

**VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

September, 2009

**VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

December, 2009

BID DATE

 , 2010

3:00 PM

OWNER

Village of Brewster, Ohio
302 S. Wabash Avenue
Brewster, Ohio 44613

Phone: (330) 767-4214
Fax: (330) 767-4607

ENGINEER

ATS Engineering, Inc.
7908 Cincinnati-Dayton Road
Suite P
West Chester, Ohio 45069

Phone: (513) 755-9842
Fax: (513) 755-5874

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SANITARY SEWER LINING**

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ADVERTISEMENT FOR GENERAL CONSTRUCTION BIDS

Notice is hereby given that the Village of Brewster, Ohio, hereinafter called Owner, shall receive sealed Bid Documents for a contract for lining of sanitary sewers.

Sealed bids will be received until 3:00 p.m. local time on , 2010, at the Village of Brewster offices, 302 s. Wabash Avenue, Brewster, Ohio 44613. All bids will be publicly opened and read aloud in the City Council Chambers at said time and place. Any Bids received after the above specified time and date will be returned to the Bidder unopened.

The sanitary sewer lining project consists of lining three (3) spans of sanitary sewer and all associated work. Sewer spans include:

- Pipe 1 – 187 feet of 12” vitrified clay, reinforce concrete and ductile iron pipe;
- Pipe 5 – 95 feet of 12” vitrified clay pipe;
- Pipe 7 – 109 feet of 14” cast iron pipe.

Bidders are hereby notified that this project is being funded jointly by Muskingum Watershed Conservation District and The Village of Brewster, Ohio. Consequently, all applicable laws and regulations which govern the use of those funds shall apply to any contract resulting from this Advertisement.

The work for which Bids are to be received shall include all portions of the work including General Construction and Demolition, with all labor, materials, equipment, tools and appurtenances, transportation services, all applicable taxes, and everything required or necessary for the entire performance and completion of the work in every detail.

All work shall be performed in strict accordance with the Project Documents as prepared by ATS Engineering, Inc., 7908 Cincinnati-Dayton Road, Suite P, West Chester, Ohio 45069, hereinafter referred to as the Engineer.

Project Documents may be examined at the following locations:

ATS Engineering, Inc.
7908 Cincinnati-Dayton Road
Suite P
West Chester, OH 45069
(513) 755-9842

Brewster Village Hall
302 S. Wabash Avenue
Brewster, OH 44613
(330) 767-4214

Copies of Project Documents can be obtained from the offices of the Engineer, ATS Engineering, Inc. 7908 Cincinnati-Dayton Road, Suite P, West Chester, Ohio 45069, (513) 755-9842. Electronic copies on compact disk (CD) in PDF format are available at a non-refundable cost of \$50.00. Paper copies are available at a non-refundable cost of \$100.00. Checks for purchase of Project Documents shall be made payable to ATS.

Bids shall be submitted on the bid forms provided in the Project Documents. The non-collusion affidavit must be signed and executed. No exceptions will be allowed. Bidder must submit with their Bid a certified check or cashier's check made payable to the Owner, and issued by a financial institution which is a member of the Federal Reserve System, or a Bid Bond executed by the Bidder and Surety Company. The amount of such check or Bid Bond shall be equal to one hundred percent (100%) of the total Bid amount.

The successful Bidder shall, upon acceptance of his Bid, be required to procure and pay for a Performance Bond and Labor and Material Payment Bond in an amount equal to his contract price. Such bonds shall comply with all laws of the State of Ohio governing public contract let by governmental units.

Bids shall be enclosed in a sealed envelope, addressed to the Owner, with the name of the Project and the name and place of business of the Bidder on the envelope.

Bids may be held by the Owner for a period not to exceed ninety (90) calendar days from the date of the opening of Bids for the purpose of reviewing the Bids and investigating the qualifications of the Bidders, prior to award of the Contract.

In the event any Bidder withdraws his bid or fails to execute a satisfactory contract and furnish a satisfactory performance bond or bonds within fifteen (15) days after a contract has been awarded to such Bidder by the Owner, the Owner may declare his certified check or cashier's check or Bid Bond forfeited to said Owner as liquidated damages.

Bidders must comply with the prevailing wage rates on Public Improvements in Stark County and the Village of Brewster, Ohio as determined by the Ohio Bureau of Employment Services, Wage and Hour Division, (614) 644-2239.

Bidder shall be required to comply with the requirements of Executive Order 11246, entitled "Equal Employment Opportunity" as amended by Executive Order 11375 and Section 3, and as supplement in Department of Labor Regulations (41 CFR part 60).

The Owner reserves the right to reject any and all Bids and to waive any informalities in the bidding and to award a Bid that in their judgement is the most advantageous to the Owner.

Village of Brewster, Ohio

Advertised:



INSTRUCTIONS TO BIDDERS
VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING

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ARTICLE 1 - DEFINED TERMS

Terms used in these Instructions to BIDDERS will have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

- 1.01 BIDDER--The individual or entity who submits a Bid directly to OWNER.
- 1.02 Issuing Office--The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.
- 1.03 SUCCESSFUL BIDDER--The lowest responsible BIDDER submitting a responsive Bid to whom OWNER (on the basis of OWNER's evaluation as hereinafter provided) makes an award.

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 may be obtained from the Issuing Office.
- 2.02 Complete sets of Bidding Documents must be used in preparing Bids; neither OWNER nor ENGINEER assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 OWNER and ENGINEER in making copies of Bidding Documents available on the above terms do so only for the purpose of obtaining Bids for the Work and do not confer a license or grant for any other use.

ARTICLE 3 - QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate BIDDER's qualifications to perform the Work, each BIDDER must be prepared to submit within five days after Bid opening upon OWNER's request detailed written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.
- 3.02 Each bid must contain evidence of BIDDER's qualification to do business in the state of Ohio or covenant to obtain such qualification prior to award of the contract.

ARTICLE 4 - EXAMINATION OF CONTRACT DOCUMENTS AND SITE

- 4.01 It is the responsibility of each BIDDER before submitting a Bid to:

- A. To examine thoroughly and carefully study the Bidding Documents, including any Addenda and the other related data identified in the Bidding Documents;
- B. To visit the Site and become familiar with and satisfy BIDDER as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. To become familiar with and satisfy BIDDER as to all federal, state, and local Laws and Regulations that may affect cost, progress, or performance of the Work;
- D. To carefully study all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.02 of the General Conditions, and carefully study all reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions;
- E. To obtain and carefully study (or assume responsibility for doing so) all additional supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by BIDDER, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents, and safety precautions and programs incident thereto;
- F. To agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times and in accordance with the other terms and conditions of the Bidding Documents;
- G. To become aware of the general nature of the work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. To correlate the information known to BIDDER, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. To promptly give ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that BIDDER discovers in the Bidding Documents and confirm that the written resolution thereof by ENGINEER is acceptable to BIDDER; and
- J. To determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

4.02 Subsurface and Physical Conditions

A. The Special Provisions identify:

1. Those reports of explorations and tests of subsurface conditions at or contiguous to the Site that Engineer has used in preparing the Bidding Documents.
2. Those drawings of physical conditions in or relating to existing surface and subsurface structures at or contiguous to the Site (except Underground Facilities) that ENGINEER has used in preparing the Bidding Documents.

B. Copies of reports and drawings referenced in paragraph 4.01.A will be made available by OWNER to any BIDDER on request. Those reports and drawings are not part of the Contract Documents, but the “technical data” contained therein upon which BIDDER is entitled to rely as provided in paragraph 4.02 of the General Conditions has been identified and established in paragraph 4.02 of the Supplementary Conditions. BIDDER is responsible for any interpretation or conclusion BIDDER draws from any “technical data” or any other data, interpretations, opinions or information contained in such reports or shown or indicated in such drawings.

4.03 Underground Facilities

A. Information and data shown or indicated in the Bidding Documents with respect to existing 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, including OWNER, or others.

4.04 Provisions concerning responsibilities for the adequacy of data furnished to prospective BIDDERS with respect to subsurface conditions, other physical conditions and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated conditions appear in paragraphs 4.02, 4.03, and 4.04 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective BIDDERS with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work appear in paragraph 4.06 of the General Conditions.

4.05 On request, OWNER will provide BIDDER access to the Site to conduct such examinations, investigations, explorations, tests, and studies as BIDDER deems necessary for submission of a Bid. BIDDER shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.06 Reference is made to 01010 Summary of Work for the identification of the general nature of other work that is to be performed at the Site by OWNER or others (such as utilities and other prime contractors) that relates to the Work for which a Bid is to be submitted. On

request, OWNER will provide to each BIDDER for examination access to or copies of Contract Documents (other than portions thereof related to price) for such other work.

- 4.07 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 Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities, and discrepancies that BIDDER has discovered in the Bidding Documents and the written resolutions thereof by ENGINEER are acceptable to BIDDER, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

ARTICLE 5 – PRE-BID CONFERENCE

- 5.01 Not used.

ARTICLE 6 - SITE AND OTHER AREAS

- 6.01 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 these Documents. All additional lands and access thereto required for temporary construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by CONTRACTOR. Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by OWNER unless otherwise provided in the Bidding Documents.

ARTICLE 7 - INTERPRETATIONS AND ADDENDA

- 7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to ENGINEER in writing. 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 ten days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 7.02 Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

ARTICLE 8 - BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to OWNER in an amount of one hundred percent (100%) of BIDDER's maximum Bid price and in the form of a certified or bank check or a Bid Bond issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.
- 8.02 The Bid security of the SUCCESSFUL BIDDER will be retained until such BIDDER has executed the Contract Documents, furnished the required contract security and met the other conditions of the Notice of Award, whereupon the Bid security will be returned. If the SUCCESSFUL BIDDER fails to execute and deliver the Contract Documents and furnish the required contract security within 15 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 OWNER until the earlier of seven days after the Effective Date of the Agreement or 91 days after the Bid opening, whereupon Bid security furnished by such BIDDERS will be returned.
- 8.03 Bid security of other BIDDERS whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven days after the Bid opening.

ARTICLE 9 - CONTRACT TIMES

- 9.01 In estimating the time necessary for completing the job allowance has been made, so far as possible, for all the ordinary delays, and hindrances incident to such work, such as weather, delays in securing materials, workman or otherwise.
- 9.02 Delays caused by earthquake, tornado, cyclone, riot, national defense, insurrection or war, or by abandonment of the work or workman engaged thereon, through no fault of the CONTRACTOR, will be considered as a basis for extension of time by the OWNER. Written request for such extension shall be filed with the OWNER within fifteen (15) days of the occurrence of the Incident causing the delay for consideration.
- 9.03 The number of calendar days within which the Work is to be Substantially Completed and Final Completed and ready for final payment is set forth in the Agreement. Times are repeated below for convenience and in the case of conflict with times in the Agreement, Agreement times shall govern.
- | | |
|-------------------------|------------------|
| Substantial Completion: | 30 calendar days |
| Final Completion: | 45 calendar days |
- 9.04 BIDDERS shall account for time required to coordinate the work of subcontractors and suppliers.

ARTICLE 10 - LIQUIDATED DAMAGES

- 10.01 All work shall be completed within the established time limit. For every calendar day that completion is delayed beyond the time limit a penalty shall be paid by the CONTRACTOR to the OWNER and it is hereby agreed that such costs represent liquidated damages caused by delay of completion. The time limit in number of calendar days from the date of the Notice to Proceed, and the amount to be charged as liquidated damages, shall be as set out in the Agreement.
- 10.02 Provisions for liquidated damages, if any, are set forth in the Agreement.

ARTICLE 11 - SUBSTITUTE AND “OR-EQUAL”

- 11.01 The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents. Whenever it is specified or described in the Bidding Documents 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 Agreement. The procedure for submission of any such application by CONTRACTOR and consideration by ENGINEER is set forth in the General Conditions and may be supplemented in the General Requirements.

ARTICLE 12 - SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 CONTRACTOR shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom CONTRACTOR has reasonable objection.
- 12.02 To demonstrate BIDDER’s qualifications to perform the Work, each BIDDER must be prepared to submit at least ten days prior to signing the Agreement upon OWNER’s request a list of all Subcontractors and Suppliers, and other individuals or entities.

ARTICLE 13 - PREPARATION OF BID

- 13.01 Additional copies of the Bidding Documents may be obtained from ENGINEER.
- 13.02 BIDDER shall complete the Bid Form and Bid Bond along with the Contractor’s EEO Certification Form, Signatory Affidavit, Personal Property Tax Affidavit, Non-Collusion Affidavit, Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization and Experience Record.

- 13.03 All blanks on the Bid forms shall be completed by printing in ink or by typewriter and the Bid signed. A Bid price shall be indicated for each Bid item and alternative listed therein, or the words “No Bid,” “No Change,” or “Not Applicable” entered.
- 13.04 A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown below the signature.
- 13.05 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown below the signature.
- 13.06 A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown below the signature.
- 13.07 A Bid by an individual shall show the BIDDER’s name and official address.
- 13.08 A Bid by a joint venture shall be executed by each joint venturer in the manner indicated on the Bid form. The official address of the joint venture must be shown below the signature.
- 13.09 All names shall be typed or printed in ink below the signatures.
- 13.10 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.
- 13.11 The address and telephone number for communications regarding the Bid shall be shown.

ARTICLE 14 - BASIS OF BID; EVALUATION OF BIDS

- 14.01 BIDDER shall submit a BID on a lump sum basis for the base bid and include a separate price for each alternate described, if any, in the Bidding Documents as provided for in the Bid form. The price for each alternate will be the amount deleted from or added to the base Bid if OWNER selects the alternate. Alternates will be utilized in evaluation of the bids received.
- 14.02 The Bid price shall include such amounts as the BIDDER deems proper for overhead and profit on account of cash allowances, if any, named in the Contract Documents as provided in paragraph 11.02 of the General Conditions.

ARTICLE 15 - SUBMITTAL OF BID

- 15.01 Each prospective BIDDER is furnished:

- A. One (1) electronic copy of Project Documents on Compact Disk (CD) or;
 - B. One (1) paper copy of Project Documents
- 15.02 BIIDDER shall complete the Bid Form and Bid Bond along with the Contractor's EEO Certification Form, Signatory Affidavit, Personal Property Tax Affidavit, Non-Collusion Affidavit, Declaration Regarding Assistance/Nonassistance to a Terrorist Organization and Experience Record.
- 15.03 The following information shall be submitted by the BIDDER:
- A. Unbound copy of Bid Form – Executed and signed
 - B. Bid Security – Bid bond or cashier's check
 - C. Contractor's EEO Certification Form
 - D. Signatory Affidavit
 - E. Non-Collusion Affidavit
 - F. Personal Property Tax Affidavit
 - G. Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization
 - H. Experience Record
- 15.04 Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement and shall be enclosed in an opaque sealed envelope plainly marked with the Project title, the name and address of BIDDER, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate envelope plainly marked on the outside with the name of the project as "BID FOR SANITARY SEWER LINING". A mailed Bid shall be sent to the address indicated on the advertisement.

ARTICLE 16 - MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be modified or withdrawn by an appropriate document duly executed in the manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.
- 16.02 If within 24 hours after Bids are opened any BIDDER files a duly signed written notice with OWNER and promptly thereafter demonstrates to the reasonable satisfaction of OWNER that there was a material and substantial mistake in the preparation of its Bid, that BIDDER may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is re-bid, that BIDDER will be disqualified from further bidding on the Work.

ARTICLE 17 - OPENING OF BIDS

- 17.01 Bids will be opened at the time and place indicated in the advertisement or invitation to Bid

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 18 - BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for 90 days after the day of the Bid opening, but OWNER may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 - AWARD OF CONTRACT

- 19.01 OWNER reserves the right to reject any or all Bids, including without limitation, nonconforming, non-responsive, unbalanced, or conditional Bids. OWNER further reserves the right to reject the Bid of any BIDDER whom it finds, after reasonable inquiry and evaluation, to be non-responsive. OWNER may also 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. OWNER reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the SUCCESSFUL BIDDER. OWNER also reserves the right to award contract for individual lump sum prices for complete parts of the work as identified in the Project Documents.
- 19.02 More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any BIDDER has an interest in more than one Bid for the Work may be cause for disqualification of that BIDDER and the rejection of all Bids in which that BIDDER has an interest.
- 19.03 In evaluating Bids, OWNER will consider 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.
- 19.04 In evaluating BIDDERS, OWNER will consider the qualifications of BIDDERS and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions. Operating costs, maintenance considerations, performance data and guarantees or materials and equipment may also be considered by OWNER.
- 19.05 OWNER may conduct such investigations as OWNER deems necessary to establish the responsibility, qualifications, and financial ability of BIDDERS, proposed Subcontractors, Suppliers, individuals, or entities to perform the Work in accordance with the Contract Documents to the OWNERS satisfaction within the prescribed time.

- 19.06 OWNER reserves the right to reject the BID of any BIDDER who does not pass investigations or evaluations to OWNER's satisfaction.
- 19.07 If the Contract is to be awarded, OWNER will award to the lowest and best BIDDER whose evaluation by the OWNER indicates to OWNER that the award will be in the best interests of the Project.
- 19.08 If the Contract is to be awarded, OWNER will give SUCCESSFUL BIDDER a Notice of Award within 90 days after the day of the Bid opening.

ARTICLE 20 - CONTRACT SECURITY AND INSURANCE

- 20.01 Article 5 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth OWNER's requirements as to performance and payment Bonds and insurance. When the SUCCESSFUL BIDDER delivers the executed Agreement to OWNER, it must be accompanied by such Bonds and Certificates of Insurance.

ARTICLE 21 - SIGNING OF AGREEMENT

- 21.01 When OWNER gives a Notice of Award to the SUCCESSFUL BIDDER, it shall be accompanied by the required number of unsigned counterparts of the Agreement with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15 days thereafter, SUCCESSFUL BIDDER shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within ten days thereafter, OWNER shall deliver one fully signed counterpart to SUCCESSFUL BIDDER with appropriate identification.

ARTICLE 22 - SALES AND USE TAXES

- 22.01 The CONTRACTOR must submit the Ohio Department of Revenue exemption certificate to each supplier. The OWNER will cooperate with the CONTRACTOR in filing the necessary forms with the Ohio Department of Revenue, but the CONTRACTOR shall be responsible for the initiation for these proceedings. The contract price will be based upon a complete exemption from this tax, and if later it is determined that a tax must be paid by the OWNER, the contract price will be adjusted to reflect this liability to the OWNER.

ARTICLE 23 - RETAINAGE

- 23.01 Provisions concerning CONTRACTOR's rights to deposit securities in lieu of retainage are set forth in the Agreement.

END OF SECTION

PREVAILING WAGE RATES

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BID FORM

VILLAGE OF BREWSTER, OHIO SANITARY SEWER LINING

PROJECT DESCRIPTION:

BIDDERS are required to provide a single lump sum figure for all Work. Additional details and more specific information regarding BID requirements may be found on the bid form.

CONTRACT IDENTIFICATION AND NUMBER:

The project is the Village of Brewster, Ohio, Sanitary Sewer Lining, dated December 2009.

THIS BID IS SUBMITTED TO:

Village of Brewster
30 Village Square
Brewster, Ohio 44613

THIS BID IS SUBMITTED FROM:

(Company Name)

- 1.01 The undersigned BIDDER proposes and agrees, if this Bid is accepted, to enter into an Agreement with OWNER in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.
- 2.01 BIDDER accepts all of the terms and conditions of the Advertisement and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that BIDDER may agree to in writing upon request of OWNER.
- 3.01 In submitting this Bid, BIDDER represents, as set forth in the Agreement, that:
- A. BIDDER has examined and carefully studied the Bidding Documents, the other related data identified in the Bidding Documents, and the following Addenda, receipt of all which is hereby acknowledged.

<u>Addendum No.</u>	<u>Addendum Date</u>
_____	_____
_____	_____
_____	_____

- B. BIDDER has visited the Site and become familiar with and is satisfied as to the general, local and Site conditions that may affect cost, progress, performance, and furnishing of the Work.
- C. BIDDER is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress and performance of the Work.
- D. BIDDER has carefully studied all reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities) which have been identified in the Special Provisions as provided in paragraph 4.02 of the General Conditions.
- E. BIDDER accepts the determination set forth in paragraph SC 4.02A. of the Special Provisions of the extent of the “technical data” contained in such reports and drawings upon which the BIDDER is entitled to rely as provided in paragraph 4.02 of the General Conditions. BIDDER acknowledges that such reports and drawings are not Contract Documents and may not be complete for BIDDER’s purposes. BIDDER acknowledges that OWNER and ENGINEER do not assume responsibility for the accuracy or completeness of information and data shown or indicated in the Bidding Documents with respect to Underground Utilities at or contiguous to the site.
- F. BIDDER has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the Site which may affect cost, progress, performance, or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by BIDDER, and safety precautions and programs incident thereto.
- G. BIDDER does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times and in accordance with the other terms and conditions of the Bidding Documents.
- H. BIDDER is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work for which this Bid is submitted as indicated in the Bidding Documents.
- I. BIDDER has correlated the information known to BIDDER, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- J. BIDDER has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that BIDDER has discovered in the Bidding Documents, and the written resolution thereof by ENGINEER is acceptable to BIDDER, and the Bidding

Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work for which this Bid is submitted.

4.01 BIDDER further represents that this Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity 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 individual or entity to refrain from bidding; and BIDDER has not sought by collusion to obtain for itself any advantage over any other BIDDER or over OWNER.

5.01 BIDDER submits the following lump sum base bid for the Sanitary Sewer Lining to be performed in accordance with the Contract Documents and agrees that items of work not specifically mentioned which are necessary and required to complete the Work intended shall be done incidental to and as part of the items of Work and understands that no additional payment will be made for such incidental work. Work, as specified in the project documents, includes all material, labor, equipment and supervision required to construct the project in accordance with project documents.

5.02 BIDDER acknowledges the Sewer Point Repair Allowance shown below and understands that the allowance is included in the Total Lump Sum Base Bid Price shown below. BIDDER shall provide documentation to substantiate the actual cost of Sewer Point Repair Work and provide a credit against the allowance if the cost of actual work is less than the allowance or submit a request to the Owner for additional compensation if the cost of actual work is greater than the allowance.

5.03 BIDDER will complete all work in accordance with the Bidding Documents for the following lump sum price:

SEWER POINT REPAIR ALLOWANCE \$10,000.00
(In Figures)

ALL OTHER WORK REQUIRED _____
(In Figures)

TOTAL LUMP SUM BASE BID PRICE _____
(In Figures)

(In Words)

_____ dollars and _____ cents.

6.01 BIDDER agrees that the Work will be substantially complete within 30 calendar days and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions within 45 calendar days of the effective date of the Notice to Proceed.

6.02 BIDDER accepts the provisions of the Agreement as to liquidated damages in the event of failure to complete the Work within the times specified above, which shall be stated in the Agreement.

6.03 BIDDER recognizes that he/she is required to coordinate his/her work with that of the other subcontractors and that it may be necessary for BIDDER to delay certain activities to coincide with the Work of the other subcontractors.

7.01 The following documents are attached to and made a condition of this Bid:

- A. Required Bid security in the form of a Bid Bond or cashier's check;
- B. Contractor's EEO Certification Form;
- C. Signatory Affidavit
- D. Non-Collusion Affidavit
- E. Personal Property Tax Affidavit
- F. Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization
- G. Experience Record

8.01 The terms used in this Bid with initial capital letters or all capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

9.01 SUBMITTED on _____, 20____.
(month) (day) (yr)

10.01 By BIDDER as:

AN INDIVIDUAL

Name: _____
(Typed or Printed)

By: _____ (SEAL)
(Individual's signature)

Doing business as: _____

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

A CORPORATION

Corporation Name: _____ (SEAL)

State of Incorporation: _____

Type: _____
(General Business, Professional, Service, Limited Liability)

Name: _____
(typed or printed)

By: _____
(Signature -- attach evidence of authority to sign)

Title: _____
(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____

A PARTNERSHIP

Partnership Name: _____ (SEAL)

Name: _____
(Typed or Printed)

By: _____
(Signature of general partner -- attach evidence of authority to sign)

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

A JOINT VENTURE

Joint Venturer One Name: _____ (SEAL)

Name: _____
(typed or printed)

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Title: _____

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

Joint Venturer Two Name: _____ (SEAL)

Name: _____
(typed or printed)

By: _____
(Signature of joint venture partner -- attach evidence of authority to sign)

Title: _____

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

Phone, FAX, and Address for receipt of official communications:

Business address: _____
(Street)

(City, State, Zip)

Phone No.: _____ FAX No.: _____

(Each joint venture must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above. Provide separate sheet of paper if more than two joint ventures.)

BID BOND

VILLAGE OF BREWSTER, OHIO SANITARY SEWER LINING

BIDDER (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

BID

BID DUE DATE: _____

PROJECT (Brief Description Including Division Letter):

BOND

BOND NUMBER: _____

DATE (Not later than Bid due date): _____

PENAL SUM: _____

(Words)

(Figures)

IN WITNESS WHEREOF, Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

BIDDER

SURETY

_____(Seal)

Bidder's Name and Corporate Seal

_____(Seal)

Surety's Name and Corporate Seal

By: _____

Signature and Title

By: _____

Signature and Title
(Attach Power of Attorney)

Attest: _____

Signature and Title

Attest: _____

Signature and Title

-
- Note: (1) Above addresses are to be used for giving required notice.
(2) Any singular reference to Bidder, Surety, OWNER or other party shall be considered plural where applicable.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assign to pay to OWNER upon default of Bidder the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. OWNER accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by OWNER) the executed Agreement required by the Bidding Documents and any performance and payment Bonds required by the Bidding Documents, or

3.2. All Bids are rejected by OWNER, or

3.3. OWNER fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from OWNER, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of and any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by OWNER and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses

shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power or Attorney evidencing the authority of the officer, agent or representative who executed this Bond on behalf of Surety to execute, seal and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer or proposal as applicable

Contractor Equal Employment Opportunity Certification

During the performance of this contract, the undersigned agrees as follows

(1) The undersigned will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The undersigned will take affirmative action to ensure that applicants are employed, and that employees are treated during employment without regard to their race, color, religion or national origin. Such action shall include, but not be limited to the following: Employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The undersigned agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this equal opportunity (federally assisted construction) clause.

(2) The undersigned will, in all solicitations or advertisements for employees placed by or on behalf of the undersigned, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex or national origin.

(3) The undersigned will send to each labor union or representative of workers, with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided advising the said labor union or workers' representative of the undersigned's commitments under this section, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

(4) The undersigned will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

(5) The undersigned will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the administering agency of the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(6) In the event of the undersigned's non-compliance with the equal opportunity (federally assisted construction) clause of this contract or with any of the said rules, regulations, or orders, this contract may be canceled, terminated, or suspended in whole or in part, and the undersigned may be declared ineligible for further Government contracts or federally assisted construction contracts in accordance with procedures authorized in Executive Order No. 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order No. 11246 of September 24, 1965, or by rule, regulations, or order of the Secretary of Labor, or as provided by law.

(7) The undersigned will include this equal opportunity (federally assisted construction) clause in every subcontract or purchase order unless exempted by the rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The undersigned will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions, including sanctions for non-compliance: Provided, however, that in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor, as a result of such direction by the administering agency the undersigned may request the United States to enter into such litigation to protect the interest of the United States.

(Signature)

(Date)

(Name and Title of Signer, Please type)

(Firm name)

Note: The penalty for making false statements in offers is prescribed in 18 U.S.C. 1001.

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VILLAGE OF BREWSTER, OHIO

SANITARY SEWER LINING

STATE OF _____) SS:
COUNTY OF _____)

_____, being duly sworn, deposes and says that he is Secretary of
(Name)
_____, a corporation organized and existing under and by virtue
(Corporation)
of the laws of the State of _____ and having its principal office at _____
_____, _____, _____, _____.
(Number and Street) (City) (County) (State)

Affiant further says that he is familiar with the records, minute books and by-laws of

(Name of Corporation)

Affiant further says that _____, _____
(Name of Officer) (Title)

of the corporation is duly authorized to sign the contract for Supply of _____
_____ for said corporation by virtue of

(State whether a provision of by-laws or a resolution of the Board of Directors. If by resolution, give date of adoption)

(Signature)

Sworn to before me by the said _____, this _____ day of _____,
20____.

Notary Public in and for

County, _____

My commission expires _____

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NON-COLLUSION AFFIDAVIT

**VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

STATE OF _____)
COUNTY OF _____) ss.

_____, being first and duly sworn, deposes and
says that he/she is _____
(sole owner, partner, president, secretary, etc.)
of _____,
(Company Name)

the party making the foregoing proposal or Bid; that such Bid is genuine and not collusive or sham; that said Bidder has not colluded, conspired, connived, or agreed, directly or indirectly, with any Bidder or person, to put in a sham Bid, or that such other person shall refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person, to fix the Bid price of affiant or any other Bidder, or to fix any overhead, profit or cost element of said Bid price, or of that of any other Bidder, or to secure any advantage against the Village of Brewster, Ohio, or any person or persons interested in the proposed Contract; and that all statements contained in said proposal or Bid are true; and further, that such Bidder has not, directly or indirectly, submitted this Bid, or the contents thereof, or divulged information or data relative thereto to any association or to any member or agent thereof.

Affiant

Sworn to and subscribed before me this _____ day of _____, 20____.

Notary Public in and for

_____ County, _____

My commission expires _____

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PERSONAL PROPERTY TAX AFFIDAVIT

STATE OF OHIO _____) SS:
COUNTY OF _____)

_____, being duly sworn, and authorized, deposes and says
that he is Treasurer of _____, a corporation organized and
existing under and by virtue of the laws of the State of _____ and having its principal
office at _____, _____, _____.
(Number and Street) (City) (County)

Affiant further states that he is familiar with the financial books and records of _____

(Name of Corporation, hereinafter Contractor)

Affiant further says that at the time the bid for this Agreement was submitted, Contractor was not delinquent with any personal property taxes on the general tax list of personal property of Stark County.

OR

Affiant states that at the time the bid was submitted for this Agreement, Contractor was charged with delinquent personal property taxes on the general tax list of personal property of Stark County in the amount of \$ _____ including unpaid penalties and interest thereon.

(SELECT THE APPROPRIATE STATEMENT ABOVE BY MARKING THE BOX WITH AN "X" AND FILLING IN THE REQUESTED INFORMATION AS APPROPRIATE.)

Further Affiant saith not. _____

Sworn to before me by the said _____, this ____ day of _____, 20____.

Notary

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**DECLARATION REGARDING MATERIAL ASSISTANCE/NONASSISTANCE TO A
TERRORIST ORGANIZATION.**

This Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization attached is being incorporated into this RFQ. Ohio Revised Code Section 2909.21 Terrorism requires that any contract that will result in an Offeror receiving funding in an aggregate amount greater than \$100,000 annually shall certify that it does not provide material assistance to any organization on the United States Department of State Terrorist exclusion list. By the Offeror completing the DMS Form and affixing a signature on the Declaration Regarding Material Assistance/Nonassistance to a Terrorist Organization, the Offeror certifies that it does not provide material assistance to any organization on the list, and that failure to complete the form or answer "yes" to any question shall serve for the purposes of this affidavit as a disclosure of the provision of assistance to an organization that is listed on the terrorist exclusion list (attached with the DMA form).

When returning your submission, please sign and return this signature page of Amendment #1 and the completed form attached here-to.

Firm Name and Signature of Authorized Representative

Date

GOVERNMENT BUSINESS AND FUNDING CONTRACTS

In accordance with section 2909.33 of the Ohio Revised Code

DECLARATION REGARDING MATERIAL ASSISTANCE/NONASSISTANCE TO A TERRORIST ORGANIZATION

This form serves as a declaration of the provision of material assistance to a terrorist organization or organization that supports terrorism as identified by the U.S. Department of State Terrorist Exclusion List (see the Ohio Homeland Security Division website for a reference copy of the Terrorist Exclusion List).

Any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided. Failure to disclose the provision of material assistance to such an organization or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree.

For the purposes of this declaration, "material support or resources" means currency, payment instruments, other financial securities, funds, transfer of funds, and financial services that are in excess of one hundred dollars, as well as communications, lodging, training, safe houses, false documentation or identification, communications equipment, facilities, weapons, lethal substances, explosives, personnel, transportation, and other physical assets, except medicine or religious materials.

LAST NAME		FIRST NAME		MIDDLE INITIAL
HOME ADDRESS				
CITY	STATE	ZIP	COUNTY	
HOME PHONE		WORK PHONE		

COMPLETE THIS SECTION ONLY IF YOU ARE A COMPANY, BUSINESS OR ORGANIZATION

BUSINESS/ORGANIZATION NAME			
BUSINESS ADDRESS			
CITY	STATE	ZIP	COUNTY
PHONE NUMBER			

DECLARATION

In accordance with division (A)(2)(b) of section 2909.32 of the Ohio Revised Code

For each question, indicate either "yes," or "no" in the space provided. Responses must be truthful to the best of your knowledge.

- Are you a member of an organization on the U.S. Department of State Terrorist Exclusion List?
☐ Yes ☐ No
- Have you used any position of prominence you have with any country to persuade others to support an organization on the U.S. Department of State Terrorist Exclusion List?
☐ Yes ☐ No

GOVERNMENT BUSINESS AND FUNDING CONTRACTS - CONTINUED

3. Have you knowingly solicited funds or other things of value for an organization on the U.S. Department of State Terrorist Exclusion List?
☐ Yes ☐ No
4. Have you solicited any individual for membership in an organization on the U.S. Department of State Terrorist Exclusion List?
☐ Yes ☐ No
5. Have you committed an act that you know, or reasonably should have known, affords "material support or resources" to an organization on the U.S. Department of State Terrorist Exclusion List?
☐ Yes ☐ No
6. Have you hired or compensated a person you knew to be a member of an organization on the U.S. Department of State Terrorist Exclusion List, or a person you knew to be engaged in planning, assisting, or carrying out an act of terrorism?
☐ Yes ☐ No

In the event of a denial of a government contract or government funding due to a positive indication that material assistance has been provided to a terrorist organization, or an organization that supports terrorism as identified by the U.S. Department of State Terrorist Exclusion List, a review of the denial may be requested. The request must be sent to the Ohio Department of Public Safety's Division of Homeland Security. The request forms and instructions for filing can be found on the Ohio Homeland Security Division website.

CERTIFICATION

I hereby certify that the answers I have made to all of the questions on this declaration are true to the best of my knowledge. I understand that if this declaration is not completed in its entirety, it will not be processed and I will be automatically disqualified. I understand that I am responsible for the correctness of this declaration. I understand that failure to disclose the provision of material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List, or knowingly making false statements regarding material assistance to such an organization is a felony of the fifth degree. I understand that any answer of "yes" to any question, or the failure to answer "no" to any question on this declaration shall serve as a disclosure that material assistance to an organization identified on the U.S. Department of State Terrorist Exclusion List has been provided by myself or my organization. If I am signing this on behalf of a company, business or organization, I hereby acknowledge that I have the authority to make this certification on behalf of the company, business or organization referenced on page 1 of this declaration.

X

Signature

Date

**Ohio Department of Public Safety
Ohio Homeland Security**

U.S. Department of State Terrorist Exclusion List

Terrorist Exclusion List Designees

- Al-Ittihad al-Islami (AI)I)
- Al-Wafa al-Igatha al-Islamia
- Asbat al-Ansar
- Darkazanli Company
- Salafist Group for Call and Combat (GSPC)
- Islamic Army of Aden
- Libyan Islamic Fighting Group
- Makhtab al-Khidmat
- Al-Hamati Sweets Bakeries
- Al-Nur Honey Center
- Al-Rashid Trust
- Al-Shifa Honey Press for Industry and Commerce
- Jaysh-e-Mohammed
- Jamiat al-Ta'awun al-Islamiyya
- Alex Boncayao Brigade (ABB)
- Army for the Liberation of Rwanda (ALIR) -- AKA: Interahamwe, Former Armed Forces (EX-FAR)
- First of October Antifascist Resistance Group (GRAPO) -- AKA: Grupo de Resistencia Anti-Fascista Primero De Octubre
- Lashkar-e-Tayyiba (LT) -- AKA: Army of the Righteous
- Continuity Irish Republican Army (CIRA) -- AKA: Continuity Army Council
- Orange Volunteers (OV)
- Red Hand Defenders (RHD)
- New People's Army (NPA)
- People Against Gangsterism and Drugs (PAGAD)
- Revolutionary United Front (RUF)
- Al-Ma'unah
- Jayshullah
- Black Star
- Anarchist Faction for Overthrow
- Red Brigades-Combatant Communist Party (BR-PCC)
- Revolutionary Proletarian Nucleus
- Turkish Hizballah
- Jerusalem Warriors
- Islamic Renewal and Reform Organization
- The Pentagon Gang
- Japanese Red Army (JRA)
- Jamiat ul-Mujahideen (JUM)
- Harakat ul Jihad i Islami (HUJI)
- The Allied Democratic Forces (ADF)
- The Lord's Resistance Army (LRA)

**Ohio Department of Public Safety
Ohio Homeland Security**

Designated on February 18, 2003

- Al Taqwa Trade, Property and Industry Company Ltd. (f.k.a. Al Taqwa Trade, Property and Industry; f.k.a. Al Taqwa Trade, Property and Industry Establishment; f.k.a. Himmat Establishment)
- Bank Al Taqwa Ltd. (a.k.a. Al Taqwa Bank; a.k.a. Bank Al Taqwa)
- Nada Management Organization (f.k.a. Al Taqwa Management Organization SA)
- Youssef M. Nada & Co. Gesellschaft M.B.H.
- Ummah Tameer E-Nau (UTN) (a.k.a. Foundation for Construction; a.k.a. Nation Building; a.k.a. Reconstruction Foundation; a.k.a. Reconstruction of the Islamic Community; a.k.a. Reconstruction of the Muslim Ummah; a.k.a. Ummah Tameer I-Nau; a.k.a. Ummah Tamir E-Nau; a.k.a. Ummah Tamir I-Nau; a.k.a. Ummat Tamir E-Nau; a.k.a. Ummat Tamir-I-Pau)
- Loyalist Volunteer Force (LVF)
- Ulster Defense Association (a.k.a. Ulster Freedom Fighters)
- Afghan Support Committee (a.k.a. Ahya ul Turas; a.k.a. Jamiat Ayat-ur-Rhas al Islamia; a.k.a. Jamiat Ihya ul Turath al Islamia; a.k.a. Lajnat el Masa Eidatul Afghanistan)
- Revival of Islamic Heritage Society (Pakistan and Afghanistan offices – Kuwait office not designated) (a.k.a. Jamia Ihya ul Turath; a.k.a. Jamiat Ihia Al- Turath Al-Islamiya; a.k.a. Revival of Islamic Society Heritage on the African Continent)

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VILLAGE OF BREWSTER, OHIO

SANITARY SEWER LINING

The bidder is required to complete the following experience statement. Bidder's experience will be evaluated in determining the lowest and responsive bidder.

List here at least three recent projects of similar nature that have been successfully completed. Details to be included shall be location, owner, type of construction and approximate dollar value of work completed.

VALUEThis image shows a blank sheet of white paper with horizontal ruling lines. The lines are evenly spaced and extend across the width of the page. There are no margins, text, or other markings on the paper.

[illegible]

NOTICE OF AWARD

**VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

Dated _____

TO: _____
(Bidder)

ADDRESS: _____

Contract: **Village of Brewster, Ohio Sanitary Sewer Lining**
(Insert name of Contract as it appears in the Bidding Documents)

Project: _____

OWNER'S Contract No. _____

You are notified that your Bid dated _____ for the above Contract has been considered. You are the apparent Successful Bidder and have been awarded a Contract for _____

(Indicate total Work, alternates or sections or Work awarded)

The Contract Price of your Contract is _____

_____ Dollars (\$ _____).
(In Words) (In Figures)

___ copies of each of the proposed Contract Documents (except Drawings) accompany this Notice of Award. ___ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

You must comply with the following conditions precedent within 15 days of the date you receive this Notice of Award.

1. Deliver to the OWNER ___ fully executed counterparts of the Contract Documents. Each of the Contract Documents must bear your signature on ().

2. Deliver with the executed Contract Documents the Contract security (Bonds) and certificate of insurance as specified in the Instructions to Bidders (Article 20), and General Conditions (Article 5) and Special Provisions (Page 00800G-2).

[illegible]

Within ten days after you comply with the above conditions, OWNER will return to you one fully executed counterpart of the Contract Documents.

By: _____
(AUTHORIZED SIGNATURE)

Brewster Sewer Lining

AGREEMENT

VILLAGE OF BREWSTER, OHIO SANITARY SEWER LINING

THIS AGREEMENT is made and entered into as of the ____ day of _____, 20__ (the Effective Date of the Agreement) by and between

OWNER: Village of Brewster, Ohio

and

CONTRACTOR: _____

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

ARTICLE 1 – TERMS AND GENERAL INFORMATION

1.01 **TERMS.** Terms used in this Agreement and printed with initial or all capital letters will have the meanings indicated in the General Conditions, which are applicable to both the singular and plural thereof.

1.02 **WORK AND CONTRACT OBLIGATIONS.** The Work is generally described as follows:

CONTRACTOR shall complete all Work and perform and fulfill all other Contract Obligations in strict accordance with the Contract Documents.

1.02 **PROJECT.** The Project for which the Work and Contract Obligations under the Contract Documents may be the whole or only a part is generally described as follows:

Lining of Sanitary Sewer Pipe 1, 5 and 7 and replacement of the flood gate at Pipe 1.

1.03 **ENGINEER.** The ENGINEER for this Project is:

**ATS Engineering, Inc.,
7908 Cincinnati-Dayton Road, Suite P
West Chester, Ohio 45069.**

ENGINEER has been appointed and engaged by OWNER to perform construction administration services for the Project as set forth in a separate agreement entered into by OWNER and ENGINEER to which CONTRACTOR is not a party. ENGINEER will provide and assume toward OWNER the duties and responsibilities, and have the rights and limited authority assigned to it by the Contract Documents.

- 1.04 **ENGINEER'S CONSULTANTS.** The following individuals or entities have contracted with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project as indicated (additional or different Consultants may be designated subsequent to the Effective Date of this Agreement):

**Donald C. Baker Surveying
(Surveying)
138 North Clay Street
Millersburg, Ohio 44654**

- 1.05 **OWNER'S REPRESENTATIVE.** The Owner's Representative is:

The Owner's Representative is appointed and authorized by the OWNER to perform and exercise certain administrative authority for the Project on OWNER's behalf and in conjunction with administrative services provided by ENGINEER, all as more particularly set forth in the General Conditions and other Contract Documents.

Name

Title

Street

City, State, Zip

Phone

- 1.06 **RESIDENT PROJECT REPRESENTATIVE.** The ENGINEER's Resident Project Representative assigned to the Project is:

Name

Title

Street

City, State, Zip

Phone

ARTICLE 2 - CONTRACT PRICE

- 2.01 OWNER shall pay CONTRACTOR for satisfactory completion and performance of the Work and fulfillment of all other Contract Obligations an amount in current funds equal to the sum of the amounts determined as forth below:

A. For all Work other than Unit Price Work, a Lump Sum of: _____

_____ (\$ _____). All specific cash allowances are included in the above price and have been computed in accordance with paragraph 11.02 of the General Conditions.

- 2.02 The Contract Price, however determined, shall be deemed full and complete compensation for all direct and indirect costs for the Work, including without limitation all materials, labor, supervision, equipment, transportation, warranties, repairs, replacement, testing, start-up, training, overhead and profit, and all liabilities, responsibilities and Contract Obligations assigned to or assumed by CONTRACTOR under the Contract Documents in respect of the Work.

ARTICLE 3 - CONTRACT TIMES

- 3.01 *Substantial Completion.* CONTRACTOR shall perform the Work and other Contract Obligations regularly, diligently and uninterruptedly and at such a rate of progress and in such other manner as required to achieve Substantial Completion within _____ calendar days after the date when the Contract Time(s) commence to run as provided in paragraph 2.03 of the General Conditions.
- 3.02 *Final Completion.* CONTRACTOR shall perform the Work and other Contract Obligations regularly, diligently and uninterruptedly and at such a rate of progress and in such other manner as required to achieve Final Completion within _____ calendar days after the date when the Contract Time(s) commence to run as provided in paragraph 2.03 of the General Conditions.
- 3.03 *Milestones.* CONTRACTOR shall perform the Work and other Contract Obligations regularly, diligently and uninterruptedly and at such a rate of progress and in such other manner as required to meet the following interim Milestones:
- 3.04 CONTRACTOR and OWNER mutually understand and agree that the times for commencement of the Work and any and all other Contract Times specified by this Agreement or other Contract Documents are essential conditions of this Agreement and the Contract, and that such Contract Times are reasonable and take into account any and all risks, limitations, adverse conditions and Contract Obligations assumed by CONTRACTOR under the Contract Documents.

ARTICLE 4 – LIQUIDATED DAMAGES

- 4.01 CONTRACTOR and OWNER recognize that, time being of the essence of this Agreement, OWNER (and members of the public if OWNER is a governmental body) will suffer financial loss, disruption and inconvenience if the Work is not completed within the Contract Times specified Article 3 above, subject to adjustments in accordance with Article 12 of the General Conditions, and that the full and exact extent and character thereof cannot reasonably be measured as a basis for determining actual monetary damages resulting from the Work and other Contract Obligations not being performed and completed on time. Accordingly, CONTRACTOR agrees that liquidated damages as specified below may be assessed, withheld from payment and/or otherwise recovered and collected by OWNER against Contractor and its Surety, in the event of delayed completion, without OWNER being required to present any evidence of the amount or character of actual damages sustained by reason thereof.
- A. *Substantial Completion.* For each calendar day that elapses after the Contract Time specified in paragraph 3.01 for Substantial Completion until Substantial Completion is actually achieved as determined under paragraph 14.04 of the General Conditions, liquidated damages shall be **\$ 500.00**; and
- B. *Final Completion.* For each calendar day that elapses after the Contract Time specified in paragraph 3.02 for Final Completion until Final Completion is actually achieved as determined under paragraph 14.06 of the General Conditions and Final Payment becomes due to CONTRACTOR under paragraph 14.07 of the General Conditions, liquidated damages shall be **\$500.00**; and
- C. *Milestones.* The following liquidated damages shall apply for each day that elapses after the Contract Times specified in paragraph 3.03 for achievement of Milestones until actual achievement of such Milestones occurs:
- 4.02 CONTRACTOR further acknowledges and agrees that the Contract Price as stated in this Agreement shall be deemed to include adequate consideration for the risk of liability for liquidated damages imposed upon CONTRACTOR hereunder and that the respective amounts of such liquidated damages are reasonable with due consideration for the type, nature and extent of the Work, other Contract Obligations and the Contract Price.

ARTICLE 5 - PAYMENT PROCEDURES

- 5.01 *Applications for Payment.* CONTRACTOR's Applications for Payment shall be submitted and will be processed as set forth in Article 14 of the General Conditions.
- 5.02 *Progress Payments.* OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment as provided in paragraph 14.02 of the General Conditions. All such payments will be measured by the schedule of values established in paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed). Prior to Substantial Completion, progress payments will be reduced by the aggregate of payments previously made, and by retainage as indicated in paragraph 5.03 below, and may be further reduced in such amounts as ENGINEER may disapprove or and/or OWNER may withhold in accordance with paragraphs 14.02.B.5 and 14.02.D of the General Conditions.
- 5.03 *Retainage.*
- A. OWNER shall withhold retainage in the amount of ten percent (10%) of the dollar value of all Work and other Contract Obligations satisfactorily completed as evidence by approved Applications for Payment until the dollar value of such completed Work and Contract Obligations reaches fifty percent (50%) of the Contract Price (as adjusted Change Orders). Thereafter, no further retainage will be withheld, provided that CONTRACTOR is making satisfactory progress and there is no specific cause for additional or increased withholding of payment.
 - B. Except as otherwise provided by Laws and Regulations or the Contract Documents, the accumulated retainage withheld under paragraph 5.02.B will be released and paid to CONTRACTOR within sixty-one (61) days after the date of Substantial Completion of all Work and Contract Obligations, less an amount equal to two hundred percent (200%) of the value of Work or other Contract Obligations remaining to be completed, corrected or fulfilled thereafter, as determined by ENGINEER in consultation with Owner's Representative.
 - C. CONTRACTOR may elect for retainage to be placed by OWNER in an escrow account with a bank, savings and loan institution, or the state as the escrow agent; provided, that CONTRACTOR shall, as a condition precedent to the validity of such election, give written notice thereof to the Owner's Representative no later than five (5) days after the Effective Date of the Agreement. If such written notice is not given within such time limit, the right of CONTRACTOR to make such election shall conclusively be deemed waived, and retainage shall thereupon be withheld by OWNER without being placed into an escrow account, and OWNER shall not be liable for payment of any interest or other charges on the amounts of retainage that it holds. If a valid escrow account election is made by CONTRACTOR under subsection C, the selection of the escrow agent and terms of the escrow agreement shall be determined in conformity with Ohio Law and, in other respects, subject to approval and acceptance by OWNER.
- 5.04 *Final Payment.* OWNER will make final payment to CONTRACTOR, consisting of the remainder of the Contract Price not in dispute, within 120 days after Final Completion as determined under paragraph 14.07 of the General Conditions.
- 5.05 *Interest.* Moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the prime rate of interest prevailing from to time at the location where the Project is situated.

Interest. For each day that such final payment is delayed after the time limit stated in paragraph 5.04 above, and provided that such delay is directly attributable to OWNER, CONTRACTOR shall be paid interest on the undisputed amount due at the rate of twelve percent (12%) per annum.

ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS

6.01 In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations, each of which shall be deemed a material part of this Agreement:

- A. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
- B. CONTRACTOR has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. CONTRACTOR is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. CONTRACTOR has carefully studied (or assumes responsibility for having done so) all (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site (except Underground Facilities), and (2) reports and drawings of a Hazardous Environmental Condition, if any, at the Site which have been identified in the Contract Documents or otherwise been made available as provided in paragraphs 4.02 and 4.06 of the General Condition.
- E. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all additional or supplementary examinations, investigations, explorations, tests, studies, and data concerning conditions (surface, subsurface, and Underground Facilities) at or contiguous to the Site which may affect cost, progress, or performance of the Work or which relate to any aspect of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, including applying the specific means, methods, techniques, sequences, and procedures of construction, if any, expressly required by the Contract Documents to be employed by CONTRACTOR, and safety precautions and programs incident thereto
- F. CONTRACTOR does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. CONTRACTOR is aware of the general nature of work to be performed by OWNER and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the Site, reports and drawings identified in the Contract Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Contract Documents.
- I. CONTRACTOR has given ENGINEER written notice of all conflicts, errors, ambiguities, or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by ENGINEER is acceptable to CONTRACTOR.
- J. The Contract Documents are sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work and fulfilling all other Contract Obligations.

ARTICLE 7 - CONTRACT DOCUMENTS

- 7.01 This Agreement consists of the following Contract Documents all of which are as fully a part of this Agreement as if set out verbatim herein or attached hereto and the same do in all particulars become the Agreement and Contract between the parties hereto in all matters and things set forth herein and described
- A.. This Agreement, including the following Exhibits attached hereto:
 - B. CONTRACTOR's Bonds, as follows:
 - a. Performance Bond;
 - b. Labor and Material Payment Bond
 - C. General Conditions (and Supplementary Conditions if included in the Project Manual or any Addendum)
 - D. Specifications as listed in the table of contents of the Project Manual;
 - E. Drawings consisting of a cover sheet and sheets numbered ____ through ____, inclusive, with each sheet bearing the following general title: _____;
 - F. Addenda (numbers ____ to ____, inclusive);
 - G. Bidding Documents, including:
 - a. Notice (or Advertisement) to Bidders
 - b. Instructions to Bidders
 - c. CONTRACTOR's Bid Proposal, plus attached bid submissions
 - H. Post-bid documentation submitted by or on behalf of CONTRACTOR prior to Contract Award
 - I. The following which may be delivered or issued on or after the Effective Date of the Agreement:
 - a. Notice to Proceed;
 - b. Written Amendments;
 - c. Work Change Directives;
 - d. Change Order(s).
- 7.02 In resolving conflicts, errors, discrepancies and disputes concerning the nature, character, scope or extent of Work or other Contract Obligations to be accomplished or fulfilled by CONTRACTOR, or other rights and obligations of the parties related to or arising from this Agreement or other Contract Documents, or the interpretation thereof, the provisions of a Contract Document expressing the greater quantity, quality or scope of the Work, or imposing the greater obligation upon the CONTRACTOR or affording the greater right or remedy to OWNER shall govern, without regard to the party who drafted or adopted such provision.
- 7.03 The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 8 – INSURANCE REQUIREMENTS

- 8.01 The limits of liability for the insurance required by paragraph 5.04 of the General Conditions shall provide the following coverages for not less than the following amounts or greater where required by Laws and Regulations:
- A. For Worker's Compensation, etc. under paragraphs 5.04.A.1 and 5.04.A.2 of the General Conditions:
 - (1) Worker's Compensation: Statutory
 - (2) Employer's Liability \$1,000,000
 - B. For Contractor's Liability Insurance under paragraphs 5.04.A.3 through 5.04.A.5 and 5.04.C of the General Conditions which shall also include completed operations and product liability coverages:

1. General Aggregate
(Except Products-Completed Operations) \$2,000,000
 2. Products-Completed Operations
("per job" aggregate) \$2,000,000
 3. Personal and Advertising Injury
(Per Person/Organization) \$1,000,000
 4. Each Occurrence
(Bodily Injury and Property Damage) \$1,000,000
 5. Umbrella Liability:
General Aggregate \$5,000,000
Each Occurrence \$2,000,000
 6. Liability insurance will provide Explosion, Collapse and Underground coverages.
 7. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall be provided by the CONTRACTOR as part of the CONTRACTOR'S General Liability coverage.
- C. For Automobile Liability under paragraph 5.04.A.6 of the General Conditions:
Combined Single Limit (Bodily Injury and
Property Damage): \$1,000,000

ARTICLE 9 - MISCELLANEOUS

- 9.01 *Successors and Assigns.* OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, sureties and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.
- 9.02 *Non-Discrimination*
- A. In the hiring of employees for the performance of the Work, CONTRACTOR and its Subcontractors, Suppliers, and all persons acting on behalf thereof shall not in any manner (1) discriminate, by reason of race, religion, color, sex, national origin or ancestry, against any citizen of the United States of America who is qualified and available to perform the work to which the employment relates; or (2) discriminate against or intimidate, on account of race, religion, color, sex, national origin or ancestry, any employee hired for the performance of work under the Contract.
- 9.03 *Minimum Wage Rates*
- A. Minimum common construction wage rates apply to this Project. Such wage determination, as included in the Project Manual or issued as an Addendum, is part of the Contract Documents whether or not specifically designated as such by the Agreement or other Contract Documents.
 - B. Wages paid to laborers, workmen, or mechanics by CONTRACTOR and its Subcontractors shall not be less than the scale set forth in such wage determination. The specified wage rates are minimum rates only, and the OWNER shall not be responsible upon any claims by CONTRACTOR for additional compensation based on payment by the CONTRACTOR or a Subcontractor of any wage rate in excess of a specified minimum rate.
 - C. CONTRACTOR and its Subcontractors shall provide and submit certified payroll reports and certifications of compliance with this section to ENGINEER and Owner's Representative at least monthly during the course of the Work (with CONTRACTOR's Application for Payment unless otherwise directed by ENGINEER or Owner's Representative). All reports and certifications of compliance shall utilize or substantially conform to

federal forms WH 347 and WH 348, and contain such additional details as ENGINEER or Owner's Representative may prescribe. Submission of such reports shall be a condition of OWNER's obligation to make payment for Work performed during the period for which the reports are to be furnished.

9.04 *Procurement And Use Of Domestic Steel Products*

- A. If performance of any of the Work involves the supply or use of materials or products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two (2) or more of such operations, from steel by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process, only such products that are rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed from steel made in the United States (including all territory, continental or insular, subject to the jurisdiction of the United States) are to be utilized or supplied in the performance of such Work.
- C. The requirement set forth in subsection A above shall not apply in the event that OWNER, acting through its chief executive, determines, in writing, that (1) the cost of domestic steel products is deemed to be unreasonable, or (2) are not produced in the United States in sufficient quantities to meet the requirements of the Contract Documents
- D. OWNER will not authorize or make any payments to CONTRACTOR unless OWNER is satisfied that CONTRACTOR has fully complied with the provisions of this section.
- E. Any payments made to CONTRACTOR which should not have been made as a result of this section shall be recoverable directly from CONTRACTOR.

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

This Agreement will be effective on _____, _____ (which is the Effective Date of the Agreement).

OWNER:

SUPPLIER:

By: _____

By: _____

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest _____

Attest _____

Address for giving notices:

Address for giving notices:

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-SUPPLIER Agreement.)

License No. _____
(Where applicable)

Agent for service of process: _____

(If SUPPLIER is a corporation or a partnership, attach evidence of authority to sign.)

Designated Representative:

Designated Representative:

Name: _____

Name: _____

Title: _____

Title: _____

Address: _____

Address: _____

Phone: _____

Phone: _____

Facsimile: _____

Facsimile: _____

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APPLICATION FOR PAYMENT No. _____
VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING

To: _____ (OWNER)
From: _____ (CONTRACTOR)
Contract: _____
Project: _____
OWNER's Contract No. _____ ENGINEER's Project No. _____
For Work accomplished through the date of: _____.

1.	Original Contract Price:	\$ _____
2.	Net change by Change Orders and Written Amendments (+ or -):	\$ _____
3.	Current Contract Price (1 plus 2):	\$ _____
4.	Total completed and stored to date:	\$ _____
5.	Retainage (per Agreement):	
	_____ % of completed Work: \$ _____	
	_____ % of stored material: \$ _____	
	Total Retainage:	\$ _____
6.	Total completed and stored to date less retainage (4 minus 5):	\$ _____
7.	Less previous Application for Payments:	\$ _____
8.	DUE THIS APPLICATION (6 MINUS 7):	\$ _____

Accompanying Documentation:

CONTRACTOR'S Certification:

The undersigned CONTRACTOR certifies that (1) all previous progress payments received from OWNER on account of Work done under the Contract referred to above have been applied on account to discharge CONTRACTOR's legitimate obligations incurred in connection with Work covered by prior Applications for Payment numbered 1 through _____ inclusive; (2) title of all Work, materials and equipment incorporated in said Work or otherwise listed in or covered by this Application for Payment will pass to OWNER at time of payment free and clear of all Liens, security interests and encumbrances (except such as are covered by a Bond acceptable to OWNER indemnifying OWNER against any such Lien, security interest or encumbrance); and (3) all Work covered by this Application for Payment is in accordance with the Contract Documents and not defective.

By _____ Dated _____
CONTRACTOR

State of _____
County of _____
Subscribed and sworn to before me this _____
day of _____, _____

Notary Public
My Commission expires: _____

Payment of the above AMOUNT DUE THIS APPLICATION is recommended.

By _____ Dated _____
ENGINEER

Application No. _____ Date: _____

ITEM	UNIT PRICE	ESTIMATED QUANTITY	SCHEDULE OF VALUES AMOUNT	QUANTITY COMPLETED	AMOUNT	%	MATERIAL STORED	AMOUNT COMPLETED AND STORED
1.	\$		\$		\$		\$	\$
2.								
3.								
4.								
5.								
6.								
7.								
8.								
9.								
10.								
11.								
12.								
13.								
14.								
15.								
16.								
17.								
18.								
19.								
20.								
21.								
22.								
23.								
24.								
25.								
26.								
27.								
28.								
29.								
30.								
TOTAL			\$		\$		\$	\$

Note: Total Schedule of Values Amount should equal the current Contract Price.

**WORK CHANGE DIRECTIVE
VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

No. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

You are directed to proceed promptly with the following change(s):
Description:

Purpose of Work Change Directive:

Attachments: (List documents supporting change)

If OWNER or CONTRACTOR believe that the above change has affected Contract Price any Claim for a Change Order based thereon will involve one or more of the following methods as defined in the Contract Documents.

Method of determining change in
Contract Price:

- ☐ Unit Prices
☐ Lump Sum
☐ Cost of the Work _____

Estimated increase (decrease) in Contract Price:
\$ _____.
If the change involves an increase, the estimated
amount is not to be exceeded without further
authorization.

Estimated increase (decrease) in Contract Times:
Substantial Completion: _____ days;
Ready for final payment: _____ days.

RECOMMENDED:

AUTHORIZED:

ENGINEER
By: _____

OWNER
By: _____

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**CHANGE ORDER
VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

No. _____

DATE OF ISSUANCE _____

EFFECTIVE DATE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____

ENGINEER's Contract No. _____

ENGINEER _____

You are directed to make the following changes in the Contract Documents:

Description:

Reason for Change Order:

Attachments: (List documents supporting change)

CHANGE IN CONTRACT PRICE:
Original Contract Price \$ _____
Net Increase (Decrease) from previous Change Orders No. ____ to ____: \$ _____
Contract Price prior to this Change Order: \$ _____
Net increase (decrease) of this Change Order: \$ _____
Contract Price with all approved Change Orders: \$ _____

CHANGE IN CONTRACT TIMES:
Original Contract Times: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net change from previous Change Orders No. ____ to No. ____: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days or dates)
Net increase (decrease) this Change Order: Substantial Completion: _____ Ready for final payment: _____ (days)
Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____ (days or dates)

RECOMMENDED:

APPROVED:

ACCEPTED:

By: _____
ENGINEER (Authorized Signature)

By: _____
OWNER (Authorized Signature)

By: _____
CONTRACTOR (Authorized Signature)

Date: _____

Date: _____

Date: _____

**CERTIFICATE OF SUBSTANTIAL COMPLETION
VILLAGE OF BREWSTER, OHIO
SANITARY SEWER LINING**

DATE OF ISSUANCE _____

OWNER _____

CONTRACTOR _____

Contract: _____

Project: _____

OWNER's Contract No. _____ ENGINEER's Project No. _____

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

To _____
OWNER

And To _____
CONTRACTOR

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on _____

Date Of Substantial Completion

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or corrected by CONTRACTOR within _____ days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties and guarantees shall be as follows:

00500-21

ATS Engineering, Inc.

Brewster Sewer Lining

OWNER:_____

CONTRACTOR:_____

The following documents are attached to and made a part of this Certificate:

This certificate does not constitute an acceptance of Work not in accordance with the Contract Documents nor is it a release of CONTRACTOR's obligation to complete the Work in accordance with the Contract Documents.

Executed by ENGINEER on _____
Date

By: _____
ENGINEER (Authorized Signature)

CONTRACTOR accepts this Certificate of Substantial Completion on _____
Date

By: _____
CONTRACTOR (Authorized Signature)

OWNER accepts this Certificate of Substantial Completion on _____
Date

By: _____
OWNER (Authorized Signature)

LABOR AND MATERIAL PAYMENT BOND

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

BOND NO. _____

CONTRACTOR
(Name and Address)

SURETY
(Name and Address of principal place of business)

OWNER (Name and Address):

CONTRACT

BOND

Date:

Date
(Not earlier than Contract Date):

Amount:

Bond Amount:

PROJECT:

WORK:

WHEREAS, the Contractor has entered into the Contract with the Owner, by which Contractor has agreed to perform and furnish certain Work for or in furtherance of construction of the Project, all as described above, pursuant to and in accordance with Contract Documents as defined or referred to in the Contract and hereby incorporated herein by reference, of which the Contract is a part.

THEREFORE, BY THESE PRESENTS:

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner and to Claimants to the payment of and for labor, materials and equipment furnished for use in the performance of the Contract, which is incorporated herein by reference, plus interest at the maximum legal rate from date of demand and attorney fees and court costs incurred by Owner to enforce this Bond.
2. With respect to the Owner, this obligation shall be null and void if the Contractor (a) promptly makes payment of all amounts due to all Claimants, and (b) defends, indemnifies and holds harmless the Owner from all claims, demands, liens or suits by any person or entity who furnished labor, materials, equipment or services for use in the performance of the Contract. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.
3. "Claimant" shall mean any subcontractor, material supplier or other person, firm, or corporation furnishing materials or equipment for or performing labor or services in the prosecution of the Work provided for in the Contract Documents, the intent of this Bond being to include, without limitation, water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Contract, architectural and engineering services required for performance of the Work of the Contractor and Subcontractors or Suppliers, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

4. The Surety's total obligation hereunder shall not exceed the Bond Amount stated above, adjusted for the aggregate sum of all Change Orders or other Written Amendments to the Contract entered into by Contractor and Owner in accordance with the Contract Documents.

5. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein, the intent being that this Bond shall to the fullest extent permitted by Laws and Regulations be construed to be a statutory Bond and a common law bond.

6. Contractor and Surety, for value received, further stipulate and agree to the following:

- a. No defect or irregularity in the Contract or in the proceedings preliminary to the letting thereof will operate to release or discharge Surety;
- b. No change, omission, extension of time, alteration or addition to the terms of the Contract or to any Work to be furnished thereunder, and no delay by the Owner in enforcement of the Contract or this Bond shall in any way affect Surety's obligation on this Bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition or delay.
- c. The Surety shall not be released or discharged hereunder by (a) substantial performance or completion of the Work by Contractor; (b) final settlement between the Owner and Contractor, or (c) Owner's retention or use of any Contract funds pursuant to Laws or Regulations or the terms of the Contract Documents.
- d. This Bond and Surety shall not be released until one (1) year after the Owner's final settlement with the Contractor.

7. Terms used in this Bond and printed with initial or all capital letters will have the meanings indicated in or referred to by the Contract, which are applicable to both the singular and plural thereof

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, do each cause this Labor and Material Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative this _____ day of _____, 20_____.

"CONTRACTOR":

By _____
Signature

Printed

"SURETY":

By _____
Signature Attorney-In-Fact

Printed

PERFORMANCE BOND

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

BOND NO. _____

CONTRACTOR
(Name and Address)

SURETY
(Name and Address of principal place of business)

OWNER (Name and Address):

CONTRACT

BOND

Date:

Date
(Not earlier than Contract Date):

Amount:

Bond Amount:

PROJECT:

WORK:

WHEREAS, the Contractor has entered into the Contract with the Owner, by which Contractor has agreed to perform and furnish certain Work for or in furtherance of construction of the Project, all as described above, pursuant to and in accordance with Contract Documents as defined or referred to in the Contract and hereby incorporated herein by reference, of which the Contract is a part.

THEREFORE, BY THESE PRESENTS:

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Contract, plus interest at the maximum legal rate from date of demand and attorney fees and court costs incurred by Owner to enforce this Bond.
2. This obligation shall be void only if the Contractor (with or without notice to the Surety):
 - a. well, truly and faithfully performs the Work and fulfills all other Contract Obligations, duties, undertakings, covenants, terms and conditions of the Contract Documents during the original Contract Time(s) allotted by the Contract Documents plus such extensions thereof, if any, as may be granted in accordance with the Contract Documents, and during any period(s) of guarantee or warranty provided by the Contract Documents or arising thereunder, and
 - b. achieves Substantial and Final Completion of the Work and completion of specified Milestones, if any; and pays to Owner any and all liquidated damages specified by the Contract Documents in respect of any delayed completion, and
 - c. fully and promptly satisfies all claims and demands incurred under or arising from the Contract, and

d. fully indemnifies and saves harmless the Owner from all direct, consequential costs and damages, including without limitation liquidated damages, which OWNER may suffer or to which Owner may be entitled by reason of failure to so indemnify and hold harmless or by reason of Contractor's breach or default under any provisions of the Contract Documents, and

e. reimburse and repay the Owner all outlay and expense, including attorney fees, which the Owner may incur in connection with any breach or default by Contractor.

3. The Surety's total obligation hereunder shall not exceed the Bond Amount stated above, adjusted for the aggregate sum of all Change Orders or other Written Amendments to the Contract entered into by Contractor and Owner in accordance with the Contract Documents.

4. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the Contract was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein, the intent being that this Bond shall to the fullest extent permitted by Laws and Regulations be construed to be a statutory Bond and a common law bond.

5. Contractor and Surety, for value received, further stipulate and agree to the following:

a. No defect or irregularity in the Contract or in the proceedings preliminary to the letting thereof will operate to release or discharge Surety;

b. No change, omission, extension of time, alteration or addition to the terms of the Contract or to any Work to be furnished thereunder, and no delay by the Owner in enforcement of the Contract or this Bond shall in any way affect Surety's obligation on this Bond, and Surety does hereby waive notice of any such change, extension of time, alteration or addition or delay.

c. The Surety shall not be released or discharged hereunder by (a) substantial performance or completion of the Work, or by (b) final settlement between the Owner and Contractor, or by (c) Owner's retention or use of any Contract funds pursuant to Laws or Regulations or the terms of the Contract Documents.

d. This Bond and Surety shall not be released until one (1) year after the Owner's final settlement with the Contractor.

6. Terms used in this Bond and printed with initial or all capital letters will have the meanings indicated in or referred to by the Contract, which are applicable to both the singular and plural thereof

IN WITNESS WHEREOF, Surety and Contractor, intending to be legally bound hereby, do each cause this Labor and Material Payment Bond to be duly executed on its behalf by its authorized officer, agent, or representative this _____ day of _____, 20____.

"CONTRACTOR":

"SURETY":

By _____
Signature

By _____
Signature Attorney-In-Fact

Printed

Printed

VILLAGE OF BREWSTER, OHIO
STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms. Wherever used in the Contract Documents and printed with initial or all capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof.

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

2. *Agreement* -- The written instrument executed by OWNER and CONTRACTOR pursuant to award of the Contract to CONTRACTOR as the lowest responsible and responsive bidder, and covering the Work and other Contract Obligations. Other Contract Documents are designated by or attached to the Agreement and made a part thereof as provided therein. If a specimen form of the Agreement is included in the Project Manual, such form shall govern and be utilized.

3. *Application for Payment* -- The form acceptable to Owner's Representative which is to be used by CONTRACTOR in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents or reasonably requested by ENGINEER or Owner's Representative. If a specimen form Application for Payment is included in the Project Manual, such form shall govern and be utilized.

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. *Bidding Documents* -- The Bidding Requirements and the proposed Contract Documents (including all Addenda issued prior to receipt of Bids).

7. *Bidding Requirements* -- The Advertisement or Invitation to Bid, Instructions to Bidders, Bid security form, if any, and the Bid form with any supplements.

8. *Bonds* -- Performance and payment bonds and other instruments of security. If specimen form Bonds are included in the Project Manual, such form shall govern and be utilized.

9. *Change Directive* -- A written statement to CONTRACTOR issued and signed by Owner's Representative (in consultation with ENGINEER where appropriate) on or after the Effective Date of the Agreement ordering an addition, deletion, or revision in the Work or in the time, schedule, sequence, method or manner of construction, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Change Directive may contain a proposed basis for adjustment, if any, in the Contract Amount or Contract Time(s), or both, but it shall not itself operate as an agreement for such adjustment; but rather shall be an indication that the parties expect that the change ordered or documented by a Change Directive will be incorporated in a subsequently issued Change Order. If a specimen form Change Directive is included in the Project Manual, such form shall govern and be utilized.

10. *Contract Obligations* -- All duties, responsibilities, risks, and liabilities assumed or incurred by CONTRACTOR under or arising from the terms of the Contract Documents, together with all requirements specified by the Contract Documents to be fulfilled, observed or adhered to by CONTRACTOR. Contract Obligations include, but are not limited to, the Work

11. *Change Order* -- A document issued on or after the Effective Date of the Agreement and signed by CONTRACTOR and OWNER which authorizes an addition, deletion, or revision in the Work or Contract Obligations, or an adjustment in the Contract Price or the Contract Time(s). If a specimen form Change Order is included in the Project Manual, such form shall govern and be utilized.

12. *Claim* -- A demand or assertion by OWNER or CONTRACTOR seeking an adjustment of Contract Price or Contract Time(s), 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.

13. *Contract* -- The entire and integrated written expression of mutual intent and agreement of OWNER and CONTRACTOR concerning the Work and the rights and obligations of the parties with respect thereto as evidenced by the Contract Documents. The Contract supersedes all prior negotiations, representations or agreements, whether written or oral.

14. *Contract Documents* -- The Contract Documents establish the rights and obligations of the parties and include the documents comprising the Project Manual (except as otherwise excluded from the definition of Contract Documents by other provisions of same), the Agreement, Addenda, CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award), Notice to Proceed, Bonds, Supplementary Conditions, Special Provisions, Specifications and the Drawings as the same may be more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Change Directives, Field Orders, and ENGINEER's or Owner's Representative's written interpretations and clarifications issued on or after the Effective Date of the Agreement. Approved Shop Drawings and the reports and drawings of subsurface and physical conditions are not Contract Documents. Only printed or hard copies of the items listed in this paragraph are Contract Documents. Files in electronic media format containing text, data, graphics, images and the like that may be furnished by OWNER or ENGINEER to CONTRACTOR are not Contract Documents.

15. *Contract Price* -- The moneys payable by OWNER to CONTRACTOR for performance and fulfillment of Contract Obligations 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).

16. *Contract Time(s)* -- The duration (in calendar days, work days or other unit of time) or the dates stated in the Agreement for achieving Substantial Completion and/or Final Completion and/or meeting specified Milestones.

17. *CONTRACTOR* -- The individual or entity with whom OWNER has entered into the Agreement.

18. *Cost of the Work* -- See paragraph 11.01.A for definition.

19. *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. Sketches and other graphic depictions prepared by ENGINEER or ENGINEER's Consultants in connection with clarifications, interpretations or recommendations issued during the course of construction pursuant to Contract Documents shall not be deemed to be Drawings as so defined unless annexed to a Change Order or other Contract Documents and specifically incorporated therein by reference.

20. *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.

21. *ENGINEER* -- The design professional duly appointed and engaged by the OWNER to perform construction administration services for the Project as set forth in a separate agreement entered into by OWNER and ENGINEER to which CONTRACTOR is not a party. The ENGINEER may act through a Resident Project Representative or other duly appointed personnel, and in such case, the term "ENGINEER" shall include such representatives and personnel. Nothing contained in the Contract Documents shall create any contractual or agency relationship between ENGINEER and CONTRACTOR.

22. *ENGINEER's Consultant* -- An individual or entity having a contract with ENGINEER to furnish services as ENGINEER's independent professional associate or consultant with respect to the Project. ENGINEER's Consultant(s) may be identified in Supplementary Conditions, special Provisions or other Contract Documents, and if not so identified, will be identified separately by written notice to CONTRACTOR as circumstances warrant.

23. *Field Order* -- A written order issued by ENGINEER or Owner's Representative which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Time(s). If a specimen form Field Order is included in the Project Manual, such form shall govern and be utilized.

24. *Final Completion* - The point in time when OWNER, in consultation with ENGINEER, determines that all Work has been completed in accordance with the Contract Documents and all Contract Obligations (except those surviving final payment to CONTRACTOR) have been performed and fulfilled, and that conditions prescribed by the Contract Documents for making final payment to CONTRACTOR have been met and satisfied.

25. *General Requirements* -- Sections of Division I of the Specifications. The General Requirements pertain to all sections of the Specifications.

26. *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.

27. *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.

28. *Laws and (or) Regulations* -- Any and all applicable laws, rules, regulations, ordinances, codes, orders and legally enforceable actions of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.

29. *Liens* -- Charges, security interests, or encumbrances upon Project funds, real property, or personal property. Such term includes, without limitation, any and all claims made by Subcontractors or Suppliers against OWNER, CONTRACTOR or CONTRACTOR's Surety seeking or securing rights to receive payment for labor, materials or services rendered with respect to the Work.

30. *Milestone* -- A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion or Final Completion.

31. *Notice of Award* -- The written notice by OWNER to the apparent successful bidder stating that upon timely compliance by the apparent successful bidder with the conditions precedent listed therein, OWNER will sign and deliver the Agreement. If a specimen form Notice of Award is included in the Project Manual, such form shall govern and be utilized.

32. *Notice to Proceed* -- A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time(s) will commence to run and on which CONTRACTOR shall start to perform the Work under the Contract Documents and fulfill other Contract Obligations not required by the Contract Documents to be performed or fulfilled prior to the issuance of the Notice to Proceed. If a specimen form Notice to Proceed is included in the Project Manual, such form shall govern and be utilized.

33. *OWNER* -- The individual, entity, public body, or authority with whom CONTRACTOR has entered into the Agreement and for whom the Work is to be performed.

34. *Owner's Representative* -- The individual person or entity appointed and authorized by the OWNER to perform and exercise certain administrative authority for the Project on OWNER's behalf and in conjunction with administrative services provided by ENGINEER, all as more particularly set forth in the Contract Documents. Nothing contained in the Contract Documents shall create any contractual or agency relationship between Owner's Representative and CONTRACTOR or ENGINEER.

35. *Partial Utilization* -- Use by OWNER of a part of the Work for the purpose for which it is intended (or a related purpose) prior to Substantial Completion of all the Work.

36. *PCBs* -- Polychlorinated biphenyls.

37. *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.

38. *Project* -- The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part as may be indicated elsewhere in the Contract Documents.

39. *Project Manual* -- The bound documentary information prepared for bidding and constructing the Work, and dealing with Contract Obligations in other respects. 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.

40. *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.

41. *Resident Project Representative* -- The authorized representative of ENGINEER who may be assigned to the Site or any part thereof. The Resident Project Representative may be an employee or independent contractor of ENGINEER, or an ENGINEER's Consultant.

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

43. *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.

44. *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.

45. *Specifications* -- That part of the Contract Documents consisting of written technical descriptions of materials, equipment, systems, standards, workmanship and performance criteria as applied to the Work, Contract Obligations and certain administrative details applicable thereto.

46. *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.

47. *Substantial Completion* -- The stage of construction when the Work, or designated part(s) thereof, is/are sufficiently complete and Contract Obligations pertaining thereto have been sufficiently fulfilled, in accordance with the Contract Documents, so that the Work or designated part(s) can be lawfully occupied, accessed, placed into service and otherwise utilized by OWNER in a safe and functional manner and for the beneficial purpose for which it was intended by OWNER. Substantial Completion may be evidenced by a certificate thereof issued by the ENGINEER and duly accepted in writing by Owner's Representative.

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

49. *Supplier* -- A manufacturer, fabricator, supplier, distributor, material man, 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.

50. *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.

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

52. *Work* -- The entire completed 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.

53. *Written Amendment* -- A written statement modifying the Contract Documents, signed by OWNER and CONTRACTOR on or after the Effective Date of the Agreement and normally dealing with the non-engineering or non-technical rather than strictly construction-related aspects of the Contract Documents.

1.02 Terminology.

A. *Intent of Certain Terms or Adjectives* --- Whenever in the Contract Documents the terms “as allowed,” “as approved,” or terms of like effect or import are used, or the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of ENGINEER or Owner’s Representative as to the Work, it is intended that such action or determination will be solely to evaluate, in general, the completed 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 shall not be effective to assign to ENGINEER or Owner’s Representative 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 9.10 or any other provision of the Contract Documents.

B. *Day* --- The word “day” shall constitute a calendar day of 24 hours measured from midnight to the next midnight.

C. *Defective* --- The word “defective,” when modifying the words “Work” or “Contract Obligations,” refers to Work or other activity, behavior, course of conduct or performance that is unsatisfactory, faulty, deficient or otherwise not in conformity with the requirements of the Contract Documents or does not meet the requirements of any inspection, reference standard, test, approval or other determination referred to in the Contract Documents, or Work that has been damaged prior to Final Completion (unless responsibility for the protection thereof has been assumed by OWNER in accordance with paragraph 14.04 or 14.05).

D. *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.

E. 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. However, no such recognized meaning shall be effective to change the duties or responsibilities of OWNER, Owner’s Representative or ENGINEER from those set forth in the Contract Documents; nor shall any such meaning be effective to assign to them 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; nor shall such meanings be construed or interpreted to qualify, limit or abridge any Contract Obligations otherwise stated in or arising under the Contract Documents.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 Delivery of Bonds. When CONTRACTOR delivers the executed Agreements to OWNER, CONTRACTOR shall also deliver to OWNER such Bonds as CONTRACTOR may be required to furnish.

2.02 Copies of Documents. OWNER shall furnish to CONTRACTOR up to five copies of the Contract Documents. Additional copies will be furnished upon request at the cost of reproduction.

2.03 Commencement of Contract Time(s); Notice to Proceed. Subsequent to or concurrently with the execution of the Agreement, OWNER shall give CONTRACTOR a written Notice to Proceed specifying the date on which CONTRACTOR shall commence Work. The Contract Time(s) will commence to run on the date indicated in the Notice to Proceed. CONTRACTOR’s execution of the Agreement signifies CONTRACTOR’s acknowledgment and consent to the extension of any and all time limits otherwise applicable to or prescribed by Laws and Regulations for

the award of the Contract or the giving of a Notice to Proceed to CONTRACTOR for commencement of the Contract Time(s) provided by the Contract Documents.

2.04 Starting the Work. CONTRACTOR shall start to perform the Work on the date when the Contract Time(s) commence to run. No Work shall be done at the Site prior to the date on which the Contract Time(s) commence to run.

2.05 Before Starting Construction.

A. *CONTRACTOR's Review of Contract Documents* --- 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 and Owner's Representative 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. CONTRACTOR shall assume all risks and bear all costs associated with any conflicts, errors, ambiguities, discrepancies or conditions which are not discovered due to CONTRACTOR's failure to conduct such study and comparison in an adequate and reasonable manner or which are discovered but not reported as required by this paragraph 2.05.A.

B. *Preliminary Submittals* --- Within ten (10) days after the Notice to Proceed or Notice of Award, or at such other time that may be specified elsewhere in the Contract Documents or scheduled by ENGINEER or Owner's Representative, the CONTRACTOR shall submit to ENGINEER and Owner's Representative for their review and for Owner's Representative's approval:

1. A preliminary progress schedule plus other related submissions in conformity with paragraphs 2.07.B, 6.04.A and 6.04.B.

2. A preliminary schedule listing all required Shop Drawing and Sample submittals, the times for submitting same and anticipated times reserved for review, approval or other action upon them by the ENGINEER and for re-submittals by CONTRACTOR.

3. A preliminary schedule of values for all of the Work which shall include quantities and prices of items which when added together equal the Contract Price and which subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices shall include an appropriate and proportionate allocation of overhead and profit for each item of Work. If required by Owner's Representative or ENGINEER, such scheduled prices for items of Work shall be further subdivided to account for Contract Obligations to be successfully or satisfactorily fulfilled or achieved subsequent to initial placement or installation, including without limitation, (i) inspections and testing; (ii) equipment check-out and start-up; (iii) finish grading and site restoration; (iv) clean-up; (v) training, (vi) operation and maintenance documentation, and (vii) closeout submittals.

4. A preliminary list of major items of construction equipment and apparatus owned or rented by the CONTRACTOR and Subcontractors that are intended to be utilized in the course of performing the Work. Such list shall, at a minimum, include make, model, year of manufacture, horsepower or other power rating, capacity or weight, and accessories.

C. *Evidence of Insurance* --- Within ten (10) days after the Effective Date of the Agreement and in any case before any Work at the Site is started, CONTRACTOR shall deliver to Owner's Representative, with a copy to the ENGINEER, Certificates of Insurance (and such other evidence of insurance as Owner's Representative may reasonably request) which CONTRACTOR is required to purchase and maintain in accordance with the requirements of Article 5.

D. *Wage Compliance Schedule* --- Within ten (10) days after the Effective Date of the Agreement and in any case before any Work at the Site is started, CONTRACTOR shall deliver to Owner's Representative, with a copy to the ENGINEER, the schedules of wages to be paid by CONTRACTOR and its Subcontractors as described in paragraph 6.24.B.

2.06 Preconstruction Conference. Before CONTRACTOR starts the Work at the site, a conference attended by CONTRACTOR, Owner's Representative, ENGINEER, and others as appropriate, will be held to establish a working understanding among the parties as to the Work, to discuss (i) the schedules and other preliminary matters referred to in this Article 2, (ii) procedures for handling Shop Drawings and other submittals, (iii) processing

Applications for Payment, (iv) maintaining required records, and (v) establishment of other procedures and understandings bearing upon coordination, performance and completion of the Work and performance of Contract Obligations..

2.07 Initial Submittals Conference.

A. Unless otherwise provided in the Contract Documents, at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to review and finalize the schedules and other documents submitted in accordance with paragraph 2.05.B. If objections or concerns are expressed as to any such items by Owner's Representative or ENGINEER that are not resolved to their satisfaction at such conference, CONTRACTOR shall have an additional seven (7) days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules or other documents are approved by Owner's Representative. Review and/or acceptance of the schedules and documents shall not give rise to any responsibility of OWNER or ENGINEER for the sequencing, scheduling or progress of the Work and shall not relieve CONTRACTOR from CONTRACTOR'S full Contract Obligations therefore.

B. As minimum standards for determining acceptability:

1. The progress schedule must provide for an orderly progression of the Work to completion in strict accordance with the Contract Time(s). Provisions in the schedule indicating CONTRACTOR's plan or intention to achieve completion earlier than the Contract Time(s) or Milestones, shall not be binding on OWNER, regardless of acquiescence in or approval of such schedule by ENGINEER or Owner's Representative. Additional requirements pertaining to CONTRACTOR's progress schedule are set forth in paragraph 6.04.

2. The schedule of Shop Drawing and Sample submittals shall provide a workable arrangement and reasonable allowances of time for reviewing and processing of required submittals.

3. The schedule of values shall provide a reasonable and balanced 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 called for by one is as binding as if called for 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. 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.

B. 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, Owner's Representative or ENGINEER from those set forth in the Contract Documents, nor shall it be effective to assign to them 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, nor shall any such provision or instruction be construed or interpreted to qualify, limit or abridge any Contract Obligations otherwise stated in or arising under the Contract Documents.

3.03 Reporting and Resolving Discrepancies.

A. *Reporting Discrepancies* --- 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 report it to ENGINEER in writing at once. CONTRACTOR shall not proceed with the Work affected thereby (except in an emergency as required by paragraph 6.16) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04. CONTRACTOR shall assume all risks and bear all costs associated with any unreported conflicts, errors, ambiguities, discrepancies or other conditions which are discovered by CONTRACTOR or which, in the exercise of reasonable diligence and investigation should have been discovered by CONTRACTOR.

B. *Resolving Discrepancies* --- 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:

1. the provisions of any standard, specification, manual, code, or instruction (whether or not specifically incorporated by reference in the Contract Documents); or
2. 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 in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a 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: (i) a Field Order; or (ii) ENGINEER's written interpretation or clarification, or (iii) ENGINEER's approval of a Shop Drawing or Sample if such approval specifically confirms the manner by which the requirements of the Contract Documents are supplemented or minor variations or deviations in the Work are authorized thereby.

3.05 Reuse of Documents.

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work under a direct or indirect contract with OWNER: (i) shall not 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 Consultant, including electronic media editions; and (ii) shall not 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 adaptation by ENGINEER. This prohibition will survive final payment, completion, and acceptance of the Work, or termination or completion of the Contract. Nothing herein shall preclude CONTRACTOR from retaining copies of the Contract Documents for record purposes.

B. As to any electronic media containing Drawings, Specifications, or other documents prepared by or bearing the seal of ENGINEER or ENGINEER's Consultants that may be delivered to or possessed at any time by CONTRACTOR in respect of the Project, CONTRACTOR acknowledges and agrees to the following for the intended benefit of OWNER, ENGINEER and ENGINEER's Consultants:

1. Such media shall not be construed to provide any express or implied warranty or guarantee to CONTRACTOR or any other person or entity or to give rise to any right of CONTRACTOR or any other person to rely in any manner on any aspect of the information provided, or that the use of such items implies the review and approval of any drawing or other document based thereon or derived from any data or information contained therein.
2. The information and data are not intended or represented to be suitable for use or reuse by CONTRACTOR or any other parties for re-design or for extensions or changes for the Project or on any other project, and any conclusion or information obtained or derived therefrom, and any use or modification to same, will be at the user's sole risk and without any liability or legal exposure whatsoever to OWNER, ENGINEER and ENGINEER's Consultants.

3. Under no circumstances shall OWNER, ENGINEER and ENGINEER's Consultants be responsible for any deterioration or modification of electronic data following the transmission or delivery of same, or for 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 them. If there is any discrepancy between electronic files and the hard copies of such items, the hard copies shall govern.

4. Items included in the electronic media may, at the option of ENGINEER or ENGINEER's Consultants, be altered by removing professional seal(s), title block(s), cover page(s) and other reference(s) identifying the preparer or creator of same, and/or by adding disclaimers and other notations consistent with the terms stated in this paragraph 3.05.

5. CONTRACTOR waives any and all claims against OWNER, ENGINEER and ENGINEER's Consultants and shall defend, indemnify, and hold each of them harmless from any claim, liability, loss or expenses, including attorney fees, arising from or related to any use or reuse of the electronic media, or products of same, by CONTRACTOR or by any Subcontractor or Supplier or other individual or entity performing or furnishing any of the Work in furtherance of the Contract.

ARTICLE 4 - AVAILABILITY OF LANDS; SITE CONDITIONS; REFERENCE POINTS

4.01 Availability of Lands.

A. OWNER will endeavor to furnish, as indicated in the Contract Documents, the rights to use the lands upon which the Work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR. OWNER will identify any encumbrances or restrictions not of general application but specifically related to use of lands so furnished with which CONTRACTOR will have to comply in performing the Work. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER, unless otherwise provided in the Contract Documents.

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

C. If it is necessary or desirable that the CONTRACTOR use land outside of the OWNER's easement or right-of-way, the CONTRACTOR shall obtain consent from the property owner, tenant or other occupant of the land. The CONTRACTOR shall not enter or utilize, for purposes of materials delivery or for any other purpose, any private property outside the designated construction easement boundaries or right-of-way without written permission from the property owner, tenant or lawful occupant.

4.02 Subsurface and Physical Conditions. In preparing the Contract Documents, ENGINEER may have utilized and relied upon one or more (i) reports of explorations and tests of subsurface conditions and/or (ii) drawings of physical conditions in or relating to existing surface or subsurface structures (which may or may not include Underground Facilities), at or contiguous to the Site. Notwithstanding any other provision or definition of the Contract Documents, such reports and drawings are not "Contract Documents," whether or not included in the Project Manual or otherwise made available at any time and in any manner to CONTRACTOR. Accordingly, CONTRACTOR may not rely upon or make any Claim against OWNER or ENGINEER or ENGINEER's Consultant with respect to

1. the completeness of such reports and/or 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 interpretation of or conclusion drawn by CONTRACTOR or its Subcontractors or Suppliers from any data, interpretations, opinions, or information.

4.03 Differing Subsurface or Physical Conditions.

A. *Notice* --- If CONTRACTOR uncovers, observes or otherwise encounters any subsurface or physical condition (other than Underground Facilities) at or contiguous to the site and believes that such condition 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;

then CONTRACTOR shall, immediately upon becoming aware thereof and before further disturbing or taking other action in respect thereof or performing any Work in connection therewith (except in an emergency as provided in paragraph 6.16), notify Owner's Representative and ENGINEER in writing about such condition. The notice shall also state CONTRACTOR'S recommendations and proposals for taking action in connection the condition. CONTRACTOR shall continue to prosecute all other Work not directly affected by the condition.

B. *Review of Condition* --- After receipt of written notice as required by paragraph 4.03.A, ENGINEER will review the pertinent condition and make appropriate recommendations to Owner's Representative concerning the advisability of obtaining or conducting additional investigations, explorations or tests and taking other appropriate action with respect to the condition. If Owner's Representative determines that a change in the Contract Documents is required because of the condition, a Change Directive or other instructions may be issued to reflect and document the consequences of the conditions and actions to be taken with respect to same.

C. *Possible Price and Times Adjustments* ---

1. The Contract Price or the Contract Time(s), or both, may be equitably adjusted to the limited extent that the existence of such differing subsurface or physical condition directly and unavoidably causes an increase or decrease in CONTRACTOR's cost or time required to perform and complete the entire 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 9.08 and 11.03.
- c. adjustments in Contract Price or Times, if any, shall be subject to the limitations, exceptions, requirements and conditions set forth in Article 12.

2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Time(s) if:

- a. CONTRACTOR knew or had reason to know of the existence of such condition at the time CONTRACTOR submitted its Bid; 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 submission of CONTRACTOR's Bid; or
- c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A; or
- d. CONTRACTOR has assumed the risk of the existence or impact of such condition pursuant to any other provision of any of the Contract Documents.

3. In no event shall CONTRACTOR be entitled to an increase in the Contract Price in excess of direct additional costs actually incurred to perform authorized additional or changed Work to address the condition, without additional allowances for delays, scheduling impacts, suspension of Work or other indirect or consequential damages or costs.

4. If OWNER and CONTRACTOR are unable to agree as to the amount or length of the adjustment to the Contract Price or Time, a Claim may be made therefor as provided in paragraph 10.05.

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, checking and verifying all such information and data,
 - b. determining the horizontal and vertical location of all Underground Facilities, whether or not such facilities are 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 in the Contract Documents, CONTRACTOR shall, immediately 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), identify the owner of such Underground Facility and give written notice to that owner and to Owner's Representative and ENGINEER about such condition. The notice shall also state CONTRACTOR'S recommendations and proposals for taking action in connection the condition. CONTRACTOR shall continue to prosecute all other Work not directly affected by the condition. After receipt of the written notice, ENGINEER will review the Underground Facility condition and make appropriate recommendations to Owner's Representative concerning 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. If Owner's Representative determines that a change in the Contract Documents is required because of the condition, a Change Directive or other instructions may be issued to reflect and document same. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

2. Equitable adjustment(s) to the Contract Price or Contract Time(s), if any, shall be subject to the criteria, limitations, exclusions and other provisions set forth or referred to in paragraph 4.03.C (except that paragraph 4.04.B.1 shall apply instead of paragraph 4.03.A as stated within sub-paragraph 4.03.C.2.c).

4.05 Reference Points and Layout.

A. Unless otherwise specified, CONTRACTOR shall be responsible for laying out the Work, shall establish all grades, lines, levels and bench-marks, and shall protect and preserve the established reference points and shall make no changes or relocation without the prior written approval of Owner's Representative or ENGINEER. CONTRACTOR shall report to ENGINEER when any reference point 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 by professionally qualified personnel. CONTRACTOR shall maintain a bound surveyor's field notebook and accurately record any discrepancies discovered in any reference point data furnished through OWNER or ENGINEER. The field notebook shall be furnished to and become the property of OWNER upon completion of the Work.

B. All work under this Contract shall be constructed in accordance with the lines and grades shown on the Drawings or as otherwise given by ENGINEER. CONTRACTOR shall retain the full and exclusive responsibility for maintaining specified alignments and grades throughout the course of the Work. Control points and reference marks for lines and grades shall be set by CONTRACTOR as the Work progresses and shall be located to avoid any undue inconvenience to the prosecution of the Work. CONTRACTOR shall place excavation and other materials so as to cause no inconvenience in the use of the reference marks provided. CONTRACTOR shall remove any obstructions placed by CONTRACTOR at no cost to OWNER.

C. CONTRACTOR shall safeguard all points, stakes, grade marks, monuments and bench-marks made or established on the Work, bear the cost of reestablishing them if disturbed, and bear the entire expense of rectifying

work improperly installed due to not maintaining or protecting or to removing without authorization such established points, stakes and marks. CONTRACTOR shall safeguard all existing and known property corners, monuments and marks adjacent to but not related to the Work and, if required, shall bear the cost of reestablishing them if disturbed or destroyed.

4.06 Hazardous Environmental Condition at Site.

A. Reference is made to the Supplementary Conditions or Special Provisions for the identification of those reports and drawings relating to a Hazardous Environmental Condition identified at the Site, if any, that have been utilized or relied upon by the ENGINEER or ENGINEER's Consultants in the preparation of the Contract Documents.

B. Copies of reports and/or drawings referred to in paragraph 4.06.A that are not included with Bidding Documents may be examined at the offices of the ENGINEER (or at such other location as ENGINEER may designate) during regular business hours. These reports and drawings are not part of the Contract Documents. For provisions governing CONTRACTOR's reliance on "technical data" contained in such reports and drawings see paragraph 4.02.

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:

1. secure or otherwise isolate such condition;
2. stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by paragraph 6.16);
3. notify the appropriate agencies or authorities;
4. notify Owner's Representative and ENGINEER (and promptly thereafter confirm such notice in writing);
5. establish site security by excluding unnecessary traffic and personnel from the affected area;
6. conduct operations within the affected area to minimize exposure to personnel and the general public and to eliminate the potential for airborne dispersion of the materials; and
7. handle, store and/or dispose of Hazardous Materials in a proper and lawful manner.

Owner's Representative will consult with ENGINEER concerning the necessity for retaining a qualified expert to evaluate such condition or take corrective action, if any.

E. CONTRACTOR shall remain responsible for the site of the affected Work until Owner's Representative has been notified of the uncovering or revealing of Hazardous Materials and Owner's Representative has given written notice to CONTRACTOR and ENGINEER that OWNER has assumed control of and responsibility for such site.

F. After completing the above obligations, CONTRACTOR shall not be required to resume Work in connection with such Hazardous Materials until after OWNER has obtained any required permits related thereto and established any special terms or conditions under which said Work shall be performed.

G. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, other 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 shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. The provisions of paragraphs 4.02, 4.03, and 4.04 are not intended to 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 CONTRACTOR's obligations under the Contract Documents. These Bonds shall remain in effect at least until one year after the date when final payment becomes due, 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 such 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 within 20 days thereafter substitute another Bond and surety, both of which shall comply with the requirements of paragraphs 5.01.B and 5.02. Failure of CONTRACTOR to obtain a substitute Bond shall constitute a material breach of Contract and may at the option of OWNER result in the termination of the Contract upon the ground of CONTRACTOR's default.

D. Maintenance Bond. If the Contract Documents provide for a Maintenance Bond to be supplied to OWNER for the Project or Work, CONTRACTOR shall, as a condition to OWNER's obligation to make final payment, supply a Maintenance Bond to secure CONTRACTOR's obligations to correct defects in the Work after Final Completion. Such bond shall be in the form and for such amount and term as prescribed by the form of bond included in the Project Manual, or as otherwise specified by the Contract Documents and shall be executed by a surety meeting the same qualifications applicable to sureties under the performance and payment Bonds.

E. The penal sum or other limiting amount stated on the face of any performance or payment bond issued and delivered to OWNER pursuant to the Contract Documents shall be deemed automatically adjusted by the aggregate sum of any Change Orders signed by OWNER and CONTRACTOR, notwithstanding any contrary provision set forth in any such bond as executed. The surety upon the bond shall be deemed to have consented in advance to such adjustment and accordingly, OWNER shall not be required to give any prior notice to or obtain any separate consent to the adjustment of the penal sum by such surety.

5.02 Licensed Sureties and Insurers. 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. CONTRACTOR shall deliver to Owner's Representative, 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.

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: (i) by any person as a result of an offense directly or indirectly related to the employment of such person by CONTRACTOR, or (ii) 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 so required by this paragraph 5.04 to be purchased and maintained shall:

1. with respect to insurance required by paragraphs 5.04.A.3 through 5.04.A.6 inclusive, include as additional insured's (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, Resident Project Representative (if other than an employee of ENGINEER) and any other individuals or entities identified in the Special Provisions or Supplementary Conditions, all of whom shall be listed as additional insured's, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insured's, and the insurance afforded to these additional insured's 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 Special Provisions or 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 3.05.B, 4.06, 6.07, 6.11, 6.20, and 6.21;
5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least thirty 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 (and 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).

C. CONTRACTOR shall also purchase and maintain excess liability insurance in the umbrella form. Evidence of such excess liability shall be delivered to OWNER in accordance with paragraph 2.05C in the form of a certificate indicating the policy numbers and limits of liability of all underlying insurance.

D. The insurance required by this paragraph 5.04 shall be written for not less than the limits of liability and coverage amounts as provided by the Special Provisions, other Contract Documents, or by Laws and Regulations, whichever is greater. CONTRACTOR shall be responsible for paying all deductible amounts.

5.05 OWNER's Liability Insurance. 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 or other Contract Documents, CONTRACTOR 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, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, and the officers, directors, partners, employees, agents, and other 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 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, 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. 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.

5.07 Waiver of Rights. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured's or additional insured's (and the officers, directors, partners, employees, agents, and other 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 insured's or additional insured's there under. OWNER and CONTRACTOR waive all rights against each other and their respective officers, directors, partners, employees, agents, and other 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, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured's or additional insured's (and the officers, directors, partners, employees, agents, and other 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.

5.08 Acceptance of Bonds and Insurance; Option to Replace. If OWNER has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by CONTRACTOR in accordance with Article 5 on the basis of non-conformance with the Contract Documents, Owner's Representative will so notify CONTRACTOR in writing (with a copy of such notice delivered to ENGINEER) within 30 days after receipt of the certificates required by paragraph 2.05.C (or other evidence giving rise to the objection). CONTRACTOR shall provide to OWNER such additional information in respect of insurance or Bonds provided as Owner's Representative may reasonably request. If CONTRACTOR does not purchase or maintain all of the Bonds and insurance required by the Contract Documents, CONTRACTOR shall notify the Owner's Representative and ENGINEER 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, OWNER may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of CONTRACTOR, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.09 Partial Utilization, Acknowledgment of Property Insurer. 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 Performance.

A. CONTRACTOR shall supervise, manage, coordinate, inspect, conduct and direct the Work competently and efficiently, and shall devote full and diligent attention thereto and apply whatever skills and expertise may be necessary to insure that all Work completed and in progress, and all other Contract Obligations, are performed and fulfilled in strict accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

B. CONTRACTOR shall assign and keep on the Project site at all times that any Work is in progress a competent, experienced, English-speaking resident superintendent, who shall not be replaced without written notice to Owner's Representative and ENGINEER. CONTRACTOR shall replace the Superintendent upon request of Owner's Representative in the event the Superintendent is unable to perform to the reasonable satisfaction of Owner's Representative or ENGINEER. The superintendent will be CONTRACTOR's representative at the site and shall have full authority to act on behalf of CONTRACTOR in every manner and in all respects, and all communications given to or issued by the superintendent shall be as binding as if given to or issued by an officer, project manager or general agent of CONTRACTOR. All costs for or associated with the superintendent(s) and other supervisory personnel assigned to the Project pursuant to this paragraph, of whatever type and for whatever duration, shall be deemed included in and compensated by the Contract Sum originally stated in the Agreement.

6.02 Labor; Working Hours.

A. CONTRACTOR shall provide orderly, obedient, qualified and competent personnel who are suitably qualified and exhibit skill and experience in performance of the type of Work and tasks performed by them. CONTRACTOR shall at all times maintain good discipline and order on or off the site in all matters pertaining to the Project. If ENGINEER or Owner's Representative notifies CONTRACTOR that any worker is incompetent, disorderly or disobedient, or has knowingly or repeatedly violated safety regulations, CONTRACTOR shall immediately remove such worker from performing Work, and may not employ such worker again for the Project without Owner's Representative's prior written consent.

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 based on a 5 day (Monday through Friday) work week. CONTRACTOR shall not permit performance of overtime work or work on Saturday, Sunday, or any legal holiday without CONTRACTOR giving at least five (5) days prior written notice to ENGINEER and Owner's Representative of its intention and schedule for such performance followed by the written consent thereto by Owner's Representative. In the event such consent is given, CONTRACTOR shall be responsible for any and all additional costs and expenses thereby incurred.

by OWNER for additional inspection and observation or other services of ENGINEER or ENGINEER's Consultants in respect of such modified schedule for performance of Work.

6.03 Services, Materials, and Equipment.

A. Unless otherwise specified in the General Requirements or elsewhere 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. All costs for or associated with such items, of whatever type and for whatever duration, shall be deemed included in and compensated by the Contract Sum originally stated in the Agreement.

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of the best reasonably available quality and new, except as otherwise provided in the Contract Documents. All general and special warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of and shall be directly enforceable against the warrantor or guarantor by OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests and inspections) as to the source, kind, and quality of materials and equipment and the performance and conformance of same with the requirements of the Contract Documents. 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. *General Requirements* --- CONTRACTOR shall adhere to the construction progress schedule established in accordance with paragraphs 2.05.B and 2.07.B as it may be adjusted or updated from time to time as provided in this paragraph 6.04. Unless waived by Owner's Representative in writing, the schedule will be developed according to the critical path method (CPM) to ensure adequate planning and execution of the Work and to assist the ENGINEER and Owner's Representative in appraising and evaluating the progress of the Work.

1. The schedule shall be computer-produced utilizing software approved by the ENGINEER or Owner's Representative.

2. Schedule data shall be categorized in such way as to indicate individual components of Work with durations not exceeding 14 calendar days, or as otherwise directed by ENGINEER and/or Owner's Representative.

3. The schedule shall indicate required completion date(s) conforming to the Contract Time(s). If CONTRACTOR determines that it can perform Work in less time than allowed by the Contract Time(s), the CONTRACTOR may plan and schedule the Work accordingly, but no claims will be allowed for delay, disruption, acceleration or other costs in relation to the early completion or reduced time schedule, and no act, conduct, expression, approval, acceptance or acquiescence by ENGINEER or OWNER shall be deemed an acceptance or ratification of any such early completion or reduced time schedule or plan of construction.

4. For all major equipment and materials fabricated or supplied for the Project, the schedule shall show a sequence of activities including (i) preparation of Shop Drawings and Sample submissions and review of same; (ii) fabrication and delivery; (iii) erection and/or installation; and (iv) Project closeout.

5. The schedule must reflect the normal anticipated adverse weather delays on all weather dependent activities. Anticipated adverse weather conditions shall be based on the same data or other criteria applicable to claims for extensions of the Contract Time(s) as set forth in paragraph 12.02.

6. Sequencing and duration of activities within the schedule shall indicate the amount of "float" (the amount of time between the early dates and the late dates of each activity or sequence of activities) and "total float" (the amount of time any given activity or path of activities may be delayed before completion within the required Contract Time(s) becomes adversely affected). Float time will not be for the exclusive use of the CONTRACTOR, but will be used in the best interest of the completion of the Project within the specified Contract Time(s).

B. *Related Submissions* --- Concurrently with submission of the progress schedule, CONTRACTOR shall also submit to ENGINEER and Owner's Representative:

1. a proposed manpower chart, cost schedule and planned progress curve for use in evaluating and monitoring construction progress; and
2. a project close-out management plan and schedule containing procedures to ensure all Work and other Contract Obligations remaining to be performed or fulfilled after Substantial Completion are completed within the applicable Contract Time(s).

C. *Review and Resubmittal(s)* --- ENGINEER will review the schedule and related submissions for general conformity with the Contract Documents and will make recommendations to the Owner's Representative concerning same. Any revisions necessary as a result of this review shall be resubmitted for review. After approval by Owner's Representative, CONTRACTOR shall provide to ENGINEER and Owner's Representative the detailed construction progress schedule in a graphical CPM format, together with tabular reports indicating, for each activity, the number, description, duration, early start, early finish, late start, late finish, and float thereof. Upon request, CONTRACTOR shall also furnish a data diskette (or CD-Rom) of the detailed construction progress schedule. The review, approval or other action taken by the ENGINEER or Owner's Representative in respect of such schedule (and other related submittals) shall not relieve the CONTRACTOR of its obligations to perform the Work within the Contract Time(s).

D. *Use of Schedule* --- The approved detailed construction progress schedule shall become the baseline schedule to which the CONTRACTOR shall strictly adhere in planning, organizing, directing, coordinating, performing and executing the Work (including all activities of Subcontractors and Suppliers), and shall be the basis for evaluating the progress of the Work. CONTRACTOR shall adhere to the progress schedule established in accordance with this paragraph 6.04 as it may be adjusted and updated from time to time as provided below.

E. *Schedule Updates* --- CONTRACTOR shall provide and submit schedule updates to ENGINEER and Owner's Representative at least monthly during the course of the Work. Such schedule updates shall be submitted with each monthly application for payment, unless otherwise directed by ENGINEER or Owner's Representative. Each updated schedule shall (i) conform to the criteria set forth in paragraph 6.04.A; (ii) indicate any anticipated change from the original or previously revised or updated progress schedule; and (iii) include provisions for performing Work authorized under approved Change Orders and Change Directives.

F. *Recovery Schedule(s)* --- If at any time during the prosecution of the Work ENGINEER or Owner's Representative determine that CONTRACTOR is not adhering to the original or updated progress schedule as approved, and give written notice thereof to CONTRACTOR, then CONTRACTOR shall forthwith, and at no extra cost to OWNER, prepare, submit to ENGINEER and Owner's Representative, and implement, a recovery schedule addressing the means and methods of construction, commitment of additional manpower, equipment and other resources and other actions to be taken by CONTRACTOR to regain compliance with the construction progress schedule during the immediate subsequent pay period and to assure completion of the Work in accordance with the Contract Documents.

1. The recovery schedule shall be prepared to at least the same level of detail as required for the construction progress schedule.
2. ENGINEER will review the recovery schedule with Owner's Representative and make appropriate recommendations to Owner's Representative concerning same. Any revisions necessary as a result of such review shall be resubmitted within five (5) days after written notice of required revisions is given to CONTRACTOR. The revised recovery schedule shall then be the schedule which the CONTRACTOR shall use in planning, organizing, directing, coordinating, performing, and executing the Work (including all activities of Subcontractors and Suppliers) to regain compliance with the construction progress schedule.
3. Successive recovery schedules shall be required if the CONTRACTOR neglects or fails to regain compliance with the construction progress schedule as provided in any prior recovery schedule.

6.05 Substitutes and "Or-Equals".

A. *In General* --- 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 and acted upon by ENGINEER and Owner's Representative under the circumstances described below.

1. “Or-Equal” Items. If in Owner’s Representative’s discretion (supported by ENGINEER’s recommendation) 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 as an “or-equal” item, in which case review and approval of the proposed item may, in Owner’s Representative’s discretion (supported by ENGINEER’s recommendation), 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 Owner’s Representative determines (with ENGINEER’s concurrence) that: (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;

b. CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items.

a. If in Owner’s Representative’s discretion (supported by ENGINEER’s recommendation) 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 and Owner’s Representative to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.

c. The procedure for review will be as set forth below (as may be supplemented in the General Requirements or other Contract Documents and as Owner’s Representative may, with ENGINEER’s concurrence, decide is appropriate under the circumstances).

d. CONTRACTOR shall first make written application to ENGINEER and Owner’s Representative for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR’s achievement of Substantial Completion on time, 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 work on the Project) to adapt the design to the proposed substitute item and 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. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also 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, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER and Owner’s Representative may require CONTRACTOR to furnish additional data about the proposed substitute item.

B. *Substitute Construction Methods or Procedures* --- If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Owner’s Representative with concurrence of ENGINEER. CONTRACTOR shall submit sufficient information to allow Owner’s Representative and ENGINEER to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review will be similar to that provided in subparagraph 6.05.A.2.

C. *Evaluation* --- ENGINEER and Owner's Representative 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. Owner's Representative, with ENGINEER's concurrence, will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until such 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. OWNER and ENGINEER shall not be responsible for any delay, hindrance or disruption due to review time for any "or-equal" or substitute.

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 time required by ENGINEER and ENGINEER's Consultants in evaluating substitute proposed or submitted by CONTRACTOR pursuant to paragraphs 6.05.A.2 and 6.05.B and in making changes in the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the Project) occasioned thereby. Whether or not approval is given for a substitute item so proposed or submitted by CONTRACTOR, CONTRACTOR shall reimburse OWNER for the charges of ENGINEER and ENGINEER's Consultants for evaluating each such 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 Bidding Documents or other Contract Documents 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 Bidding Documents or other Contract Documents, 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 other 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 or Written Amendment signed. 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 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 shall it 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, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insured's or additional insured's (and the officers, directors, partners, employees, agents, and other 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. 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. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees or agents, and other consultants 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. 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. CONTRACTOR shall pay all charges of utility owners for connections to the Work, and OWNER shall pay all charges of such utility owners for capital costs related thereto, such as plant investment fees.

6.09 Laws and Regulations.

A. CONTRACTOR shall give all notices and 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 or Contract Obligations stated elsewhere in the Contract Documents.

C. Changes in Laws or Regulations taking effect after 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 may be the subject of an adjustment in Contract Price or Contract Time(s), subject to the requirements and limitations set forth in Article 12.

6.10 Taxes. 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, ENGINEER, ENGINEER's Consultant, and the officers, directors, partners, employees, agents, and other consultants 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 and Final Completion of the Work CONTRACTOR shall clean and restore the Site as required by Owner's Representative to be appropriate for the stage of completion to make the completed Work and Site ready for utilization and/or acceptance by OWNER. Such cleaning and restoration shall include removal of tools, appliances, construction equipment and machinery, and surplus materials and restoration to original condition of 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. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show all changes or other deviations from Contract Documents made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER and Owner's Representative for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER. Receipt of such deliveries in proper and acceptable form shall be a condition precedent to CONTRACTOR's right to receive final payment.

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. 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 solely to the fault of Drawings or Specifications or solely to the acts or omissions of OWNER or ENGINEER or ENGINEER's Consultant, 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). CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until Final Completion (except as otherwise expressly provided in a certificate of Substantial Completion that becomes binding upon OWNER as provided in paragraph 14.04.D).

1. CONTRACTOR is solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work; accordingly, the right of the Owner's Representative, ENGINEER (including the ENGINEER's Resident Project Representative), ENGINEER's Consultants or others to observe or otherwise review the Work and operations shall not relieve the CONTRACTOR from any Contract Obligations hereunder.

2. CONTRACTOR shall incorporate all safety requirements into the construction progress schedules including preconstruction and other periodic safety meetings, posted safety rules, and site inspections by safety and other inspectors employed by the CONTRACTOR.

6.14 Safety Representative. 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. If such designation is not made, the safety representative shall be deemed to the highest ranking superintendent assigned to the Site by CONTRACTOR.

6.15 Hazard Communication Programs. CONTRACTOR shall be responsible for assuring the coordination, availability and 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. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR shall take whatever actions are reasonably required or appropriate to prevent such threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER and Owner's Representative 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 of any such actions. The emergency status of a condition encountered during the course of performing Work shall not, of itself, constitute grounds to deny or diminish any remedy or right otherwise available to OWNER or to augment any right or remedy available to CONTRACTOR.

6.17 Shop Drawings and Samples.

A. *Shop Drawings* --- CONTRACTOR shall submit Shop Drawings to ENGINEER for review or other appropriate action in accordance with the accepted schedule of Shop Drawings and Sample submittals. All submittals will be identified as ENGINEER may require and in the number of copies specified in the General Requirements or other Contract Documents. The 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.E.

B. *Samples* --- CONTRACTOR shall also submit Samples to ENGINEER for review or other appropriate action in accordance with the accepted schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, Supplier, pertinent data such as catalog numbers, and the use for which intended and otherwise as ENGINEER may require to enable ENGINEER to review the submittal for the limited purposes required by paragraph 6.17.E. The numbers of each Sample to be submitted will be as specified in the Specifications, or if not so specified, as prescribed by ENGINEER.

C. *Work Performed Before Review or Other Action* --- Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER as required

by paragraph 2.07, any related Work performed prior to ENGINEER's review or other appropriate action with respect to the pertinent submittal will be at the sole expense and responsibility of CONTRACTOR.

D. Submittal Procedures ---

1. Before submitting each Shop Drawing or Sample, CONTRACTOR shall have determined and verified:
 - a. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - b. 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 means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and
 - d. CONTRACTOR 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 indication that CONTRACTOR has satisfied CONTRACTOR's obligations under the Contract Documents with respect to CONTRACTOR's review and approval of that submittal.
3. At the time of each submittal, CONTRACTOR shall give ENGINEER specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to ENGINEER for review and approval of each such variation.

E. ENGINEER's Review ---

1. ENGINEER will endeavor to review and take other appropriate action on Shop Drawings and Samples in accordance with the accepted schedule of Shop Drawings and Sample submittals. Such review or other action will be undertaken 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 or other action will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto. The review or other action taken with respect to a separate item as such will not indicate review or action with respect to the assembly in which the item functions.
3. ENGINEER's review and other actions taken with respect to Shop Drawings or Samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal in the exact manner required by paragraph 6.17.D.3 and ENGINEER has given specific and unconditional written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any review or action by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1. However, if ENGINEER's response is given for Shop Drawings or Samples that, as submitted, indicate or describe improvements, upgrades or enhancements beyond the requirements of the Contract Documents, such indications or descriptions may, at the option of ENGINEER or Owner's Representative, be required to be provided, installed or furnished by CONTRACTOR as part of the Work, at no additional cost to OWNER.

F. Resubmittal Procedures --- 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 other appropriate action. 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. CONTRACTOR shall diligently and uninterruptedly prosecute and carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER or ENGINEER or any third parties. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise specifically agree in writing. Any work stoppage, delay, suspension

or reduction in manpower, or removal of equipment from the site determined by the ENGINEER or Owner's Representative to have occurred by reason of any such unresolved dispute or disagreement shall constitute an event of default thereby subjecting CONTRACTOR to termination of the Contract and/or such other rights or remedies exercisable by OWNER due to CONTRACTOR's breach of contract, regardless of the stage of completion at which such circumstances occur.

6.19 CONTRACTOR's General Warranty and Guarantee.

A. CONTRACTOR warrants and guarantees to OWNER, ENGINEER, and ENGINEER's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:

1. abuse, modification, or improper maintenance or operation by OWNER contrary to specific instructions provided by CONTRACTOR in accordance with the Contract Documents; or
2. normal wear and tear under normal usage.

B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents and to fulfill other Contract Obligations shall be absolute. None of the following will constitute an acceptance of Work or other contract performance by CONTRACTOR that is not in accordance with the Contract Documents or a release of CONTRACTOR's Contract Obligations with respect to the Work or otherwise:

1. observations by ENGINEER and/or Owner's Representative;
2. recommendation by ENGINEER or action in response thereto by Owner's Representative or payment by OWNER of any progress or final payment;
3. the issuance or acceptance of a certificate of Substantial Completion or any payment related thereto by OWNER;
4. use or occupancy of the Work or any part thereof by OWNER, whether before or after Substantial Completion;
5. any acceptance or acquiescence by OWNER or any failure to accept Work or other Contract Obligations;
6. any review, approval or other action taken by ENGINEER or Owner's Representative in respect of a Shop Drawing or Sample submittal;
7. any inspection, test, or approval by others; or
8. 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 ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, losses and damages and expenses, whether direct, indirect or consequential, (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) arising out of or resulting from the performance of the Work or from the installation, existence, use, maintenance, condition, repairs, alteration, or removal of any equipment or material, provided that any such claim, damage, loss or expense is caused in whole or in part by a negligent act or omission of CONTRACTOR, any Subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the Work or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by a party indemnified hereunder or arises by or is imposed by Law or Regulation regardless of the negligence of any such party. Such indemnification shall also apply to any warranty or corrective Work required by the Contract Documents.

1. 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; and
2. is caused in whole or in part 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, regardless of whether or not caused in part by any

negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

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 Consultants or to the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them 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 Subcontractor Claims and Liens. CONTRACTOR agrees and warrants to the OWNER that no claim or lien shall attach to or be filed on the Project or to encumber contract proceeds by virtue of CONTRACTOR's neglect, refusal or failure to pay any employee, Subcontractor or Supplier. Should such claim or Lien be threatened or filed, payment otherwise due the CONTRACTOR will not become due until CONTRACTOR delivers to OWNER a complete release and waiver of such claim or Lien, or at the option of Owner's Representative, a bond in satisfactory form to indemnify OWNER against such claim or Lien.

6.22 Equal Opportunity and Non-discrimination. CONTRACTOR and its Subcontractors and Suppliers shall strictly comply with all existing Laws and Regulations regarding (i) prohibition of discrimination in employment practices on the basis of race, sex, creed, color, religion, national origin, ancestry, age, handicap, disabled veteran status and Vietnam era veteran status.

6.23 DBE or WBE Status. CONTRACTOR and its Subcontractors and Suppliers shall strictly comply with all applicable Laws and Regulations of the governing jurisdiction and with provisions stated elsewhere in the Contract Documents concerning CONTRACTOR's status as a disadvantaged business enterprise, minority business enterprise and/or women-owned business enterprise or the utilization of such enterprises in performance of Work.

6.24 Prevailing Minimum Wages.

A. CONTRACTOR and its Subcontractors and Suppliers shall strictly comply with all applicable Laws and Regulations of the governing jurisdiction and with provisions stated elsewhere in the Contract Documents concerning minimum wages and fringe benefits to be paid to laborers, workers and other employees in performance of Work, and reporting requirements applicable to same.

B. Before any Work is commenced under the Contract, CONTRACTOR shall submit to ENGINEER and Owner's Representative complete and accurate schedules of wages to be paid to laborers, workmen, or mechanics by CONTRACTOR and its Subcontractors, which rates shall not be less than the scale set forth in applicable wage determinations included as part of the Contract Documents. Such specified wage rates are minimum rates only, and the OWNER shall not be responsible upon any claims by CONTRACTOR for additional compensation based on payment by the CONTRACTOR or a Subcontractor of any wage rate in excess of a specified minimum rate.

C. CONTRACTOR shall, for a period of three years after Final Completion (or such longer period as may be required by Laws and Regulations), maintain accurate and complete payroll records covering the entire Contract term during which any Work is performed at the site of the Project, and make same available for inspection by OWNER or its appointed representatives during such required retention period.

6.25 Archeological Discoveries. CONTRACTOR and its Subcontractors and Suppliers shall strictly comply with all applicable Laws and Regulations of the governing jurisdiction and with provisions stated elsewhere in the Contract Documents concerning the discovery of and actions required with respect to archaeological artifacts, burial objects, human remains or similar discoveries during performance of the Work, including the reporting of same to governing bodies.

ARTICLE 7 - OTHER WORK

7.01 Related Work at Site.

A. OWNER may perform other work related to the Project at the Site by OWNER's employees, or let other direct contracts therefore, or have other work performed by utility owners.

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract and each utility owner (and OWNER, if OWNER is performing the other work with OWNER's employees) proper and safe access to the Site and 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. Unless otherwise provided in the Contract Documents, 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 and Owner's Representative 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 including latent defects and deficiencies in such other work.

7.02 Coordination.

A. CONTRACTOR shall schedule and perform the Work such that it shall cause no delay in the work of OWNER's forces or other contractors. Where coordination and scheduling conflicts arise between the Work of CONTRACTOR and such other work, ENGINEER or Owner's Representative may provide input to resolve the conflict, but such input shall not relieve the CONTRACTOR of its obligations in respect of coordination with those performing work separately.

B. Except as provided in paragraph 12.02 with respect to time extensions, CONTRACTOR shall have no claim against OWNER for delays, disruptions or hindrances caused by a separate contractor, including without limitation delays resulting from actual or alleged lack of coordination by OWNER or ENGINEER.

C. Should CONTRACTOR cause damage to another contractor, CONTRACTOR agrees to settle with such party by agreement, if the separate contractor will so settle. If such party initiates a claim in litigation or arbitration against OWNER or ENGINEER on account of damage alleged to have been sustained, OWNER or ENGINEER as applicable, shall notify CONTRACTOR and CONTRACTOR shall bear the cost of defending such proceedings, and if a judgment or award in arbitration against OWNER or ENGINEER arises therefrom, CONTRACTOR shall pay or satisfy said judgment, and pay all cost incurred by OWNER or ENGINEER, including attorney fees.

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 Communications to Contractor. OWNER may issue all communication to CONTRACTOR through ENGINEER or at its option may communicate with the CONTRACTOR through Owner's Representative, with a copy to the ENGINEER.

8.02 Replacement of ENGINEER. In case of termination of the employment of ENGINEER. OWNER shall appoint a successor engineer whose status under the Contract Documents shall be that of the former ENGINEER, except as Owner's Representative may otherwise advise CONTRACTOR by written notice.

8.03 Furnishing Data. OWNER shall promptly furnish the data required of OWNER under the Contract Documents.

8.04 Prompt Payment. OWNER shall make payments to CONTRACTOR when they become due as provided in paragraphs 14.02.C and 14.07.C.

8.05 Lands and Easements; Reports and Tests. 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. OWNER's responsibilities, if any, in respect to purchasing and maintaining liability and property insurance are set forth in Article 5 and in other Contract Documents containing provisions that supplement, modify or reassign such responsibilities.

8.07 Change Orders. OWNER is obligated to execute Change Orders as indicated in paragraph 10.03.A.

8.08 Inspections, Tests, and Approvals. 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 (including Owner's Representative) 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 or fulfill other Contract Obligations in accordance with the Contract Documents.

B. Failure or omission of OWNER, Owner's Representative or ENGINEER to discover, object to or take other enforcement action with respect to defective Work or deficiencies in performance of other Contract Obligations by CONTRACTOR shall not relieve CONTRACTOR from any of its Contract Obligations and shall not constitute a waiver by OWNER of any rights, immunities or defenses afforded to it by the Contract Documents.

8.10 Undisclosed Hazardous Environmental Condition. OWNER's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in paragraph 4.06.

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 ENGINEER's Authority and Responsibilities.

A. The duties and responsibilities and the limitations of authority of ENGINEER during construction are primarily specified in a separate agreement between ENGINEER and OWNER as to which CONTRACTOR is neither a party nor an intended beneficiary. Such duties, responsibilities and limitations, including those referred to in the Contract Documents, shall not be extended without written consent of OWNER and ENGINEER. The assignment of any authority, duties or responsibilities to ENGINEER or under the Contract Documents, or under any agreement between OWNER and ENGINEER, or any undertaking, exercise or performance thereof by ENGINEER, is intended to be for the sole and exclusive benefit of OWNER and not for the benefit of CONTRACTOR, Subcontractors, Suppliers, or any other person or organization, or for any surety or employee or agent of any of them.

B. Nothing contained in the Contract Documents shall be construed to create a contractual relationship of any kind (1) between the ENGINEER and CONTRACTOR, (2) between the OWNER and a Subcontractor or Subcontractors, or (3) between any person or entities other than the OWNER and CONTRACTOR. The ENGINEER shall, however, be entitled to performance and enforcement of obligations under the CONTRACT DOCUMENTS intended to facilitate performance of the ENGINEER'S duties.

C. OWNER may, at any time by written notice to CONTRACTOR, authorize and designate a representative of ENGINEER to perform some or all of the duties and exercise some or all of the authority of the Owner's Representative as delineated in the Contract Documents, whereupon the terms of these General Conditions and other Contract Documents shall be interpreted and construed in a manner consistent with such authorization.

9.02 Visits to Site.

A. ENGINEER will make periodic visits to site to observe the general progress and other aspects of the Work at such times, in such manner and subject to limitations and other standards as set forth in the separate agreement

between ENGINEER and OWNER.

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, and 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 Resident Project Representative. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing additional observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in other provisions of the Contract Documents.

9.04 Clarifications and Interpretations. ENGINEER may, upon its own initiative or in response to written request from Owner's Representative or CONTRACTOR, issue written clarifications or interpretations of the technical requirements of the Contract Documents pertaining to the Work as ENGINEER may determine necessary, which shall be consistent with the intent of and reasonably inferable from the Contract Documents. Such written clarifications and interpretations will be binding on CONTRACTOR unless stated to be advisory in nature.

9.05 Authorized Variations in Work. ENGINEER (acting through the Resident Project Representative or otherwise) may authorize variations in the Work from the requirements of the Contract Documents by written Field Order issued in accordance with paragraph 10.03.C.

9.06 Rejecting Defective Work. ENGINEER and Owner's Representative (acting in consultation with ENGINEER) will have concurrent authority to disapprove or reject Work believed by either of them to be defective or not productive of 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.

9.07 Shop Drawings. Change Orders and Payments.

A. In connection with ENGINEER's authority as to Shop Drawings and Samples, see paragraph 6.17.

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

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

9.08 Determinations for Unit Price Work. 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 final recommendation to Owner's Representative concerning the quantities and classifications (by recommendation of an Application for Payment or otherwise) to be approved and accepted by Owner's Representative.

9.09 Decisions on Requirements of Contract Documents and Acceptability of Work.

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents for the purpose of determining the acceptability of the Work there under, provided and to the extent that such requirements and issues pertain to technical, engineering, design, quality standards or other subjects dealing with the Work that are within the scope of ENGINEER's professional expertise. Interpretations will be rendered in writing within a reasonable time.

B. When functioning as interpreter under this paragraph 9.09, ENGINEER will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by ENGINEER pursuant to this paragraph 9.09 with respect to any such Claim, dispute, or other matter (except any which have been waived by the making or acceptance of final payment as provided in paragraph 14.07) will be a condition precedent to any exercise by CONTRACTOR of such rights, defenses or remedies as it may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

9.10 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 responsible for CONTRACTOR's failure to perform the Work or fulfill other Contract Obligations 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 the authority and responsibility of ENGINEER set forth in this paragraph 9.10 and elsewhere in these General Conditions shall also apply to ENGINEER's Consultants, Resident Project Representative, and assistants.

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work.

A. Without invalidating the Agreement and without notice to any surety, OWNER (acting through Owner's Representative or otherwise) may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Written Amendment, a Change Order, or a 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 Time(s), or both, that should be allowed as a result of a Change Directive, a Claim may be made therefore as provided in paragraph 10.05.

10.02 Unauthorized Changes in the Work. CONTRACTOR shall not be entitled to an increase in the Contract Price or an extension of the Contract Time(s) 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 Implementing Changes.

A. *Change Orders* --- OWNER and CONTRACTOR shall execute appropriate Change Orders (or Written Amendments) 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 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 Time(s) which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Change Directive; and
3. changes in the Contract Price or Contract Time(s) which embody the substance of any written decision rendered 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 dispute resolution provisions of the Contract

Documents and applicable Laws and Regulations, but during any such dispute resolution process, CONTRACTOR shall carry on the Work and adhere to the progress schedule as provided in paragraph 6.18.

Except as otherwise expressly and mutually agreed by OWNER and CONTRACTOR in writing, an executed Change Order shall be deemed a complete, fair and final settlement of any and all Claims, disputes and other matters in question between OWNER and CONTRACTOR related to or arising from the Work, occurrence or other subject matter therein described or addressed, including, but not limited to CONTRACTOR's entitlement with respect to adjustments in the Contract Price and/or Contract Time(s); provided, that execution of a Change Order shall not in any case relieve CONTRACTOR of its responsibilities and Contract Obligations pertaining to Work performed or provided pursuant to a Change Order.

B. *Change Directives* --- OWNER, acting through Owner's Representative, may by written Change Directive, without invalidating the Contract, order changes in the Work consisting of additions, deletions or other revisions, subject to adjustment of the Contract Price and/or Contract Time(s) if and as necessary.

1. A Change Directive shall be used in the absence of complete and prompt agreement on the terms of a Change Order.

2. If the Change Directive provides for an adjustment to the Contract Price, the adjustment shall be based on the method provided in paragraph 12.01.B.

3. A Change Directive signed by CONTRACTOR indicates the agreement of CONTRACTOR with the basis of adjustment in Contract Amount and/or Contract Time(s) and other terms and conditions stated therein. Such agreement shall be effective immediately and shall be recorded later by preparation and execution of an appropriate Change Order.

4. Upon receiving a Change Directive, CONTRACTOR shall promptly proceed with the change in the Work involved.

5. If required by ENGINEER or Owner's Representative, CONTRACTOR shall prepare and maintain a written daily record setting forth in detail the quantities and classifications of all elements of Work performed in furtherance of a Change Directive, and submit a copy of same to ENGINEER at the end of each day (or as otherwise directed by ENGINEER or Owner's Representative). Signature upon such record by a representative of OWNER or ENGINEER shall only be deemed an acknowledgment of receipt of such record and shall not be deemed an agreement therewith or approval of payment based thereon by ENGINEER or OWNER.

C. *Field Orders* --- Owner's Representative or ENGINEER may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Amount or the Contract Time(s) and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These shall be accomplished by written Field Order delivered the issuing party to CONTRACTOR with a copy to ENGINEER (if issued by Owner's Representative) or to Owner's Representative (if issued by ENGINEER). Such Field Order will be binding on CONTRACTOR (unless issued by ENGINEER and countermanded in writing by Owner's Representative), who shall perform the Work involved and as directed therein.

10.04 Notification to Surety. 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 Time(s)) 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, and OWNER's rights and remedies under such Bond shall not be defeated or impaired in any manner by CONTRACTOR's failure to provide such notice. The amount of each applicable Bond will be adjusted to reflect the effect of any such change.

10.05 CONTRACTOR Claims.

A. If CONTRACTOR believes or deems itself to be entitled to receive or intends to preserve any rights of Claim to any actual or potential adjustment, increase or extension of the Contract Price and/or Contract Time(s), or other relief with respect to the terms of the Contract Documents or any directive, order, decision, recommendation or other action taken or omitted or notice given by ENGINEER or OWNER there under, CONTRACTOR shall strictly adhere to the following requirements:

1. Written notice stating the nature of each Claim, dispute, or other matter shall be delivered by CONTRACTOR to the Owner's Representative and ENGINEER no later than 14 days after the occurrence of the event or condition or the first of a series of events or conditions giving rise thereto.

2. An additional written notice specifically stating the factual basis, grounds and the form and extent of adjustment in the Contract Price and/or Contract Time(s) or other relief sought by CONTRACTOR in connection with the Claim, dispute, or other matter, with supporting data, shall be delivered to the Owner's Representative and ENGINEER within 30 days after the occurrence of the event or the first of a series of events giving rise thereto.

a. For Claims involving adjustment in the Contract Price or other monetary relief, supporting data shall include a detailed accounting and breakdown of all categories of costs or other amounts sought by CONTRACTOR, plus copies of time records, invoices, receipts and other documentation verifying each such element of cost, damages or other monetary relief claimed.

b. For Claims involving any adjustment in or extension of the Contract Time(s), supporting data shall include a detailed analysis and presentation showing the actual effect and impact of the occurrence, series of events or other circumstances giving rise to the Claim upon the construction progress schedule (and critical path expressed therein) and upon achievement of completion as prescribed by the Contract Time(s). Claims relating to unusual weather conditions shall be further supported by accurately recorded actual weather data.

c. For Claims of any type or character, CONTRACTOR shall, with or subsequent to the giving of such notice, promptly provide to Owner's Representative and ENGINEER any additional records, documentation or other evidence pertaining thereto which the Owner's Representative or ENGINEER may reasonably request as being required to facilitate analysis and evaluation of the Claim and the rendering of decisions thereon.

Owner's Representative may, for good cause and by written notice, allow additional time for CONTRACTOR to submit additional or more accurate data in support of the Claim, dispute, or other matter.

3. A notice of Claim by CONTRACTOR shall be conclusively deemed to include all direct, indirect, cumulative and consequential amounts and/or time extensions or other form of relief claimed or to be claimed by CONTRACTOR resulting or arising from the facts, occurrences, conditions or events giving rise to such Claim.

B. Owner's Representative, acting directly or in consultation with ENGINEER, will render a formal written response to the Claim within a reasonable time after receipt of the last submittal of supporting information and data by CONTRACTOR as required under paragraph 10.05.A.

C. If CONTRACTOR disagrees with such response in any respect, CONTRACTOR shall, within 14 days after receipt thereof, give written notice to Owner's Representative and ENGINEER stating with specificity all matters, issues and elements of the CONTRACTOR's Claim and Owner's Representative's response which CONTRACTOR intends to preserve for submission to further dispute resolution. If OWNER and CONTRACTOR cannot otherwise agree, such preserved matters, issues and elements pertaining to CONTRACTOR's Claim shall be subject to Dispute Resolution provisions set forth in Article 16. In all other respects, Owner's Representative's response shall be conclusively binding upon CONTRACTOR.

D. No Claim by CONTRACTOR for an adjustment in Contract Price or Contract Time(s) (or Milestones) or for other relief with respect to the terms of the Contract Documents or any directive, order, decision, recommendation or other action taken or omitted or notice given by ENGINEER or OWNER there under, shall be valid or enforceable unless submitted in strict accordance with the notice and submission requirements set forth in this paragraph 10.05, all of which shall be deemed conditions precedent to CONTRACTOR's rights in respect of such Claim.

E. Nothing provided in this paragraph 10.05 shall be interpreted or construed to afford CONTRACTOR any rights or entitlement to any adjustment of the Contract Price or Contract Time(s) or other relief that is limited, waived, denied or excluded by any other provisions of these General Conditions or any other Contract Documents.

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

11.01 Cost of the Work.

A. *Definition and General Limitations* --- The term Cost of the Work means the sum of all costs directly and necessarily incurred and paid by CONTRACTOR in the proper performance of the Work and not otherwise included in the Contract Price. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price or other monetary relief is to be measured or determined on the basis of Cost of the Work (including Work performed on a "time and materials" or "T&M" basis), the costs to be reimbursed to CONTRACTOR shall be strictly and exclusively limited to additional or incremental costs verified by supporting data submitted by CONTRACTOR in accordance with paragraph 10.05 and determined therefrom by Owner's Representative or ENGINEER to be

1. required by and essential to the change in the Work or because of the event or condition giving rise to the Claim; and
2. unavoidable in the exercise of due diligence and efficient conduct and management of the change, event or Work affected thereby; and
3. in amounts and/or quantities that are reasonable and in no case higher than those prevailing in the locality of the Project; and
4. included among the types of costs itemized and described in paragraph 11.01.B; and
5. not included among the types of excluded costs itemized and described in paragraph 11.01.C.

In resolving uncertainties or ambiguities concerning whether a particular item or amount of cost is or is not reimbursable to CONTRACTOR as a Cost of the Work under this paragraph 11.01, the interpretation disfavoring such reimbursement shall govern.

B. *Included Costs* --- Subject to the restrictions and qualifications stated in paragraph 11.01.A, the Cost of the Work may include the following items:

1. Payroll costs paid for field labor employees in the direct employ of CONTRACTOR, consisting of wages paid under schedules of job classifications agreed upon by OWNER and CONTRACTOR, payroll taxes, social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and worker's compensation insurance. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above only if and to the extent permitted under paragraph 6.02.B.
2. Costs paid for materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith, if any, and sales, consumer, use, and other similar taxes related thereto. All cash discounts, 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. Costs paid by CONTRACTOR to Subcontractors for Work performed by Subcontractors. If required by Owner's Representative, CONTRACTOR shall, prior to authorizing or contracting for performance of Work by subcontractors, obtain competitive proposals from them and, upon request, deliver same to Owner's Representative who will then determine, in consultation with ENGINEER, if such proposals 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, or similar basis, 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. Actual rental costs paid for construction equipment and machinery, including accessories thereto, rented from other persons or entities not affiliated with CONTRACTOR, in accordance with rental agreements approved by Owner's Representative with the advice of ENGINEER, and including costs of transportation, loading, unloading, assembly, dismantling and removal thereof. Such rental costs shall be limited to the time of actual use in performing the affected Work and shall cease when the use thereof is no longer necessary for such Work.
5. Ownership and operating costs for construction equipment and machinery, including accessories thereto, owned by CONTRACTOR or its affiliates. Such costs shall not exceed the hourly rates computed for

average conditions in accordance with methods and limitations set forth in the latest edition of U.S. Army Corps of Engineers Publication EP 1110-1-8, Volume 2 ("Construction Equipment Ownership and Operating Expense Schedule – Region II"). Costs for specialized owned equipment not determinable by reference to such publication shall only be reimbursed if and to the extent the rates for same are approved in writing by Owner's Representative prior to the use of such equipment for performing the affected Work. No reimbursement shall be made for standby or idle equipment.

C. *Excluded Costs* --- Notwithstanding any other provisions in this paragraph 11.01, the term Cost of the Work shall not include any of the following items, which shall be deemed to be general and administrative costs or direct or indirect overhead or contingencies covered by the CONTRACTOR's fee or by the Contract Price originally stated in the Agreement:

1. Costs and other compensation for CONTRACTOR's officers, executives, principals (of partnerships and sole proprietorships), general or project managers, general or project superintendents, 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, management or superintendence of the Work or Project.

2. Incidental personnel expenses not specifically included under paragraph 11.01.B.1, including, but not limited to costs of transportation, travel, and subsistence expenses of CONTRACTOR's employees (whether or not incurred in discharge of their duties connected with the Work).

3. Cost of materials, supplies, equipment, machinery, appliances, utilities, telecommunications, fuel, and sanitary facilities, office and temporary facilities at the Site, and small tools, which are consumed in the performance of the Work or which are used but not consumed and which remain the property of CONTRACTOR after Final completion.

4. Losses and damages (and related expenses) caused by damage to the Work (including losses and damages within the deductible amounts of property insurance).

5. Cost of premiums for additional bonds or bond coverages.

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

7. Costs due to the negligence, inefficiency or diminished productivity of CONTRACTOR any Subcontractor, or anyone directly or indirectly employed by any of them.

8. Costs for correction of defective or ill-timed Work, disposal of materials or equipment wrongly supplied, or making good any damage to property.

9. Costs excluded under paragraph 12.06.

10. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in paragraph 11.01.B, including, but not limited to expenses of or associated with CONTRACTOR's principal and branch offices or CONTRACTOR's office and facilities maintained or located on or off the site of the Project.

D. *CONTRACTOR's Fee* --- 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.

E. *Documentation* --- In any circumstance whereby any Work covered by a Change Order or Claim by CONTRACTOR is to be determined based on Cost of the Work pursuant to this paragraph 11.01 CONTRACTOR shall establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a manner and form acceptable to Owner's Representative an itemized cost breakdown together with accurate and complete supporting data to substantiate each applicable cost item and the amount of same. Additional requirements governing submission of supporting documentation are set forth in paragraph 10.05.

11.02 Cash 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 as may be acceptable to

OWNER and ENGINEER. CONTRACTOR agrees that:

1. the 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
2. CONTRACTOR's costs for unloading and handling on the Site, labor, installation costs, overhead, profit, and other expenses contemplated for the 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.

B. Prior to final payment, an appropriate Change Order will be issued to reflect actual amounts due CONTRACTOR on account of Work covered by allowances.

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, CONTRACTOR's Bid or Bidding Documents. 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 as provided in paragraph 9.08.

B. 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.

C. OWNER or CONTRACTOR may make a Claim for an adjustment in the Contract Price (subject to the provisions of paragraph 10.05 in the case of a Claim by CONTRACTOR) if:

1. the Contract Price (determined as stated in paragraph 11.03.A) of an individual item of Unit Price Work amounts to 10% or more of the total Contract Price (determined under paragraph 11.03.A or as otherwise stated in the Agreement, as applicable), and the variation in the quantity of such individual Unit Price item performed by Contractor differs by more than 20% from the estimated quantity of such item; and
2. there is no corresponding adjustment with respect any other item of Work.

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

12.01 Change of Contract Price.

A. *In General* --- The Contract Price may only be changed by a Change Order or by a Written Amendment. A Claim by OWNER for an adjustment in the Contract Price shall be based on written notice submitted by OWNER to CONTRACTOR with a copy given to ENGINEER. Claims by CONTRACTOR for an adjustment in the Contract Price shall be subject to the provisions of paragraph 10.05.

B. *Value of Work* --- 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 direct and indirect overhead and profit, and to cover items of non-reimbursable costs under paragraph 11.01, shall be determined as follows:

1. a fixed fee mutually agreed to in writing between CONTRACTOR and Owner's Representative ; or
2. if a fixed fee is not agreed upon, then a fee based on the percentages applied to specified items of the Cost of the Work as follows:

- a. for costs qualifying for reimbursement to CONTRACTOR under paragraphs 11.01.B.1 and 11.01.B.2, the CONTRACTOR's fee shall be 15 percent;

- b. for costs qualifying for reimbursement to CONTRACTOR under paragraph 11.01.B.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 not to exceed 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.B.1 and 11.01.B.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee not to exceed 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.B.4 and 11.01.B.5, and 11.01.C;

- 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 Time(s).

A. The Contract Time(s) (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim by OWNER for an adjustment in the Contract Time(s) shall be based on written notice submitted by OWNER to CONTRACTOR with a copy given to ENGINEER. Claims by CONTRACTOR for an adjustment in the Contract Time(s) shall be subject to the provisions of paragraph 10.05.

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

12.03 Delays Beyond CONTRACTOR's Control.

A. *Excusable Delays* --- Except as otherwise provided in this Article 12, the Contract Time(s) may be adjusted by a time extension only if and to the extent that CONTRACTOR's ability to progress with and complete the Work is unreasonably and directly delayed by any of the following causes (provided that CONTRACTOR has not, by the terms of the Contract Documents, undertaken to assume the risks or impacts thereof:

1. Act or neglect of OWNER or ENGINEER or by any employee of either; or
2. Changes ordered in the Work in accordance with provisions of the Contract Documents; or
3. Unavoidable labor disputes;
4. Unavoidable fire, acts of God or other casualties;
5. Unforeseeable, abnormal and unusually severe weather conditions or other natural phenomena (subject to limitations stated in paragraph 12.02.C); or
6. Delay authorized by Owner's Representative pending resolution of disputes under Article 16; or
7. Other causes beyond CONTRACTOR's control which Owner's Representative, in consultation with ENGINEER, determines may fairly justify such extension.

B. *Limitations* --- Such Contract Time(s) extensions will be granted only if and to the extent that the above delays do not occur concurrently with other causes of delay as to which the CONTRACTOR is not entitled to such

relief. Furthermore, a time extension will be granted only if and to the extent that a delay actually and directly impacts the time necessary for CONTRACTOR to perform and complete critical path activities in time to complete the Work within the Contract Time(s). No adjustment or time extension will be given due to delays affecting parts of the Work that do not directly impact the critical path of the construction progress schedule. Delays of concurrent work activities that are or could be performed within a moveable time frame of the construction progress schedule and which are not critical to completion of the Work within the Contract Time(s) shall not entitle CONTRACTOR to an adjustment in the Contract Time(s).

C. *Weather Delays* --- Extensions of Time(s) will not be granted for normal inclement weather conditions (rain, snow, ice, wind, humidity, ambient temperatures, etc.), as shown by meteorological data recorded by the local or area office of the National Weather Service closest to the location where the Project is situated. Claims for time extension(s) delay attributed to unusually severe weather must be supported by such data for the period in question, and the same calendar period, for the five (5) preceding years. When the weather for the period in question exceeds in intensity, frequency or severity of the average of such five (5) year period by more than ten percent (10%), a time extension will be considered. Comparison will be on a monthly basis.

12.04 Unexcused Delays.

A. The Contract Time(s) (or Milestones) will not be extended due to 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.

B. If CONTRACTOR fails to complete the Work within the Contract Time(s) (including adjustments to same covered by Change Orders) and liquidated damages for such delayed completion are not specified in the Agreement or other Contract Documents (or are deemed by a court or other dispute resolution tribunal to be non-enforceable in respect of such delay), CONTRACTOR and its Surety shall be liable to OWNER for any and all actual costs, expenses and damages arising out of or resulting from such delayed completion.

12.05 Liquidated Damages.

A. If CONTRACTOR fails to complete the Work within the Contract Time(s) (including adjustments to same covered by Change Orders) and liquidated damages for such delayed completion are specified in the Agreement or other Contract Documents, CONTRACTOR and its Surety shall be liable to OWNER for such liquidated damages in lieu of actual damages and not as a penalty, in the amounts per day for each calendar day of delayed completion.

B. Liquidated damages, if any, have been fixed and agreed upon by OWNER and CONTRACTOR because of the impracticability and extreme difficulty of fixing and ascertaining the actual damages to the OWNER in the event of such delayed completion, and in recognition that OWNER will nevertheless sustain substantial damages and losses in respect thereof. The Contract Price as stated in the Agreement shall be deemed to include adequate consideration for the risk of liability imposed upon CONTRACTOR under this Section in respect to liquidated damages and CONTRACTOR acknowledges and agrees that the respective amounts of such liquidated damages are reasonable with due consideration for the type, nature and extent of the Work and the Contract Price and that such liquidated damages fairly approximate the nature and amount of actual damages resulting from delayed completion, and that such liquidated damages may be assessed and recovered by OWNER without proof or evidence concerning the types or amounts of such actual damages.

C. The prospect of partial acceptance, use or occupancy of portions of the Work or Project by OWNER prior to achievement of Substantial or Final Completion has been taken into account in establishing the rates and amounts of liquidated damages, and accordingly, such partial acceptance, use or occupancy shall not prejudice OWNER's rights in respect to the assessment, withholding or recovery of liquidated damages as specified.

D. Liability of CONTRACTOR and its Surety for liquidated damages shall include completion delays related to or arising from termination under paragraph 15.02, including without limitation any delays associated with OWNER's forbearance in effectuating such termination or taking actions or enforcing other rights or remedies against CONTRACTOR or its Surety under the Contract Documents.

12.06 No Damages for Delays. Except as otherwise specifically provided in paragraph 12.03 with respect to time extensions, CONTRACTOR assumes sole risk and responsibility for the occurrence and consequences of any and all suspensions, delays, interferences and other hindrances or disruptions encountered with respect to performance of the Work, regardless of the duration or severity thereof, including but not limited to those caused by or relating to any acts, inactions, errors or omissions of CONTRACTOR, OWNER, Owner's Representative, ENGINEER, their

employees, agents or consultants, or other contractors. Such time extension(s) shall be CONTRACTOR's sole and exclusive remedy in respect of any such suspension, delay, interference, hindrance or disruption and CONTRACTOR shall have no remedy or right of Claim for recovery or reimbursement of any direct or indirect cost, expense and damages incurred in connection therewith, whether or not such conditions or costs and damages resulting therefrom were contemplated by OWNER or CONTRACTOR at the time of CONTRACTOR's Bid or the Effective Date of the Agreement.

ARTICLE 13 - TESTS AND INSPECTIONS; DEFECTIVE WORK

13.01 Notice of Defects. 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. OWNER, ENGINEER, ENGINEER's Consultants, 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.B; 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 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's Representative 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 and Owner's Representative timely notice of CONTRACTOR's intention to cover the same and Owner's Representative, directly or through 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. If it is found that such 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, however, such Work is not found to be defective, CONTRACTOR shall be allowed an increase in the Contract Price or an extension of the Contract Time(s) (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction.

13.05 OWNER May Stop the Work. If the Work is defective, or CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work or Contract Obligations related thereto in such a way that the completed Work will conform to the Contract Documents, Owner's Representative may order CONTRACTOR to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right to stop the Work shall not give rise to any duty on the part of OWNER or Owner's Representative 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. CONTRACTOR shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by ENGINEER or Owner's Representative, 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).

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 Laws or Regulations or 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: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by OWNER, remove it from the Project and replace it with Work that is not defective, and (iii) 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. If CONTRACTOR does not promptly comply with the terms of such 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, and 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 (or its Surety if applicable).

1. In circumstances where Owner's Representative determines that a defect does not involve an emergency or other circumstance reasonably requiring immediate action to protect OWNER's interests, OWNER or ENGINEER will give CONTRACTOR written notice of such defect within a reasonable time after it is observed or detected. CONTRACTOR shall, at its sole cost and within seven (7) calendar days after receipt of such notice, commence the repair, replacement, restoration, rebuilding or other corrective action to rectify the damaged or defective Work and shall diligently and without interruption complete all such required corrective action.

2. In circumstances where Owner's Representative determines that a defect does involve an emergency or other circumstance reasonably requiring immediate action to protect OWNER's interests, OWNER may, without prior notice to CONTRACTOR, take such action as Owner's Representative or ENGINEER deems reasonably necessary to effectuate the repair, replacement, restoration, rebuilding or other corrective action to rectify the damaged or defective Work or the protection and preservation of other Work or property threatened thereby. Owner's Representative or ENGINEER will notify CONTRACTOR as soon as practicable after such

determination by Owner's Representative is made and may afford CONTRACTOR a reasonable opportunity to investigate and continue or complete further corrective action as appropriate. If such opportunity is given and CONTRACTOR fails to commence and continue required corrective action in a prompt and timely manner, OWNER may complete the repair, replacement, restoration or rebuilding of the damaged or defective Work using its own personnel or those of a third party.

3. In all circumstances, CONTRACTOR and its Surety shall be liable for any and all costs and damages sustained by OWNER in respect of any defect or deficiency in the Work.

B. 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 or by Written Amendment.

C. 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 and accepted by OWNER.

D. CONTRACTOR's obligations under this paragraph 13.07 are in addition to any other Contract Obligations, warranties and guarantees pertaining to the Work, and nothing contained in this paragraph 13.07 shall be construed to establish a period of limitation with respect to the enforcement thereof, including without limitation obligations of CONTRACTOR, manufacturers or others under general or special warranties. The time period(s) established herein relate(s) only to the specific obligation of CONTRACTOR to correct, repair or replace the Work, and has no relationship to the time within which proceedings may be commenced to establish or enforce CONTRACTOR's liability with respect to other Contract Obligations.

13.08 Acceptance of Defective Work. If, instead of requiring correction or removal and replacement of defective Work, OWNER prefers to accept it, OWNER may do so. CONTRACTOR shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to the evaluation of and determination to accept such defective Work and the diminished value thereof. If any such acceptance occurs prior to Final Completion 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 and other costs, losses and damages.

13.09 OWNER May Correct Defective Work.

A. If CONTRACTOR fails to commence and proceed with correction, repair or removal and replacement of defective Work as provided by this Article 13, or otherwise fails or refuses in any respect to perform the Work and fulfill other Contract Obligations in accordance with the Contract Documents, OWNER may, upon giving seven (7) days prior written notice to CONTRACTOR, correct and remedy any such deficiency by whatever means OWNER deems reasonably appropriate under the circumstances.

B. In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. In connection with such corrective and 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. 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 Time(s) (or Milestones) 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 Basis of Payment; Retainage.

A. *Schedule of Values* --- The schedule of values established as provided in paragraph 2.07 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 satisfactorily completed.

B. *Retainage* --- OWNER shall withhold retainage in the amount or percentages set forth in the Agreement or other Contract Documents.

14.02 Progress Payments.

A. *Applications for Payments* ---

1. At least 20 days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to ENGINEER for review an Application for Payment in such form as Owner's Representative, in consultation with ENGINEER, may prescribe, filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application.

2. The Application shall be accompanied by supporting documentation, schedules, reports, and other documentation as required by the Contract Documents. If requested by ENGINEER or Owner's Representative, CONTRACTOR shall also provide waivers and releases of Liens and claims by Subcontractors and Suppliers. 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 payment obligations and other Contract Obligations associated with prior Applications for Payment.

3. An Application for Payment shall not include any amounts the CONTRACTOR does not intend to pay to a Subcontractor or Supplier because of a dispute or other reason.

4. 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 by Owner's Representative, 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's Representative.

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's Representative 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 limited 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 9.08, 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: (i) 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 (ii) 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 to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for CONTRACTOR's failure to comply with Laws and Regulations applicable to CONTRACTOR's performance of the Work. Additionally, said review or recommendation will not impose responsibility on ENGINEER to make any examination to ascertain how or for what purposes CONTRACTOR has used the moneys paid on account of the Contract Price, or 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 referred to 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 test), revise or revoke any such payment recommendation previously made, to such extent and in such amount(s) 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 Written Amendment or Change Orders;
- c. OWNER has been required to correct defective Work or complete Work in accordance with paragraph 13.09; or
- d. third party claims filed or circumstances indicating a reasonable probability of filing of such claims;
- e. actual knowledge or reasonable belief of the occurrence or existence of any of the events or circumstances enumerated or referred to in paragraphs 14.02.C or 15.02.A.

C. Payment Becomes Due ---

1. Within ten (10) days after receiving the Application with the ENGINEER's written recommendation pertaining thereto, Owner's Representative will review and act upon the Application for Payment by approving ENGINEER's recommendation or taking other action with respect thereto as provided by the Contract Documents.

2. The Application, together with ENGINEER's recommendation and the written statement by Owner's Representative indicating the Owner's Representative's action thereon, will then be submitted to the governing board of OWNER at its next regularly scheduled meeting. Payment will become due and payable to CONTRACTOR thirty (30) days after approval of the Application for Payment by such board, in the amount so approved.

3. Review, actions and approvals conducted under this paragraph shall be subject to the provisions of paragraph 14.02.D.

D. Withholding of Payment ---

1. Owner's Representative may decline approval of an Application for Payment, and OWNER may refuse to make payment of the amount recommended by ENGINEER or Owner's Representative or otherwise

withhold or nullify the whole or part of any payment to such extent deemed necessary to protect or preserve OWNER's rights and interests with respect to:

- a. defective Work not remedied;
- b. third party claims made or reasonable evidence indicating probable filing of such claims;
- c. failure of CONTRACTOR to make payments properly to Subcontractors or for labor, materials or equipment;
- d. reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Amount;
- e. damage to OWNER or another contractor;
- f. reasonable evidence that the Work will not be completed within the Contract Time(s), and that the unpaid balance may not be adequate to cover damages for the anticipated delay;
- g. failure of CONTRACTOR to maintain and/or submit required supporting data or other documents as and when required by the Contract Documents.
- h. the occurrence of any of the events enumerated or referred to in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

2. Owner's Representative will promptly give written notice to CONTRACTOR (with a copy to ENGINEER) stating the reasons for such action. OWNER will pay CONTRACTOR any amount remaining after deduction of the amount so withheld.

3. When the grounds for refusal or withholding of payment are removed to OWNER's reasonable satisfaction, OWNER will pay to CONTRACTOR the amount so withheld in connection with processing of Contractor's next successive Application for Payment.

14.03 CONTRACTOR's Warranty of Title. 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 believes that the Work and performance of other Contract Obligations have reached the stage of Substantial Completion, CONTRACTOR shall so notify the Owner's Representative and ENGINEER in writing, and provide therewith a list of items of Work or Contract Obligations remaining to be completed, corrected or performed. After receiving such notice, ENGINEER in consultation with Owner's Representative will, if deemed appropriate, schedule and conduct an inspection with Owner's Representative and CONTRACTOR to determine if Substantial Completion has been achieved.

B. If the inspection or other observations concerning the status of performance and completion reveal to ENGINEER and Owner's Representative that Substantial Completion has not been achieved, ENGINEER will give written notice thereof to CONTRACTOR and may also provide one or more lists of items of Work and/or Contract Obligations to be accomplished for Substantial Completion to be achieved. The procedure set forth in paragraph 14.04.A will then be repeated.

C. If such inspection or observations reveal and confirm to ENGINEER and Owner's Representative that Substantial Completion has been achieved, ENGINEER will prepare and deliver to Owner's Representative and CONTRACTOR a certificate of Substantial Completion. Such certificate will (i) fix the date of Substantial Completion; (ii) describe the division of responsibilities pending Final Completion between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees; and (iii) include an attached list of Work items and/or other Contract Obligations to be completed, corrected or fulfilled prior to Final Completion. Failure to include an item on such list shall not alter the responsibility of CONTRACTOR to complete all Work and perform all other Contract Obligations in accordance with the Contract Documents.

D. Unless OWNER and CONTRACTOR mutually agree otherwise in writing and so inform ENGINEER, the certificate of Substantial Completion shall become effective and binding upon OWNER and CONTRACTOR upon (i) written acceptance thereof by Owner's Representative and CONTRACTOR; or (ii) upon the fifth day following

the date of ENGINEER's issuance of the certificate unless and except for objection(s) made thereto by written notice of Owner's Representative or CONTRACTOR given to and received by ENGINEER within such five (5) day period.

E. OWNER shall have the right, but not the obligation, to exclude CONTRACTOR from the site of the Work after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to the site to complete or correct items of Work and to fulfill other Contract Obligations.

F. The achievement of Substantial Completion of all or any part of the Work shall not diminish, impair or defeat any rights or remedies of OWNER under the Contract Documents (including Bonds) arising from or related to any subsequent breach or default by CONTRACTOR.

14.05 Partial Utilization. Use or occupancy by OWNER of portions of the Work may be accomplished prior to Substantial Completion of all the Work upon determination by Owner's Representative, in consultation with ENGINEER, that any such portion is substantially complete and can separately function and be utilized by OWNER for all or part of its intended purpose without causing substantial interference with CONTRACTOR's performance of the remainder of the Work, subject to the following:

A. Owner's Representative may at any time give written notice to CONTRACTOR and ENGINEER of OWNER's intent to use or occupy any part of the Work. After receiving such notice, ENGINEER in consultation with Owner's Representative will, if deemed appropriate, schedule and conduct an inspection with Owner's Representative and CONTRACTOR to determine if Substantial Completion of that part of the Work has been achieved.

B. If such inspection or observations reveal and confirm to ENGINEER and Owner's Representative that Substantial Completion of such part of the Work has been achieved, ENGINEER will prepare and deliver to Owner's Representative and CONTRACTOR a certificate of Substantial Completion for such part. Such certificate will (i) fix the date of partial Substantial Completion; (ii) describe the division of responsibilities pending Final Completion between OWNER and CONTRACTOR for such part with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees; and (iii) include an attached list of Work items and/or other Contract Obligations to be completed, corrected or fulfilled with respect to such part of the Work prior to Final Completion. Failure to include an item on such list shall not alter the responsibility of CONTRACTOR to complete all Work and perform all other Contract Obligations in accordance with the Contract Documents.

C. Unless OWNER and CONTRACTOR mutually agree otherwise in writing and so inform ENGINEER, the certificate of partial Substantial Completion shall become effective and binding upon OWNER and CONTRACTOR upon (i) written acceptance thereof by Owner's Representative and CONTRACTOR; or (ii) upon the fifth day following the date of ENGINEER's issuance of the certificate unless and except for objection(s) made thereto by written notice of Owner's Representative or CONTRACTOR given to and received by ENGINEER within such five (5) day period.

D. During the period of OWNER's use or occupancy of such part of the Work, OWNER shall afford CONTRACTOR reasonable access and opportunity to complete or correct items on said list and to complete other related Work.

E. Use and occupancy by OWNER under this paragraph 14.05 will not be deemed an acceptance of any Work not completed in accordance with the Contract Documents, and shall not constitute grounds for adjustment of the Contract Time(s) or Contract Price.

14.06 Final Inspection. When CONTRACTOR believes that the entire Work and performance of other Contract Obligations have reached the stage of Final Completion, CONTRACTOR shall so notify the Owner's Representative and ENGINEER in writing. ENGINEER in consultation with Owner's Representative will then schedule and conduct a final inspection with participation of Owner's Representative and CONTRACTOR to determine if Final Completion has been achieved. If the inspection or other observations by ENGINEER or Owner's Representative concerning the status of performance and completion reveal that Final Completion has not been achieved, ENGINEER will give written notice thereof to CONTRACTOR and may also provide one or more lists of items of Work and/or Contract Obligations to be accomplished for Final Completion to be achieved. The procedure set forth in this paragraph 14.06 will then be repeated.

14.07 Final Payment.

A. *Application for Payment ---*

1. When the inspection(s) and observations described in paragraph 14.06 reveal and confirm to ENGINEER and Owner's Representative that Final Completion has been achieved, including but not limited to delivery by CONTRACTOR, in accordance with the Contract Documents, of 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 procedures set forth in paragraph 14.02.A (subject to further requirements set forth in subparagraphs 14.07.A.2 and 14.07.A.3 below).

2. The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by subparagraph 5.04.B.7; (ii) consent of the surety, if any, to final payment; and (iii) 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. *Review of Application and Acceptance ---* 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 ---* Review and other action by Owner's Representative and OWNER upon the Application for Final Payment shall follow the procedures and terms set forth in sub-paragraphs 1 and 2 of paragraph 14.02.C.

14.08 Final Completion Delayed. 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 and recommendation of ENGINEER, and without terminating the Agreement, 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. 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 Contract Obligations under the Contract Documents; and (2) a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing and in accordance with paragraph 10.05 which are still unsettled.

14.10 CONTRACTOR's Continuing Obligations. Neither recommendation of any progress or final payment by ENGINEER, nor approval or acceptance thereof by OWNER, nor the issuance of a certificate of Substantial

Completion, nor any payment by OWNER to CONTRACTOR under the Contract Documents, nor any use or occupancy of the Work or any part thereof by OWNER, nor any act of acceptance by OWNER nor any failure to do so, nor any review and approval of a Shop Drawing or sample submission, nor any activities by CONTRACTOR or OWNER in correcting defective Work will constitute an acceptance of Work not in accordance with the Contract Documents or a release or waiver of Contract Obligations or of OWNER's rights and remedies under the Contract Documents.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 OWNER May Suspend Work. 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 may be allowed an adjustment in the Contract Times directly attributable to any such suspension as provided in and subject to the conditions of paragraphs 12.02 and 12.03.

15.02 OWNER May Terminate for Cause.

A. OWNER may terminate the Contract for cause upon occurrence or existence of any one or more of the following events or circumstances:

1. CONTRACTOR is adjudged a bankrupt or insolvent, or makes a general assignment for the benefit of creditors, or CONTRACTOR or a third party files a petition to take advantage of any debtor's act or to reorganize under the bankruptcy or similar laws, or a trustee or receiver is appointed for CONTRACTOR or for any of CONTRACTOR's property on account of the CONTRACTOR's insolvency, and CONTRACTOR or its successor in interest does not provide adequate assurance of future performance within ten (10) days of receipt of a written request by OWNER for such assurance;
2. 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);
3. CONTRACTOR's disregard of Laws or Regulations of any public body having jurisdiction;
4. CONTRACTOR's disregard of the authority of ENGINEER or Owner's Representative; or
5. CONTRACTOR's breach or violation of any other Contract Obligations or provisions of the Contract Documents, whether occurring before or after Substantial Completion.

Any of such events or circumstances shall constitute a material breach of the Contract by CONTRACTOR to justify and uphold termination and/or exercise of other rights and remedies by OWNER as against CONTRACTOR and its Surety, without regard to the status or stage of CONTRACTOR's completion of the Work or fulfillment of other Contract Obligations.

B. If one or more of the events or conditions identified in paragraph 15.02.A occur, OWNER may, upon giving CONTRACTOR and its Surety seven (7) days prior written notice, terminate the Agreement and CONTRACTOR's right to proceed there under, which termination shall become effective without further notice upon the expiration of such seven (7) day period unless otherwise rescinded or modified by OWNER in writing. The following shall govern in the event of such termination (all of which shall be equally binding on CONTRACTOR and its Surety, except as otherwise negotiated and agreed to in writing between OWNER and such Surety):

1. OWNER may 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 or authorize other contractors and parties to use the same for completing or correcting the Work, 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. OWNER and such completion contractors or other parties shall not be liable to CONTRACTOR for the cost or value of any such property used or incorporated in the course of such completion or correction.
2. OWNER may, by any means determined in good faith to be expedient and appropriate under the circumstances, contract with one or more separate contractors or other appropriate parties for completion and

correction of the Work or performance of other Contract Obligations. OWNER shall not be required to accept the lowest price or the shortest duration proposed for such completion, correction or performance. In the event that OWNER takes bids therefore, CONTRACTOR shall not be eligible for the award of any contracts resulting therefrom.

3. Prior to achievement of Final Completion, CONTRACTOR shall not be entitled to receive any further payment, and its Surety shall not be entitled, by equitable subrogation or otherwise, to payment or use of contract funds withheld by OWNER.

4. If the unpaid balance of the Contract Price exceeds the sum of (i) liquidated damages for delayed completion of the Work as provided by the Contract Documents, and (ii) the Completion Costs as hereinafter defined, and (iii) such other damages to which OWNER is entitled by reason of CONTRACTOR's breach or default under the Agreement or the termination thereof, and (iv) attorney fees incurred by OWNER incidental to the enforcement of any claims, rights and remedies against CONTRACTOR and its Surety, such excess will be paid to CONTRACTOR. If such sum exceeds such unpaid balance, CONTRACTOR and its Surety shall be liable to OWNER for payment of such difference.

5. As used in sub-paragraph 15.02.B.4, the term "Completion Costs" shall mean any and all direct, indirect and consequential costs, damages and expenses paid or incurred by OWNER for or incidental to completion or correction of the Work following termination, or procuring the performance and fulfillment of other Contract Obligations for which CONTRACTOR is liable, whether by OWNER's own forces or by one or more separate contractors or other third parties engaged by OWNER for such purposes, and shall include but not be limited to all fees and charges of engineers, architects, consultants, attorneys and other professionals, plus court costs, arbitration and arbitrator fees and similar charges.

C. Termination under this paragraph 15.02 shall not affect any rights or remedies of OWNER against CONTRACTOR and Surety then existing or which may thereafter accrue. Any retention or payment of moneys otherwise due CONTRACTOR by OWNER will not release CONTRACTOR or Surety from liability.

D. If it is determined for any reason that termination under this paragraph 15.02 was not justified, the termination shall be deemed a termination for convenience of the OWNER, whereupon the rights and obligations of the parties shall be determined and governed in accordance with the provisions of paragraph 15.03.

15.03 OWNER May Terminate For Convenience.

A. Upon seven (7) days' written notice to CONTRACTOR and ENGINEER, OWNER may, without cause and without prejudice to any other right or remedy of OWNER, elect to terminate the Agreement in whole or in part for its convenience. Immediately upon receipt of the notice, CONTRACTOR shall take the following actions in respect of the terminated Work (except as otherwise instructed by the notice):

1. Discontinue Work;
2. Take actions necessary, or that the Owner may direct, for the protection and preservation of the Work;
3. Terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders;
4. Take all other action as may be required or appropriate to minimize costs, damages and expenses in consequence of the termination;
5. Deliver to OWNER all survey notes, drawings, specifications and estimates completed or partially completed, which items shall become the property of OWNER; and
6. Follow all other instructions of OWNER as stated in such notice

B. Amounts payable to CONTRACTOR shall not exceed the following:

1. A portion of the Contract Price fairly allocated to Work executed by CONTRACTOR in accordance with the Contract Documents prior to the effective date of termination;
2. Reasonable expenses sustained by CONTRACTOR 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; and

3. Reasonable costs, losses and damages paid by CONTRACTOR in discharge of just claims under terminated contracts with Subcontractors, Suppliers and others.

Such amounts shall be subject to offset and reduction to account for any adjusted for amounts and damages, if any, for which CONTRACTOR is liable or which OWNER is entitled to retain and withhold pursuant to the terms of the Contract Documents.

C. The payment as determined under paragraph 15.03.B shall constitute CONTRACTOR's sole and exclusive remedy with respect to a termination for convenience, and CONTRACTOR shall not be entitled to payment on account of anticipated profit, overhead, or other direct, indirect or consequential damages or other economic loss associated with any terminated Work.

15.04 CONTRACTOR May Stop Work or Terminate. If, through no act or fault of CONTRACTOR, the Work is suspended for a period of more than ninety (90) consecutive days by OWNER or under an order of court or other public authority, or OWNER substantially fails to perform or make payment to CONTRACTOR as prescribed by the Contract Documents, CONTRACTOR may, upon thirty (30) days written notice to Owner's Representative and ENGINEER, terminate the Contract and recover from OWNER payment for all Work executed and any expense sustained plus reasonable termination expenses. In lieu of terminating the Contract, if OWNER has failed to make payment as aforesaid, CONTRACTOR may, ten (10) days after written notice to Owner's Representative and ENGINEER, stop the Work until payment of all amounts then due. The provisions of this Section shall not relieve CONTRACTOR of his obligations to carry on the Work in accordance with the progress schedule and without delay during disputes and disagreements with OWNER.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 Application of Article.

A. Subject to the limitations and exceptions hereinafter stated in this paragraph 16.01, the dispute resolution procedures prescribed in this Article 16 shall apply to and govern the resolution, settlement and final disposition of all claims, disagreements, controversies, disputes and other matters in question (collectively referred to as "Disputes") between OWNER and CONTRACTOR arising out of, or relating to the Contract Documents or the breach thereof.

B. At OWNER's option, the dispute resolution procedures described in this Article 16 shall not apply to any Dispute that arises from or relates specifically to any claim, disagreement, controversy, dispute or other matter in question between or involving OWNER and another contractor, ENGINEER or other third party who is not bound by the same dispute resolution provisions herein set forth (herein called "Third Party Claim"). In such case, and at OWNER's option, the Dispute between OWNER and CONTRACTOR shall be resolved in the same manner, by the same proceedings and subject to the jurisdiction of the same court or other tribunal as the Third Party Claim. In all other cases, the provisions of this Article 16 shall remain in full force and effect.

C. Except as otherwise consented and agreed to by OWNER in writing, the arbitration procedures for dispute resolution as set forth in paragraph 16.04 shall not apply to any of the following:

1. Disputes relating to, arising from or affected by Claims by CONTRACTOR which are alleged by OWNER to be waived, forfeited or otherwise barred by the provisions of the Contract Documents.
2. Disputes concerning or resulting from termination for cause by OWNER under paragraph 15.02;
3. Disputes which individually or in the aggregate involve an amount in controversy exceeding the sum of Two Hundred Thousand Dollars (\$200,000) not including interest.

16.02 Negotiation.

A. OWNER and CONTRACTOR will endeavor to use their best efforts to resolve Disputes through informal good faith negotiations conducted promptly after a Dispute arises and before pursuit of other dispute resolution procedures.

B. Upon written request made by Owner's Representative or CONTRACTOR to the other party, a meeting shall be promptly scheduled and held between senior officials of OWNER, CONTRACTOR and, if OWNER agrees,

ENGINEER and/or or other interested parties. The purpose of this and any subsequent meetings will be good faith negotiations of the matters constituting the Dispute.

C. Negotiations shall be concluded within thirty (30) calendar days of the first meeting, unless OWNER and CONTRACTOR mutually agreed otherwise.

16.03 Mediation.

A. Disputes not otherwise resolved through negotiations shall be promptly submitted to non-binding mediation as a condition precedent to arbitration or the institution of legal or equitable proceedings by either party. Such mediation may be commenced by either party giving written notice to the other party of its intent to mediate. Within 14 days thereafter, OWNER and CONTRACTOR shall, in good faith, seek to reach mutual agreement upon selection of a duly qualified Mediator and the scheduling and manner of conducting the mediation.

B. If such agreement is not reached within such time, the mediation shall proceed in accordance with the Construction Industry Mediation Rules of the American Arbitration Association currently in effect. Request for mediation shall be filed in writing with the other party to the Contract and with the American Arbitration Association. The request may be made concurrently with the commencement of arbitration under paragraph 16.04 (or litigation, if applicable) but, in such event, mediation shall proceed in advance of arbitration (or litigation), which shall be stayed pending mediation for a period of 90 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

C. The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof

16.04 Arbitration.

A. Disputes not otherwise settled or resolved by negotiations or mediation will be resolved and decided by arbitration in accordance with this paragraph 16.04.

B. The arbitration process may be commenced by either party giving written notice to the other party of its intent to arbitrate. Within 14 days thereafter, OWNER and CONTRACTOR shall, in good faith, seek to reach mutual agreement upon selection of a duly qualified Arbitrator or arbitration panel. If agreement is not reached within such time, the arbitration shall proceed in accordance with the Construction Industry Arbitration Rules of the American Arbitration Association then in effect, as modified to conform to the provisions stated in this paragraph 16.04.

C. Notice of demand for arbitration shall be filed in writing with the other party to the Agreement and, if applicable, with the American Arbitration Association, and a copy will be sent to ENGINEER for information. The demand for arbitration will be made within a reasonable time after the Dispute has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

D. No arbitration arising out of or relating to the Contract Documents shall include, by consolidation, joinder or in any other manner, any other person or entity (including ENGINEER and its agents, employees or consultants) unless:

1. The inclusion of such other person or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration;

2. Such other person or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings; and

3. The written consent of the other person or entity sought to be included and of OWNER and CONTRACTOR has been obtained for such inclusion, which consent shall make specific reference to this subparagraph 16.04.D; but no such consent shall constitute consent to arbitration of any claim, disagreement, controversy, dispute or other matter in question not specifically described in such consent or to arbitration with any party not specifically identified in such consent.

E. The arbitration shall be conducted in accordance with the following requirements:

1. The Arbitrator(s) shall decide only the Disputes (and issues pertaining thereto) presented by the demand(s), counterclaim(s) and other related response(s) and submissions of the parties.

2. The Arbitrator(s) shall not have authority or discretion to vary or disregard the terms and conditions of the Contract Documents.

3. The Arbitrator(s) may award attorney's fees to the prevailing party upon a finding that the other party initiated or continued to assert a frivolous, unreasonable, or groundless claim or defense.

4. The hearing and other administrative conferences pertaining to the arbitration shall take place in the county where the Project is located.

5. No documentary evidence shall be admissible in any arbitration hearing unless copies thereof are furnished to the opposing party at least thirty (30) days prior to the date of commencement of the arbitration hearing.

6. No witness shall be called to testify or heard at the hearing unless the witness is identified and the subject matter of his/testimony is disclosed in writing to the opposing party at least thirty (30) days prior to the date of commencement of the hearing.

F. Any award rendered by the Arbitrators in accordance this paragraph 16.04 will be final and binding on OWNER and CONTRACTOR, and shall also be binding upon CONTRACTOR's Surety, whether or not such Surety is joined in the proceeding, and judgment may be entered upon the award in any court having jurisdiction thereof.

G. This agreement to arbitrate and any other binding agreement or consent to arbitrate entered into in accordance with this Article 16 will be specifically enforceable under the prevailing law of any court having jurisdiction.

ARTICLE 17 – MISCELLANEOUS

17.01 Giving Notice. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if shown to be received by the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if shown to be sent by certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 Computation of Times. 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. 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, and 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. 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 Agreement.

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

17.06 No Assignment. CONTRACTOR shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder until thirty (30) days prior notice in writing has been given to the OWNER of the intention to assign, which notice shall state the identity and address of the prospective assignee. No assignment shall be made without the OWNER's prior written consent. In case the CONTRACTOR assigns all or any part of the moneys due or to become due under this Contract, the instrument of assignment shall contain a clause substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the

CONTRACTOR shall be subject to all rights and claims OWNER and of all persons, firms and corporations of services rendered or materials supplied for the performance of the work called for in this Contract.

17.07 Severability. If any provision of this Agreement shall be invalid or unenforceable to any extent or in any application, then the remainder of this Agreement and of such terms and conditions, except to such extent or in such application, shall not be affected thereby, and each and every term and condition of this Agreement shall be valid and enforced to the fullest extent and in the broadest application permitted by law.

17.08 Recoverable Damages. Whenever reference is made to claims, costs, losses or damages recoverable by OWNER against CONTRACTOR or its surety, such recovery shall include, but not be limited to, all fees and charges of engineers, architects, attorneys and other professionals and all court or arbitration or other dispute resolution costs.

SPECIAL PROVISIONS

These Special Provisions amend or supplement the General Conditions of the Construction Contract and other provisions of the Contract Documents. All such provisions which are not so amended or supplemented shall remain in full force and effect. The terms used in these Special Provisions will have the meanings indicated in the General Conditions.

OWNER (see GC 1.01.33).

The name and address of the OWNER is:

Village of Brewster, Ohio
302 S. Wabash Avenue
Brewster, OH 44613

OWNER is a political subdivision existing under and governed by the laws of the State of Ohio and for this Project is acting by and through the agency or department (if any) designated in the Agreement or Bidding Documents.

ENGINEER (see GC 1.01.21).

The name and address of the ENGINEER is:

ATS Engineering, Inc.
7908 Cincinnati-Dayton Road
Suite P
West Chester, Ohio 45069

ENGINEER'S CONSULTANTS (see GC 1.01.22).

The following ENGINEER's Consultants have been engaged by ENGINEER to render services for this Project:

Donald C. Baker Surveying
138 North Clay Street
Millersburg, OH 44654

CONTRACTOR'S LIABILITY INSURANCE (See GC 5.04).

The insurance required by Article 5 of the General Conditions shall be modified as follows:

The Contractor shall, at his expense, furnish and maintain insurance in the form and amount specified in subparagraphs A through F inclusive, of this section. Policies shall be with acceptable insurance companies authorized to do business in the State of Ohio. Owner shall be listed as insured with ATS Engineering listed as additional insured.

The Contractor shall not commence Work nor shall he permit any of his Sub-Contractors to commence Work until the insurance policies specified hereinafter, or otherwise required, have been submitted to, and approved by the Owner. Such insurance policies shall be kept in force until the Contractor receives final payment pursuant to the provisions of the General Conditions.

Insurance shall be endorsed so that it cannot be changed or canceled in less than ten (10) days after the receipt by the Contractor and the Owner of written notice of such proposed action from the Insurer.

The insurance specified in Subparagraphs A, B, C, and D shall be written under the comprehensive general form of liability insurance contracts.

The Contractor shall furnish three (3) certificates or, whenever specifically requested by the Owner, three (3) certified copies of the insurance policies themselves and a receipt evidencing full payment of the premiums.

In addition to the insurance described hereinafter, the Contractor shall secure and maintain such other insurance as may be designated elsewhere in the Contract Documents.

If the Contractor is required to repair or perform Work after the completion of the Work involved under this Contract he shall obtain new policies in accordance with the requirements in this section.

- A. Builders Risk: In addition to such fire and other physical damage insurance as the Contractor elects to carry for his own protection, he shall also secure and maintain in the name of the Owner, the government agency sponsoring the Project, Subcontractors, the Engineer and any other parties having an interest in the Project, as named insured as their interest may appear; a builders' risk policy for fire, extended coverage, vandalism and malicious mischief in the amount of one hundred (100) percent of the value of the completed part of the Project and Materials in storage, except that such coverage shall not be required in connection with sewer, water main or paving construction. Pump or lift station construction shall not be considered sewer or water main construction for the purposes of this paragraph.
- B. Workers Compensation: The Contractor shall provide Workers Compensation Insurance for all employees engaged in Work who may come within the protection of the workers compensation law, and, where applicable, employer's General Liability Insurance for employees not so protected and shall require all Sub-Contractors to provide corresponding insurance. The Contractor shall indemnify the Owner and the Engineer against any and all liabilities, cost and expense due to

accidents or other occurrences covered by the workers compensation law.

- C. Contractor's Motor Vehicle Bodily Injury and Property Damage Liability Insurance: Insurance to cover liability arising from the use and operation of motor vehicles in connection with the performance of the Contract (as customarily defined in liability insurance policies), whether they be owned, hired or non owned by the Contractor, as follows:

1. Bodily Injury Liability: \$1,000,000 for each person; limit of \$1,000,000 for each occurrence.
2. Property Damage Liability: \$1,000,000 for each occurrence.

- D. Contractor's Public Liability and Property Damage Liability Insurance: Contractor's Public Liability Insurance providing a limit of not less than \$1,000,000 for all damages arising out of bodily injuries, including accidental death to one person, and a total limit of \$1,000,000 for all damages arising out of bodily injuries, including accidental death, to two or more persons in one occurrence. Contractor's Property Damage Liability Insurance providing for a limit of not less than \$1,000,000 for all damages arising out of damages to or destruction of property.

Coverage under this policy shall include, to the limits indicated above, the collapse or damage to any structure, building or its contents, public or private utility, or pavement during construction and for two (2) years thereafter.

Whenever Work under this Contract is to be done in the vicinity of existing underground utilities or structures, coverage under the policy shall also include, to the limits indicated, all damages to said underground utilities or structures during construction and for a period of two (2) years thereafter. Whenever Work under the Contract is to be done by blasting, coverage under the policy shall also include, to the limits indicated above, all damages of any kind whatsoever caused by blasting.

- E. Contractor's Protective Public Liability and Property Damage Liability Insurance: Contractor's Protective Public Liability and Property Damage Liability Insurance for operations performed by Sub-Contractors providing for coverage and limits corresponding to those described in subparagraph D.

- F. Owner's Protective Public Liability and Property Damage Liability Insurance: Regular Owner's Protective Public Liability and Property Damage Liability Insurance for operations performed by the Contractor or any Sub-Contractor providing for coverage and the limits corresponding to those described in subparagraph D.

This policy shall be written in the name of the Owner as a separate policy from those specified elsewhere herein.

- G. Additional insureds under paragraph 5.04 B.1. shall be:

1. ATS Engineering, Inc.
2. Village of Brewster, Ohio

NON-DISCRIMINATION

- A. In the hiring of employees for the performance of the Work, CONTRACTOR and its Subcontractors, Suppliers, and all persons acting on behalf thereof shall not in any manner (1) discriminate, by reason of race, religion, color, sex, national origin or ancestry, against any citizen of the state of Ohio who is qualified and available to perform the work to which the employment relates; or (2) discriminate against or intimidate, on account of race, religion, color, sex, national origin or ancestry, any employee hired for the performance of work under the Contract.

MINIMUM WAGE RATES

- A. Minimum common construction wage rates apply to this Project. Such wage determination is included in Section 00200 of the Project Manual (or by Addendum) and is part of the Contract Documents whether or not specifically designated as such by the Agreement or other Contract Documents.
- B. Wages paid to laborers, workmen, or mechanics by CONTRACTOR and its Subcontractors shall not be less than the scale set forth in such wage determination. The specified wage rates are minimum rates only, and the OWNER shall not be responsible upon any claims by CONTRACTOR for additional compensation based on payment by the CONTRACTOR or a Subcontractor of any wage rate in excess of a specified minimum rate.
- C. CONTRACTOR and its Subcontractors shall provide and submit certified payroll reports and certifications of compliance with this section to ENGINEER and Owner's Representative at least monthly during the course of the Work (with CONTRACTOR's Application for Payment unless otherwise directed by ENGINEER or Owner's Representative). All reports and certifications of compliance shall utilize or substantially conform to federal forms WH 347 and WH 348, and contain such additional details as ENGINEER or Owner's Representative may prescribe. Submission of such reports shall be a condition of OWNER's obligation to make payment for Work performed during the period for which the reports are to be furnished.

PROCUREMENT AND USE OF DOMESTIC STEEL PRODUCTS

- A. If performance of any of the Work involves the supply or use of materials or products rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed, or processed by a combination of two (2) or more of such operations, from steel by the open hearth, basic oxygen, electric furnace, Bessemer or other steel making process, only such products that are rolled, formed, shaped, drawn, extruded, forged, cast, fabricated, or otherwise similarly processed from steel made in the United States (including all territory, continental or insular, subject to the jurisdiction of the United States) are to be utilized or supplied in the performance of such Work.
- C. The requirement set forth in subsection A shall not apply in the event that OWNER, acting through its chief executive, determines, in writing, that (1) the cost of domestic steel products is deemed to be unreasonable, or (2) are not produced in the United States in sufficient quantities to meet the requirements of the Contract Documents.
- D. OWNER will not authorize or make any payments to CONTRACTOR unless OWNER is satisfied that CONTRACTOR has fully complied with the provisions of this section.
- E. Any payments made to CONTRACTOR which should not have been made as a result of this section shall be recoverable directly from CONTRACTOR, or from the Subcontractor who failed to comply herewith subsection.

WITHHOLDING AND PAYMENT OF RETAINAGE

- A. OWNER shall withhold retainage in the amount of ten percent (10%) of the dollar value of all Work satisfactorily completed as evidence by approved Applications for Payment until all of the Work and Contract Obligations required by the Contract Documents is fifty percent (50%) complete. Thereafter, no further retainage will be withheld, provided that CONTRACTOR is making satisfactory progress and there is no specific cause for additional or increased withholding of payment.
- B. Except as otherwise provided by Laws and Regulations or the Contract Documents, retainage (including escrowed principal and escrowed income if applicable) will be released and paid to CONTRACTOR within sixty-one (61) days after the date of Substantial Completion of all Work, less an amount equal to two hundred percent (200%) of the value of Work or other Contract Obligations remaining to be completed, corrected or fulfilled thereafter, as determined by ENGINEER in consultation with Owner's Representative.
- C. CONTRACTOR may elect for retainage to be placed by OWNER in an escrow account with a bank, savings and loan institution, or the state as the escrow agent; provided, that CONTRACTOR shall, as a condition precedent to the validity of

such election, give written notice thereof to the Owner's Representative no later than five (5) days after the Effective Date of the Agreement. If such written notice is not given within such time limit, the right of CONTRACTOR to make such election shall conclusively be deemed waived, and retainage shall thereupon be withheld by OWNER without being placed into an escrow account, and OWNER shall not be liable for payment of any interest or other charges on the amounts of retainage that it holds.

- D. If a valid escrow account election is made by CONTRACTOR under subsection C, the selection of the escrow agent and terms of the escrow agreement shall be determined in conformity with Ohio law and, in other respects, subject to approval and acceptance by OWNER.

CONTINUOUS TREATMENT PROVISION

Federal regulations prohibit by-passing of any sewage during construction operations. The CONTRACTOR will be responsible for providing any required temporary pumping facilities, piping, etc., necessary to complete the project without any process bypassing. Continuous treatment must be provided at the same level during construction as existed prior to construction.

OHIO STATE HIGHWAY STANDARD SPECIFICATIONS

All applicable technical portions of the most recent Ohio Department of Transportation (ODOT) Standard Specifications shall apply to and supplement the technical requirements for the Work as provided by the Contract Documents to the extent not in conflict therewith.

SECTION 01010 SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. General Scope of Work
- B. Work by Owner
- C. Contractor's Responsibilities.
- D. Work Sequence.
- E. Owner occupancy.
- F. Maintaining Sewage Flows
- G. Contract Documents

1.2 GENERAL SCOPE OF WORK

- A. The scope of work anticipated for the Sanitary Sewer Lining is generally described as:
 - 1. Pipe 1 – 187 feet of 12” vitrified clay, reinforce concrete and ductile iron pipe;
 - 2. Pipe 5 – 95 feet of 12” vitrified clay pipe;
 - 3. Pipe 7 – 109 feet of 14” cast iron pipe;
 - 4. Repairs to existing piping to accommodate liner;
 - 5. Bypass pumping as required;
 - 6. Closed circuit televising of sewer before and after project;
 - 7. Repair of existing facilities damaged or disturbed by project work;
- B. Contractors shall be responsible for coordination of subcontractors, suppliers, and overall construction schedule.

1.3 WORK BY OWNER

- A. Owner shall provide construction engineering and observation services for the project.
- B. Contractor shall be responsible for obtaining all permits required for construction of the improvements.

1.4 CONTRACTOR'S RESPONSIBILITIES

- A. Contractor shall provide all labor, material, equipment, supervision, management, and transportation necessary to complete the scope of work intended and required by these project documents.
- B. The site is constrained by existing underground utilities and overhead utility lines. Interested bidders are strongly encouraged to visit the site prior to submitting a bid.
- C. Contractor shall be responsible for providing any required temporary pumping facilities, piping, etc., necessary to complete the project without any process bypassing. Continuous treatment must be provided at the same level during construction as existed

- prior to construction.
- D. The Contractor shall take all precautions to protect against any adverse environmental effects (e.g., dust, noise, soil erosion) during construction.
 - E. Contractor shall be responsible for unloading and storage of all materials and equipment.
 - F. Contractor shall be responsible for supply of all labor and all ancillary materials to provide a complete installation of liner.

1.5 OWNER OCCUPANCY

- A. The Owner retains the right to occupy adjacent facilities throughout construction. The Contractor shall minimize disturbances to the Owner's operations.

1.6 MAINTAINING SEWAGE FLOWS

- A. Contractor shall be responsible for providing by-pass pumping as required to construct the improvements detailed in this contract.

1.7 CONTRACT DOCUMENTS

- A. The contract documents for this project shall consist of this volume plus a set of 24" x 36" blueline plans entitled "Village of Brewster, Ohio Sanitary Sewer Lining".

END OF SECTION

SECTION 01300 SUBMITTALS

PART1 - GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed products list.
- D. Shop drawings.
- E. Product data.
- F. Samples.
- G. Manufacturers' instructions.
- H. Manufacturers' certificates.
- I. Construction photographs.

1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with cover letter to Engineer at:

ATS Engineering, Inc.
Village of Brewster, Ohio Sanitary Sewer Lining
7908 Cincinnati-Dayton Road
Suite P
West Chester, Ohio 45069

- B. Sequentially number the transmittal forms. Resubmittals to have original number with an alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Engineer at business address. Coordinate submission of related items.
- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for Contractor and Engineer review stamps. Engineer will require 4 ½" x 4 ½" for stamp
- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.

1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Prepare and submit initial and revised construction progress schedule in accordance with Section 01308.
- B. Revise and resubmit as required.
- C. Initial Application for Payment will not be accepted until construction progress schedule is approved.
- D. Applications for Payment will not be accepted unless accompanied by revised progress schedule.
- E. Construction progress schedules shall be prepared in accordance with Specification Section 01308.

1.4 SCEDHULE OF VALUES & SCHEDULE OF PAYMENTS

- A. Prepare and submit schedule of values and schedule of payments in accordance with Section 01308.
- B. Revise and resubmit as required.
- C. Initial Application for Payment will not be accepted until schedule of values and schedule of payments is approved.
- D. Schedules shall be prepared in accordance with Specification Section 01308

1.5 PROPOSED PRODUCTS LIST

- A. Within 15 days after date of Notice to Proceed, submit complete list of major products proposed for use other than those required sooner, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.6 SHOP DRAWINGS

- A. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Engineer and Owner.

1.7 PRODUCT DATA

- A. Submit the number of copies which the Contractor requires, plus three copies which will be retained by the Engineer and Owner.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01700.

1.8 SAMPLES

- A. Submit samples to illustrate functional and aesthetic characteristics of the Product, with

- integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. Submit samples of finishes from the full range of manufacturers' standard colors, or in custom colors selected, textures, and patterns for Owner's selection.
 - C. Include identification on each sample, with full Project information.
 - D. Submit the number or samples specified in individual specification Sections; one of which will be retained by Owner.
 - E. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.9 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.10 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification sections, submit manufacturers' certificate to Engineer for review, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Engineer.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 01308 SCHEDULES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Construction Progress Schedule.
- B. Schedule of Values.
- C. Schedule of Payments.

1.2 SUBMITTALS

- A. Submit schedules under provisions of Section 01300 and as modified herein.
- B. Construction Progress Schedule
 - 1. The contractor shall submit four (4) copies of the initial schedule to the Owner at the preconstruction conference.
 - 2. The schedule shall show each item to be procured for the work and for each such item, necessary dates for each step in the procurement process, including those for placement of orders, receipt and submittal of shop drawings, receipt of shop drawing approvals and delivery. Any delivery time problem or other problem anticipated shall be noted as remarks in the list.
 - 3. The component parts of the schedule shall be subdivided to the satisfaction of the Engineer and shall be broken down, at a minimum, to excavation, concrete, equipment, electrical, mechanical, instrumentation, etc., categories for each structure of the project.
 - 4. Within 30 days after the submission of the above mentioned list, the Contractor shall submit four (4) copies, in final form, of the critical path diagram and list to the Engineer.
 - 5. If the schedule as submitted by the Contractor is not sufficiently detailed, contains errors, or is unrealistic, it will be rejected in writing, and the Contractor shall submit a revised schedule within seven (7) days of the date of the notice of rejection.
 - 6. Contractor shall submit four (4) copies of the revised schedule to the Owner each month at or prior to the monthly progress meetings.
 - 7. A report summarizing the status of the project and the reason for deviation from the previous schedule shall accompany each monthly update of the schedule.
- C. Schedule of Values
 - 1. Submit four (4) copies of Schedule of Values to Owner for review at least 20 days prior to submitting first application for a progress payment. After review by the Engineer, revise and resubmit schedule as required until it is approved.
- D. Schedule of Payments

1. Submit four (4) copies of Schedule of Values to Owner for review at least 20 days prior to submitting first application for a progress payment. After review by the Engineer, revise and resubmit schedule as required until it is approved.
 2. Revisions to the Schedule of Payments may be required as the project progresses to reflect changing project conditions.
- E. Pending satisfaction of this requirement for schedules (Construction Progress Schedule, Schedule of Values and Schedule of Payments) no progress payment will be made, except in such amounts approved by the Engineer for materials received at the job site as provided in the General Conditions.

1.3 COORDINATION

- A. In the preparation of schedules the Contractor shall take into consideration shop drawing submittal and review time, the delivery times of equipment and materials, subcontractor's work, availability and abilities of workmen, weather conditions, any restrictions in operations at the job site, and all other items that may affect completion of the work within the time requirements of the Contract Documents.
- B. Contractor shall be responsible for coordination and scheduling of all construction activities including those of subcontractors and suppliers.

1.4 CONSTRUCTION PROGRESS SCHEDULE

- A. To assure completion of the work within the established time of completion, all activities of the Contractor will be scheduled and monitored by use of the critical path method, utilizing both activity diagram and list.
- B. The Contractor shall prepare and submit the initial and subsequent critical path diagrams and lists for the entire project.
- C. Critical path diagrams and lists shall be prepared by experts having demonstrated skill and substantial experience in critical path scheduling and shall show all activities in detail.
- D. Lists shall include for each activity its number, description, duration, early start, early finish, late start, late finish, and float time. Both the initial and subsequent submissions shall be time scaled.
- E. Schedule up dates and revisions
 1. The critical path diagram will be revised every month during the project to reflect departures and changes from the previous critical path diagram.
 2. If departures and changes during the previous period are of such minor nature that no useful purpose is served by revising the critical path diagram, the Owner may waive this requirement.
 3. A status report shall accompany each monthly update of the construction progress schedule which will provide detailed information as to the reason why the current schedule deviates from the previous.

- F. The Contractor shall consider equipment and material delivery times and coordinate deliveries to accommodate Contractors scheduling requirements.

1.5 SCHEDULE OF VALUES

- A. The Schedule of Values is an itemized list that establishes the value or costs of each part of the work.
- B. It shall be used as the basis for negotiations concerning additional work or credits which may arise during the construction.
- C. Quantities and unit prices may be included in the Schedule when approved by or required by the Owner.
- D. Schedule shall show breakdown of labor, materials, equipment and other costs used in preparation of the bid.
- E. Costs shall be in sufficient detail to indicate separate amounts for each portion of the work and section of the specifications.
- F. Contractor may include an item for bond, insurance, temporary facilities and job mobilization. This item will be included for payment at a rate of 25 percent per month for the first four months.
- G. Schedule of Values shall be prepared on 8-1/2" x 11" white paper.
- H. Use Table of Contents in the specifications as basis for Schedule format and identify each item with number and title in the Table of Contents. List sub-items of major products or systems as appropriate or when requested by the Engineer.
- I. When requested by the Engineer, support values with data that will substantiate their correctness.
- J. The sum of the individual values shown on the Schedule of Values must equal the total contract price.
- K. Each item shall include a directly proportional amount of the Contractor's overhead and profit.
- L. Schedule shall show the purchase and delivery costs for materials and equipment that the Contractor anticipates he shall request payment for prior to their installation.

1.6 SCHEDULE OF PAYMENTS

- A. The Schedule of Payments is list of the monthly applications for payment requests that the Contractor anticipates.
- B. It is understood that actual applications for payment may deviate from this schedule to reflect actual project conditions.
- C. Revised Schedule of Payment shall be required if deviations become substantial.

END OF SECTION

SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 FACILITIES

- A. Unless otherwise noted, Contractor shall provide all temporary electrical, lighting, heat, ventilation, telephone, water, sanitary, and first aid facilities required.
- B. The Contractor shall provide and maintain methods, equipment and temporary construction as necessary to provide controls over environmental conditions at the construction site and adjacent areas.
- C. The existing facilities may not be used unless agreement is obtained in writing from the Owner stating the conditions of use.

1.2 SECTION INCLUDES

- A. Temporary Utilities: Electricity, lighting, heat, ventilation, telephone service, water, and sanitary and first aid facilities.
- B. Temporary Controls: Barriers, enclosures and fencing, fire protection, protection of the Work, and water control.

1.3 TEMPORARY ELECTRICITY

- A. Temporary electrical service shall be installed and maintained by the Contractor until substantial completion of the project unless otherwise agreed by Owner.
- B. All cost for installation and operation, including the charge for power consumed, shall be the responsibility of the Contractor.
- C. Provide power outlets for construction operations, with branch wiring and distribution boxes. Provide flexible power cords as required.
- D. Provide adequate distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1.4 TEMPORARY LIGHTING

- A. Provide and maintain adequate lighting for construction operations.
- B. Provide and maintain adequate lighting to interior work areas.

1.5 TEMPORARY VENTILATION

- A. Provide and pay for ventilation devices and power to ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

1.6 TEMPORARY SANITARY AND FIRST AID FACILITIES

- A. Provide all required sanitary and first aid facilities for use throughout the construction period including but not limited to:
 - 1. Potable water and sanitary drinking cups;
 - 2. Sanitary drinking fountains where feasible;
 - 3. Enclosed toilet facilities;
 - 4. Suitable general employee washing facilities;
 - 5. First-aid stations at or immediately adjacent to all major work areas and in the temporary field offices;
 - 6. Post telephone numbers of physicians, hospitals and ambulance services by each telephone at the project site;
 - 7. At least one person thoroughly trained in first aid procedures shall be present on the site whenever work is in progress. These persons must have a certificate indicating that they have completed a first-aid training course conducted by the American Red Cross or other approved agency.
- B. Contractor shall be responsible for the cost of maintaining all required sanitary and first aid facilities.
- C. Provide facilities and fixtures in compliance with applicable federal, state and local laws and regulations.
- D. Maintain strict supervision of use of facilities.
- E. Maintain, service and clean facilities and keep them supplied continuously with soap, towels, paper and all other required supplies.
- F. Enforce proper use of sanitary facilities, including preventing the committing of nuisances in buildings or on the site.
- G. Dispose of all wastes in conformance with applicable regulations.

1.7 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas and to protect adjacent properties from damage due to construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.
- C. Provide protection for plant life designated to remain. Replace damaged plant life.
- D. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.8 PROTECTION OF INSTALLED WORK AND PROPERTY

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to minimize damage.
- A. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- A. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- B. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is

- necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- C. Prohibit traffic from landscaped areas.
 - D. Contractor shall assume full responsibility for the preservation of all public and private property or facility on or adjacent to the site. If any direct or indirect damage is done by or on account of any act, omission, neglect or misconduct in the execution of the work by the Contractor, it shall be restored by the Contractor, at his expense, to a condition equal to that existing before the damage was done.

1.9 SECURITY

- A. Contractor shall safely guard all work, materials, equipment and property from loss, theft, damage and vandalism. The Contractor's duty to safely guard property shall include the Owner's property and other private property from injury or loss in connection with the performance of the contract.
- B. Contractor may make no claim against the Owner for damage resulting from trespass.
- C. Party responsible for security shall make good all damage to property of Owner and others arising from failure to provide adequate security.
- D. If existing fencing or barriers are breached or removed for purposes of construction, the Contractor shall provide and maintain temporary security fencing equal to the existing in a manner satisfactory to the Owner.
- E. Security measures taken by the Contractor shall be at least equal to those usually provided by the Owner to protect his existing facilities during normal operation.
- F. Coordinate with Owner's security program.
- G. Maintain security program throughout construction until owner's acceptance and occupancy precludes need for Contractor's security program.

1.10 PARKING

- A. Provide all temporary construction roads, walks, and parking areas required during the construction and for use of emergency vehicles.
- B. Temporary roads and parking areas shall be designed and maintained by the Contractor so as to be fully usable in all weather
- C. When site space is not adequate, provide additional off-site parking.
- D. Prevent interference with traffic and the Owner's operations on existing roads.
- E. Contractor shall indemnify and save harmless the Owner from any expenses caused by Contractor's operations over these roads
- F. Roadways damaged by Contractor shall be restored to their original condition by the Contractor subject to approval of the Owner
- G. Temporary roads, walks and parking areas shall be removed by the Contractor prior to final acceptance and the ground returned to its original condition, unless otherwise required by the Contract Documents

1.11 ENVIRONMENTAL CONTROLS

- A. Noise Control

1. Contractor's vehicles and equipment shall be such as to minimize noise to the greatest degree practicable.
2. Noise shall conform to the latest OSHA standards.
3. In no case will noise levels be permitted which interfere with the work of the Owner or others.

B. Dust Control

1. Contractor shall be responsible for controlling objectionable dust caused by operation of vehicles and equipment.
2. Apply water and calcium chloride or use other methods subject to Engineer's review which will keep dust in the air to a minimum.

C. Pest and Rodent Control

1. Contractor shall provide rodent and pest control as necessary to prevent infestation of construction or storage area.
2. Employ methods and use materials which will not adversely affect conditions at the site or adjoining properties.

D. Water Control

1. Contractor shall provide methods to control surface water and water from excavations and structures to prevent damage to the Work, the Site or adjoining properties.
2. Control fill, grading and ditching to direct water away from excavations, pits, tunnels, existing facilities and other construction areas.
3. Direct drainage to proper runoff courses so as to prevent erosion, damage or nuisance.
4. Provide, operate and maintain equipment and facilities of adequate size to control surface water.
5. Dispose of drainage water in a manner to prevent flooding, erosion, or other damage to any portion of the site or to adjoining areas and in conformance with all environmental requirements.

E. Pollution Control

1. Contractor shall provide methods, means and facilities required to prevent contamination of soil, water or atmosphere by the discharge of noxious substances from construction operations.
2. Provide equipment and personnel and perform emergency measures required to contain any spillages and to remove contaminated soils or liquids.
3. Excavate and dispose of any contaminated earth off site and replace with suitable compacted fill and topsoil.
4. Take special measures to prevent harmful substances from entering public waters.

5. Prevent disposal of wastes, effluents, chemicals or other such substances adjacent to streams or in sanitary or storm sewers.
6. All sewage, oil and refuse generated during the course of the Work shall not be discharged into the adjacent waterways.
7. Provide systems for control of atmospheric pollutants.
8. Prevent toxic concentrations of chemicals.
9. Prevent harmful dispersal of pollutants into the atmosphere.
10. All contractors' equipment used during construction shall conform to all current federal, state and local laws and regulations.

F. Erosion Control

1. Contractor shall plan and execute construction and earthwork by methods to control surface drainage from cuts and fills and from borrow and waste disposal areas to prevent erosion.
2. Hold areas of bare soil exposed at one time to a minimum.
3. Construct fills and waste areas by selective placement to eliminate surface silts or clays which will erode.
4. Periodically inspect earthwork to detect any evidence of the start of erosion and apply corrective measures as required to control erosion.

END OF SECTION

SECTION 01600
MATERIAL AND EQUIPMENT

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

1.2 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. Does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer, for similar components.

1.3 TRANSPORTATION AND HANDLING

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight, climate controlled enclosures.
- B. For exterior storage of fabricated products, place on sloped supports, above ground.
- C. Provide off-site storage and protection when site does not permit on-site storage or protection.
- D. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to avoid condensation.
- E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- F. Arrange storage of products to permit access for inspection. Periodically inspect to assure products are undamaged and are maintained under specified conditions.

1.5 PRODUCT OPTIONS

- A. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named after bidding. No substitutions shall be considered prior to Bidding.

1.6 SUBSTITUTIONS

- A. Engineer will consider requests for substitutions only within 15 days after date of Owner-Contractor Agreement, established in Notice to Proceed.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
 - 2. Will provide the same warranty for the substitution as for the specified product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
 - 1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
 - 3. The Engineer will notify Contractor, in writing, of decision to accept or reject request.

END OF SECTION

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Warranties.

1.2 CLOSEOUT PROCEDURES

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

1.3 WARRANTIES

- A. Provide duplicate notarized copies.
- B. Submit prior to final Application for Payment.

END OF SECTION

SECTION 02110 SITE PREPARATION

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Protect existing streets and structures.
- B. Maintain streets, driveways, sidewalks, curbs, gutters, seeding, and sodding.
- C. Protect trees designated to remain (trunks, roots and branches).
- D. Restore topsoil in planted areas or agricultural land.
- E. Restore grass and other vegetation damaged during construction.
- F. Maintain the construction area during the progress of the work.
- G. Completely restore the construction area to its original condition at the completion of the work.

1.2 REGULATORY REQUIREMENTS

- A. Conform to applicable Local, State and Federal codes for disposal of debris, burning debris on site, use of herbicides, other disposal and erosion control.
- B. Coordinate clearing Work with utility companies.

PART 2 - PRODUCTS

Not used.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Verify that existing plant life designated to remain, is tagged or identified.

3.2 PROTECTION

- A. Locate, identify, and protect utilities that remain, from damage.
- B. Protect trees, plant growth, and features designated to remain, as final landscaping.
- C. Protect bench marks from damage or displacement.
- D. Any trees, plant growth, or features designated to remain and damaged by the contractor shall be repaired to the satisfaction of the Owner at the Contractor's expense.
- E. Survey monuments damaged by Contractor shall be restored at the Contractor's expense.

3.3 CLEARING

- A. Clear areas required for access to site and execution of Work.
- B. Remove paving, curbs, and other improvements as necessary.
- C. Clear undergrowth and deadwood, without disturbing subsoil.

3.4 REMOVAL

- A. Remove debris, rock, and extracted plant life from site.

3.5 PAVEMENT, CURBS, WALKS AND DRIVES

- A. Use suitable equipment, tools and methods to saw and trim pavement, curbs, walks or drives to a neat joint at the removal limit if limit does not occur at an existing joint.
- B. Restore to their original condition all pavement, curbs, walks and drives that were damaged, disturbed or occupied by the Contractor in connection with any phase of the Work.

END OF SECTION

SECTION 02150 BYPASS PUMPING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Contractor shall furnish, construct, maintain and operate bulkheads, plugs, hoses, piping, and pumps to bypass sewage flow while maintenance or construction operations are in progress. The flow shall be diverted by pumping around the construction location to a downstream manhole. Bypass pumping shall prevent backup or overflow onto streets, yards and unpaved areas or into buildings, adjacent ditches, storm sewers, and waterways, without diverting sewage outside of the sewer system.
- B. Related Work Specified Elsewhere:
 - 1. Section 02651, Television Inspection.
 - 2. Section 02760, Cleaning of Sewers.
 - 3. Section 02770, Pipe Lining.

1.2 QUALITY ASSURANCE

- A. The bypass system shall meet the requirements of all codes and regulatory agencies having jurisdiction. The Contractor shall be responsible for damage due to sewer backup or overflow onto streets, yards and unpaved areas or into buildings, adjacent ditches, storm sewers, and waterways.
- B. Some sewer flow data is available for Contractor's review upon request.

1.3 SUBMITTALS

- A. Submittals shall conform to the requirements herein.
- B. The Contractor shall submit, prior to installation, a detailed plan and description outlining all details and provisions of the temporary bypass pumping system. The plan shall be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials and all other incidental items necessary and/or required to insure proper operation of the bypass pumping system, including protection of the access and bypass pumping locations from damage due to the discharge flows, and compliance with the requirements and permit conditions specified in these Contract Documents. No bypass pumping shall begin until all provisions and requirements have been reviewed and approved.
- C. The bypass pumping plan shall include, but not be limited to, the following:
 - 1. Staging areas for pumps;
 - 2. Flow stoppage system, including pipe and channel plugging method and types of plugs;

3. Number, size, material, location and method of installation of pump suction piping;
4. Number, size, materials, method of installation and location of installation of discharge piping;
5. Number, size, materials, method of installation and location of installation of all valves;
6. Bypass pump sizes, capacity, number of each size to be on site and power requirements;
7. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range shall be submitted);
8. Size and location of standby power generator, if required;
9. Downstream discharge plan;
10. Any thrust and restraint block sizes and locations;
11. Any temporary pipe supports and anchoring required;
12. Calculations for selection of bypass pumping pipe size;
13. Schedule and for installation of and maintenance of bypass pumping lines;
14. Plan indicating location of bypass pumping line locations;
15. Method of noise reduction.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Design piping, joints, and accessories to withstand at least twice the maximum system pressure or 50 psi, whichever is greater.
- B. Pumps shall be self-priming type or submersible electric, in good working order, with a working pressure gauge. All power must be supplied by the Contractor. All pumps used must be constructed to allow dry running for extended periods of time to accommodate the cyclical nature of sewer flows.
- C. Contractor shall provide one stand-by pump equal to the capacity of the largest pump on site.

PART 3 - EXECUTION

3.1 FIELD QUALITY CONTROL AND MAINTENANCE

- A. Any time the bypass pumping system is operating, an experienced operator shall be on site to monitor the operation, adjust pump speed, valves, etc., make minor repairs to the system and report problems.
- B. During bypass pumping, do not allow sewage to be leaked, dumped, or spilled in or onto any area outside of the existing sewer system.
- C. In the event of accidental spill or overflow, immediately stop the discharge and take action to clean up, disinfect the spill and promptly notify the Owner.

- D. Prevent back-up of sewage in sewer laterals within the areas of pipe being rehabilitated.
- E. In the event of rain, the Contractor shall coordinate the operation of bypassing with the Owner.
- F. The Contractor shall design his bypass pumping operation to handle all flows when bypass pumping. The Contractor is responsible for timing lining operations for dry weather conditions. Wet weather flows may significantly exceed peak dry weather flows.
- G. Spare parts for each type of pump and piping shall be kept on site as required.
- H. The bypass pumping operation shall be demonstrated to the satisfaction of the Engineer and Owner prior to starting rehabilitation work.

3.2 INSTALLATION AND REMOVAL

- A. Contractor shall locate his bypass pipelines to minimize any disturbance to existing utilities and shall obtain approval of the pipeline locations from the Owner.
- B. During all bypass pumping operation, the Contractor shall protect existing structures and equipment from damage inflicted by any equipment. The Contractor shall be responsible for all physical damage to the existing structures and equipment caused by human or mechanical failure. The Contractor is responsible for replacing any part of the manhole damaged during the bypass operation.
- C. When working inside existing structures, the Contractor shall exercise caution and comply with OSHA requirements when working in the presence of gases, combustible or oxygen-deficient atmospheres, and confined spaces.
- D. The Contractor is responsible for excavation and dismantling the manhole to allow the proper area for the bypass operation. Upon completion of the work, the Contractor shall restore the manhole to its original condition, and backfill the excavation according to the requirements of the agency having jurisdiction.
- E. Bypass pumping and piping equipment shall be located on property and easements owned by the Owner. If additional property is required for operation and access to the Contractor's bypass pumping operation, the Contractor shall obtain written permission and agreements from the property owner and submit copies of the agreement to the Owner.
- F. The pipeline must be located off streets and sidewalks and on shoulders of the roads. When the bypass pipeline crosses streets and driveways, the Contractor must place the bypass pipelines in trenches and cover with temporary pavement. Upon completion of the bypass pumping operations, and after the receipt of written permission from the Owner, the Contractor shall remove all the piping, restore all property to pre-construction condition and restore all pavement.
- G. When bypass pumping operations are complete, piping shall be drained into the sewer prior to disassembly.
- H. Noise reduction shall be required if bypass pumping is located within 300 feet of an occupied structure. The method of noise reduction shall be approved by the Engineer. Noise reduction shall result in a sound level of no more than 70 dBA at a distance of 30 feet from the pumps.

END OF SECTION

SECTION 02651
TELEVISION INSPECTION

PART 1 – GENERAL

1.1 WORK INCLUDED

- A. Contractor shall provide all labor, materials, tools, equipment and incidentals as shown, specified, and required to perform Post- Installation television (TV) inspection of the influent sewer, as specified herein.

1.2 DEFINITIONS

- A. Survey TV Inspection: Video inspection of sewer lines to determine existing conditions of the pipe. Survey TV Inspection has already been performed by the Owner.
- B. Pre-Installation TV Inspection: Video inspection of sewer lines specified for rehabilitation to confirm cleaning and constructability of line rehabilitation.
- C. Post-Installation TV Inspection: Video inspection to determine that rehabilitation of an existing sewer or construction of new sanitary sewers has been completed according to Specifications.

1.3 SUBMITTALS

- A. Submit the TV equipment manufacturer's operating manual and guidelines to the Owner and Engineer for review. Strictly follow such instructions unless modified by the Owner or Engineer.
- B. Submit three (3) copies of CD-ROMs, DVDs and TV Inspection logs, in a bound report, to the Owner or Engineer for review.
 - 1. Provide CD-ROMs or DVDs of a quality sufficient for the Owner or Engineer to evaluate the condition of the sewer, locate the sewer service connections, and verify cleaning. If the Owner or Engineer determines that the quality is not sufficient, Contractor shall re-televiser the sewer segment and provide a new CD-ROM or DVD and report at no additional cost to the Owner. Camera distortions, inadequate lighting, dirty lens, or blurred/hazy picture will be cause for rejection of a tape and rejection of the associated line segment. Payment for televised inspection will not be made until Owner or Engineer approves the quality of the CD-ROM, DVD and reports.
 - 2. CD-ROM or DVD submitted become the property of the Owner.
 - 3. Contractor shall maintain a master copy of all CD-ROMs, DVDs and TV Inspection Reports submitted, until final acceptance of contract.
 - 4. The Post-Installation CD-ROMs or DVDs shall not be edited.

PART 2 – PRODUCTS

2.1 TELEVISION EQUIPMENT

- A. Closed Circuit TV Equipment: Select and use closed-circuit television equipment that will produce a color CD-ROM or DVD.
- B. Pipe Inspection Camera: Produce a CD-ROM or DVD using a pan-and-tilt, radial viewing, pipe inspection camera or a hand-held video camera that pans ± 275 degrees and rotates 360 degrees. Use an accurate footage counter to measure the exact distance of the camera from the centerline of the starting point. Use a camera with camera height adjustment so that the camera lens is always centered at one-half the inside diameter, or higher, in the pipe being televised. Provide a lighting system that allows the features and condition of the pipe to be clearly seen. A reflector in front of the camera may be required to enhance lighting in humidity conditions. The camera shall be operative in 100 percent humidity conditions. The camera, television monitor and other components of the video system shall be capable of producing a minimum 500-line resolution colored video picture. Picture quality and definition shall be to the satisfaction of the Engineer. If unsatisfactory, equipment shall be removed and no payment made for an unsatisfactory inspection.
- C. Television Inspection Logs: Prepare printed location records to clearly identify the location of each source of infiltration or defect discovered using a standard stationing system. Other data of significance includes:
 - 1. Estimation of extraneous flows observed from holes, joints, cracks, and from the annular space between rehabilitated sliplined pipe.
 - 2. Unusual conditions.
 - 3. Roots.
 - 4. Cracked or collapsed sections.
 - 5. Sags or low spots in the pipe.
 - 6. Presence of scale and corrosion.
 - 7. Structural deficiencies.
 - 8. Signs of previous leakage.
 - 9. Sewer line sections that the camera failed to pass through and reasons for the failure.
 - 10. Other discernible features.
- D. Data shall be recorded and a copy of the television inspection logs shall be supplied to the Owner or Engineer in the form of a bound report. A table listing acronyms and their meaning shall be included in the report. Contractor shall also supply the Owner a copy of the television inspection logs on an electronic file that is Microsoft Excel compatible.
- E. Photographs: Take instant developing 35 mm, or other standard size photographs off the TV monitor of problem areas as directed to document defects, and unusual, questionable, or severe conditions found during the course of the Work.
- F. Digital Video Disc: Provide digital video of the information in DVD format.

1. Two labels are required. One label shall be placed on the front of the CD-Rom or DVD and one place on the CD-ROM or DVD case. Permanently label each CD-ROM or DVD with the following information:
 - a. Spine of tape or CD-ROM or DVD case:
 - 1) File Number.
 - 2) Contractor's Name.
 - 3) Inspection Type: Pre or Post-Installation.
 - 4) Tape Number.
 - 5) Date Televised.
 - 6) Date Submitted.
 - b. Face of tape or front of CD-ROM or DVD:
 - 1) File Name/Description.
 - 2) Pipe Diameter.
 - 3) Pipe Length.

PART 3 – EXECUTION

3.1 TELEVISION

- A. Immediately after cleaning, televise the sewer line to document its condition and to locate existing points of infiltration or other defects. Notify the Owner and Engineer 24 hours in advance of any TV inspection so that the Owner and Engineer may observe inspection operations. If conditions are shown that preclude the proper liner installation, even with cleaning, the Contractor shall notify the Owner and Engineer immediately.
- B. Perform TV inspection of the sewer as follows:
 1. Perform Survey TV Inspection immediately after cleaning.
 - a. Move the camera through the line in either direction at a uniform rate, stopping when necessary to ensure proper documentation of the sewer's condition.
 - b. Use manual winches, power winches, TV cable and powered rewinds or other devices that do not obstruct the camera view or interfere with proper documentation of the sewer conditions to move the camera through the sewer line.
 - c. Quantify visible leakage of extraneous flow into the sewer or other sags or defects in the sewer and record on electronic log and audio/video recording. The video recording may be paused during observation. Record results of the flow observed on CD-ROM, DVD and inspection logs..

2. Perform Pre-Installation TV Inspection immediately after line cleaning and before line rehabilitation work. Pre-Installation TV Inspection is not required for sewer lines designated as remove and replace. Verify that the line is clean and ready to accept the line rehabilitation material. Maintain copies of CD-ROMs or DVDs and logs for reference by the Owner or Engineer for the duration of the Project.
3. Perform Post-Installation TV Inspection to confirm completion of rehabilitation work or proper installation of new sewers. Verify that the rehabilitation work or new sewer construction conforms to the requirements of the Specifications. Provide a color videotape showing the completed Work. Prepare and submit a log providing location of any discrepancies.
4. Camera shall pan beginning and ending manholes to demonstrate that all debris has been removed. Camera operator shall slowly pan clamped joints, and when pipe material transitions from one material to another. A log shall be completed for every segment that is submitted to the Owner.
5. Whenever non-remote powered and controlled winches are used to pull the television camera through the line, telephones, radios, or other suitable means of communication shall be set up between the operators positioned at the two manholes of the sewer lines being inspected to ensure that good communications exist between members of the crew.
6. The accuracy of the measurements for location of defects and service connections cannot be stressed too strongly. Marking on cable, or the like, which would require interpolation for depth of manhole, will not be allowed. Measurement meters shall be accurate to two-tenths of a foot over the entire length of the sewer line section being inspected. Prior to recording the location of defects and service connections, slack in the cable of the television inspection camera shall be taken up to assure metering device is designating proper footage. Accuracy of the measurement meters shall be checked daily by use of a walking meter, roll-a-tape, or other suitable device.

3.2 FLOW CONTROL

- A. There shall be no flow in the line while performing Pre-Installation TV Inspection.
- B. No flow will be allowed in the line while performing Post-Installation TV Inspection.

3.3 PASSAGE OF TV CAMERA

- A. Do not pull or propel the television camera through the line at a speed greater than 30 feet per minute for Pre- and Post-Rehabilitation TV Inspection.
- B. For Post-Installation TV Inspection, exercise the full capabilities of the camera equipment to document the completion of the rehabilitation work or proper installation of the new sewers. and the conformance of the Work to the Specifications. Provide a full 360-degree view of pipe and joints.

3.4 FIELD QUALITY CONTROL

- A. Contractor shall not allow, under any circumstances, sewage or solids removed in the cleaning process to be released onto streets or into ditches, catch basins, storm drains, or storm sewer manholes, or cleanouts.
- B. Acceptance of sewer cleaning work is contingent upon the successful completion of the TV inspection. If the TV inspection shows debris, solids, sand, grease, or grit remaining in the line, the cleaning will be considered unsatisfactory. Repeat cleaning, inspection, and televising of the sewer line until cleaning is satisfactory.

3.5 ACCEPTANCE OF WORK

- A. Rehabilitation or completion of new sewer installation work shall only be accepted if no defects are found in the line upon TV inspection as determined by the Owner.
- B. Contractor shall repair all defects to the piping in a manner acceptable to the Owner at no additional cost to the Owner.

END OF SECTION

SECTION 02760 CLEANING OF SEWERS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Contractor shall provide all labor, materials, tools, equipment and incidentals as shown, specified, and required to clean the pipelines.
- B. The cleaning work required includes, but is not limited to, the following:
 - a. field locating all manholes along the sewer reaches to be cleaned;
 - b. cleaning of existing sanitary sewers, as hereinafter specified, to permit proper television inspection, installation of liner, and other rehabilitation techniques;
 - c. disposal of waste and sediment as specified herein;
 - d. removal of roots as specified herein;
 - e. cleaning up as the Work progresses and after the completion of all Work activities; and
 - f. all other work required for the complete and satisfactory cleaning of the pipeline.
- C. Related Sections:
 - 1. Section 02150, Bypass Pumping.
 - 2. Section 02651, Television Inspection.
 - 3. Section 02770, Pipe Lining.

1.2 REQUIREMENTS

- A. The Contractor shall take precautions recommended by the manufacturer and all other precautions necessary in handling of root treatment chemicals. Chemical root treatment material to be used in strict compliance with all applicable federal, state and local requirements relative to type of material and usage thereof.
- B. Take precautions to protect sewer mains and manholes from damage that might be inflicted by the improper selection of the cleaning process or improper use of the equipment. When using hydraulically propelled devices, take precautions to ensure that the water pressure created does not cause damage or flooding to public or private property. Do not surcharge the sewer beyond the elevation that could cause overflow of sewage into area waterways, homes, or buildings, or onto the ground.
- C. While video of the sewers are available, the images are approximately two years old. The Contractor is responsible for determining current conditions for estimating amount of cleaning that may be required.

1.3 SUBMITTALS

- A. Submit the following to Engineer for review:
 - 1. Plan for disposal of debris and sediment removed from the sewer lines.
 - 2. Specifications for the sewer cleaning equipment to be used on the project.
 - 3. Specifications for the equipment to be used to remove sediment and debris at the downstream manhole of each reach to be cleaned.

PART 2 - PRODUCTS

2.1 CLEANING EQUIPMENT

- A. All sewers shall be cleaned with truck-mounted, high velocity, hydro-cleaning equipment. The Contractor shall remove all unsound materials, debris, and grease by cleansing the interior surface using a minimum of 2,000 psi water spray pressure wash.
- B. Provide equipment capable of removing all sand, dirt, rocks and other debris from the sewer reach to allow unobstructed remote television internal inspection of all internal surfaces, and other rehabilitation techniques.
- C. All cleaning equipment, including machines, devices, and tools required for the entire cleaning operation shall be owned or leased and operated by the Contractor. The Contractor shall certify that backup cleaning equipment is available and can be delivered to the Site within 24 hours.
- D. Any blockages of lateral building connections resulting from the cleaning or other items of Work shall be removed by cleaning of the building connection by the Contractor, at his own expense. Any damage caused by flood of lateral building connections shall be corrected by the Contractor, at his own expense.
- E. Contractor shall provide all equipment capable of mechanically removing roots. Devices shall include a root saw, spring blade root cutter chuck or approved equal.
- F. Hand-held pressure washers with a minimum of 1,000 psi of pressure may be used.

PART 3 - EXECUTION

3.1 CLEANING

- A. After determining the preliminary requirements and the feasibility of effective video inspection, the Contractor shall thoroughly clean all pipeline reaches in order to permit an unrestricted inspection by closed circuit television. Particular emphasis shall be afforded the removal of accumulated grease, roots, sand, rocks, sludge and other debris so that the video inspection will show clearly all portions of the pipe being inspected. Acceptance of pipeline cleaning shall be made upon the successful completion of the television inspection and shall be defined as removing sufficient material to ensure an effective rehabilitation of the pipeline, to the satisfaction of the Engineer. If television inspection shows the cleaning to be unsatisfactory, the

- Contractor shall reclean and reinspect the pipeline at no additional cost to the Owner.
- B. Contractor is responsible for obtaining necessary permits for obtaining water from the Village of Brewster. Contractor is responsible for following all rules and requirements of the Water Department. Backflow preventers shall be used to prevent contamination of the potable water system. The Contractor is responsible for any damage resulting from improper operation of hydrants. Do not use or obstruct a fire hydrant when there is a fire in the area. Remove water meters, fittings and piping from fire hydrants at the end of each working day.
 - C. Do not waste water from the public water supply because of improper connections or from hydrants left opened. If the Engineer or Owner determines that the Contractor is wasting water, the Owner may elect to charge the Contractor for water used on the project.
 - D. The Contractor shall remove all bricks, rocks, debris, sludge, dirt, sand, grease, roots and other materials from the sewers to be cleaned, and collect and remove the resulting debris from the downstream manholes of the sewer section being cleaned. Passing waste material between manholes will not be permitted. When necessary, temporarily install a dam trap or weir and in the downstream manhole in such manner that debris and solids shall be trapped and retained for subsequent removal.
 - E. Remove waste and debris cleaned from the sewers at the downstream manhole by pumps or other means. The discharge and drainage stream shall be returned to the sewer and discharged downstream for disposal. Under no circumstances shall sewage or solids be dumped onto the ground surface, street, or into ditches, catch basins or storm drains. All solids and semi-solids shall be placed in a covered watertight container so that no spillage or leakage will occur and covered to minimize odors, and shall be disposed of by the Contractor. The Contractor is responsible for all operations and costs associated with removal, transportation, tipping and disposal of debris collected during the cleaning operations.
 - F. Where access to manholes in easements and rights-of-way is required, the Contractor will obtain permission for access for his equipment.
 - G. The Contractor shall conform to the following requirements:
 - 1. Cleaning of upstream reaches of sewers shall be completed before the downstream reaches are cleaned;
 - 2. Hydro-cleaning equipment shall be inserted in the downstream manhole of the reach, and the cleaning work shall proceed upstream; and
 - 3. Winching equipment used shall not damage the existing pipelines.

END OF SECTION

SECTION 02770 PIPE LINING

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Contractor shall provide all materials, equipment, labor and supervision for the installation and testing of pipe lining. The pipe lining will be installed in pipes made of various materials.
- B. Related Sections:
 - 1. Section 02150, Bypass Pumping.
 - 2. Section 02651, Television Inspection.
 - 3. Section 02760, Cleaning of Sewers.
 - 4. Section 03602, Sliplining Grout - Structural

1.2 QUALITY ASSURANCE

- A. Reference Standards: Comply with applicable provisions and recommendations of the following:
 - 1. ASTM D2321, Practice for Underground Installation of Flexible Thermoplastic Pipe for Sewers and Other Gravity Flow Applications.
 - 2. ASTM 3035, Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on a Controlled Outside Diameter.
 - 3. ASTM D 3350, Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
 - 4. ASTM F 585, Practice for Insertion of Flexible Polyethylene Pipe into Existing Sewers.
 - 5. ASTM F 714, Specification for Polyethylene (PE) plastic pipe (SDR-PR) Based on Outside Diameter.
 - 6. ASTM F 1417, Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low Pressure Air
 - 7. PPI Handbook of Polyethylene Pipe.
 - 8. AASHTO Standard Specification for Highway Bridges.
 - 9. ASTM D543 - Test Method for Resistance of Plastics to Chemical Reagents.
 - 10. Standards of American Water Works Association, AWWA.
 - 11. Standards of American National Standards Institute, ANSI.
 - 12. ASTM D2990 - Long-term Flexural and Tensile Modulus of Elasticity.
 - 13. ASTM D1784 - Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPVC) Compounds
 - 14. ASTM D2152 - Test Method for Degree of Fusion of Extruded Poly(Vinyl Chloride) (PVC) Pipe and Molded Fittings by Acetone Immersion
 - 15. ASTM D2241 - Poly (Vinyl Chloride) (PVC) Plastic Pipe (SDR-PR)

- B. Contractor shall be licensed and/or certified by the manufacturer of the sliplining system and shall meet other experience requirements as listed. Only commercially proven products and installers with substantial track records will be approved. Products and installers seeking approval must document an ability to meet the following criteria to be deemed commercially proven:
1. For a product to be considered commercially proven, a minimum of 1,000,000 linear feet or 4,000 manhole-to-manhole line sections of successful wastewater collection system installations in the U.S. must be documented to the satisfaction of the Owner to assure commercial viability. Of that, 50,000 LF must be 26-inches and larger.
 2. For an Installer to be considered as commercially proven, the installer must satisfy all insurance, financial, and bonding requirements of the Owner, and must have had at least 5 (five) years active experience in the commercial installation of the product. Acceptable documentation of these minimum installations must be submitted to the Owner.
 3. Sewer rehabilitation products submitted for approval must provide third party test results supporting the long term performance and structural strength of the product and such data shall be satisfactory to the Owner. No product will be approved without independent third party testing verification.
 4. The Contractor's Superintendent who will perform the work under this Section must have at least 3 years of experience and have successfully installed at least 300,000 linear feet of the proposed product, of which at least 5,000 linear feet must be 36-inch or greater.
- C. The Contractor shall be capable of providing all crews and equipment as needed to complete the work when directed without undue delay.
- D. Though the process may be licensed, no change of material, design values, or procedures may be made during the course of the Work without the prior written approval of the Engineer.
- E. The Contractor shall use sliplining materials provided by a single manufacturer. The supplier shall be responsible for conforming to all test requirements specified herein as applicable. In addition, all liners to be installed under this Contract may be inspected at the plant for compliance with these specifications by an independent testing laboratory provided by the Owner, at its own expense. The Contractor shall require the manufacturer's cooperation in these inspections. The cost of plant inspection will be the responsibility of the Owner.
- F. At the time of manufacture, each lot of liner shall be inspected for defects and tested in accordance with applicable ASTM standards. At the time of delivery, the liner shall be homogeneous throughout, uniform in color, free of cracks, holes, foreign materials, blisters, or deleterious faults.
- G. Care shall be taken in shipping, handling and storage to avoid damaging the liner. Extra care shall be taken during cold weather construction. Any liner damaged in shipment shall be replaced as directed by the Engineer.
- H. While stored, the sliplining materials shall be adequately supported and protected. The sliplining materials shall be stored in a manner as recommended by the manufacturer and as approved by the Engineer.

- I. For testing purposes, a production lot shall consist of all liner having the same marking number. It shall include any and all items produced during any given work shift and must be so identified as opposed to previous or ensuing production.
- J. All sliplining work shall be fully guaranteed by the Contractor and manufacturer for a period of one year from the date of acceptance. During this period, all serious defects discovered by the Owner shall be removed and replaced in a satisfactory manner at no cost to the Owner. The Owner may conduct an independent television inspection, at its own expense, of the lining work at any time prior to the completion of the guarantee period.
- K. The Engineer may at any time direct the manufacturer and the Contractor to obtain compound samples and prepare test specimens in accordance with the applicable ASTM standards. The Contractor shall provide certified test results of the short-term properties, including wall thickness, flexural strength and flexural modulus of the cured lining material from a flat plate sample, conforming to Article 3.6.A of this Section. Samples shall be prepared and tested by an independent laboratory approved by the Engineer. The cured liner samples shall be tested for flexural strength and flexural modulus properties in accordance with ASTM F1216, ASTM D790, ASTM M638 and ASTM D2990. The samples shall meet or exceed the physical properties stated in this specification. Conformance certification shall be submitted to the Engineer for approval as part of the acceptance requirements.
- L. The newly installed liner shall be designed for a minimum 50-year service life under continuous loading conditions. Design of the liner shall be based on the condition of the existing pipe as classified by the Engineer. The liner design is the responsibility of the Contractor. The liner shall be designed by a registered professional engineer in the State of Ohio and shall have sufficient wall thickness to withstand the anticipated external pressures and loads which will be imposed after installation. The design of the liner shall include considerations for ring bending, deflection, combined loading, buckling, and ovality. Calculations which determine wall thickness requirements of the liner shall be submitted to the Engineer for information only, to assure that the requirements of the specifications have been complied with. Designs shall be based on the use of standard flexible pipe equations, as defined in ASTM and shall account for the effects of ovality. A safety factor of at least two shall be utilized. The short-term modulus of elasticity shall be reduced by 50 percent in the calculations. Where ovalities exceed 10 percent, alternate design methodologies shall be used and shall show design meets structural requirements.

1.3 DESCRIPTION

- A. The process shall consist of inserting a plastic pipe into an existing sewer, holding the pipe in place and grouting the annular space between the host pipe and the liner.
- B. The liner pipe shall be designed for and a structurally sound pipe with a uniformly smooth interior providing hydraulic flow equal to or greater than the existing sewer in original condition.

1.4 SUBMITTALS

- A. Submittals shall conform to the requirements of Section 01300, Submittals.

- B. Product Data: Provide data indicating pipe and pipe accessories.
- C. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

PART 2 - PRODUCTS

2.1 MATERIALS

A. High Density Polyethylene (HDPE) Pipe

- 1. Be manufactured of high-density polyethylene resin in accordance with ASTM D3350-06 with a cell classification of 345464C.
- 2. Have a material designation of PE 3408 by the Plastic Pipe Institute.
- 3. Meet stiffness range as shown in ASTM F714, Appendix X1, Table X1.1
- 4. Have physical properties in accordance with polyethylene material standard ASTM D3350-06 with cell classification 345464C as follows:
 - a. Density: 0.955 gms/cubic centimeters per ASTM D1505.
 - b. Flexural Modulus: Minimum 135,000 psi per ASTM D790.
 - c. Tensile Strength: Minimum 3,200 psi per ASTM D638.
 - d. PENT > 100 hours at 80 degrees C, 2.4 Mpa per ASTM F1473.
 - e. HDB@ 23 degrees C: 1,600 psi per ASTM D2837.
 - f. UV Stabilizer: Minimum 2% carbon black per ASTM D 1603.
- 5. Liner pipe for host pipe 24-inch ID and larger shall be DR 32.5
- 6. Liner pipe for host pipe 20-inch and smaller shall be DR 17
- 7. Liner pipe shall be smooth and non-porous with a Manning friction coefficient "n" of 0.009 or a Hazen Williams friction coefficient "C" of 150.

B. Fusible Polyvinyl Chloride (FPVC) Pipe

- 1. Fusible polyvinylchloride pipe shall conform to ASTM D3034 or ASTM F679.
- 2. Fusible polyvinylchloride pipe may instead conform to AWWA C900 or AWWA C905, and/or ASTM D2241 or ASTM D1785 for IPS standard dimensionality, if applicable. Testing shall be in accordance with AWWA standards for any of these pipe types.
- 3. Rework material shall be allowed per ASTM D3034, ASTM F679, AWWA C900 or AWWA C905 standards.
- 4. Fusible polyvinylchloride pipe shall be extruded with plain ends. The ends shall be square to the pipe and free of any bevel or chamfer. There shall be no bell or gasket of any kind incorporated into the pipe.
- 5. Fusible polyvinylchloride pipe shall be manufactured in a standard 20', 30' or 40' nominal length.
- 6. Fusible polyvinylchloride pipe shall be green in color for wastewater use.

7. Pipe generally shall be marked per AWWA C900 or AWWA C905, and shall include as a minimum:
 - a. Nominal pipe size
 - b. PVC
 - c. Dimension Ratio, Standard Dimension Ratio or Schedule (omit for ASTM D3034 or ASTM F679 pipe)
 - d. Extrusion production-record code
 - e. Trademark or trade name
 - f. Cell Classification 12454 and/or PVC material code 1120 may also be included.
8. Pipe shall be homogeneous throughout and be free of visible cracks, holes, foreign material, blisters, or other visible deleterious faults.
9. Liner pipe for host pipe 24-inch ID and larger shall be DR 32.5
10. Liner pipe for host pipe 20-inch and smaller shall be DR 17
11. Liner pipe shall be smooth and non-porous with a Manning friction coefficient “n” of 0.009 or a Hazen Williams friction coefficient “C” of 150.

2.2 **JOINTING**

A. Fusion Joints

1. Fusible joints shall be assembled in the field with butt-fused joints.
2. Contractor shall follow the pipe supplier’s guidelines for this procedure.
3. Pipe shall be handled in a safe and non-destructive manner before, during, and after the fusion process and in accordance with this specification and pipe supplier’s guidelines.
4. Pipe shall be fused by qualified fusion technicians, as documented by the pipe supplier.
5. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) affixed to the fusion machine.
6. Only appropriately sized and outfitted fusion machines that have been approved by the pipe supplier shall be used for the fusion process.
7. Fusion machines shall incorporate the following properties, including the following elements:
 - a. HEAT PLATE - Heat plates shall be in good condition with no deep gouges or scratches. Plates shall be clean and free of any debris or contamination. Heater controls shall function properly, cord and plug shall be in good condition. The appropriately sized heat plate shall be capable of maintaining a uniform and consistent heat profile and temperature for the size of pipe being fused, per the pipe supplier’s guidelines.
 - b. CARRIAGE – Carriage shall travel smoothly with no binding at less than 50 psi. Jaws shall be in good condition with proper inserts for the pipe size being fused. Insert pins shall be installed with no interference to

- carriage travel.
 - c. GENERAL MACHINE - Overview of machine body shall yield no obvious defects, missing parts, or potential safety issues during fusion.
 - d. DATA LOGGING DEVICE - The current version of the pipe supplier's recommended and compatible software shall be used. Datalogging device operations and maintenance manual shall be with the unit at all times. If fusing for extended periods of time, an independent 110V power source shall be available to extend battery life.
8. Other equipment specifically required for the fusion process shall include the following:
- a. Pipe rollers shall be used for support of pipe to either side of the machine.
 - b. A weather protection canopy that allows full machine motion of the heat plate, fusion assembly and carriage shall be provided for fusion in inclement and /or windy weather.
 - c. Fusion machine operations and maintenance manual shall be kept with the fusion machine at all times.
 - d. Facing blades specifically designed for cutting fusible polyvinylchloride pipe shall be used.
9. Joint Recording
- a. Each fusion joint shall be recorded and logged by an electronic monitoring device (data logger) connected to the fusion machine.
 - b. The fusion data logging and joint report shall be generated by software developed specifically for the butt-fusion of thermoplastic pipe.
 - c. The software shall register and/or record the parameters required by the pipe supplier and these specifications.
 - d. Data not logged by the data logger shall be logged manually and be included in the Fusion Technician's joint report.

B. Buttress Lock Joints

- 1. "Buttress-Loc" pipe allows short lengths of pipe to be assemble inside a manhole effectively converting short lengths of plastic pipe into continuous pipelines.
- 2. Each length is screwed together with a chain wrench that when fully tightened, automatically self seals.
- 3. Completed joint shall exhibit very high pull out strength without changing the OD or the ID of the liner pipe.
- 4. Liner pipe shall be advanced into the host pipe as the joints are completed.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Review survey television inspection tapes of the sewer line to plan rehabilitation work. Contractor shall be responsible for determining the location of all active sanitary services prior to lining.
- B. The work of pipeline cleaning shall conform to the requirements of Section 02760, Cleaning of Sewers.
- C. Contractor shall provide for continuous sewage flow around the section of sewer that is to be lined in accordance with Section 02150, Bypass Pumping.
- D. Inspect and confirm the inside diameter, alignment and condition of the pipeline. Contractor shall confirm the data and information collected from this inspection to verify the size of the liner and refine the installation techniques. If unknown physical conditions in the work area are uncovered during the investigation that materially differ from those ordinarily encountered, the Contractor shall notify the Engineer.
- E. Inform the Engineer of work schedules for sliplining installation.
- F. Conduct operations in accordance with applicable OSHA standards, including those safety requirements involving work on an elevated platform and entry into a confined space. Make suitable precautions to eliminate hazards to personnel near construction activities when pressurized air is being used.

3.2 PRE-INSTALLATION CLEANING AND TV INSPECTION

- A. Contractor shall clean the pipeline in accordance with Section 02760, Cleaning of Sewers, prior to lining the existing pipe.
- B. Contractor shall conduct TV Inspection, prior to lining in accordance with Section 02651, Television Inspection.

3.3 OBSTRUCTION REMOVAL, POINT REPAIR AND SAG ELIMINATION

- A. Necessary point repairs to facilitate lining shall be the responsibility of the Owner. Contractor shall notify the Owner immediately after the pre-installation cleaning and TV inspection where point repairs are necessary to facilitate installation of the liner.
- B. Notify the Engineer if the pre-installation video inspection reveals an obstruction in the line segment (such as heavy solids, dropped joints, protruding service connections or collapsed pipe) that cannot be removed by conventional sewer cleaning equipment and if the obstruction will prevent completion of the inversion.

3.4 BYPASS PUMPING

- A. Bypass pumping systems shall be in accordance with Section 02150, Bypass Pumping.

3.5 INSTALLATION PROCEDURES

- A. General
 - 1. Liner shall be installed by pulling or pushing.
 - 2. Precautions shall be taken to protect the liner from scratches or gouges.

3. Liner shall be protected from rough edges of the host pipe.
4. Liner shall be equipped with suitable spacers to allow installation and ensure proper placement of the liner pipe in the host pipe.
5. Liner shall be allowed to relax and come to thermal equilibrium before sealing the annular space between the liner and the host pipe.
6. Liner shall extend into manhole.

B. Excavation And Access Pits

1. Access pit length shall be determined by the material and jointing method selected by the Contractor.
2. The minimum bending radius for the pipe as recommended by the supplier shall be maintained.
3. Sheet piling, shoring and bracing requirements shall be in accordance with these specifications and applicable jurisdictional standards.
4. Confined space requirements shall be in accordance with OSHA regulations.
5. Access pit excavations shall be performed at all points where the slipline pipe will be inserted into the existing pipeline.
6. When possible, access pit excavations shall coincide with host pipe lateral connection points or other appurtenance installations.

C. Pulling Equipment

1. The pulling mechanism shall be properly connected to the end of the pipe via a pulling head or arrangement approved by the pipe supplier.
2. The maximum pulling tension on the pipe shall not exceed the pipe supplier's safe pulling force as submitted for this project.

D. Pushing Equipment

1. An end protector plate shall be attached for hydraulically pushing or winching completed sections further into the sewer from manhole to manhole.
2. Routine shall be carried out until the entire pipe insertion is finished.

E. Pipe Care

1. The pipe shall be handled with care to minimize the possibility of it being cut, kinked, gouged, or otherwise damaged. The use of cables or hooks will not be permitted.
2. Sections of the pipe damaged, cut, or gouged shall be repaired by cutting out the section of damaged pipe and rejoining.

3.6 FIELD QUALITY CONTROL

- A.** Field acceptance of the liner shall be based on the Engineer's evaluation of the installation including TV video and a review of certified test data for the installed pipe samples.

1. Groundwater infiltration of the liner shall be zero.
 2. There shall be no evidence of splits, cracks, breaks, lifts, kinks, delaminations or crazing in the liner.
 3. If any defective liner is discovered after it has been installed, it shall be removed and replaced with either a sound liner or a new pipe at no additional cost to the Owner.
- B. Repair failed lining or lining deemed unacceptable as a result of post-installation television inspection or test reports for structural values, thickness, or other defects. Obtain approval of the Engineer for method of repair, which may require field or workshop demonstration.

3.7 SEALING AT MANHOLES

- A. Form a tight seal between the sliplining and the manhole wall at the pipe penetration.
- B. Liner pipe shall be allowed to relax and come to thermal equilibrium for 24 hours prior to sealing.
- C. Do not leave any annular gaps.
- D. Seal the annular space to permanently block the flow of water into the manhole between the liner and the host pipe.
- E. Finish off the seal with an approved non-shrink grout or cementitious liner material placed around the pipe opening from inside the manhole in a band at least 4-inches wide.

3.8 POST-TELEVISION OF COMPLETED WORK

- A. Provide a video tape showing completed work in accordance with Section 02651, Television Inspection.
- B. All defects discovered during the television inspection shall be corrected by the Contractor before the Work under the Contract will be considered for substantial completion. After the defects are corrected, the sewer shall be video taped again.
- C. The post-rehabilitation television inspection tape shall be submitted to the Engineer in sufficient time to allow the Engineer to review the video tape prior to substantial completion.

3.9 FINAL CLEANUP

- A. Upon completion of rehabilitation work and testing, Contractor shall clean and restore the entire project area affected by the Work.
- B. All excess material and debris not incorporated into the permanent installation shall be disposed of in accordance with local regulations.
- C. Sidewalks, driveways and street surfaces shall be cleaned and returned to a condition similar to that before the work started.

END OF SECTION

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SECTION 03602
SLIPLINING GROUT - STRUCTURAL

PART 1 – GENERAL

1.1 DESCRIPTION

Contractor shall provide all materials, labor and equipment necessary to completely fill the annular space between the slipliner pipe and the host pipe with high-strength (> 3000 psi) cementitious grout.

1.2 QUALITY ASSURANCE

- A. ASTM C138 Test Method for Unit Weight, Yield and Air Content (Gravimetric) of Concrete
- B. ASTM C939 Standard Test Method for Flow of Grout for Preplaced-Aggregate Concrete (Flow Cone Method)
- C. ASTM C942 Standard Test Method for Compressive Strength of Grout for Preplaced-Aggregate Concrete in the Laboratory
- D. ASTM C1090 Standard Test Method for Measuring Changes in Height of Cylindrical Specimens from Hydraulic-Cement Grout

1.3 DESCRIPTION

- A. Contractor shall seal the annular space between the liner and host pipes with cementitious structural grout as shown and specified.

1.4 SUBMITTALS

- A. Submittals shall conform to the requirements of Section 01300, Submittals.
- B. CONTRACTOR shall provide six (6) bound copies of the following information to the ENGINEER for review and approval prior to construction:
 - 1. Qualifications and experience of grout mix applicator and Project Superintendent and support personnel.
 - 2. Grout mix design and trial mix tests, with set time, compressive strength, viscosity, and density test results.
 - 3. Initial set time of the grout.
 - 4. The 24 hour and 28 day minimum grout compressive strengths.
 - 5. The grout working time before a 15% change in density or viscosity occurs.
 - 6. The proposed grouting methods and procedures.
 - 7. Method for waste grout recovery.
 - 8. Estimated grout volume for each pipe.
 - 9. The maximum injection pressures proposed as well as maximum allowable grout injection pressures as provided by the pipe manufacturer (as applicable).
 - 10. Proposed grout stage volumes (if grouting is to be performed in stages)

11. Bulkhead designs and locations including vent and injection port location and proposed materials to be used in bulkhead construction. In addition the lengths of each port shall be shown.
12. Method of flow control during grouting
13. Detailed plans depicting the method of blocking the liner pipe down to the invert for a period of time long enough to allow the grout to set when buoyant uplift is a factor.
14. Written confirmation that the CONTRACTOR has coordinated grouting procedures with the grout installer and the liner pipe manufacturer.
15. For each different type of grout or variations in procedure of installation, a complete package shall be submitted. The submittal shall include each of the above items and the locations of conditions to which it applies.

PART 2 - PRODUCTS

- A. Provide cementitious grout consisting of a mixture of cement, water, fly ash or lime and admixtures specifically designed to meet the requirements of this Section.
- B. Use only potable water obtained from a municipal water distribution system and transported, when required, in a clean, dedicated container designed specifically for such.
- C. Admixtures shall be selected by the slip-lining grout manufacturer to meet performance requirements, improve pumpability, control set time and reduce segregation. Admixtures shall not be biodegradable.
- D. The grout shall have a minimum compressive strength of 3000 psi in 28 days when tested in accordance with ASTM C942.
- E. The grouting system shall have sufficient gauges, monitoring devices, and tests to determine the effectiveness of the grouting operation and to ensure compliance with the liner pipe specifications and design parameters.
- F. CONTRACTOR shall develop one or more mix designs to completely fill the annular space based upon, but not restricted to, the following requirements:
 1. Size of annular void
 2. Void (size) of the surrounding soil
 3. Absence or presence of water
 4. Sufficient strength and durability achieve the design requirements presented in the sliplining Specification.
 5. Provide adequate retardation for placement
 6. Provide less than 1 percent shrinkage by volume
 7. Heat of hydration compatible with pipe material in accordance with pipe manufacturer's recommendations
- G. Mixing
 1. The materials shall be mixed in equipment of sufficient size and capacity to

provide the desired amount of grout material for each stage of the grouting operation.

2. System shall mix the grout to a homogeneous consistency and deliver grout to the injection point under a normal range of operating conditions.
3. Equipment shall be capable of mixing the grout at densities required for the approved procedures and shall also be capable of changing mixing parameters as dictated by field conditions at any time during the grouting operation.

H. Pressure Gauges

1. Pressure gauges shall be suitable for use in the grouting environment and have a working range between 1.5 to 2.0 times the design grout pressures, and have accuracy within 0.5% of full range.
2. Provide, at a minimum, one pressure gauge at the point of injection and one pressure gauge at the grout pump.

PART 3 - EXECUTION

3.1 GROUT INJECTION

- A. Notify the ENGINEER at least 24 hours in advance of grouting operations.
- B. Once the slipliner pipe has been installed, construct bulkheads at each end in sequence from upstream to downstream. Following construction of the bulkheads, the CONTRACTOR shall fill the annular space between the slipliner pipe and the host pipe along its entire length with cementitious grout by injecting grout from one end of the pipe segment, allowing it to flow toward the other end.
- C. Equip slipliner pipes with temporary weirs as necessary to fill the pipes with water to prevent flotation during grouting operations.
- D. Remove or control standing or running water in annular spaces to maintain the correct water ratio of the grout mixture.
- E. Limit pressure on the annular space to prevent damage to the liner. The gauged grout pressure at the pipe shall not exceed that of the pipe manufacturer's recommendation or 5 psi, whichever is smaller. Regardless of the pressure, the CONTRACTOR shall be solely responsible for any damage or distortion to slipliner pipe due to grouting.
- F. The drilling of additional injection holes from the surface or through the liner pipe to facilitate grouting is prohibited.
- G. Injection of grout shall continue until all of the following conditions have been achieved unless otherwise approved by the ENGINEER:
 1. The estimated volume of grout has been injected
 2. The exhausted grout recovered at each vent is not less than 85% of the density of the freshly injected grout
 3. The exhausted grout at each vent is not less than 85% of the original viscosity of the freshly injected grout, and

4. The grout installer, and/or Field Engineer recommends ceasing grouting operations
- H. No hardened grout is permitted in the liner pipe invert after completion of grouting operations.

3.2 **TESTING**

- A. Provide all personnel and equipment necessary to measure density in accordance with ASTM C138 or by another method as approved by the ENGINEER not less than two times per hour in the field during grouting operations.
- B. Provide all personnel and equipment necessary to measure viscosity in accordance with ASTM C939 not less than two times per hour in the field during grouting placement. The apparent viscosity shall not exceed 35 seconds unless otherwise approved by the ENGINEER.
- C. Compressive Strength
 1. Collect, transport, cure, test and report samples in accordance with ASTM C942.
 2. Contrary to ASTM C942, collect and test specimens based on the more restrictive of the following criteria:
 - a. One (1) specimen (consisting of one, 3-gang mold) for each grouting event for each pipe collected at approximately the mid-point of the grouting operation.
 - b. One (1) specimen (consisting of one, 3-gang mold) for each 500 cubic feet of grout placed for each pipe.
 3. Test all specimens for compressive strength at 28 days. Additional specimens and tests may be performed at the CONTRACTOR'S discretion.
 4. CONTRACTOR shall engage the services of an independent, ASTM/AASHTO accredited testing laboratory to collect and test specimens associated with the strength requirements of this Section.

END OF SECTION