CONTRACT DOCUMENTS AND SPECIFICATIONS

FOR

2024 TRENCHLESS SANITARY SEWER REHABILITATION

RFB 2024-005

MAY 2024

110 South Main Street
Springville, UT 84663
Tel: (801) 491-2780
Fax: (801) 489-2709

2024 TRENCHLESS SANITARY SEWER REHABILITATION

CONTRACT DOCUMENTS AND SPECIFICATIONS

RFB 2024-005

OWNER:

SPRINGVILLE CITY CORPORATION
110 South Main Street
Springville, UT 84663
801-491-2780

TABLE OF CONTENTS

SECTION

Inside Cover
Table of Contents

PART 1 - BID DOCUMENTS

00030 Invitation to Bid
00100 Instructions to Bidders
00110 Information for Bidders
00300 Bid Form
00310 Bid Schedule
00410 Bid Bond
00411 Bid Security
00420 Contractor's Qualifications and Experience
00430 List of Subcontractors

PART 2 - CONTRACT FORMS

00500 Agreement
00510 Notice of Award
00520 Notice to Proceed
00530 Change Order
00610 Construction Performance Bond
00620 Construction Payment Bond

Exhibit A - Signed Notice of Award
Exhibit B - Signed Notice to Proceed
Exhibit C - Contractor's Bid
Exhibit D - Insurance Forms

PART 3 - CONTRACT CONDITIONS

00700 Standard General Conditions of the Construction Contract (EJCDC)
00800 Supplementary Conditions

PART 4 - TECHNICAL SPECIFICATIONS

All work shall be governed by the Springville City *Standard and Specifications and Drawings* Manual (latest edition) which may be found online at www.springville.org with the following modifications and additions:

DIVISION 1 - GENERAL REQUIREMENTS ADDITIONS

01010 Summary of Work
01025 Measurement and Payment
01040 Coordination
01050 Field Engineering
01070 Abbreviations

01090 Reference Standards
01210 Project Meetings
01300 Contractor Submittals
01410 Testing Agency Services
01440 Quality Control and Materials Testing
01452 Pavement Smoothness
01500 Temporary Construction Utilities and Environmental Controls
01505 Mobilization
01530 Protection of Existing Facilities
01550 Job Conditions
01570 Traffic Control
01700 Project Closeout

American Public Works Association (APWA) Manual of Standard Specifications (2017 Edition) Sections listed below are provided to supplement Springville City standard specifications:

013113 Coordination
013119 Preconstruction Conference
013510 Acceptance
014219 References
016500 Product Delivery and Handling
016600 Product Storage and Protection
017113 Mobilization and Demobilization
017123 Construction Layout
017413 Progress Cleaning
017839 Project Record Documents
02316 Dewatering
024113 Selective Site Demolition
311100 Site Clearing
312500 Erosion and Sediment Control
321123 Untreated Base Course
321213 Tack Coat

The following job specific specification listed below is provided to supplement Springville City standard specifications:

32 12 06 T Patch Temporary Pavement
33 05 23.40 Cured-In-Place Pipe
33 05 23.50 Sewer Main and Lateral Sealing by Chemical Grout
33 05 23.60 Sewer Line Cleaning and Television Inspection

PART 5 - CONSTRUCTION DRAWINGS

- END OF TABLE OF CONTENTS-

Part 1

BID DOCUMENTS

DOCUMENT 00030

INVITATION TO BID

Notice is hereby given that SPRINGVILLE CITY INCORPORATED (OWNER) will accept bids for the construction of the **2024 TRENCHLESS SANITARY SEWER REHABILITATION** project according to the Drawings and Specifications and in accordance with the Springville City Standard Specifications and Drawings Manual, and described in general as:

> **Provide rehabilitation of approximately 717 linear feet of 8-inch and 2,028 linear feet of 10-inch sanitary sewer main utilizing the Cured-in-Place (CIPP) method in Springville, Utah. The work generally includes sanitary sewer pipe rehabilitation using CIPP, including cleaning, CCTV inspection, cutting off any protruding taps and/or roots, reinstating approx. 56 laterals utilizing "top hat" inserts, and related items of work.**

Bids will be accepted by the OWNER on-line through **https://tinyurl.com/springvillebids** until **3:00 PM** (local time) on **Tuesday, February 27, 2024.** The OWNER will then make the decision of award and contact the individual bidders with the decision on or after **Thursday, February 29, 2024.**

CONTRACT DOCUMENTS to be executed by the winning CONTRACTOR may be obtained on or after the date of the bid award at the Springville City Offices, upstairs in the Community Development Office. These CONTRACT DOCUMENTS will include an agreement to be signed by both the CONTRACTOR and the OWNER prior to any work commencing. A PAYMENT BOND and PERFORMANCE BOND will be required by the winning CONTRACTOR and all necessary forms are also included in the CONTRACT DOCUMENTS.

All communication relative to the Project and any questions which BIDDERs may have concerning the project shall be submitted online using the "Questions and Answers" section for this project using the following link: **https://tinyurl.com/springvillebids**. **(From the link, search for Springville City 2024 Trenchless Sanitary Sewer Rehabilitation** project**)**

The OWNER reserves the right to reject any or all bids; or to accept or reject the whole or any part of any bid; or to waive any informality or technicality in any bid in the best interest of the City. Only bids giving a firm quotation properly submitted and signed will be accepted.

- END OF DOCUMENT -

DOCUMENT 00100

INSTRUCTIONS TO BIDDERS

1.01 DEFINED TERMS

A. 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:

i. *Bidder* - The individual or entity who submits a Bid directly to OWNER.

ii. *Issuing Office* - The office from which the Bidding Documents are to be issued and where the bidding procedures are to be administered.

iii. *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.

1.02 COPIES OF BIDDING DOCUMENTS

A. Complete sets of the Bidding Documents may be obtained online from **https://tinyurl.com/springvillebids** (From the link above, search for **2024 Trenchless Sanitary Sewer Rehabilitation** project)

B. 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.

C. OWNER 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.

1.03 QUALIFICATIONS OF BIDDERS

A. To demonstrate Bidder's qualifications to perform the Work, within five days of OWNER's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

1. Valid license to perform this type of work in Utah
2. Has completed 3 CIPP sewer lining projects in the last 5 years.
3. Evidence of insurability

1.04 EXAMINATION OF BIDDING DOCUMENTS, OTHER RELATED DATA, AND SITE CONDITIONS

A. Subsurface and Physical Conditions

1. No formal subsurface or soil investigation has been made at the site

B. Underground Facilities

1. 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.

C. Hazardous Environmental Condition

1. No hazardous environmental conditions have been identified at the site.

D. 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.

E. 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.

F. Reference is made to Article 7 of the Supplementary Conditions 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.

G. It is the responsibility of each Bidder before submitting a Bid to:

1. examine and carefully study the Bidding Documents, including any Addenda, the Springville Standard Specifications and Drawings manual (latest edition), APWA Standard Specifications and Drawings manual (latest edition) and the other related data identified in the Bidding Documents;

2. 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;

3. 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; all bids must be in accordance with the specifications and requirements provided in the Bidding Documents and the Springville Standard Specifications and Drawings manual (latest edition).

4. carefully study all reports or 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 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;

5. obtain and carefully study (or assume responsibility for doing 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 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;

6. 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;

7. 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;

8. 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;

9. promptly give OWNER and 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

10. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

H. The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 1.04, 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.

1.05 PRE-BID CONFERENCE

A. A pre-bid conference will not be held for this project**.**

1.06 SITE AND OTHER AREAS

A. The Site is identified in the Bidding 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 the OWNER unless otherwise provided in the Bidding Documents.

1.07 INTERPRETATIONS AND ADDENDA

A. All communication relative to the Project and any questions which BIDDERs may have concerning the project shall be directed to the OWNER during the pre-bid meeting. Additional questions not answered during the pre-bid meeting, but prior to the submitting of bids, shall be asked in writing using the Question and Answer service through Sciquest for this project (**https://tinyurl.com/springvillebids** (From the link above, search for **2024 Trenchless Sanitary Sewer Rehabilitation** project)).

B. All questions about the meaning or intent of the Bidding Documents are to be submitted to OWNER in writing through Sciquest. Interpretations or clarifications considered necessary by OWNER in response to such questions will be issued by Addenda delivered via Sciquest to all parties recorded by OWNER as having received the Bidding Documents. Questions received less than five 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.

C. Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by OWNER or ENGINEER.

1.08 BID SECURITY

A. A Bid must be accompanied by Bid security made payable to the OWNER in an amount of five percent (5%) of Bidder's maximum Bid price and in the form of a certified or bank check or a Bid Bond (on the form attached) issued by a surety meeting the requirements of paragraphs 5.01 and 5.02 of the General Conditions.

B. 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 ten (10) 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 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be returned.

C. Bid security of other Bidders whom OWNER believes do not have a reasonable chance of receiving the award will be returned within seven (7) days after the Bid opening.

1.09 CONTRACT TIMES

A. The number of days within which, or the dates by which, the Work is to be (a) Substantially Completed and (b) also completed and ready for final payment are set forth in the Agreement.

1.10 LIQUIDATED DAMAGES

A. Provisions for liquidated damages, if any, are set forth in the Agreement.

1.11 SUBSTITUTE AND OR-EQUAL ITEMS

A. The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. 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.

1.12 SUBCONTRACTORS, SUPPLIERS, AND OTHERS

A. If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to OWNER in advance of a specified date prior to the Effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to OWNER a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by OWNER. If OWNER or ENGINEER, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, OWNER may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

B. If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Declining to make requested substitutions will not constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

C. Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

1.13 PREPARATION OF BID

A. The Bid form is included with the Bidding Documents. Additional copies may be obtained from OWNER or ENGINEER.

B. All blanks on the Bid form shall be completed by printing in ink or by typewriter and the Bid signed in ink (when paper forms are being accepted). A Bid price shall be indicated for each [section, Bid item, alternative, adjustment unit price item, and unit price item] listed therein, or the words "No Bid", "No Change", or "Not Applicable" entered, as appropriate.

C. 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.

D. 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.

E. 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.

F. A Bid by an individual shall show the Bidder's name and official address.

G. 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.

H. All names shall be typed or printed in ink below the signatures.

I. The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid form.

J. The address and telephone number for communications regarding the Bid shall be shown. A fax number and e-mail address, if available, shall also be shown.

K. The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located or covenant to obtain such qualification prior to award of the Contract. Bidder's state contractor license number for the state of the Project, if any, shall also be shown on the Bid Form.

1.14 BASIS OF BID; EVALUATION OF BIDS

A. Unit Price

1. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid Schedule.

2. The total of all estimated prices will be determined as the sum of the products of the estimated quantity of each item and the unit price Bid for the item. The quantities shown in the bid schedule are shown for bid purposes only. Final quantities will be different and very depending upon the work directives. The final quantities and Contract Price will be determined in accordance with paragraph 11.03 of the General Conditions.

3. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum. Discrepancies between words and figures will be resolved in favor of the words.

B. 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.

C. Bid prices will be compared after adjusting for differences in the time designated by Bidders for Substantial Completion. The adjusting amount will be determined at the rate set forth in the Contract Documents for liquidated damages for failing to achieve Substantial Completion for each day before or after the desired date appearing in Article 9.

1.15 SUBMITTAL OF BID

A. Each prospective Bidder may obtain copies of the Bidding Documents including the Bid Form, and, if required, the Bid Bond. A copy of the Bid form is to be completed and submitted with the following data:

1. A tabulation of the Bid consisting of Document 00310 - Bid Schedule(s) completely and correctly filled in

2. Document 00410 -Bid Bond;

3. Document 00420 – Contractor's Qualifications;

4. **Note: In order to be considered, Contractor must have successfully completed three similar projects in size and scope within the last <u>five</u> years and give references of such.**

5. Document 00430 - List of Subcontractors; and

6. Additional supplemental information demonstrating the BIDDER's ability to complete projects within scheduled times and ability to perform the specific work.

B. A Bid shall be submitted no later than the date and time prescribed and submitted electronically via Sciquest **https://tinyurl.com/springvillebids** (From the link above, search **2024 Trenchless Sanitary Sewer Rehabilitation** project)). No non-electronic (i.e. paper) bids will not be accepted, nor will bids be accepted in any other way other than via Sciquest. <u>Bidders are encouraged to print the necessary documents for a complete bid, fill out the information needed (including all required signatures, seals, etc.), then scan and upload the documents to Sciquest in Adobe PDF format.</u>

C. While line items, including unit prices, quantities, and amounts, may be entered in and/or tabulated using Sciquest in order to aid Bidder with sums (when bid is set up on Sciquest to allow for this functionality), this shall not remove the responsibility from the Bidder of submitting a completed tabulation of the Bid consisting of Document 00310 - Bid Schedule completely and correctly filled in. A bid not submitting a Document 00310 - Bid Schedule, will be considered incomplete and non-responsive. Discrepancies between the information tabulated by Sciquest line items and Document 00310 - Bid Schedule will be in favor of the Bid Schedule.

1.16 MODIFICATION AND WITHDRAWAL OF BID

A. 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.

B. 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 rebid, that bidder will be disqualified from further bidding on the Work.

1.17 OPENING OF BIDS

A. Bids will be opened at the time and place indicated in the advertisement or Invitation to Bid via Sciquest.

1.18 BIDS TO REMAIN SUBJECT TO ACCEPTANCE

A. All Bids will remain subject to acceptance for the period of time stated in the Bid form, but OWNER may, in its sole discretion, release any Bid prior to the end of this period.

1.19 AWARD OF CONTRACT

A. 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-responsible. 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 also 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.

B. 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.

C. 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.

D. 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.

E. 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.

F. If the Contract is to be awarded, OWNER will award the Contract to the Bidder whose Bid is in the best interests of the Project

1.20 CONTRACT SECURITY AND INSURANCE

A. 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.

1.21 SIGNING OF AGREEMENT

A. 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 seven (7) days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to OWNER. Within seven (7) days thereafter, OWNER shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

1.22 LICENSING REQUIREMENTS

A. All bidders must meet the requirements of the Utah State Contractors License Law, Title 58, Chapter.

1.23 RETAINAGE

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

- END OF DOCUMENT -

DOCUMENT 00110

INFORMATION FOR BIDDERS

1.01 GENERAL

A. The Contractor shall construct the work specified herein in accordance with the requirements of the Contract Documents, the *Springville City Standard Specifications and Drawings* manual (latest edition), and the referenced portions of those referenced codes, standards, and specifications listed herein; except, for the following:

a. Wherever references to "Standard Specifications" are made, the provisions therein for measurement and payment shall not apply.

b. Where there are differences between the Project specifications and drawings and *Springville City Standard Specifications and Drawings*, the more stringent shall govern.

c. Anything not specified in the *Springville City Standard Specifications and Drawings* shall be governed by the most current revision of the Utah APWA specifications. If conflicts arise, the Developer/Contractor shall notify the City Engineer or his representative for final direction.

1.02 TENTATIVE PROJECT SCHEDULE

The following is a preliminary project schedule and is subject to change:

Public Announcement (State and City Website)	Friday, February 9, 2024
Bid Documents Available on Sciquest (**https://tinyurl.com/springvillebids** (search for **2024 Trenchless Sanitary Sewer Rehabilitation** project)	on or after Monday February 12, 2024
Pre-bid Conference / Site Visit	No Pre-Bid for this project
Bids Due on Sciquest (**https://tinyurl.com/springvillebids**)	3:00 PM, Tuesday, February 27, 2024
Notice of Award	Tuesday, March 5, 2024
Pre-Construction Meeting	TBD
Notice to Proceed / Commence Construction	Friday, March 15, 2024
Construction Substantial Completion	Project will have 46 days to Substantial Completion from start of project. Must be completed before June 28, 2024.
Construction Final Completion	14 Days after the Substantial Completion

1.03 CONSTRUCTION COORDINATION

A. The work on this project must proceed in a systematic way with a minimum of inconvenience to the public. The Contractor will confine its operations to as small an area of work per crew as feasible.

B. For construction occurring during the time period of irrigation season (i.e. typically April 15 - October 15). Special care and consideration will need to be given when working on, near, or around irrigation pipelines, ditches, structures, or other facilities, to ensure that irrigation deliveries will be able to be delivered upon completion of work. If needed the Contractor will coordinate construction with the Springville Irrigation Company to minimize disruption to irrigation facilities. Contact Springville Irrigation Company Water Master, Tom Setser, 801-427-2240 (cell) or 801-491-2985 (office).

C. Bidders are required to inform themselves fully of the conditions relating to the construction and labor under which the work will be or is now being performed, and the Contractor must employ, as far as possible, such methods and means in carrying out his work as will not cause any interruption or interference to any other contractor.

D. Contractor will notify residents of the commencement of construction a minimum of 48 hours prior to start of work. Access to homes will be provided to the residents on the street each morning and night. The Contractor will notify/coordinate with residents a minimum of 48 hours prior to paving of the roadway or placing concrete. Concrete will be allowed to cure a minimum of 7 days before vehicular traffic will be allowed back on it.

E. Before burying pipeline or fittings, Contractor shall contact City Inspector to allow for inspection and survey of all items using GPS to determine exact location of utility. Items buried without City approval will be re-excavated by the Contractor at no additional cost to the City.

1.04 FEDERAL, STATE, AND LOCAL INSPECTING AGENCIES

A. The site of construction is to be open at all reasonable times and places for periodic observation by accredited representatives of the Federal, State, and local agencies who have regulatory or supervisory authority over any part of the work proposed or regulated thereto.

1.05 SPECIAL ENVIRONMENTAL CONCERNS

A. The construction for this project is in an environmentally sensitive area and special care will be given when working in close proximity to streams and springs.

1.06 PUBLIC SAFETY AND CONVENIENCE

A. The convenience of the general public and the protection of persons and property is of prime importance and shall be provided for by the Contractor during this project. The Contractor

shall use every reasonable precaution to safeguard persons and property. Failure of the Owner or the Engineer to notify the Contractor of any deficiencies in providing for public safety and convenience shall not relieve the Contractor from its responsibility. If an unsafe condition arises or exists during the progress of the work, or if the Owner has reason to believe that an unsafe condition exists, suspend the work wholly or in part for such period as may be necessary to correct the unsafe condition. The Contractor shall be required to comply with the requirements of the Manual on Uniform Traffic Control Devices (MUTCD).

i. Compliance with Rules and Regulations: The Contractor shall comply with all rules and regulations of the City, County, and State authorities regarding the closing of public streets, or highways, to the use of public traffic. If conditions justify, the Engineer may authorize the contractor to close general traffic. No such closure shall be made without authorization of the Engineer. Closure of streets or highways shall be in conformance with the (MUTCD).

ii. Road Closures and Obstructions: No road shall be closed to the public by the Contractor except by express permission of the Engineer or Public Works Department Director. The Contractor shall, at all times, conduct its work so as to insure the least possible obstruction to traffic and normal commercial pursuits.

iii. Protection of the Traveling Public: All obstructions within traveled roadways shall be protected by signs, barricades, and lights where necessary for the safety of the traveling public. All barricades and obstructions shall be protected at night by signal lights that shall be suitably distributed across the roadway and kept burning from sunset to sunrise. Barricades shall be of substantial construction. Failure of the Owner or the Engineer to notify the Contractor to maintain barricades, barriers, lights, flares, danger signals, or guards shall not relieve the Contractor from its responsibility.

iv. Hazardous Conditions: Whenever the Contractor's operations create a hazardous condition, it shall furnish flaggers and guards to give adequate warning to the public of any dangerous conditions to be encountered. It shall furnish, erect, and maintain fences, barricades, signs, lights, and other devices that may be necessary to prevent injury and damage to persons and property. Flaggers and guards shall be UDOT trained and shall hold current certification and shall be equipped with signs, flags, etc. as required by the Utah State Department of Transportation (UDOT) regulations.

v. Dust and Debris Control: The Contractor shall control dust and debris that originates in the construction right-of-way or site. Dust, trash, and other debris shall be controlled on a daily basis by methods that shall include, but not be limited to, the use of a dust setting spray, a pick-up broom or street sweeper and trash disposal. The Contractor shall maintain on the project site a water truck with a minimum two thousand (2,000)-gallon capacity. The Contractor shall be responsible to secure a source of water and shall obtain the necessary permission for its use. Failure by the Contractor to adequately control dust and debris may result in the Owner initiating dust and debris control measures and deducting the cost from payment due to the Contractor.

1.07 EXAMINATION OF PLANS AND SITE OF WORK

A. The bidder is required to examine carefully the site of the proposed work, the Plans, Specifications, Special Conditions, General Conditions, Bid, Contract, and Bond forms before submitting a Bid. Submission of a Bid shall be considered prima facie evidence that the bidder has made such examination and is satisfied as to the conditions to be encountered in performing the work and as to the requirements of the Contract Documents.

1.08 INTENT OF PLANS AND SPECIFICATIONS

A. The intent of the Plans and Specifications is to prescribe a complete work or improvement which will be performed in a manner acceptable to the Engineer and in full compliance with the terms of the Contract. Provide the Owner with a complete, safe, and operable work or improvement, even though the Plans and Specifications may not specifically call out all items or items of work required of the Contractor to complete his tasks, incidental appurtenances, materials, and the like.

B. Perform the work in accordance with the lines, grades, cross sections, and dimensions indicated on the Plans and detailed drawings.

C. Unless otherwise specified in the Special Conditions, furnish all materials, labor, tools, equipment, water, light, power, transportation, superintendence, temporary construction of every nature, and incidentals, including, but not limited to, dust and traffic control measures, and to perform all work involved in executing the Contract in a safe, satisfactory and workmanlike manner within the time specified.

1.09 CHANGES IN THE WORK

A. The Owner, without invalidating the Contract and without notification of Sureties, may order extra work, make changes by altering, or delete any portion of the work as specified herein, or as deemed necessary or desirable by the Owner. All such work shall be executed under the conditions of the original Contract except that any claim for extension of time and additional costs caused thereby shall be adjusted at the time of ordering such change or extra work.

B. In giving instructions, the Engineer shall have authority to make minor changes in the work, not involving extra cost, and not inconsistent with the purposes of the work. No extra work or change shall be made unless in pursuance of a written order by the Engineer, and no claim for an addition to the total amount of the Contract shall be valid unless so ordered, except in an emergency endangering life or property.

C. It is mutually understood that it is inherent in the nature of the pipelines, roads, structures, and other construction, that some changes in the Plans and Specifications may be necessary during the course of construction to adjust them to field conditions, and that it is of the essence of the Contract to recognize a normal and expected margin of change. The Owner shall have the right to make such changes, from time to time, in the Plans, in the character of the work, and in the termini of the project as may be necessary or desirable to provide for the completion of the work in the most satisfactory manner without invalidating the Contract for the Contractor.

D. Any change ordered by the Owner which involves installation of work essential to complete the Contract, but for which no basis of payment is provided for herein, said payment therefore

shall be subject to negotiation. The Contractor shall submit his price to the Owner to construct the Owner requested change in the work within 5 days of the date the Owner delivers the written request to the Contractor to submit his price to perform the changed work.

E. The Engineer shall have the right to add or delete units at the item unit rates set forth in the Bid Schedule.

F. Upon demand of either the Contractor or the Owner an equitable adjustment satisfactory to both parties shall be made in the basis of payment for extra work. The prices agreed upon and any agreed upon adjustment in Contract time shall be incorporated in the written order issued by the Owner, which shall be written so as to indicate acceptance on the part of the Contractor as evidenced by his signature. In the event prices cannot be agreed upon, the Owner reserves the right to terminate the Contract as it applies to the items in question and make such arrangements as it may deem necessary to complete the work, or it may direct the Contractor to proceed with the items in question on a force account basis as provided hereinafter.

1.10 WEATHER CONDITIONS

A. In the event of temporary suspension of work, or during inclement weather, the Contractor will, and will cause its Subcontractors to, protect any project work or materials against damage from the weather. If, in the opinion of the Engineer, any Project work or materials become damaged by reason of failure on the part of the Contractor or any of its Subcontractors to so protect its work, such work or materials shall be removed and replaced at the expense of the Contractor.

1.11 LAND MONUMENTS

A. Survey land monuments and property marks shall not be moved or otherwise disturbed by the Contractor until an authorized agent, of the agency having jurisdiction over the land monuments or property marks setting, has witnessed or otherwise referenced their location, and only then in accordance with the requirements of the agency having jurisdiction and at no cost to the Owner.

B. The Contractor shall preserve existing City, County, State, and Federal land monuments whenever possible. When these monuments cannot be preserved, the Contractor shall notify the Engineer at least two (2) weeks in advance of the proposed construction in order that the Engineer will have ample opportunity to reference these monuments for later replacement.

1.12 LINES AND GRADES

A. All work under this Contract shall be built in accordance with the lines and grades as indicated in the Contract Documents. Distances and measurements, except elevations and structural dimensions, are given and made on horizontal planes.

1.13 CONSTRUCTION STAKING

A. Construction staking for the Contract work shall be performed by the Owner as outlined in section 01050 Field Engineering.

1.14 PROJECT RECORD DOCUMENTS

A. Maintain at the site, available to the Owner and Engineer at all times, one copy of all Plans, Specifications, Addenda, accepted Shop Drawings, Change Orders, and other modifications in good order and marked to record all changes made during construction. These shall be delivered to the Engineer for the Owner upon completion of the Project. The City will perform an as-built survey of the improvements. Before burying pipeline or fittings, Contractor shall contact City Inspector to allow for inspection and survey of all items using GPS to determine exact location of utility. Items buried without City approval will be re-excavated by the Contractor at no additional cost to the City.

1.15 CONSTRUCTION PROGRESS SCHEDULE

A. The Contractor shall, as required, at the time of each work directive submit an estimated construction progress schedule. The progress schedule shall be subject to the approval of the Engineer. The Contractor shall submit copies of the progress schedule with each request for payment showing the relation of the completed work to the progress schedule. Application for payment will not be accepted without a current report on the progress of the Work.

1.16 APPROVED HAUL ROUTES

A. The Contractor shall only use haul routes approved by the City Engineer or City Public Works Director.

1.17 UTILITIES SHOWN ON THE PLANS

A. Regardless of what utilities are shown on the Plans, verify these locations and any additional lines which may exist through consulting with the Owner, utility companies, and/or "Blue stakes"(1-800-662-4111).

B. Existing utilities are indicated on project Plans in accordance with the best information available. Notify all utilities when work is in progress and make such arrangements as are necessary to make any emergency repair to any utility, in a manner satisfactory to the owner of a damaged utility line, including individual or house service utility lines.

C. No extra compensation will be made for the repair of any individual or house service utility or utility lines damaged by the Contractor's labor forces or equipment, nor for any damage incurred through neglect or failure to provide protective barriers, lights and other devices or means required to protect such existing utilities.

D. Expose all sanitary and storm sewers, water, gas, electric, telephone utility lines, and other underground structures which might interfere with the construction of the project, in order to permit survey location prior to construction.

E. The work necessary to the raising, lowering or relocating of a utility, which work is not so indicated on the Plans shall be at the owner's expense. The necessary work may be done by the owner of the utility or by the Contractor, at the option of the owner of the utility. All work shall be in accordance with the standards of the owner of the utility.

F. Resolve crossing and clearance problems concerning all utility structures with the utility company concerned.

1.18 UTILITIES NOT SHOWN ON THE PLANS

A. If utility lines are encountered which are not indicated on the Plans, other than individual or house service utility lines, and which the Owner, utility companies, and/or "Blue stake" are unaware of their existence, and these lines are damaged or work is required to clear same, then the Contractor will be paid for any extra work involved on his part, as set forth elsewhere herein.

1.19 LUMP SUM BID ITEMS

A. While this contract is based on a Unit Price basis, payment for some items will be on a lump sum basis, as shown in the Bid Schedule.

B. Payment for the lump sum items, as designated in the Bid Schedule and Measurement and Payment, for the completed work will be compensation in full for the furnishing of all overhead, labor, materials, devices, equipment, and appurtenances included in the work as are necessary to complete the total work under this Contract in a good, neat, and satisfactory manner as indicated on the Plans, as described in the Specifications, and as otherwise implied or required to fulfill the objective of the work. Each item, fixture, piece of equipment, work, etc., as indicated on the Plans, or specified anywhere in these Documents, shall be completed with all necessary connections and appurtenances for the satisfactory use and operation of said item, and the total system or systems.

C. Any and all patents and license fees for the right to use equipment or processes included in this Contract shall be included in the lump sum bid price. Submit to the Engineer an itemized list of all such fees, indicating the amount of each and to whom paid.

D. Cost of painting, testing, and other incidental operations, profit, and overhead cost, including the cost of supervision, temporary field offices, move-in, move-out, insurance, taxes, equipment not a permanent part of the job, and other incidental items, shall be included in the lump sum bid price for the item to which they pertain.

1.20 CONTRACTOR'S REPRESENTATIVE AND EMERGENCIES

A. At all times, the Contractor shall be present at the work in person or represented by a competent superintendent who shall supervise and direct the work and shall be authorized by the Contractor to receive and fulfill instructions from the Engineer.

B. At all times during working hours, the Contractor shall be represented in all matters pertaining to this project by one, and only one, fully competent and experienced general superintendent. Instructions and information given by the Engineer to the Contractor's superintendent on the work shall be considered as having been given to the Contractor. Before any work is done at the jobsite, give written notice to the Engineer stating who the Contractor's superintendent will be, giving his home address and telephone number. Any request by the Contractor to change the general superintendent shall be submitted in writing to the Engineer for his approval. A

statement naming more than one representative at a time to be in charge and depending upon which is present at the time will not be acceptable.

C. Emergencies may arise during the progress of the work which may require special effort or require extra shifts of workers to continue the work beyond normal working hours. Be prepared in case of such emergencies from whatever cause, to do all necessary work promptly.

1.21 PROPERTY RIGHTS IN MATERIAL

A. Nothing in the Contract shall be construed as vesting in the Contractor any right of property in the material used after they have been attached or affixed to the work or the soil and accepted. All such materials shall become the property of the Owner upon being so attached or affixed and accepted.

- END OF SECTION -

DOCUMENT 00300

BID FORM

PROJECT IDENTIFICATION: 2024 TRENCHLESS SANITARY SEWER REHABILITATION

CONTRACT IDENTIFICATION AND NUMBER: RFB 2024-005

THIS BID IS SUBMITTED TO: Springville City
110 South Main
Springville City, Utah 84663

1.01 ACCEPTANCE TO ENTER AGREEMENT

A. 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.

1.02 TERMS AND CONDITIONS

A. Bidder accepts all of the terms and conditions of the Advertisement or Invitation to Bid and Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. The Bid will remain subject to acceptance for 30 days after the Bid opening, or for such longer period of time that Bidder may agree in writing upon request of OWNER.

1.03 REPRESENTATION OF BIDDER

A. In submitting this Bid, Bidder represents, as set forth in the Agreement, that:

i. 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:

Addendum Number	Date

ii. 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 and performance of the Work.

iii. 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.

iv. Bidder has carefully studied 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) which have been identified in the Supplementary Conditions as provided in Paragraph 4.02 of the General Conditions, and (2) reports and drawings of a Hazardous Environmental Conditions, if any, which has been identified in the Supplementary Conditions as provided in paragraph 4.06 of the General Conditions.

v. 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, 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 applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents to be employed by Bidder, and safety precautions and programs incident thereto.

vi. Bidder does not consider that any further examinations, investigations, explorations, tests, studies, or data are necessary for 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.

vii. Bidder 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 Bidding Documents.

viii. 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.

ix. Bidder has given OWNER and ENGINEER written notice of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by OWNER and ENGINEER is acceptable to Bidder.

x. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

1.04 REPRESENTATION OF BID

A. 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.

1.05 COMPLETION AND COST OF WORK

A. Bidder will complete the Work in accordance with the Contract Documents for the prices provided in the Bid Schedule(s) (Document 00310) which are attached to and made a condition of this Bid.

B. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Bid items will be based on actual quantities provided, determined as provided in the Contract Documents.

1.06 COMPLETION AND LIQUIDATED DAMAGES

A. Bidder agrees that the Work will be substantially completed, and completed and ready for final payment in accordance with paragraph 14.07.B of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.

B. 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.

1.07 DOCUMENTS INCLUDED WITH BID

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

A. A tabulation of the Bid consisting of Document 00310 - Bid Schedule(s) completely and correctly filled in;

B. Completion and submission of Document 00420 - Contractor♠s Qualifications and Experience. Included with this form should be information required by Document 00100 Section 3 Qualifications of Bidders.

C. A tabulation of Subcontractors, Suppliers and other individuals and entities required to be identified in this Bid consisting of Document 00430 - List of Subcontractors;

D. Additional supplemental information demonstrating the Bidder♠s ability to complete the project within the scheduled time and ability to perform the specific work.

1.08 MISCELLANEOUS

A. Terms used in this Bid with capital letters have the meanings indicated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

B. If required by the Supplementary Conditions, Bidder will comply with the provisions of 40 CFR Part Nos. 8, 60-1 and 60-4 concerning Equal Employment Opportunities (EEO).

SUBMITTED on _____, 20___.

State Contractor License No. _____. (If applicable)

If Bidder is:

An Individual

Name (typed or printed): _____

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

Doing Business as: _____
Business address: _____
_____
Phone No.: _____ FAX No.: _____

A Partnership

Partnership Name: _____ (SEAL)

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

Name (typed or printed): _____

Business address: _____
_____
Phone No.: _____ FAX No.: _____

A Corporation

Corporation Name: _____ (SEAL)
State of Incorporation:
Type (General Business, Professional, Service, Limited Liability:

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

Name (typed or printed): _____

Title: _____

(CORPORATE SEAL)

Attest _____
(Signature of Corporate Secretary)

Business address: _____
_____
Phone No.: _____ FAX No.: _____

Date of Qualification to do business is _____

A Joint Venture

Joint Venturer Name: _____ (SEAL)

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

Name (typed or printed): _____

Title: _____

Business address: _____
_____
Phone No.: _____ FAX No.: _____

Joint Venturer Name: _____ (SEAL)

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

Title: _____

Business address: _____

_____

Phone No.: _____ FAX No.: _____

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

_____

_____

(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.)

CERTIFICATION OF REGISTRATION

This is to certify that I or We _____
the undersigned, is a Registered Contractor in the State of Utah,

and that I or We hold License No. _____,

as issued by the Utah State Commission of Business Regulations, _____
(date)

licensing me or us to practice as a _____ Contractor in said State.

_____
Contractor*

By _____

* Signer, title and address same as above.

- END OF BID FORM -

SECTION 00310

BID SCHEDULE

1.01 PROJECT IDENTIFICATION

A. Name: **2024 TRENCHLESS SANITARY SEWER REHABILITATION**

B. Submitted to: Springville City
110 South Main
Springville City, Utah 84663

1.02 RELATED SECTIONS

Section 01025: Measurement and Payment

1.03 SCHEDULES TO BE ADDED TO THE AGREEMENT

This Bid Schedule contains the schedule of values which will be incorporated into the Agreement (Section 00500) by reference.

1.04 BID SCHEUDLE

A. Approach To Work and Constraints

The following shall be considered in preparing the Bid Schedule:

1. Streets must remain open to traffic with a minimum of one lane of traffic in each direction at all times. Access to all adjacent streets will need to be provided at all time during the project.

2. Contractor will be responsible for all permits, traffic control.

3. The contractor shall make every effort to maintain service usage throughout the duration of the project. In the event that a service will be out of service, the maximum amount of time of no service shall be 8 hours for any property served by the sewer. A public notification program shall be implemented, and shall as a minimum, require the contractor to be responsible for contacting each home or business connected to the sanitary sewer and informing them of the work to be conducted, and when the sewer will be off-line. The contractor shall also provide the following:

   a. Written notice to be delivered to each home or business the day prior to the beginning of work being conducted on the section, and a local telephone number of the contractor they can call to discuss the project or any problem which could arise

   b. Personal contact with any home or business, which cannot be reconnected within the time stated in the written notice.

4. Bidder acknowledges that estimated quantities are not guaranteed and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

5. Refer to the Measurement and Payment for description of all work covered in each bid item.

6. Cost of mobilization is limited to **no greater than 5%** of the total cost of construction.

B. Schedule of Values

ITEM	DESCRIPTION	ESTIMATED QUANTITY	UNIT	UNIT COST	TOTAL AMOUNT
1	Mobilization	1	LS		$
2	Traffic control	1	LS		$
Various Locations Throughout City - Cutler Ave, Center St, 200 North, 400 East, 200 East , and 300 East					
3	8-Inch CIPP Rehabilitation	717	LF		$
4	10-inch CIPP Rehabilitation	2,028	LF		$
5	Lateral Reinstatement - "Top Hat" Lateral Liner	56	EA		$
6	Intruding Lateral Cut	5	EA		$
				BID ALT TOTAL	$

1.05 BIDDER'S ACKNOWLEDGEMENT

The BIDDER acknowledges to the OWNER that the BID provided herein includes total cost required to build a fully functioning project including all work, materials, appurtenances, accessories, and related items as outlined within these specifications and shown in the drawings.

COMPANY: _____

Signed: _____

Title: _____

Date: _____

- END OF SECTION –

PENAL SUM FORM

DOCUMENT 00410

BID BOND

BIDDER (Name and Address):

_____

_____

_____

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

_____

_____

_____

OWNER : Springville City
110 South Main
Springville, Utah 84663

BID
BID DUE DATE:_____
PROJECT (Brief Description Including Location):

_____

_____

_____

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)	(Seal)
BIDDER's Name and Corporate Seal	Surety's Name and Corporate Seal
By:_____	By:_____
Signature and Title	Signature and Title (Attach Power of Attorney)
Attest:_____	Attest:_____

	___		___
	___		___
Signature and Title		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.

EJCDC NO. 1910-28-C (1996 Edition)

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns 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 and Contract 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 and Contract 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 Bid-ding 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 of 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 provision of 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.

EJCDC NO. 1910-28-C (1996 Edition)

DOCUMENT 00411

BID SECURITY

Fill in the Bid Bond (Document 00410) or append a certified or bank check made payable to OWNER.

DOCUMENT 00420

CONTRACTOR'S QUALIFICATION AND EXPERIENCE

The BIDDER shall furnish the following information. Failure to comply with this requirement will render the Bid non-responsive and may cause its rejection. Additional sheets shall be attached as required.

A. CONTRACTOR's Name and Address:

_____

_____

_____

B. CONTRACTOR's Telephone Number: _____

Fax Number:

C. CONTRACTOR's License:
Primary Classification _____
State License No. _____
Supplemental Classifications held, if any:
_____

D. Number of years as a contractor in construction work of this type: _____

E. Names and titles of Principal Officers of CONTRACTOR's Firm:

_____
Name Title

_____
Name Title

_____
Name Title

_____
Name Title

F. Name of person who inspected site of proposed work for your firm:

_____
Name Date of Inspection

G. Name, address, and telephone number of Surety Company and agent who will provide the required bonds on this Contract:

Surety:	Address:
Agent:	Title:
Phone:	Fax:

H. List of current jobs now under construction:

	Client	Telephone No.	Dollar Amt.	Type of Job
1.				
2.				
3.				
4.				

I. List projects of this size and complexity completed within the last five years:

	Client/Reference	Telephone No.	Dollar Amt.	Type of Job
1.				
2.				
3.				
4.				

J. Have you ever failed to complete any work awarded to you? If so, when, where and why?

_____

_____

_____

_____

_____

_____

_____

k. List your major equipment available for this Contract:

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

_____

Contractor's Signature

- END OF DOCUMENT -

DOCUMENT 00430

LIST OF SUBCONTRACTORS

The bidder shall list below the names and business address of each subcontractor who will perform Work under this Contract in excess of five percent (5%) of the total bid price and shall also list the portion of the work which will be done by such subcontractor. After the opening of proposals, no changes or substitutions will be allowed without the written approval of the Owner. NOTE: Attach additional sheets if required.

WORK TO BE PERFORMED	SUBCONTRACTOR'S NAME AND ADDRESS
1._____	_____
_____	_____
2._____	_____
_____	_____
3._____	_____
_____	_____
4._____	_____
_____	_____
5._____	_____
_____	_____
6._____	_____
_____	_____

- END OF DOCUMENT -

Part 2

CONTRACT FORMS

DOCUMENT 00500

AGREEMENT

THIS AGREEMENT is dated as of the _____ day of _____ in the year 20 24
by and between Springville City Corp. _____(hereinafter called OWNER)
and _____ (hereinafter called CONTRACTOR).

Project Name: **2024 TRENCHLESS SANITARY SEWER REHABILITATION**
Owners Contract No.: **RFB 2024-005**

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

1.01 WORK

A. The CONTRACTOR shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows:

1. Provide rehabilitation of approximately 717 linear feet of 8-inch and 2,028 linear feet of 10-inch sanitary sewer pipe utilizing the Cured-in-Place (CIPP) method in Springville, Utah. The work generally includes sanitary sewer pipe rehabilitation using CIPP, including cleaning, CCTV inspection, cutting off any protruding taps and/or roots, reinstating approx. 56 laterals utilizing "top hat" inserts, and related items of work.

2. The work to be performed shall include furnishing all necessary materials, equipment, facilities, services and appurtenances thereto needed for the complete construction of the project.

The above explanation is intended to give a general understanding of the scope of the work under these specifications, and shall not be construed to be an itemized listing of each element of work required. CONTRACTOR shall be responsible for construction of complete facilities conforming in all respects to the details and requirements of the specifications, drawings, and other contract documents.

1.02 CONTRACT TIME, LIQUIDATED DAMAGES AND BONUS

A. Time of the Essence

1. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

B. Dates for Substantial Completion and Final Payment

1. The Work will be substantially completed by _____within approximately **46** calendar days after the date when the Contract Times commence to run as provided in paragraph 2.03 of the General Conditions, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions by _____, within approximately **60** calendar days after the date when the Contract Times commence to run. Work will commence by a date that all work will be completed (final completion) on or before **June 28, 2024**.

C. Liquidated Damages. OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that OWNER will suffer financial loss if the Work is not completed within the times specified in paragraph 2.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. They also recognize the delays, expense and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by OWNER if the Work is not completed on time. Accordingly, instead of requiring any such proof, OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) CONTRACTOR shall pay OWNER ONE THOUSAND FIVE HUNDRED ($1500.00) for each day that expires after the time specified in paragraph 2.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion if CONTRACTOR shall neglect, refuse or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by OWNER, CONTRACTOR shall pay OWNER ONE THOUSAND FIVE HUNDRED ($1500.00) for each day that expires after the time specified in paragraph 2.02 above for completion and readiness for final payment.

1.03 CONTRACT PRICE

A. OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents in current funds and at the prices shown in CONTRACTOR's Bid Schedule attached hereto as an exhibit.

B. As provided in paragraph 11.03 of the General Conditions estimated quantities are not guaranteed, and determinations of actual quantities and classification are to be made by OWNER as provided in paragraph 9.08 of the General Conditions. Unit prices have been computed as provided in paragraph 11.03 of the General Conditions.

1.04 PAYMENT PROCEDURES

A. Submittal and Processing of Payments

1. CONTRACTOR shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by OWNER as provided in the General Conditions, as modified by the Supplementary Conditions.

B. Progress Payments; Retainage.

1. OWNER shall make progress payments on account of the Contract Price on the basis of CONTRACTOR's Applications for Payment, on or about the 1st day of each month during construction. 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) or, in the event there is no schedule of values, as provided in the General Requirements.

   i. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below, but in each case, less the aggregate of payments previously made and less such amounts as OWNER shall determine, or OWNER may withhold, in accordance with paragraph 14.02 of the General Conditions.

   ii. 95% of Work completed (with the balance being retainage). If Work has been 50% completed as determined by OWNER, and if the character and progress of the Work have been satisfactory to OWNER, OWNER may determine that as long as the character and progress of the Work remain satisfactory to them, there will be no additional retainage on account of Work completed, in which case the remaining progress payments prior to Substantial Completion will be in an amount equal to 100% of the Work completed.

   iii. 95% (with the balance being retainage) of materials and equipment not incorporated in the Work (but delivered, suitably stored and accompanied by documentation satisfactory to OWNER as provided in paragraph 14.02.B.5 of the General Conditions).

2. Upon Substantial Completion, OWNER shall pay an amount sufficient to increase total payments to CONTRACTOR 97.5% of the Work completed (with the balance being retainage), less such amounts as OWNER shall determine in accordance with paragraph 14.02.B.5 of the General Conditions and less 100% of OWNER's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion.

C. Final Payment

1. Upon final completion and acceptance of the Work in accordance with paragraph 14.07 of the General Conditions, OWNER shall pay the remainder of the Contract Price as provided in said paragraph 14.07.

1.05 INTEREST

A. All moneys held in retainage as provided in Article 1.04.B of this Agreement shall be placed in an interest bearing account. Accrued interest shall be to the benefit of the CONTRACTOR.

B. All moneys not paid when due as provided in Article 14 of the General Conditions shall bear a maximum annual interest rate of 4 percent.

1.06 CONTRACTOR'S REPRESENTATIONS

A. In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

1. CONTRACTOR has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.

2. notice 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, performance or furnishing of the Work.

3. CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance or furnishing of the Work.

4. CONTRACTOR has carefully studied available reports, explorations, drilling logs and tests (including those listed in the Instruction to Bidders as provided in paragraph 4.02 of the General Conditions) and has performed all necessary explorations and tests necessary to become familiar with subsurface conditions at or contiguous to the site.

5. CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means,

methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto.

6. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.

7. 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.

8. CONTRACTOR has become familiar with all physical conditions relating to existing surface and subsurface conditions (including utilities) which are at or contiguous to the site and assumes responsibility for the accurate location of said Underground Facilities. No additional examinations, investigations, explorations, tests, reports, studies or similar information or data in respect of said Underground Facilities are or will be required by CONTRACTOR in order to perform and furnish the Work at the Contract Price, within the Contract Time and in accordance with the other terms and conditions of the Contract Documents, including specifically the provisions of paragraph 4.02 of the General Conditions.

9. 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.

10. CONTRACTOR has given OWNER written of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents, and the written resolution thereof by OWNER is acceptable to CONTRACTOR.

11. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

1.07 CONTRACT DOCUMENTS

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

1. This Agreement (pages 1 to __8__, inclusive);

2. Performance Bond (pages __1__ to __2__, inclusive);

3. Payment Bond (pages __1__ to __2__, inclusive);

4. General Conditions (pages 1 to 42, inclusive);

5. Supplementary Conditions (pages __1__ to __6__, inclusive);

6. Technical Specifications as listed in the table of contents of the Project Manual;

7. Drawings consisting of a Cover Sheet and sheets listed thereon, with each sheet bearing the following general title**: 2024 TRENCHLESS SANITARY SEWER REHABILITATION**

8. Addenda (Numbers___1_____ to___2___ inclusive);

9. Exhibits to this Agreement (enumerated as follows):

   a. Exhibit A Notice of Award;
   b. Exhibit B Notice to Proceed;
   c. Exhibit C CONTRACTOR's Bid (with documentation accompanying Bid);
   d. Exhibit D Insurance Forms;

10. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

   a. Written Amendments;
   b. Work Change Directives;
   c. Change Order(s).

B. The documents listed in paragraph 7.01.A are attached to this Agreement except as expressly noted otherwise above).

C. There are no Contract Documents other than those listed above in this Article 7.

D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.05 of the General Conditions.

1.08 MISCELLANEOUS

A. Terms

1. Terms used in this Agreement will have the meanings indicated in the General Conditions.

B. Assignment of contract

1. No assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be

bound; and, specifically but without limitation, moneys that may become due and moneys that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

C. Successors and Assigns

1. OWNER and CONTRACTOR each binds itself, its partners, successors, assigns, and legal representatives to the other party hereto, its partners, successors, assigns, and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.

D. Severability

1. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

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

This Agreement will be effective on _____, 20 23 .

OWNER Springville City Corporation	CONTRACTOR_____
By _____	By _____
( )	( )
( )	( )
( )	( )
(SEAL)	(SEAL)
( )	( )
( )	( )
( )	( )
Attest _____	Attest _____
Address for giving notices:	Addresses for giving notices:
	_____
	_____
	License No. _____
	Agent for service of process_____

(If CONTRACTOR is a corporation, attach evidence of authority to sign.)

- END OF DOCUMENT -

DOCUMENT 00510

NOTICE OF AWARD

Dated_____, 2024_____

TO: _____
(BIDDER)

ADDRESS: _____

PROJECT: **2024 TRENCHLESS SANITARY SEWER REHABILITATION**

CONTRACT: **2024 TRENCHLESS SANITARY SEWER REHABILITATION**

OWNERS CONTRACT NO.: RFB 2024-005

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: **2024 TRENCHLESS SANITARY SEWER REHABILITATION**.

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

The Contract Price of your contract is_____$_____

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

You must comply with the following conditions precedent within ten calendar days of the date of this Notice of Award, that is by _____.

1. Deliver to the OWNER two fully executed counterparts of the agreement including all the Contract Documents. This includes the triplicate sets of Drawings. Each of the Contract Documents must bear your signature on the cover page.

2. Deliver with the executed Contract Documents the Contract Security (Bonds) as specified in the Instruction to Bidders (Article 21), General Conditions (paragraph 5.01) and Supplementary Conditions (paragraph SC-5.01).

3. (List other conditions precedent).

a. Deliver evidence of insurance and current contractor's license.

b. Submission of an approved traffic control plan for the work area.

c. Submission of an approved SWPPP/Erosion Control Plan

d. Submission of Performance and Payment Bonds

Failure to comply with these conditions within the time specified will entitle OWNER to consider your bid abandoned, and to annul the Notice to Award.

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

SPRINGVILLE CITY
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

_____
(TITLE)

- END OF DOCUMENT -

DOCUMENT 00520

NOTICE TO PROCEED

TO_____Dated_____2024___
(CONTRACTOR)

ADDRESS: _____

_____

CONTRACT: 2024 TRENCHLESS SANITARY SEWER REHABILITATION_

PROJECT: _2024 TRENCHLESS SANITARY SEWER REHABILITATION

OWNERS CONTRACT NO.: _____RFB 2024-005_____

You are notified that the Contract Times under the above contract will commence to run on _____ _____. By that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 3 of the Agreement the date of Substantial Completion is_____ and the date of readiness for final payment is _____, respectively.

Before you may start any Work at the site, paragraph 2.05.C of the General Conditions provides that you and OWNER must each deliver to the other (with copies to other identified additional insureds) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

Also before you may start any Work at the site(s), you must: _____

_____

_____

(Add other requirements)

_____SPRINGVILLE CITY_
(OWNER)

By: _____
(AUTHORIZED SIGNATURE)

_____
(TITLE)

EJCDC 1910-23 (1996 Edition)
Prepared by the Engineers' Joint Contract Documents Committee and endorsed by The General Contractors of America.

DOCUMENT 00530

CHANGE ORDER

No. _____

PROJECT:	DATE OF ISSUANCE:
OWNER:	OWNER's Project No.
CONTRACTOR:	ENGINEER:
CONTRACT FOR:	ENGINEER's Project No.

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

Description:

Purpose of Change Order:

Attachments: (List of documents supporting change)

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIME
Original Contract Price	Original Contract Time days or date
Previous Change Orders No. _____ to No. _____	Net Change from Previous Change Orders days
Contract Price Prior to this Change Order	Contract Time Prior to this Change Order days or date
Net Increase (Decrease) of this Change Order	Net Increase (Decrease) of this Change Order days
Contract Price with all Approved Change Orders	Contract Time with all Approved Change Orders days or date

RECOMMENDED:	APPROVED:	APPROVED:
by _____	by _____	by _____
Engineer	Owner	Contractor

EJCDC No. 1910-8-B (1983 Edition)
Prepared by the Engineers' Joint Contract Documents Committee and endorsed by The Associated General Contractors of America. (3/90)

DOCUMENT 00610

PERFORMANCE BOND

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):
Springville City
110 South Main
Springville City, Utah 84663

CONSTRUCTION CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Date (Not earlier than Construction Contract Date):
Amount:
Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL		SURETY	
Company:	(Corp. Seal)	Company:	(Corp. Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL		SURETY	
Company:	(Corp. Seal)	Company	(Corp. Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	

EJCDC No. 1910-28A (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America. Engineers' Joint Contract Documents Committee. The associated General Contractors of America, and the American Institute of Architects.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER for the performance of the Contract, which is incorporated herein by reference.
2. If the CONTRACTOR performs the Contract, the Surety and the CONTRACTOR have no obligation under this Bond, except to participate in conferences as provided in paragraph 3.1.
3. If there is no OWNER Default, the Surety's obligation under this Bond shall arise after:
   3.1 The OWNER has notified the CONTRACTOR and the Surety at the address described in Paragraph 10 below, that the OWNER is considering declaring a CONTRACTOR Default and has requested and attempted to arrange a conference with the CONTRACTOR and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Contract. If the OWNER, the CONTRACTOR and the Surety agree, the CONTRACTOR shall be allowed a reasonable time to perform the Contract, but such an agreement shall not waive the OWNER's right, if any, subsequently to declare a CONTRACTOR Default; and
   3.2 The OWNER has declared a CONTRACTOR Default and formally terminated the CONTRACTOR's right to complete the Contract. Such CONTRACTOR Default shall not be declared earlier than twenty days after the CONTRACTOR and the Surety have received notice as provided in paragraph 3.1; and
   3.3 The OWNER has agreed to pay the Balance of the Contract Price to:
      3.3.1 The Surety in accordance with the terms of the Contract;
      3.3.2 Another contractor selected pursuant to paragraph 4.3 to perform the Contract.
4. When the OWNER has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take on of the following actions:
   4.1 Arrange for the CONTRACTOR, with consent of the OWNER, to perform and complete the Contract; or
   4.2 Undertake to perform and complete the Contract itself, through its agents or through independent contractors; or
   4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the OWNER for a contract for performance and completion of the Contract, arrange for a contract to be prepared for execution by the OWNER and the contractor selected with the OWNER's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the Bonds issued on the Contract, and pay to the OWNER the amount of damages as described in paragraph 6 in excess of the Balance of the Contract Price incurred by the OWNER resulting from the CONTRACTOR Default ; or
   4.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances;
      1. After investigation, determine the amount for which it may be liable to the OWNER and, as soon as practicable after the amount is determined, tender payment therefor to the OWNER; or
      2. Deny liability in whole or in part and notify the OWNER citing reasons therefor.
5. If the Surety does not proceed as provided in paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the OWNER to the Surety demanding that the Surety perform its obligations under this Bond, and the OWNER shall be entitled to enforce any remedy available to the OWNER. If the Surety proceeds as provided in paragraph 4.4, and the OWNER refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the OWNER shall be entitled to enforce any remedy available to the OWNER.
6. After the OWNER has terminated the CONTRACTOR's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the OWNER shall not be greater than those of the CONTRACTOR under the Construction Contract, and the responsibilities of the OWNER to the Surety shall not be greater than those of the OWNER under the Contract. To the limit of the amount of this Bond, but subject to commitment by the OWNER of the Balance of the Contract Price to mitigation of costs and damages on the Contract, the Surety is obligated without duplication for:
   6.1 The responsibilities of the CONTRACTOR for correction of defective work and completion of the Construction Contract.
   6.2 Additional legal, design professional and delay costs resulting from the CONTRACTOR's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and
   6.3 Liquidated damages, or if no liquidated damages are specified in the Contract, actual damages caused by delayed performance or non-performance of the CONTRACTOR.
7. The Surety shall not be liable to the OWNER or others for obligations of the CONTRACTOR that are unrelated to the Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the OWNER or its heirs, executors, administrators, or successors.
8. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.
9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after CONTRACTOR Default or within two years after the CONTRACTOR ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
10. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page.
11. 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 here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
12. Definitions.
   12.1 Balance of the Contract Price: The total amount payable by the OWNER to the CONTRACTOR under the Contract after all proper adjustments have been made, including allowance to the CONTRACTOR of any amounts received or to be received by the OWNER in settlement of insurance or other claims for damages to which the CONTRACTOR is entitled, reduced by all valid and proper payments made to or on behalf of the CONTRACTOR under the Contract.
   12.2 Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.
   12.3 CONTRACTOR Default: Failure of the CONTRACTOR, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.
   12.4 OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY-Name, Address and Telephone)
AGENT or BROKER:
OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

DOCUMENT 00620

PAYMENT BOND

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

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):
Springville City
110 South Main
Springville City, Utah 84663

CONTRACT
Date:
Amount:
Description (Name and Location):

BOND
Date (Not earlier than Construction Contract Date):
Amount:
Modifications to this Bond Form:

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

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company: (Corp. Seal)
Signature: _____	Signature: _____
Name and Title:	_____
	Name and Title:

(Space is provided below for signatures of additional parties, if required.)

CONTRACTOR AS PRINCIPAL	SURETY
Company: (Corp. Seal)	Company (Corp. Seal)
Signature: _____	Signature: _____
Name and Title:	_____
	Name and Title:

EJCDC No. 1910-28B (1996 Edition)
Originally prepared through the joint efforts of the Surety Association of America. Engineers' Joint Contract Documents Committee. The Associated General Contractors of America, American Institute of Architects, American Subcontractors Association, and the Associated Specialty Contractors.

1. The CONTRACTOR and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the OWNER to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

2. With respect to the OWNER, this obligation shall be null and void if the CONTRACTOR:

2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies and holds harmless the OWNER from all claims, demands, liens or suits by any person or entity who furnished labor, materials, or equipment for use in the performance of the Contract, provided the OWNER has promptly notified the CONTRACTOR and the Surety (at the address described in Paragraph 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the CONTRACTOR and the Surety, and provided there is no OWNER Default.

3. With respect to Claimants, this obligation shall be null and void if the CONTRACTOR promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with the CONTRACTOR have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with the CONTRACTOR:

1. Have furnished written notice to the CONTRACTOR and sent a copy, or notice thereof, to the OWNER, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the CONTRACTOR, or not received within 30 days of furnishing the above notice any communication from the CONTRACTOR by which the CONTRACTOR has indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety and sent a copy, or notice thereof, to the OWNER, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the CONTRACTOR.

5. If a notice required by Paragraph 4 is given by the OWNER to the CONTRACTOR or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1 Send an answer to the Claimant, with a copy to the OWNER, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the OWNER to the CONTRACTOR under the Contract shall be used for the performance of the Contract and to satisfy claims, if any, under any Performance Bond. By the CONTRACTOR furnishing and the OWNER accepting this Bond, they agree that all funds earned by the CONTRACTOR in the performance of the Contract are dedicated to satisfy obligation of the CONTRACTOR and the Surety under this Bond, subject to the OWNER's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the OWNER, Claimants or others for obligations of the CONTRACTOR that are unrelated to the Contract. The OWNER shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Contract or to related subcontracts, purchase orders and other obligations.

11. No suite or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the Work or part of the Work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by paragraph 4.1 or paragraph 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period or limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the OWNER or the CONTRACTOR shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the OWNER or the CONTRACTOR, however accomplished shall be sufficient compliance as of the date received at the address shown on the signature page.

13. 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 here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is, that this Bond shall be construed as a statutory Bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the CONTRACTOR shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. Definitions:

15.1 Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a Subcontractor of the CONTRACTOR to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of 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 the CONTRACTOR's Subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2 Contract: The agreement between the OWNER and the CONTRACTOR identified on the signature page, including all Contract Documents and changes thereto.

15.3 OWNER Default: Failure of the OWNER, which has neither been remedied nor waived, to pay the CONTRACTOR as required by the Contract or to perform and complete or comply with the other terms thereof.

(FOR INFORMATION ONLY-Name, Address and Telephone)
AGENT or BROKER:
OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

Exhibit A

NOTICE OF AWARD

Exhibit B

NOTICE TO PROCEED

Exhibit C

CONTRACTOR'S BID

Exhibit D

INSURANCE FORMS

Part 3

CONTRACT CONDITIONS

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By

AMERICAN CONSULTING ENGINEERS COUNCIL

National Society of Professional Engineers
Professional Engineers in Private Practice

AMERICAN SOCIETY OF CIVIL ENGINEERS

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

AMERICAN CONSULTING ENGINEERS COUNCIL

AMERICAN SOCIETY OF CIVIL ENGINEERS

This document has been approved and endorsed by

The Associated General Contractors of America

Construction Specifications Institute

Advancement of Construction Technology

These General Conditions have been prepared for use with the Owner-Contractor Agreements (No. 1910-8-A-1 or 1910-8-A-2) (1996 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other. Comments concerning their usage are contained in the EJCDC User's Guide (No. 1910-50). For guidance in the preparation of Supplementary Conditions, see Guide to the Preparation of Supplementary Conditions (No. 1910-17) (1996 Edition).

EJCDC No. 1910-8 (1996 Edition)

Copyright ©1996

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

American Consulting Engineers Council
1015 15th Street N.W., Washington, DC 20005

American Society of Civil Engineers
345 East 47th Street, New York, NY 10017

TABLE OF CONTENTS

Page

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY . . . . . 00700 - 6
1.01 *Defined Terms* . . . . . 00700 - 6
1.02 *Terminology* . . . . . 00700 - 8
ARTICLE 2 - PRELIMINARY MATTERS . . . . . 00700 - 9
2.01 *Delivery of Bonds* . . . . . 00700 - 9
2.02 *Copies of Documents* . . . . . 00700 - 9
2.03 *Commencement of Contract Times; Notice to Proceed* . . . . . 00700 - 9
2.04 *Starting the Work* . . . . . 00700 - 9
2.05 *Before Starting Construction* . . . . . 00700 - 9
2.06 *Preconstruction Conference* . . . . . 00700 - 10
2.07 *Initial Acceptance of Schedules* . . . . . 00700 - 10
ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE . . . . . 00700 - 10
3.01 *Intent* . . . . . 00700 - 10
3.02 *Reference Standards* . . . . . 00700 - 10
3.03 *Reporting and Resolving Discrepancies* . . . . . 00700 - 11
3.04 *Amending and Supplementing Contract Documents* . . . . . 00700 - 11
3.05 *Reuse of Documents* . . . . . 00700 - 11
ARTICLE 4 - AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS . . . . . 00700 - 11
4.01 *Availability of Lands* . . . . . 00700 - 11
4.02 *Subsurface and Physical Conditions* . . . . . 00700 - 12
4.03 *Differing Subsurface or Physical Conditions* . . . . . 00700 - 12
4.04 *Underground Facilities* . . . . . 00700 - 13
4.05 *Reference Points* . . . . . 00700 - 13
4.06 *Hazardous Environmental Condition at Site* . . . . . 00700 - 14
ARTICLE 5 - BONDS AND INSURANCE . . . . . 00700 - 15
5.01 *Performance, Payment, and Other Bonds* . . . . . 00700 - 15
5.02 *Licensed Sureties and Insurers* . . . . . 00700 - 15
5.03 *Certificates of Insurance* . . . . . 00700 - 15
5.04 *CONTRACTOR's Liability Insurance* . . . . . 00700 - 15
5.05 *OWNER's Liability Insurance* . . . . . 00700 - 16
5.06 *Property Insurance* . . . . . 00700 - 16
5.07 *Waiver of Rights* . . . . . 00700 - 17
5.08 *Receipt and Application of Insurance Proceeds* . . . . . 00700 - 18
5.09 *Acceptance of Bonds and Insurance; Option to Replace* . . . . . 00700 - 18
5.10 *Partial Utilization, Acknowledgment of Property Insurer* . . . . . 00700 - 18
ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES . . . . . 00700 - 18
6.01 *Supervision and Superintendence* . . . . . 00700 - 18
6.02 *Labor; Working Hours* . . . . . 00700 - 19
6.03 *Services, Materials, and Equipment* . . . . . 00700 - 19
6.04 *Progress Schedule* . . . . . 00700 - 19
6.05 *Substitutes and "Or-Equals"* . . . . . 00700 - 19
6.06 *Concerning Subcontractors, Suppliers, and Others* . . . . . 00700 - 20
6.07 *Patent Fees and Royalties* . . . . . 00700 - 21
6.08 *Permits* . . . . . 00700 - 21
6.09 *Laws and Regulations* . . . . . 00700 - 22
6.10 *Taxes* . . . . . 00700 - 22
6.11 *Use of Site and Other Areas* . . . . . 00700 - 22
6.12 *Record Documents* . . . . . 00700 - 22
6.13 *Safety and Protection* . . . . . 00700 - 23
6.14 *Safety Representative* . . . . . 00700 - 23
6.15 *Hazard Communication Programs* . . . . . 00700 - 23

6.16 *Emergencies* . . . . . 00700 - 23
6.17 *Shop Drawings and Samples* . . . . . 00700 - 23
6.18 *Continuing the Work* . . . . . 00700 - 24
6.19 *CONTRACTOR's General Warranty and Guarantee* . . . . . 00700 - 25
6.20 *Indemnification* . . . . . 00700 - 25
ARTICLE 7 - OTHER WORK . . . . . 00700 - 26
7.01 *Related Work at Site* . . . . . 00700 - 26
7.02 *Coordination* . . . . . 00700 - 26
ARTICLE 8 - OWNER'S RESPONSIBILITIES . . . . . 00700 - 26
8.01 *Communications to Contractor* . . . . . 00700 - 26
8.02 *Replacement of ENGINEER* . . . . . 00700 - 26
8.03 *Furnish Data* . . . . . 00700 - 26
8.04 *Pay Promptly When Due* . . . . . 00700 - 26
8.05 *Lands and Easements; Reports and Tests* . . . . . 00700 - 26
8.06 *Insurance* . . . . . 00700 - 27
8.07 *Change Orders* . . . . . 00700 - 27
8.08 *Inspections, Tests, and Approvals* . . . . . 00700 - 27
8.09 *Limitations on OWNER's Responsibilities* . . . . . 00700 - 27
8.10 *Undisclosed Hazardous Environmental Condition* . . . . . 00700 - 27
8.11 *Evidence of Financial Arrangements* . . . . . 00700 - 27
ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION . . . . . 00700 - 27
9.01 *OWNER'S Representative* . . . . . 00700 - 27
9.02 *Visits to Site* . . . . . 00700 - 27
9.03 *Project Representative* . . . . . 00700 - 27
9.04 *Clarifications and Interpretations* . . . . . 00700 - 28
9.05 *Authorized Variations in Work* . . . . . 00700 - 28
9.06 *Rejecting Defective Work* . . . . . 00700 - 28
9.07 *Shop Drawings, Change Orders and Payments* . . . . . 00700 - 28
9.08 *Determinations for Unit Price Work* . . . . . 00700 - 28
9.09 *Decisions on Requirements of Contract Documents and Acceptability of Work* . . . . . 00700 - 28
9.10 *Limitations on ENGINEER's Authority and Responsibilities* . . . . . 00700 - 28
ARTICLE 10 - CHANGES IN THE WORK; CLAIMS . . . . . 00700 - 29
10.01 *Authorized Changes in the Work* . . . . . 00700 - 29
10.02 *Unauthorized Changes in the Work* . . . . . 00700 - 29
10.03 *Execution of Change Orders* . . . . . 00700 - 29
10.04 *Notification to Surety* . . . . . 00700 - 29
10.05 *Claims and Disputes* . . . . . 00700 - 30
ARTICLE 11 - COST OF THE WORK; CASH ALLOWANCES; UNIT PRICE WORK . . . . . 00700 - 30
11.01 *Cost of the Work* . . . . . 00700 - 30
11.02 *Cash Allowances* . . . . . 00700 - 32
11.03 *Unit Price Work* . . . . . 00700 - 32
ARTICLE 12 - CHANGE OF CONTRACT PRICE; CHANGE OF CONTRACT TIMES . . . . . 00700 - 33
12.01 *Change of Contract Price* . . . . . 00700 - 33
12.02 *Change of Contract Times* . . . . . 00700 - 33
12.03 *Delays Beyond CONTRACTOR's Control* . . . . . 00700 - 33
12.04 *Delays Within CONTRACTOR's Control* . . . . . 00700 - 34
12.05 *Delays Beyond OWNER's and CONTRACTOR's Control* . . . . . 00700 - 34
12.06 *Delay Damages* . . . . . 00700 - 34
ARTICLE 13 - TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK . . . . . 00700 - 34
13.01 *Notice of Defects* . . . . . 00700 - 34
13.02 *Access to Work* . . . . . 00700 - 34
13.03 *Tests and Inspections* . . . . . 00700 - 34
13.04 *Uncovering Work* . . . . . 00700 - 35
13.05 *OWNER May Stop the Work* . . . . . 00700 - 35
13.06 *Correction or Removal of Defective Work* . . . . . 00700 - 35

13.07 *Correction Period* . . . . . 00700 - 35
13.08 *Acceptance of Defective Work* . . . . . 00700 - 36
13.09 *OWNER May Correct Defective Work* . . . . . 00700 - 36
ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION . . . . . 00700 - 36
14.01 *Schedule of Values* . . . . . 00700 - 36
14.02 *Progress Payments* . . . . . 00700 - 37
14.03 *CONTRACTOR's Warranty of Title* . . . . . 00700 - 38
14.04 *Substantial Completion* . . . . . 00700 - 38
14.05 *Partial Utilization* . . . . . 00700 - 39
14.06 *Final Inspection* . . . . . 00700 - 39
14.07 *Final Payment* . . . . . 00700 - 39
14.08 *Final Completion Delayed* . . . . . 00700 - 40
14.09 *Waiver of Claims* . . . . . 00700 - 40
ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION . . . . . 00700 - 40
15.01 *OWNER May Suspend Work* . . . . . 00700 - 40
15.02 *OWNER May Terminate for Cause* . . . . . 00700 - 40
15.03 *OWNER May Terminate For Convenience* . . . . . 00700 - 41
15.04 *CONTRACTOR May Stop Work or Terminate* . . . . . 00700 - 41
ARTICLE 16 - DISPUTE RESOLUTION . . . . . 00700 - 41
16.01 *Methods and Procedures* . . . . . 00700 - 41
ARTICLE 17 - MISCELLANEOUS . . . . . 00700 - 42
17.01 *Giving Notice* . . . . . 00700 - 42
17.02 *Computation of Times* . . . . . 00700 - 42
17.03 *Cumulative Remedies* . . . . . 00700 - 42
17.04 *Survival of Obligations* . . . . . 00700 - 42
17.05 *Controlling Law* . . . . . 00700 - 42

GENERAL CONDITIONS

ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

A. 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 which is evidence of the agreement between OWNER and CONTRACTOR covering the Work.

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

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

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

6. *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.

9. *Change Order*--A document recommended by ENGINEER which is signed by CONTRACTOR and OWNER and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.

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

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

12. *Contract Documents*--The Contract Documents establish the rights and obligations of the parties and include the Agreement, Addenda (which pertain to the Contract Documents), CONTRACTOR's Bid (including documentation accompanying the Bid and any post Bid documentation submitted prior to the Notice of Award) when attached as an exhibit to the Agreement, the Notice to Proceed, the Bonds, these General Conditions, the Supplementary Conditions, the Specifications and the Drawings as the same are more specifically identified in the Agreement, together with all Written Amendments, Change Orders, Work Change Directives, Field Orders, and ENGINEER'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 of text, data, graphics, and the like that may be furnished by OWNER to CONTRACTOR are not Contract Documents.

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

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

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

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

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

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

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

20. *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 and who is identified as such in the Supplementary Conditions.

21. *Field Order*--A written order issued by ENGINEER which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.

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

23. *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.

24. *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.

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

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

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

28. *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.

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

30. *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.

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

32. *PCBs*--Polychlorinated biphenyls.

33. *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.

34. *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.

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

36. *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.

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

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

39. *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.

40. *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.

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

42. *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.

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

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

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

46. *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.

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

48. *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.

49. *Work Change Directive*--A written statement to CONTRACTOR issued on or after the Effective Date of the Agreement and signed by OWNER and recommended by ENGINEER ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

50. *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 nonengineering or nontechnical rather than strictly construction-related aspects of the Contract Documents.

1.02 *Terminology*

A. *Intent of Certain Terms or Adjectives*

1. 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 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 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*

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

C. *Defective*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it does not conform to the Contract Documents or does not meet the requirements of any inspection, reference standard, test, or approval referred to in the Contract Documents, or has been damaged prior to ENGINEER's recommendation of final payment (unless responsibility for the protection thereof has been assumed by OWNER at Substantial Completion in accordance with paragraph 14.04 or 14.05).

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.

ARTICLE 2 - PRELIMINARY MATTERS

2.01 *Delivery of Bonds*

A. 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*

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

2.03 *Commencement of Contract Times; Notice to Proceed*

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

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

A. *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 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; however, CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless CONTRACTOR knew or reasonably should have known thereof.

B. *Preliminary Schedules:* Within ten days after the Effective Date of the Agreement (unless otherwise specified

in the General Requirements), CONTRACTOR shall submit to ENGINEER for its timely review:

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

2. a preliminary schedule of Shop Drawing and Sample submittals which will list each required submittal and the times for submitting, reviewing, and processing such submittal; and

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

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

2.06 *Preconstruction Conference*

A. Within 20 days after the Contract Times start to run, but before any Work at the Site is started, a conference attended by CONTRACTOR, ENGINEER, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in paragraph 2.05.B, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

2.07 *Initial Acceptance of Schedules*

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 for acceptability to ENGINEER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to CONTRACTOR until acceptable schedules are submitted to ENGINEER.

1. The progress schedule will be acceptable to ENGINEER if it provides an orderly progression of the Work to completion within any specified Milestones and the Contract Times. Such acceptance will not impose on ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR's full responsibility therefor.

2. CONTRACTOR's schedule of Shop Drawing and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR's schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

A. The Contract Documents are complementary; what is 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. *Standards, Specifications, Codes, Laws, and Regulations*

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

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

2. No provision of any such standard, specification, manual or code, or any instruction of a Supplier shall be effective to change the duties or responsibilities of OWNER, CONTRACTOR, or ENGINEER, or any of their subcontractors, consultants, agents, or employees from those set forth in the Contract Documents, nor shall any such provision or instruction be effective to assign to OWNER, ENGINEER, or any of ENGINEER's Consultants, agents, or employees any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies*

1. 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.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in paragraph 3.04; provided, however, that CONTRACTOR shall not be liable to OWNER or ENGINEER for failure to report any such conflict, error, ambiguity, or discrepancy unless CONTRACTOR knew or reasonably should have known thereof.

B. *Resolving Discrepancies*

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

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

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

3.04 *Amending and Supplementing Contract Documents*

A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof in one or more of the following ways: (i) a Written Amendment; (ii) a Change Order; or (iii) a Work Change Directive.

B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways: (i) a Field Order; (ii) ENGINEER's approval of a Shop Drawing or Sample; or (iii) ENGINEER's written interpretation or clarification.

3.05 *Reuse of Documents*

A. CONTRACTOR and any Subcontractor or Supplier or other individual or entity performing or furnishing 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 adaption 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.

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

4.01 *Availability of Lands*

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

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

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

4.02 *Subsurface and Physical Conditions*

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

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

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

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER, or any of ENGINEER's Consultants with respect to:

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

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

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

4.03 *Differing Subsurface or Physical Conditions*

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

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

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

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

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

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

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

C. *Possible Price and Times Adjustments*

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

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

b. with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of paragraphs 9.08 and 11.03.

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

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

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

c. CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.

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

4.04 *Underground Facilities*

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

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

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

a. reviewing and checking all such information and data,

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

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

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

B. *Not Shown or Indicated*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, CONTRACTOR shall be responsible for the safety and protection of such Underground Facility.

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

4.05 *Reference Points*

A. OWNER shall provide engineering surveys to establish reference points for construction which in ENGINEER's judgment are necessary to enable CONTRACTOR to proceed with the Work. CONTRACTOR shall be responsible for laying out the Work, shall protect and preserve the established reference points and property

monuments, and shall make no changes or relocations without the prior written approval of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

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

B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. Except for such reliance on such "technical data," CONTRACTOR may not rely upon or make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:

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

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

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

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

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

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

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

G. To the fullest extent permitted by Laws and Regulations, OWNER shall indemnify and hold harmless CONTRACTOR, Subcontractors, 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, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by CONTRACTOR or by anyone for whom CONTRACTOR is responsible. Nothing

in this paragraph 4.06.E shall obligate OWNER to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

H. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, 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 4.06.F shall obligate CONTRACTOR to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

I. The provisions of paragraphs 4.02, 4.03, and 4.04 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.

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

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

5.04 *CONTRACTOR's Liability Insurance*

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

1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;

2. claims for damages because of bodily injury, occupational sickness or disease, or death of CONTRACTOR's employees;

3. claims for damages because of bodily injury, sickness or disease, or death of any person other than CONTRACTOR's employees;

4. claims for damages insured by reasonably available personal injury liability coverage which are sustained: (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 insureds (subject to any customary exclusion in respect of professional liability) OWNER, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;

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

3. include completed operations insurance;

4. include contractual liability insurance covering CONTRACTOR's indemnity obligations under paragraphs 6.07, 6.11, and 6.20;

5. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 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).

5.05 *OWNER's Liability Insurance*

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

5.06 *Property Insurance*

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

1. include the interests of OWNER, CONTRACTOR, Subcontractors, 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. OWNER shall purchase and maintain such boiler and machinery insurance or additional property insurance as may be required by the Supplementary Conditions or Laws and Regulations which will include the interests of OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and any other individuals or entities identified in the Supplementary Conditions, each of whom is deemed to have an insurable interest and shall be listed as an insured or additional insured.

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

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

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

5.07 *Waiver of Rights*

A. OWNER and CONTRACTOR intend that all policies purchased in accordance with paragraph 5.06 will protect OWNER, CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, 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 insureds or additional insureds thereunder. 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 insureds or additional insureds (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.

B. OWNER waives all rights against CONTRACTOR, Subcontractors, ENGINEER, ENGINEER's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them for:

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

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

pursuant to paragraph 14.04, or after final payment pursuant to paragraph 14.07.

C. Any insurance policy maintained by OWNER covering any loss, damage or consequential loss referred to in paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against CONTRACTOR, Subcontractors, ENGINEER, or ENGINEER's Consultants and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

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

B. OWNER as fiduciary shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within 15 days after the occurrence of loss to OWNER's exercise of this power. If such objection be made, OWNER as fiduciary shall make settlement with the insurers in accordance with such agreement as the parties in interest may reach. If no such agreement among the parties in interest is reached, OWNER as fiduciary shall adjust and settle the loss with the insurers and, if required in writing by any party in interest, OWNER as fiduciary shall give bond for the proper performance of such duties.

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

A. If either OWNER or CONTRACTOR has any objection to the coverage afforded by or other provisions of the Bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by paragraph 2.05.C. OWNER and CONTRACTOR shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the Bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent Bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

A. CONTRACTOR shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but CONTRACTOR shall not be responsible for the negligence of OWNER or ENGINEER in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

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

6.02 *Labor; Working Hours*

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

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

6.03 *Services, Materials, and Equipment*

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

B. All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of OWNER. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

6.04 *Progress Schedule*

A. CONTRACTOR shall adhere to the progress schedule established in accordance with paragraph 2.07 as it may be adjusted from time to time as provided below.

1. CONTRACTOR shall submit to ENGINEER for acceptance (to the extent indicated in paragraph 2.07) proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

2. Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 12. Such adjustments may only be made by a Change Order or Written Amendment in accordance with Article 12.

6.05 *Substitutes and "Or-Equals"*

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

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

a. in the exercise of reasonable judgment ENGINEER determines that: (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 ENGINEER's sole discretion an item of material or equipment proposed by CONTRACTOR does not qualify as an "or-equal" item under

paragraph 6.05.A.1, it will be considered a proposed substitute item.

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

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

d. CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application 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 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 ENGINEER. CONTRACTOR shall submit sufficient information to allow ENGINEER, in ENGINEER's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in subparagraph 6.05.A.2.

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

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

E. *ENGINEER's Cost Reimbursement:* ENGINEER will record 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 ENGINEER approves 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 Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or

entities to be submitted to OWNER in advance for acceptance by OWNER by a specified date prior to the Effective Date of the Agreement, and if CONTRACTOR has submitted a list thereof in accordance with the Supplementary Conditions, OWNER's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. CONTRACTOR shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued 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 insureds or additional insureds (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*

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

A. Unless otherwise provided in the Supplementary Conditions, CONTRACTOR shall obtain and pay for all construction permits and licenses. OWNER shall assist CONTRACTOR, when necessary, in obtaining such permits

and licenses. CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. 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.

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

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

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

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

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

3. To the fullest extent permitted by Laws and Regulations, CONTRACTOR shall indemnify and hold harmless OWNER, 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 Completion of the Work CONTRACTOR shall clean the Site and make it ready for utilization by OWNER. At the completion of the Work CONTRACTOR shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

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

6.12 *Record Documents*

A. CONTRACTOR shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work

Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to ENGINEER for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to ENGINEER for OWNER.

6.13 *Safety and Protection*

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

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

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

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.

B. CONTRACTOR shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of OWNER or ENGINEER or 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 such time as all the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, CONTRACTOR is obligated to act to prevent threatened damage, injury, or loss. CONTRACTOR shall give ENGINEER prompt written notice if CONTRACTOR believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If ENGINEER determines that a change in the Contract Documents is required because of the action taken by CONTRACTOR in response to such an emergency, a Work Change Directive or Change Order will be issued.

6.17 *Shop Drawings and Samples*

A. CONTRACTOR shall submit Shop Drawings to ENGINEER for review and approval in accordance with the acceptable 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. 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. CONTRACTOR shall also submit Samples to ENGINEER for review and approval in accordance with the acceptable 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.

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

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

3. ENGINEER's review and approval of 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 as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

F. *Resubmittal Procedures*

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

6.18 *Continuing the Work*

A. CONTRACTOR shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with OWNER. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except

as permitted by paragraph 15.04 or as OWNER and CONTRACTOR may otherwise agree in writing.

6.19 *CONTRACTOR's General Warranty and Guarantee*

A. CONTRACTOR warrants and guarantees to OWNER, 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 persons other than CONTRACTOR, Subcontractors, Suppliers, or any other individual or entity for whom CONTRACTOR is responsible; or

2. normal wear and tear under normal usage.

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

1. observations by ENGINEER;

2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;

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

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

5. any acceptance by OWNER or any failure to do so;

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

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, ENGINEER, 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, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

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.

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 therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:

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

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

B. CONTRACTOR shall afford each other contractor who is a party to such a direct contract 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 in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of CONTRACTOR's Work. CONTRACTOR's failure to so report will constitute an acceptance of such other work as fit and proper for integration with CONTRACTOR's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

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

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

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

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

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

ARTICLE 8 - OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

A. Except as otherwise provided in these General Conditions, OWNER shall issue all communications to CONTRACTOR through ENGINEER.

8.02 *Replacement of ENGINEER*

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

8.03 *Furnish Data*

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

8.04 *Pay Promptly When Due*

A. OWNER shall make payments to CONTRACTOR promptly when they are due as provided in paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

A. OWNER's duties in respect of providing lands and easements and providing engineering surveys to establish reference points are set forth in paragraphs 4.01 and 4.05. Paragraph 4.02 refers to OWNER's identifying and making available to CONTRACTOR copies of reports of explorations

and tests of subsurface conditions and drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site that have been utilized by ENGINEER in preparing the Contract Documents.

8.06 *Insurance*

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

8.07 *Change Orders*

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

8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on OWNER's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

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

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

9.01 *OWNER'S Representative*

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

9.02 *Visits to Site*

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

B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in paragraph 9.10, 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 *Project Representative*

A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations thereon of any such Resident Project Representative and assistants will be as provided in paragraph 9.10 and in the Supplementary Conditions. If OWNER designates another

representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

9.04 *Clarifications and Interpretations*

A. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents 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 OWNER and CONTRACTOR. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a written clarification or interpretation, a Claim may be made therefor as provided in paragraph 10.05.

9.05 *Authorized Variations in Work*

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

9.06 *Rejecting Defective Work*

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

9.07 *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*

A. ENGINEER will determine the actual quantities and classifications of Unit Price Work performed by CONTRACTOR. ENGINEER will review with CONTRACTOR the ENGINEER's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). ENGINEER's written decision thereon will be final and binding (except as modified by ENGINEER to reflect changed factual conditions or more accurate data) upon OWNER and CONTRACTOR, subject to the provisions of paragraph 10.05.

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

A. ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to ENGINEER in writing, in accordance with the provisions of paragraph 10.05, with a request for a formal decision.

B. When functioning as interpreter and judge under this paragraph 9.09, ENGINEER will not show partiality to OWNER or CONTRACTOR and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. 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 OWNER or CONTRACTOR of such rights or remedies as either 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 in accordance with the Contract Documents.

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

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

E. The limitations upon authority and responsibility set forth in this paragraph 9.10 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 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 Work Change Directive. Upon receipt of any such document, CONTRACTOR shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).

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

10.02 *Unauthorized Changes in the Work*

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

10.03 *Execution of Change Orders*

A. OWNER and CONTRACTOR shall execute appropriate Change Orders recommended by ENGINEER (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.A or OWNER's correction of defective Work under paragraph 13.09, or (iii) agreed to by the parties;

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

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

10.04 *Notification to Surety*

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

10.05 *Claims and Disputes*

A. *Notice:* Written notice stating the general nature of each Claim, dispute, or other matter shall be delivered by the claimant to ENGINEER and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. Notice of the amount or extent of the Claim, dispute, or other matter with supporting data shall be delivered to the ENGINEER and the other party to the Contract within 60 days after the start of such event (unless ENGINEER allows additional time for claimant to submit additional or more accurate data in support of such Claim, dispute, or other matter). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of paragraph 12.01.B. A Claim for an adjustment in Contract Time shall be prepared in accordance with the provisions of paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to ENGINEER and the claimant within 30 days after receipt of the claimant's last submittal (unless ENGINEER allows additional time).

B. *ENGINEER's Decision:* ENGINEER will render a formal decision in writing within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any. ENGINEER's written decision on such Claim, dispute, or other matter will be final and binding upon OWNER and CONTRACTOR unless:

1. an appeal from ENGINEER's decision is taken within the time limits and in accordance with the dispute resolution procedures set forth in Article 16; or

2. if no such dispute resolution procedures have been set forth in Article 16, a written notice of intention to appeal from ENGINEER's written decision is delivered by OWNER or CONTRACTOR to the other and to ENGINEER within 30 days after the date of such decision, and a formal proceeding is instituted by the appealing party in a forum of competent jurisdiction within 60 days after the date of such decision or within 60 days after Substantial Completion, whichever is later (unless otherwise agreed in writing by OWNER and CONTRACTOR), to exercise such rights or remedies as the appealing party may have with respect to such Claim, dispute, or other matter in accordance with applicable Laws and Regulations.

C. If ENGINEER does not render a formal decision in writing within the time stated in paragraph 10.05.B, a decision denying the Claim in its entirety shall be deemed to have been issued 31 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any.

D. No Claim for an adjustment in Contract Price or Contract Times (or Milestones) will be valid if not submitted in accordance with this paragraph 10.05.

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

11.01 *Cost of the Work*

A. *Costs Included:* The term Cost of the Work means the sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to CONTRACTOR will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by OWNER, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall include only the following items, and shall not include any of the costs itemized in paragraph 11.01.B.

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

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

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

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

5. Supplemental costs including the following:

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

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

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

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

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

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

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

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

i. When the Cost of the Work is used to determine the value of a Change Order or of a Claim, the cost of premiums for additional Bonds and insurance required because of the changes in the Work or caused by the event giving rise to the Claim.

j. When all the Work is performed on the basis of cost-plus, the costs of premiums for all Bonds and insurance CONTRACTOR is required by the Contract Documents to purchase and maintain.

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

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

considered administrative costs covered by the CONTRACTOR's fee.

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

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

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

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

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

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

11.02 *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 as recommended by ENGINEER to reflect actual amounts due CONTRACTOR on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by CONTRACTOR will be made by ENGINEER subject to the provisions of paragraph 9.08.

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 in accordance with paragraph 10.05 if:

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

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

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

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

12.01 *Change of Contract Price*

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

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

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

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

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

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

1. a mutually acceptable fixed fee; or

2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

a. for costs incurred under paragraphs 11.01.A.1 and 11.01.A.2, the CONTRACTOR's fee shall be 15 percent;

b. for costs incurred under paragraph 11.01.A.3, the CONTRACTOR's fee shall be five percent;

c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of paragraph 12.01.C.2.a is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and CONTRACTOR will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;

d. no fee shall be payable on the basis of costs itemized under paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;

e. the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in CONTRACTOR's fee by an amount equal to five percent of such net decrease; and

f. when both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

A. The Contract Times (or Milestones) may only be changed by a Change Order or by a Written Amendment. Any Claim for an adjustment in the Contract Times (or Milestones) shall be based on written notice submitted by the party making the claim to the ENGINEER and the other party to the Contract in accordance with the provisions of paragraph 10.05.

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

12.03 *Delays Beyond CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of CONTRACTOR, the Contract Times (or Milestones) will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in paragraph 12.02.A. Delays beyond the control of CONTRACTOR shall include, but not be limited to, acts or neglect by OWNER, acts or neglect of utility owners or other contractors performing other work as contemplated by

Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

12.04 *Delays Within CONTRACTOR's Control*

A. The Contract Times (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.

12.05 *Delays Beyond OWNER's and CONTRACTOR's Control*

A. Where CONTRACTOR is prevented from completing any part of the Work within the Contract Times (or Milestones) due to delay beyond the control of both OWNER and CONTRACTOR, an extension of the Contract Times (or Milestones) in an amount equal to the time lost due to such delay shall be CONTRACTOR's sole and exclusive remedy for such delay.

12.06 *Delay Damages*

A. In no event shall OWNER or ENGINEER be liable to CONTRACTOR, any Subcontractor, any Supplier, or any other person or organization, or to any surety for or employee or agent of any of them, for damages arising out of or resulting from:

1. delays caused by or within the control of CONTRACTOR; or

2. delays beyond the control of both OWNER and CONTRACTOR including but not limited to fires, floods, epidemics, abnormal weather conditions, acts of God, or acts or neglect by utility owners or other contractors performing other work as contemplated by Article 7.

B. Nothing in this paragraph 12.06 bars a change in Contract Price pursuant to this Article 12 to compensate CONTRACTOR due to delay, interference, or disruption directly attributable to actions or inactions of OWNER or anyone for whom OWNER is responsible.

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

13.01 *Notice of Defects*

A. Prompt notice of all defective Work of which OWNER or ENGINEER has actual knowledge will be given to CONTRACTOR. All defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 *Access to Work*

A. OWNER, ENGINEER, 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 OWNER's and ENGINEER's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to OWNER and ENGINEER.

E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by CONTRACTOR without written concurrence of ENGINEER, it must, if requested by ENGINEER, be uncovered for observation.

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

13.04 *Uncovering Work*

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

B. If ENGINEER considers it necessary or advisable that covered Work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as ENGINEER may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. 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 the parties are unable to agree as to the amount thereof, OWNER may make a Claim therefor as provided in paragraph 10.05. 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 Times (or Milestones), or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a Claim therefor as provided in paragraph 10.05.

13.05 *OWNER May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

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

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.

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.

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

13.08 *Acceptance of Defective Work*

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

13.09 *OWNER May Correct Defective Work*

A. If CONTRACTOR fails within a reasonable time after written notice from ENGINEER to correct defective Work or to remove and replace rejected Work as required by ENGINEER in accordance with paragraph 13.06.A, or if CONTRACTOR fails to perform the Work in accordance with the Contract Documents, or if CONTRACTOR fails to comply with any other provision of the Contract Documents, OWNER may, after seven days written notice to CONTRACTOR, correct and remedy any such deficiency.

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. If the parties are unable to agree as to the amount of the adjustment, OWNER may make a Claim therefor as provided in paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of CONTRACTOR's defective Work.

D. CONTRACTOR shall not be allowed an extension of the Contract Times (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 *Schedule of Values*

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

14.02 *Progress Payments*

A. *Applications for Payments*

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

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

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

B. *Review of Applications*

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

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

a. the Work has progressed to the point indicated;

b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work under paragraph 9.08, 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 tests,

revise or revoke any such payment recommendation previously made, to such extent as may be necessary in ENGINEER's opinion to protect OWNER from loss because:

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

b. the Contract Price has been reduced by 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. ENGINEER has actual knowledge of the occurrence of any of the events enumerated in paragraph 15.02.A.

C. *Payment Becomes Due*

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

D. *Reduction in Payment*

1. OWNER may refuse to make payment of the full amount recommended by ENGINEER because:

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

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

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

d. OWNER has actual knowledge of the occurrence of any of the events enumerated in paragraphs 14.02.B.5.a through 14.02.B.5.c or paragraph 15.02.A.

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

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

14.03 *CONTRACTOR's Warranty of Title*

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

14.04 *Substantial Completion*

A. When CONTRACTOR considers the entire Work ready for its intended use CONTRACTOR shall notify OWNER and ENGINEER in writing that the entire Work is substantially complete (except for items specifically listed by CONTRACTOR as incomplete) and request that ENGINEER issue a certificate of Substantial Completion. Promptly thereafter, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of the Work to determine the status of completion. If ENGINEER does not consider the Work substantially complete, ENGINEER will notify CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers the Work substantially complete, ENGINEER will prepare and deliver to OWNER a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. OWNER shall have seven days after receipt of the tentative certificate during which to make written objection to ENGINEER as to any provisions of the certificate or attached list. If, after considering such objections, ENGINEER concludes that the Work is not substantially complete, ENGINEER will within 14 days after submission of the tentative certificate to OWNER notify CONTRACTOR in writing, stating the reasons therefor. If, after consideration of OWNER's objections, ENGINEER considers the Work substantially complete, ENGINEER will within said 14 days execute and deliver to OWNER and CONTRACTOR a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as ENGINEER believes justified after consideration of any objections from OWNER. At the time of delivery of the tentative certificate of Substantial Completion ENGINEER will deliver to OWNER and CONTRACTOR a written recommendation as to division of responsibili-

ties pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless OWNER and CONTRACTOR agree otherwise in writing and so inform ENGINEER in writing prior to ENGINEER's issuing the definitive certificate of Substantial Completion, ENGINEER's aforesaid recommendation will be binding on OWNER and CONTRACTOR until final payment.

B. OWNER shall have the right to exclude CONTRACTOR from the Site after the date of Substantial Completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the tentative list.

14.05 *Partial Utilization*

A. Use by OWNER at OWNER's option of any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which OWNER, ENGINEER, and CONTRACTOR agree constitutes a separately functioning and usable part of the Work that can be used by OWNER for its intended purpose without significant interference with CONTRACTOR's performance of the remainder of the Work, may be accomplished prior to Substantial Completion of all the Work subject to the following conditions.

1. OWNER at any time may request CONTRACTOR in writing to permit OWNER to use any such part of the Work which OWNER believes to be ready for its intended use and substantially complete. If CONTRACTOR agrees that such part of the Work is substantially complete, CONTRACTOR will certify to OWNER and ENGINEER that such part of the Work is substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. CONTRACTOR at any time may notify OWNER and ENGINEER in writing that CONTRACTOR considers any such part of the Work ready for its intended use and substantially complete and request ENGINEER to issue a certificate of Substantial Completion for that part of the Work. Within a reasonable time after either such request, OWNER, CONTRACTOR, and ENGINEER shall make an inspection of that part of the Work to determine its status of completion. If ENGINEER does not consider that part of the Work to be substantially complete, ENGINEER will notify OWNER and CONTRACTOR in writing giving the reasons therefor. If ENGINEER considers that part of the Work to be substantially complete, the provisions of paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

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

14.06 *Final Inspection*

A. Upon written notice from CONTRACTOR that the entire Work or an agreed portion thereof is complete, ENGINEER will promptly make a final inspection with OWNER and CONTRACTOR and will notify CONTRACTOR in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. CONTRACTOR shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

14.07 *Final Payment*

A. *Application for Payment*

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

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

1. If, on the basis of ENGINEER's observation of the Work during construction and final inspection, and ENGINEER's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, ENGINEER is satisfied that the Work has been completed and CONTRACTOR's other obligations under the Contract Documents have been fulfilled, ENGINEER will, within ten days after receipt of the final Application for Payment, indicate in writing ENGINEER's recommendation of payment and present the Application for Payment to OWNER for payment. At the same time ENGINEER will also give written notice to OWNER and CONTRACTOR that the Work is acceptable subject to the provisions of paragraph 14.09. Otherwise, ENGINEER will return the Application for Payment to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment, in which case CONTRACTOR shall make the necessary corrections and resubmit the Application for Payment.

C. *Payment Becomes Due*

1. Thirty days after the presentation to OWNER of the Application for Payment and accompanying documentation, the amount recommended by ENGINEER will become due and, when due, will be paid by OWNER to CONTRACTOR.

14.08 *Final Completion Delayed*

A. If, through no fault of CONTRACTOR, final completion of the Work is significantly delayed, and if ENGINEER so confirms, OWNER shall, upon receipt of CONTRACTOR's final Application for Payment 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*

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

1. a waiver of all Claims by OWNER against CONTRACTOR, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from CONTRACTOR's continuing obligations under the Contract Documents; and

2. a waiver of all Claims by CONTRACTOR against OWNER other than those previously made in writing which are still unsettled.

ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

15.01 *OWNER May Suspend Work*

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

15.02 *OWNER May Terminate for Cause*

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

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

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

3. CONTRACTOR's disregard of the authority of ENGINEER; or

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

B. If one or more of the events identified in paragraph 15.02.A occur, OWNER may, after giving CONTRACTOR (and the surety, if any) seven days written notice, terminate

the services of CONTRACTOR, exclude CONTRACTOR from the Site, and take possession of the Work and of all CONTRACTOR's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by CONTRACTOR (without liability to CONTRACTOR for trespass or conversion), incorporate in the Work all materials and equipment stored at the Site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the Work as OWNER may deem expedient. In such case, CONTRACTOR shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by OWNER arising out of or relating to completing the Work, such excess will be paid to CONTRACTOR. If such claims, costs, losses, and damages exceed such unpaid balance, CONTRACTOR shall pay the difference to OWNER. Such claims, costs, losses, and damages incurred by OWNER will be reviewed by ENGINEER as to their reasonableness and, when so approved by ENGINEER, incorporated in a Change Order. When exercising any rights or remedies under this paragraph OWNER shall not be required to obtain the lowest price for the Work performed.

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

15.03 *OWNER May Terminate For Convenience*

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

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

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

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

4. for reasonable expenses directly attributable to termination.

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

15.04 *CONTRACTOR May Stop Work or Terminate*

A. If, through no act or fault of CONTRACTOR, the Work is suspended for more than 90 consecutive days by OWNER or under an order of court or other public authority, or ENGINEER fails to act on any Application for Payment within 30 days after it is submitted, or OWNER fails for 30 days to pay CONTRACTOR any sum finally determined to be due, then CONTRACTOR may, upon seven days written notice to OWNER and ENGINEER, and provided OWNER or ENGINEER do not remedy such suspension or failure within that time, terminate the Contract and recover from OWNER payment on the same terms as provided in paragraph 15.03. In lieu of terminating the Contract and without prejudice to any other right or remedy, if ENGINEER has failed to act on an Application for Payment within 30 days after it is submitted, or OWNER has failed for 30 days to pay CONTRACTOR any sum finally determined to be due, CONTRACTOR may, seven days after written notice to OWNER and ENGINEER, stop the Work until payment is made of all such amounts due CONTRACTOR, including interest thereon. The provisions of this paragraph 15.04 are not intended to preclude CONTRACTOR from making a Claim under paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to CONTRACTOR's stopping the Work as permitted by this paragraph.

ARTICLE 16 - DISPUTE RESOLUTION

16.01 *Methods and Procedures*

A. Dispute resolution methods and procedures, if any, shall be as set forth in the Supplementary Conditions. If no method and procedure has been set forth, and subject to the provisions of paragraphs 9.09 and 10.05, OWNER and CONTRACTOR may exercise such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any dispute.

ARTICLE 17 - MISCELLANEOUS

17.01 *Giving Notice*

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

17.02 *Computation of Times*

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

17.03 *Cumulative Remedies*

A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, 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*

A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion, and acceptance of the Work or termination or completion of the Agreement.

17.05 *Controlling Law*

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

SECTION 00800

SUPPLEMENTARY CONDITIONS

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

SC-1 DEFINITIONS AND TERMINOLOGY

The terms used in these Supplementary Conditions which are defined in the Standard General Conditions of the Construction Contract (No. 1910-8, 1996 Edition) have the meanings assigned to them in the General Conditions.

SC-1.01.A.19 ENGINEER

Delete Paragraph 1.01.A.19 of the General Conditions and insert the following in its place:

ENGINEER The Springville City Engineer

SC-2.02 COPIES OF DOCUMENTS

Delete Paragraph 2.02 of the General Conditions and insert the following in its place:

OWNER shall furnish to CONTRACTOR up to 2 copies of the contract Documents which may include bound reduced drawings. Additional quantities of the Contract Documents will be furnished at reproduction cost.

SC-2.03 COMMENCEMENT OF CONTRACT TIME; NOTICE TO PROCEED

Delete paragraph 2.03 of the General Conditions and insert the following in its place:

The Contract Times will commence to run on the date indicated in the Notice to Proceed. Any Work undertaken by CONTRACTOR prior to the date indicated in the Notice to Proceed will be entirely at his own risk.

SC-5.04 CONTRACTOR'S LIABILITY INSURANCE

The requirements of General Conditions paragraph 5.04 for insurance to be purchased and maintained by the CONTRACTOR, and any renewals thereof, are modified and supplemented as follows:

C. A copy of the acceptable Certificates of Insurance filed with the OWNER shall be delivered to the OWNER for review before any work at the site is started.

D. All liability insurance policies for the project shall include an endorsement naming the OWNER as additional insured.

E. The CONTRACTOR General Liability Insurance shall be comprehensive form and shall include the following coverages:

1. Premises/Operations, collapse hazard, underground hazard, products/completed operations hazard, contractual insurance applicable to CONTRACTOR□s obligations under SC 6.03 Indemnification, broad form property damage, independent contractors, and personal injury.

2. Auto Liability Insurance shall be comprehensive form and shall cover owned, hired and non-owned vehicles.

3. 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. Workers' Compensation, etc. under paragraphs 5.04.A.1 and A.2. of the General Conditions:

      (1) State: .....Statutory
      (2) Applicable Federal:.....Statutory
      (3) Employer's Liability $1,000,000
      (Each Accident):

   b. CONTRACTOR's Liability Insurance under paragraphs 5.04.A.3 through A.6 of the General Conditions which shall also include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of CONTRACTOR:

      (1) General Aggregate (Except Products-Completed Ops).....$2,000,000
      (2) Products-Completed Operations Aggregate.....$1,000,000
      (3) Personal and Advertising Injury (Per Person/ Organization):.....$1,000,000
      (4) Each Occurrence (Bodily Injury and Property Damage): $1,000,000
      (5) Property Damage liability insurance will provide Explosion, Collapse and Underground coverages where applicable.
      (6) Excess Liability in Umbrella Form:
         (a) General Aggregate $2,000,000
         (b) Each Occurrence.....$1,000,000

   c. Automobile Liability under paragraph 5.04.A.6 of the General Conditions:

      (1) Bodily Injury:
         (a) Each Person.....$1,000,000
         (b) Each Accident.....$1,000,000
      (2) Property Damage:
         (a) Each Accident $1,000,000
         or
      (3) Combined Single Limit (Bodily Injury and Property Damage):
         (a) Each Accident $1,000,000

d. The Contractual Liability coverage required by paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the following amounts:

(1) Bodily Injury
(a) Each Accident $1,000,000
(b) Annual Aggregate $1,000,000
(2) Property Damage:
(a) Each Accident $1,000,000
(b) Annual Aggregate $1,000,000

e. Other persons or entities (other than those already listed in the General Conditions) to be included on the policy as additional insured shall include:

(1) Springville City Corporation
(2) Other Engineering or testing groups employed by OWNER for work at the site or this project.

SC-5.06 PROPERTY INSURANCE

SC-5.06.A. Delete paragraph 5.06.A of the General Conditions in its entirety and insert the following in its place:

A. CONTRACTOR shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. This insurance shall:

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

2. Be written on a Builder□s Risk □all-risk□ or open peril or special causes of loss policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, 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 OWNER; and

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, and CONTRACTOR with 30 days written notice to each other additional insured to whom a certificate of insurance has been issued.

B. CONTRACTOR shall be responsible for any deductible or self-insured retention.

C. The policies of insurance required to be purchased and maintained by CONTRACTOR in accordance with this paragraph SC-5.06 shall comply with the requirements of paragraph 5.06.C of the General Conditions.

SC-5.06.E. Delete paragraph 5.06.E of the General Conditions in its entirety.

SC - 6.13 SAFETY AND PROTECTION

Add the following language at the end of the first sentence of the first paragraph of 6.13 of the General Conditions:

In particular the CONTRACTOR shall be responsible for observing and supervising all safety precautions in accordance with regulations established by the Occupational Safety and Health Administration (OSHA).

SC-6.20 INDEMNIFICATION

Paragraphs 6.20.A, B, & C of the General Conditions shall be deleted in their entirety and replaced with the following:

A. To the fullest extent permitted by law, the CONTRACTOR shall indemnify and hold harmless the OWNER and their agents and employees from and against all claims, damages, losses and expense including but not limited to attorney□s fees arising out of or resulting from the performance of the work, provided that any such claim, damage, loss or expense (a) 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 (b) is caused in whole or in part by any negligent act, errors or omission of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused by a party indemnified hereunder.

B. In any and all claims against the OWNER or any of their agents or employees by an employee of the CONTRACTOR, any SUBCONTRACTOR, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, the indemnification obligation under this paragraph shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any SUBCONTRACTOR under worker□s compensation acts, disability benefit acts or other employee benefit acts.

C. The obligations of the CONTRACTOR under subparagraph SC-6.20.A above, shall not extend to the liability of the OWNER, his agents or employees arising out of the preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications.

SC-7.02 COORDINATION

Add a new paragraph immediately after paragraph 7.02 of the General Conditions which is to read as follows:

SC-7.03. Should CONTRACTOR cause damage to the work or property of any separate contractor at the site, or should any claim arising out of CONTRACTOR's performance of the Work at the site be made by any separate contractor against CONTRACTOR, OWNER, the Construction Coordinator or any other person, CONTRACTOR shall promptly attempt to settle with such other contractor by agreement, or otherwise resolve the dispute by arbitration or at law. CONTRACTOR shall, to the fullest extent permitted by Laws and Regulations, indemnify and hold OWNER, and the Construction Coordinator harmless from and against all claims, damages, losses and expenses (including, but not limited to, fees of engineers, architects, attorneys and other professionals and court and arbitration costs) arising directly, indirectly or consequentially out of any action, legal or equitable, brought by any separate contractor against OWNER, or the Construction Coordinator to the extent based on a claim arising out of CONTRACTOR's performance of the Work. Should a separate contractor cause damage to the Work or property of CONTRACTOR or should the performance of Work by any separate contractor at the site give rise to any other claim, CONTRACTOR shall not institute any action, legal or equitable, against OWNER, or the Construction Coordinator or permit any action against any of them to be maintained and continued in its name or for its benefit in any court or before any arbiter which seeks to impose liability on or to recover damages from OWNER, or the Construction Coordinator on account of any such damage or claim. If CONTRACTOR is delayed at any time in performing or furnishing Work by any act or neglect of a separate contractor and OWNER and CONTRACTOR are unable to agree as to the extent of any adjustment in Contract Times attributable thereto, CONTRACTOR may make a claim for an extension of times in accordance with Article 12. An extension of the Contract Times shall be CONTRACTOR's exclusive remedy with respect to OWNER, and Construction Coordinator for any delay, disruption, interference or hindrance caused by any separate contractor. This paragraph does not prevent recovery from OWNER, or Construction Coordinator for activities that are their respective responsibilities.

SC-11.03 UNIT PRICE WORK

Paragraph 11.03.C of the General Conditions is hereby deleted in its entirety and the following is substituted in lieu thereof:

C. The unit price of an item of Unit Price Work shall be subject to re-evaluation and adjustment under the following conditions:

1. If the total cost of a particular item of Unit Price Work amounts to 30% or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by CONTRACTOR differs by more than 30% from the estimated quantity of such item indicated in the Agreement; and

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

3. If CONTRACTOR believes that CONTRACTOR has incurred additional expense as a result thereof; or if OWNER believes that the quantity variation entitles OWNER to an adjustment in the unit price, either OWNER or CONTRACTOR may make a claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

SC-14.02.A APPLICATIONS FOR PAYMENT

The first sentence of Paragraph 14.02.A.1 of the General Conditions is hereby deleted in its entirety and the following is substituted in lieu thereof:

1. At least thirty (30) days before the date established for each progress payment (but not more often than once a month), CONTRACTOR shall submit to OWNER for review an Application for Payment filled out and signed by CONTRACTOR covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.

2. All applications for payment shall be accompanied by partial lien releases on the project from all Subcontractors, Employees, Suppliers, and Contractors who have pre-liened the work.

SC-14.02.C PAYMENT BECOMES DUE

Paragraph 14.02.C of the General Conditions is hereby deleted in its entirety and the following is substituted in lieu thereof:

OWNER will, within ten days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to OWNER, or return the Application to CONTRACTOR indicating in writing ENGINEER's reasons for refusing to recommend payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the Application. Twenty days after presentation of the Application for Payment to OWNER, but not prior to the day indicated in Section 5.1 of the "Agreement", the amount recommended will (subject to the provisions of the last sentence of paragraph 14.07) become due and when due will be paid by OWNER to CONTRACTOR.

- END OF SUPPLEMENTARY CONDITIONS -

Part 4

TECHNICAL SPECIFICATIONS

SECTION 01010

SUMMARY OF WORK

PART 1 GENERAL

1.01 GENERAL

A. The work to be performed under this project shall consist of furnishing all labor, materials, and equipment necessary or required to complete the work in all respects as shown on the plans and as herein specified. All work, materials, and services not expressly shown or called for in the Contract Documents which may be necessary to complete the construction of the work in good faith shall be performed, furnished, and installed by CONTRACTOR as though originally so specified or shown, at no increase in cost to OWNER.

1.02 WORK COVERED BY CONTRACT DOCUMENTS

A. The work to be performed is as indicated in the Agreement (Document 00500).

1.03 CONTRACT METHOD

A. The work hereunder will be constructed under a unit-price contract.

B. CONTRACTOR shall include the General Conditions and Supplementary Conditions of the Contract as a part of all of its subcontract agreements.

1.04 WORK SEQUENCE

A. The contract time and dates for substantial and final completion are as indicated in the Agreement (Document 00500), and is on a calendar day basis commencing from the date of the Notice to Proceed.

1.05 CONTRACTOR USE OF PROJECT SITE

A. CONTRACTOR's use of the project site shall be limited to its construction operations, including on-site storage of materials, on-site fabrication facilities.

1.06 PROJECT SECURITY

A. CONTRACTOR shall make all necessary provisions to protect the project and CONTRACTOR's facilities from fire, theft, and vandalism, and the public from unnecessary exposure to injury.

1.07 CHANGES IN THE WORK

A. It is mutually understood that it is inherent in the nature of municipal construction that some changes in the plans and specifications may be necessary during the course of construction to adjust them to field conditions, and that it is of the essence of the Contract to recognize a normal and expected margin of change. The OWNER shall have the right to make such changes, from time

to time, in the plans, in the character if the work, and in the scope of the project as may be necessary or desirable to ensure the completion of the work in the most satisfactory manner without invalidating the Contract.

- END OF SECTION -

SECTION 01025

MEASUREMENT AND PAYMENT

PART 1 GENERAL

A. All work completed under this contract shall be in accordance with the Plans and Specifications and will be measured by the ENGINEER or his authorized representative. The quantities appearing on the Bid Schedule are approximate only, and are prepared for the comparison of bids. Payment to CONTRACTOR on bid items with unit prices other than "Lump Sum" or “Plan Quantity” will be made for actual quantities of work performed and accepted, or material furnished in accordance with the Contract. The scheduled quantities of work to be done and materials to be furnished may be increased or decreased.

B. The term "Lump Sum" when used as an item of payment will mean complete payment for the work described in the contract. When a complete structure, portion of work, or unit is specified "Lump Sum" as the unit of measurement, the unit will include fittings, accessories, and all work necessary to complete the work as shown on the plans and as specified in the contract documents.

C. The term "Plan Quantity" when used in an item description will mean that the item will not be measured, but will instead be paid for by the specified unit of measure and at the estimated quantity listed in the Bid Schedule.

D. Measurement and payment to furnish and install or construct a particular Bid Item will be considered as payment in full for furnishing all labor, equipment, materials, supplies, tools and miscellaneous apparatus necessary for a complete item, and the aggregate payment of all Bid Items will constitute full compensation to construct a complete and workable Project as specified.

E. Payment for all items shall be at the unit price listed in the bid schedule. Payment will be withheld for any material or work not completed in accordance with these specifications and/or not passing required tests.

F. No measurement and payment will be made for any incidental work that is not specifically identified in this Division but is necessary for a complete and workable Project as specified. This includes, but is not limited to, dewatering, submittals, certifications, materials testing, clearing and grubbing, landscape restoration, and temporary environmental controls

G. When the accepted quantities of work vary from the quantities in the bid schedule, CONTRACTOR shall accept as payment in full, so far as contract items are concerned, payment at the original contract unit prices for the work done. OWNER reserves the right to add to or delete from quantities listed in the bid schedule in order to match the total bid with the budgeted money available.

PART 2 BID SCHEDULE

See table on subsequent sheet(s).

BID ITEM	ITEM	METHOD OF MEASUREMENT	BASIS OF PAYMENT
1	Mobilization	Not measured; paid for on a lump sum basis	Payment shall be considered full compensation for general and miscellaneous responsibilities and operations not normally attributed to any other single bid item within this schedule. This shall include, but is not limited to, work described or enumerated in Section 01505, Mobilization and mobilizing to and from the project, clean-up, temporary utilities, payment and performance bonding, insurance, permits, and pre-construction video records. Work completed under this bid item shall be paid for at the contract lump sum price in accordance with the following schedule: a. At 10% of project completion, 25% of the lump sum amount will be paid. b. At 25% of project completion, 50% of the lump sum amount will be paid. c. At 50% of project completion, 75% of the lump sum amount will be paid. d. At 75% of project completion, 100% of the lump sum amount will be paid.
2	Traffic control	Not measured; paid for on a lump sum basis	Payment shall be considered full compensation for design, submission, approval, fees, permits, and implementation of the traffic control plan, including but not limited to: furnish and maintain all signs, electronic VMS boards, channelization devices, flagmen, steel plates, ramping, and barricades required in the specifications or as ordered by the Owner and/or UDOT, and as required for the proper protection and direction of the traveling public. **No work shall commence until the project has been adequately signed.** Facilities, services, and actions shall comply with, but not necessarily be limited to: MUTCD, UDOT, and Springville City requirements. Work completed under this bid item shall be paid for at the contract lump sum price in accordance with the following schedule: a. At 10% of project completion, 25% of the lump sum amount will be paid. b. At 25% of project completion, 50% of the lump sum amount will be paid. c. At 50% of project completion, 75% of the lump sum amount will be paid. d. At 75% of project completion, 100 % of the lump sum amount will be paid.

BID ITEM	ITEM	METHOD OF MEASUREMENT	BASIS OF PAYMENT
3 and 4	8-inch and 10-inch CIPP Rehabilitation	Linear foot of sewerline rehabilitaed using CIPP in accordacne with Spec 33 05 23.40. Shall be measured on a horizontal basis for each manhole-to-manhole reach.	Payment shall be considered full compensation for all labor, equipment and materials necessary to rehabilitate exisitng sanitary sewerline through the use of CIPP, including, but not limited to; moving equipment from reach to reach, set up for installation, pre-installation video inspection, pre-installation sewer line cleaning, grit, calcification and root removal, all equipment sewer bypassing, traffic control, permits, sewer pipe lining and testing, post installation video inspection, testing and all other costs whatsoever involved in relining the sewer pipes and related work described in the Contract Documents.
5	Lateral Reinstatement - "Top Hat" Lateral Liner	Each service tap that is reinstated and Top Hat later liner accpepably installed.	Payment shall be considered full compensation for all labor, equipment and materials necessary to reinstate the exisitngin lateral and install a "Top Hat" later liner, including, but not limited to;Pre-Lining cleaning and CCTV inspections, Post-Lining CCTV inspection, Pre-Lining leakage control, bypass pumping, removal of the CIPP coupon, brushing and polishing of the lateral cut edge, installation of the Top Hat lateral liner to create a lateral mainline interface seal, permanent restoration, permanent repair of manhole bench and channel, testing and all other labor, materials and equiipment required (excluding itmes paid for elsewhere) for the reinstatement of the existing sewer lateral, complete and in place.
6	Intruding Lateral Cut	Each intruding lateral acceptably cut	Payment shall be considered full compensation for all labor, equipment and materials necessary to cut the intruding section of sewer lateral flush with the main in advance f the liner isntallation, including, but not limited to; cut, removal, disposal of the protrduing lateral flush with the main, brushing and polishing of the lateral cut edge in preparation for CIPP installation, CCTV inspection, by pass pumping, removal of laterla cut/debris and all other labor, materials and equiipment required (excluding itmes paid for elsewhere) for the cuting of the intruding lateral.

SECTION 01040

COORDINATION

PART 1 GENERAL

1.01 GENERAL

A. The OWNER and/or utility owners may be working within the project area while this contract is in progress. If so, the CONTRACTOR shall schedule his work in conjunction with these other entities to minimize mutual interference.

B. All compaction and other testing requirements specified shall be provided and paid for by OWNER.

C. CONTRACTOR shall notify OWNER of the schedule for materials testing required by CONTRACTOR in Sections 01410 and 01440 a minimum of 24 hours in advance in order to provide OWNER time to be present during desired testing. CONTRACTOR shall be responsible for obtaining copies of testing reports or data and insuring that the work is in full compliance with the Contract Documents.

D. CONTRACTOR shall notify owners of private rights-of-way 72 hours prior to work being performed across private owners right-of-way.

E. If required to work in City streets or Utah Department Of Transportation (UDOT) right-of-way, CONTRACTOR shall notify right-of-way owner 72 hours prior to work being performed therein. Work within the City streets or UDOT right-of-way shall be in accordance with required permits and any license agreement with OWNER. CONTRACTOR shall obtain and comply with all required permits.

1.02 MEASUREMENT AND PAYMENT

A. Coordination shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01050

FIELD ENGINEERING

PART 1 GENERAL

1.01 GENERAL

A. OWNER shall provide the following construction surveying at no cost to CONTRACTOR:

1. New storm drain inlet location staking, associated TBC and flow line elevations.

2. Redhead stakes at grade breaks and at 100-foot intervals or more often as needed for proper construction of the roadway.

3. Removal and replacement of Survey monuments. Any removal of survey monuments, without notification to the OWNER/Surveyor, is illegal and additional replacement costs will be charged to the CONTRACTOR.

B. CONTRACTOR shall provide all other survey construction staking as necessary to complete the facilities and appurtenant work according to the contract documents.

C. OWNER shall not be responsible for stakes, etc. removed through negligence of CONTRACTOR and in that event shall be compensated by CONTRACTOR $50.00 per stake replaced for restaking efforts.

D. CONTRACTOR shall provide two (2) business day advance notice to OWNER/Surveyor for any surveying requests.

1.02 MEASUREMENT AND PAYMENT

A. Field Engineering shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01070

ABBREVIATIONS

PART 1 GENERAL

1.01 DESCRIPTION

A. Wherever in these Specifications references are made to the standards, specifications, or other published data of the various national, regional, or local organizations, such organizations may be referred to by their acronym or abbreviation only. As a guide to the user of these specifications, the following acronyms or abbreviations which may appear in these specifications shall have the meanings indicated herein.

1.02 ABBREVIATIONS AND ACRONYMS

AAR Association of American Railroads
AASHTO American Association of the State Highway and Transportation Officials
ACI American Concrete Institute
AGA American Gas Association
AGC American General Contractors
AI The Asphalt Institute
AIA American Institute of Architects
AISC American Institute of Steel Construction
AISI American Iron and Steel Institute
ANSI American Nation Standards Institute, Inc.
APWA American Public Works Association
ASCE American Society of Civil Engineers
ASHRAE American Society of Heating, Refrigerating, and Air-Conditioning Engineers
ASME American Society of Mechanical Engineers
ASOC American Society of Quality Control
ASSE American Society of Sanitary Engineers
ASTM American Society for Testing and Materials
AWS American Welding Society
AWWA American Water Works Association
BBC Basic Building Code, Building Officials and Code Administrators International
CEMA Conveyors Equipment Manufacturer's Association
CGA Compressed Gas Association
CLFMI Chain Link Fence Manufacturer's Institute
CMA Concrete Masonry Association
CRSI Concrete Reinforcing Steel Institute
DWQ Department of Water Quality
DWR Drinking Water Regulations
EIA Electronic Industries Association
ETC Electrical Test Laboratories
ICBO International Conference of Building Officials
IEEE Institute of Electrical and Electronics Engineers

IES	Illuminating Engineering Society
IME	Institute of Makers of Explosives
ISA	Instrument Society of America
ISO	International Organization of Standardization
ITE	Institute of Traffic Engineers
MBMA	Metal Building Manufacturer's Association
NACE	National Association of Corrosion Engineers
NBS	National Bureau of Standards
NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NFPA	National Fire Protection Association
NFPA	National Forest Products Association
OSHA	Occupational Safety and Health Administration
PCA	Portland Cement Association
RWMA	Resistance Welder Manufacturer's Association
SAE	Society of Automotive Engineers
SSPWC	Standard Specification for Public Works Construction
UDOT	Utah Department of Transportation
UBC	Uniform Building Code
UL	Underwriters Laboratories, Inc.
UPRR	Union Pacific Railroad
WCRSI	Western Concrete Reinforcing Steel Institute
WRI	Wire Reinforcements Institute, Inc.
WWPA	Western Wood Products Association

- END OF SECTION -

SECTION 01090

REFERENCE STANDARDS

PART 1 GENERAL

1.01 GENERAL

A. TITLES OF SECTIONS AND PARAGRAPHS. Captions accompanying Specifications sections and paragraphs are for convenience of reference only, and do not form a part of the Specification.

B. APPLICABLE PUBLICATIONS. Whenever in these specifications references are made to published specifications, codes, standards, or other requirements, it shall be understood that wherever no date is specified, only the latest specifications, standards or requirements of the respective issuing agencies which have been published as of the date that the work is advertised for bids, shall apply; except to the extent that said standards or requirements may be in conflict with applicable laws, ordinances, or governing codes. No requirements set forth herein or shown on the drawings shall be waived because of any provision of, or omission from, said standards or requirements.

C. SPECIALISTS, ASSIGNMENTS. In certain instances, specifications test requires (or implies) that specific work is to be assigned to specialists or expert entities, who must be engaged for the performance of that work. Such assignments shall be recognized as special requirements and shall not be interpreted so as to conflict with the enforcement of building codes and similar regulations governing the work; also they are not intended to interfere with local union jurisdiction settlements and similar conventions. Such assignments are intended to establish which party or entity involved in a specific unit of work is recognized as "expert" for the indicated construction processes or operations. Nevertheless, the final responsibility for fulfillment of the entire set of contract requirements remains with CONTRACTOR.

1.02 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

A. Without limiting the generality of other requirements of the specifications, all work specified herein shall conform to or exceed the requirements of all applicable codes and the applicable requirements of the following documents to the extent that the provisions of such documents are not in conflict with the requirements of these Specifications nor the applicable codes.

B. Reference herein to "Building Code" or UBC shall mean the Uniform Building Code of the International Conference of Building Officials (ICBO). The latest edition of the code as approved and used by the local agency as of the date of award, as adopted by the agency having jurisdiction, shall apply to the work herein, including all addenda, modifications, amendments, or other lawful changes thereto.

C. In case of conflict between codes, reference standards, drawings and the other Contract Document, the most stringent requirements shall govern. All conflicts shall be brought to the attention of the ENGINEER for clarification and directions prior to ordering or providing any materials or labor. CONTRACTOR shall bid the most stringent requirements.

D. APPLICABLE STANDARD SPECIFICATIONS. CONTRACTOR shall construct the work specified herein in accordance with the requirements of the Contract Documents, the most current Edition of the *Springville City Standard Specifications and Drawings* manual, and the referenced portions of those referenced codes, standards, and specifications listed herein; except, that wherever references to "Standard Specifications" are made, the provisions therein for measurement and payment shall not apply.

E. References in the Contract Documents to "Standard Specifications" shall mean the most current Edition of the *Springville City Standard Specifications and Drawings* manual and the Contract Documents including all current supplements, addenda, and revisions thereof.

F. References herein to "OSHA Regulations for Construction" shall mean Title 29, Part 1926, Construction Safety and Health Regulations, Code of Federal Regulations (OSHA), including all changes and amendments thereto.

G. References herein to "OSHA Standards" shall mean Title 29, Part 1910, Occupational Safety and Health Standards, Code of Federal Regulations (OSHA), including changes and amendments thereto.

H. UTAH STATE BOARD OF HEALTH REQUIREMENTS. Water and Sewer installation shall conform to the requirements of the Utah Administration Code, R448-3, for "Water Mains Near Sewers" for horizontal and vertical separation.

I. UTAH DEPARTMENT OF TRANSPORTATION (UDOT) REQUIREMENTS. CONTRACTOR's work shall conform to UDOT specifications for excavation on State highways. (See Section 17010)

J. U.S. ARMY CORPS OF ENGINEERS REQUIREMENTS. CONTRACTOR's work shall conform to C.O.E. Specifications in accordance with Section 404 of the Clean Water Act for excavation in wetlands.

K. Reference herein to APWA shall mean the latest edition of the Manual of Standard Specifications and Manual of Standard Plans as prepared by the American Public Works Association and the Associated General Contractors of America.

- END OF SECTION -

SECTION 01210

PROJECT MEETINGS

PART 1 GENERAL

1.01 PRECONSTRUCTION CONFERENCE

A. Prior to the commencement of work at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by CONTRACTOR, its superintendent, and its subcontractors as appropriate. Other attendees will be:

1. Representatives of OWNER.

2. Governmental representatives as appropriate.

3. Others as requested by CONTRACTOR, or OWNER.

B. Unless previously submitted to OWNER, CONTRACTOR shall bring to the conference one copy of each of the following:

1. Progress Schedule a detailed outline showing the sequences of construction of principle items of work. The outline shall show the beginning and ending dates of the major items of work on the Project.

2. A list of names, titles, addresses, and telephone numbers of the CONTRACTOR's responsible personnel, indicating those who may be reached outside normal working hours.

3. Procurement schedule of major equipment and materials and items requiring long lead time.

4. Shop Drawings/Sample/Substitute or "Or Equal" submittal schedule.

C. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to CONTRACTOR prior to the meeting date, which may include the following:

1. CONTRACTOR's tentative schedules.

2. Transmittal, review, and distribution of CONTRACTOR's submittals.

3. Processing applications for payment.

4. Maintaining record documents.

5. Critical work sequencing.

6. Field decisions and Change Orders.

7. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.

8. Major equipment deliveries and priorities.

9. CONTRACTOR's assignments for safety and first aid.

D. OWNER will preside at the preconstruction conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.

1.02 PROGRESS MEETINGS

A. CONTRACTOR shall schedule and hold regular on-site progress meetings at least weekly and at other times as required by OWNER or as required by progress of the work. CONTRACTOR, and all subcontractors active on the site shall be represented at each meeting. CONTRACTOR may at its discretion request attendance by representatives of its suppliers, manufacturer's, and other subcontractors.

B. OWNER shall preside at the meetings and provide for keeping and distribution of the minutes. The purpose of the meetings will be to review the progress of the work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

C. At each construction progress meeting a progress report shall be presented by the CONTRACTOR containing an updated Progress Schedule. Where the delayed completion date of a project phase is noted, the CONTRACTOR shall describe the anticipated delays or problems and outline the action plan being taken to counter their effect.

1.03 MEASUREMENT AND PAYMENT

A. Project Meetings shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01300

CONTRACTOR SUBMITTALS

PART 1 GENERAL

1.01 SHOP DRAWING SUBMITTAL

A. CONTRACTOR shall furnish to the OWNER for review, copies of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication and installation drawings, erection drawings, list, graphs, operating instructions, catalog sheets, data sheets, and similar items. Shop drawings and submittal requirements shall include interpretations of proposed or required configurations not shown on the drawings, so as a document record of such can be approved.

B. Drawings shall be submitted sufficiently in advance to allow the OWNER not less than ten regular working days for examining the drawings. These drawings shall be accurate, distinct, and complete and shall contain all required information, including satisfactory identification of items and unit assemblies in relation to the contract drawings and/or specifications.

C. When the shop drawings are approved by the OWNER, two sets of prints will be returned to CONTRACTOR marked "Approved", "Approved, Except as Noted", or similar notification. If changes or corrections are necessary, one set will be returned to CONTRACTOR with such changes or corrections, indicated by a brief statement, and CONTRACTOR shall correct and resubmit the drawings, in triplicate, when requested by the OWNER.

D. Approval of shop drawings, will not be required of reinforcing steel that is detailed by CONTRACTOR in accordance with the plans and specifications. Any change from the plans and specifications that is made by CONTRACTOR in reinforcing steel as well as any other change shall be approved by the OWNER in a written change order prior to any work being altered from that already approved for construction.

E. Fabrication of an item may be commenced only after the OWNER has reviewed the pertinent submittals and returned copies to CONTRACTOR marked either "Approved", or "Approved - Except as Noted". Corrections indicated on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis of claims for extra work.

F. All CONTRACTOR shop drawing submittals shall be carefully reviewed by an authorized representative of CONTRACTOR, prior to submission to the OWNER.

G. The OWNER's review of CONTRACTOR shop drawing submittals shall not relieve CONTRACTOR of the entire responsibility for the corrections of details and dimensions. CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in CONTRACTOR submittals. CONTRACTOR shall be responsible for dimensions and the design of adequate connections and details.

1.02 SAMPLES SUBMITTAL

A. Whenever requested of the OWNER, CONTRACTOR shall submit at least 1 sample of each item or material to the OWNER for acceptance at no additional cost to OWNER.

B. Samples, as required herein, shall be submitted for acceptance prior to ordering such material for delivery to the jobsite, and shall be submitted in an orderly sequence so that dependent materials or equipment can be assembled and reviewed without causing delay in the Work.

C. Unless otherwise specified, all colors and textures of specified items will be selected by the OWNER from the manufacturer's standard colors and standard materials, products, or equipment lines.

1.03 OPERATION AND MAINTENANCE MANUAL SUBMITTAL

A. No operation and maintenance manuals are required.

1.04 PROGRESS SCHEDULE SUBMITTAL

A. Prepare as progress schedule using the Critical Path Method.

B. Minimum Sheet Size: 11 x 17 inches.

C. Show complete sequence of construction by activity, with dates for beginning and completion of each element of construction.

D. Provide separate schedule of submittal dates for shop drawings, product data, and samples.

E. Submit revised Progress Schedule with each Application for Payment.

1.05 MEASUREMENT AND PAYMENT

1. Contractor submittals shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01410

TESTING AGENCY SERVICES

PART 1 GENERAL

1.01 SECTION INCLUDES

A. CONTRACTOR shall be responsible for providing Construction Quality Control Testing of all soils, concrete, etc. as required by the various sections of these specifications. This section includes the following:

1. Use of independent testing agency.
2. Control testing report submittal requirements.
3. Responsibilities of testing agency.

1.02 REFERENCES

A. ASTM D 3740: Standard Recommended Practice for Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

B. ASTM D 4561: Standard Practice for Quality Control Systems for and Inspection and Testing Agency for Bituminous Paving Materials.

C. ASTM E 329: Standard Recommended Practice for Inspection and Testing Agencies for Concrete, Steel, and Bituminous Materials as Used in Construction.

1.03 DEFINITIONS

A. Independent Testing Agency: A testing agency NOT owned by CONTRACTOR, and an agency that does not have any preferential affiliation or association with CONTRACTOR, or any of CONTRACTOR□s Subcontractors and Suppliers other than entering into a contract with CONTRACTOR to perform the duties defined in these specifications.

B. Professional Engineer: An engineer who complies with Utah licensing law and is acceptable to the authority having jurisdiction.

1.04 QUALITY ASSURANCE

A. CONTRACTOR shall employ and pay for services of an independent testing agency which complies with ASTM D 3740, ASTM D 4561, and ASTM E 329 to test materials for contract compliance.

B. Concrete Technician: Approved by ENGINEER or ACI certified.

1.05 CONTRACTOR SUBMITTALS

A. Prior to start of Work, submit testing agency□s name, address, telephone number and the following:

1. Person charged with engineering managerial responsibility.
2. Professional engineer on staff to review services.
3. Level of certification of technicians.

1.06 TESTING AGENCY SUBMITTALS

A. Field Test Report: Submit report no later than the end of the current day.

B. Laboratory Test Report: Submit original report within 48 hours after test results are determined.

C. Final Summary Report: Submit prior to final payment.

D. On all reports include:

1. Project title, number and date of the report.
2. Date, time and location of test
3. Name and address of material Supplier.
4. Identification of product being tested and type of test performed.
5. Identify whether test is initial test or retest.
6. Results of testing and interpretation of results.
7. Name of technician who performed the testing.

1.07 RESPONSIBILITIES OF TESTING AGENCY

A. Calibrate testing equipment at least annually with devices of an accuracy traceable to either National Bureau of Standards or acceptable values of natural physical constraints.

B. Provide sufficient personnel at site and cooperate with CONTRACTOR, and OWNER□s Representative in performance of testing service.

C. Secure samples using procedures specified in the applicable testing code.

D. Perform testing of products in accordance with applicable sections of the Contract Documents.

E. Immediately report any compliance or noncompliance of materials and mixes to CONTRACTOR, and OWNER□s Representative.

F. When an out-of-tolerance condition exists, perform additional inspections and testing until the specified tolerance is attained, and identify retesting on test reports.

1.08 LIMITS ON TESTING AGENCY AUTHORITY

A. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.

B. Agency may not suspend Work.

C. Agency has no authority to accept Work for OWNER.

1.09 MEASUREMENT AND PAYMENT

A. Testing agency services shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01440

QUALITY CONTROL AND MATERIALS TESTING

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Responsibilities for controlling quality of materials, products and workmanship.

B. Responsibilities for manufacturer□s instructions, certificates and field service.

1.02 MATERIALS

A. All materials incorporated in the project shall be new and shall fully comply with the specifications. Unless otherwise clearly provided in the specifications, all workmanship, equipment, materials, and articles incorporated in the work covered by the contract are to be of the best available grade of their respective kinds. Whenever, in the specifications, any material, article, device, product, fixture, form, type of construction, or process indicated or specified by patent or proprietary name, by name of manufacturer, or by catalog number, such specifications shall be deemed to be used for the purpose of establishing a standard of quality and facilitating the description of the material or process desired and shall be deemed to be followed by the words "or approved equal" and CONTRACTOR may in such case, upon receiving the ENGINEER's approval, purchase and use any item, type, or process which shall be substantially equal in every respect to that indicated or specified.

B. Materials and equipment may be used in the Work based upon receipt of a Supplier□s certificate of compliance. Certificate must be in possession of CONTRACTOR and reviewed by OWNER prior to use.

C. Quality Assurance Testing by the OWNER shall not relieve CONTRACTOR of responsibility to furnish materials and work in full compliance with Contract Documents.

1.03 MANUFACTURER□S INSTRUCTIONS

A. Should instructions conflict with Contract Documents, request clarification before proceeding.

B. When required in individual sections, submit manufacturer□s instructions in the quantity required for product data, delivery, handling, storage, assembly, installation, start-up, adjusting, balancing, and finishing, as appropriate.

1.04 MANUFACTURER□S CERTIFICATES

A. When required in individual sections, submit manufacturer□s certificate in duplicate executed by responsible officer certifying that product meets or exceeds specified requirements.

1.05 MANUFACTURER□S FIELD SERVICES

A. When required in individual sections, have manufacturer or Supplier provide qualified representative to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment as applicable and to make written report of observations and recommendations to OWNER.

1.06 WORKMANSHIP

A. Maintain performance control and supervision over Subcontractors, Suppliers, manufacturer□s, products, services, workmanship, and site conditions, to produce work in accordance with Contract Documents.

B. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.

C. Provide suitable qualified personnel to produce specified quality.

D. Ensure finishes match approved samples.

1.07 INSPECTION AND TESTING OF MATERIALS

A. Testing agency and testing for quality control and material testing shall be furnished by CONTRACTOR as part of the project. Results of testing shall be reported to CONTRACTOR and OWNER on site. Reports of the testing shall be transmitted directly to the OWNER.

B. Materials to be supplied under this contract will be tested and/or inspected either at their place of origin or at the site of the work by the testing agency. CONTRACTOR shall give the OWNER written notification well in advance of actual readiness of materials to be tested and/or inspected at point of origin so OWNER may witness testing by the testing agency. Satisfactory tests and inspections at the point of origin shall not be construed as a final acceptance of the material nor shall it preclude retesting or reinspection at the site of the work.

C. CONTRACTOR shall furnish such samples of materials as are requested by the OWNER, without charge. No material shall be used until reports from the testing agency have been reviewed and accepted by the OWNER. See Section 01300, CONTRACTORs Submittal.

1.08 UNSATISFACTORY CONDITIONS

A. Examine areas and conditions under which materials and products are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

1.09 QUALITY CONTROL TESTING

A. OWNER□s failure to detect any defective Work or materials does not prevent later rejection when such defect is discovered nor does it obligate OWNER for acceptance.

B. CONTRACTOR shall provide 24-hours minimum notice to OWNER for all testing required by these specifications so that OWNER may be present during testing.

1.10 TESTING ACCEPTANCE AND FREQUENCY

A. Minimum Quality Control Testing Frequency: As defined in Table 01440-1, the CONTRACTOR shall be responsible to ensure that all testing is performed at the frequencies shown. CONTRACTOR shall uncover any work at no cost to OWNER to allow the testing agency to perform required testing at the frequency shown.

B. Acceptance of Defective Work: As defined in Article 13.08 of the General Conditions.

1.11 MEASUREMENT AND PAYMENT

A. There shall be no separate measurement and payment for general quality control & materials testing. General quality control and materials testing include all test requirements of these specifications. Any Contractor costs for general quality control & materials testing shall be considered as included in the contract unit or lump sum prices for the various items of the contract to which it relates.

B. Quality Control and Materials Testing required in Table 01440-1, shall be paid for by CONTRACTOR. Any additional independent Quality Assurance testing requested and approved by OWNER prior to testing shall be paid for by OWNER.

TABLE 01440-1: QUALITY CONTROL TESTING FREQUENCY

SYSTEM or MATERIAL	TESTS	MINIMUM REQUIRED FREQUENCY
SUBGRADE AND BACKFILL MATERIALS		
Section 02221 Excavation and Backfill for Buried Pipelines	Field Density	1 test per 300 linear feet per 1.5 feet of backfill thickness placed.
	Laboratory	1 test for each material type which includes proctor, classification and gradation.
Section 02222 Excavation and Backfill for Structures	Field Density	1 test per 300 linear feet per 1.5 feet of backfill thickness placed.
	Laboratory	1 test for each material type which includes proctor, classification and gradation.
Section 02278 Road Base - Untreated Base Course	Field Density	Base course subgrade: 1 test per 2,000 square feet of area. Base course: 1 test per 2,000 square feet of area.
	Laboratory	Base course: 1 test for each material type which includes proctor, classification and gradation.
ASPHALT		
Section 02500 Removal and Replacement of Surface Improvements	Mix Design	Marshall Test Method: 1 test initially per each type of material and each change in target, and for each day of production thereafter. Specific Gravity: 1 per each Marshall Test Extraction: 1 test per each Marshall Test
	Field Density	Bituminous surfaces: 1 test per 2,000 square feet placed or part thereof.
	Asphalt Thickness and Core Density	Bituminous surfaces: 1 test sample every 300 linear feet of completed roadway.
PORTLAND CEMENT CONCRETE		
Section 03300 Cast-in-Place Concrete	Slump	1 test every day of placement or 1 test for every 50 cubic yards and more frequently if batching appears inconsistent. Conduct with strength tests.
	Entrained air	1 test with slump test.
		1 test with slump test.

SYSTEM or MATERIAL	TESTS	MINIMUM REQUIRED FREQUENCY
	Ambient and concrete temperatures	
	Water cement ratio.	To be verified and provided with batch tickets.
	Compressive strength	1 set of 4 cylinders every 50 c.y. or part thereof per day.

NOTES:

1 Additional tests shall be conducted when variations occur due to the contractor's operations, weather conditions, site conditions, etc.

2 Classification, moisture content, Atterberg limits and specific gravity tests shall be conducted for each compaction test if applicable.

3 Tests can substitute for same tests required under "Aggregates" (from bins or source), although gradations will be required when blending aggregates.

4 Aggregate moisture tests are to be conducted in conjunction with concrete strength tests for water/cement calculations.

- END OF SECTION -

SECTION 01452

PAVEMENT SMOOTHNESS

1.01 GENERAL

A. This pavement smoothness specification does not relieve the contractor from responsibility concerning workmanship in accordance with the requirements of the Specifications, other contract requirements or as defined by the Engineer.

1.02 TOLERANCES

A. The surface of the pavement, after compaction, shall be uniform and true to the established grade. When tested with a ten-foot (10-foot) straight edge placed on the surface of the pavement, at any point, the surface shall not deviate more than one-eighth on an inch (1/8-inch) from the lower edge of the straight edge.

B. Profilograph testing The Owner reserves the right to test pavement smoothness through the use of a profilograph or profiler as described in APWA spec 32 12 16 Plant-mix Asphalt Paving, 3.6 Tolerances, E. Roughness.

1. If the test results meet the requirements of APWA 32 12 16, Table 4 Roughness Tolerance, the Owner will pay the cost of the profilograph test.

2. If the test results do not meet the requirements of APWA 32 12 16, Table 4, the Contractor will be responsible to pay the cost of the initial profilograph test as well as any and all subsequent profilograph tests until the results are satisfactory to the Engineer and/or Owner.

1.03 COLLARING OF UTILITIES

A. When utilities are to be collared with concrete (i.e. water valves, manholes, etc.) the pavement smoothness test will completed prior to collaring.

1.04 CORRECTION METHODS

A. When corrections to the pavement surface are required, the Engineer shall review and approve the contractor s method of correction. Any corrections required to the pavement surface and/or adjoining travel lanes and shoulders will be at no cost to the Owner.

B. The Engineer may require correction of any or all adjoining traffic lanes or shoulders at the Contractor s expense to assure a uniform cross section. Methods of correction may include, but are not limited to, diamond grinding, remove and replace, and AC overlay. *Under no circumstances, however, shall the pavement be subject to an artificial heat source over 175°F.*

C. Seal areas that have been ground with asphalt tack coat. Use a tack coat application between 0.07 and 0.14 gal/SY.

1.05 MEASUREMENT AND PAYMENT

A. No separate payment will be made for testing or correcting pavement smoothness to meet the requirements of this specification. Include all costs and resources for smoothness testing, preparation and correction in the surfacing bid items.

- END OF SECTION -

SECTION 01500

TEMPORARY CONSTRUCTION UTILITIES AND ENVIRONMENTAL CONTROLS

PART 1 GENERAL

1.01 DESCRIPTION

A. This section covers temporary utilities, including electricity, lighting, telephone service, water, and sanitary facilities; temporary controls, including barriers, protection of work, and water control; and construction facilities, including parking, progress cleaning, and temporary buildings.

1.02 TEMPORARY UTILITIES

A. Temporary Electricity: CONTRACTOR shall provide, maintain, and pay for all power required by CONTRACTOR.

B. Temporary Lighting: CONTRACTOR shall provide all temporary lighting required for prosecution of his work and for employee and public safety. As a minimum, lighting levels during working hours shall meet the requirements of U.O.S.H.A. Subsection 1926.56 illumination.

C. Telephone Service: CONTRACTOR shall provide, maintain and pay for telephone service.

D. Temporary Water Service

1. CONTRACTOR shall provide for all his workers on the project, adequate and reasonably convenient uncontaminated drinking water supply. All facilities shall comply with the regulations of the local and State Departments of Health.

2. CONTRACTOR shall be responsible to arrange for water, both potable and non-potable water.

3. When water is taken from a city water system or any other potable water supply source for construction purposes, suitable precautions shall be taken to prevent cross connections and contamination of water supply.

E. Temporary Sanitary Facilities: CONTRACTOR shall provide and maintain sanitary facilities for his employees and his subcontractors' employees that will comply with the regulations of the local and State Departments of Health.

1.03 TEMPORARY CONTROLS

A. Barriers: Provide barriers as necessary to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

B. Dust Control:

1. Execute Work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into the atmosphere. Give all unpaved streets, roads, detours, or haul roads used in the construction area an approved dust-preventive treatment or periodically water to prevent dust. Applicable environmental regulations for dust prevention shall be strictly enforced.

2. CONTRACTOR shall comply with the requirements of the State of Utah Department of Environmental Quality, Air Quality Regulations (including R307-205 Emission Standards: Fugitive Emissions and Fugitive Dust, and R307-309 Fugative Emissions and Fugative Dust, of the Utah air Conservation Rules (UACR). **Note that it is the CONTRACTOR□s responsibility to prepare, submit, and obtain approval from the Executive Secretary for the dust control plan required under these regulations.**

C. Protection of Work: CONTRACTOR shall protect installed work and provide special protection where specified in individual specifications sections. CONTRACTOR shall provide temporary and removable protection for installed products, and shall control activity in immediate work area to minimize damage.

D. Open Burning: No open burning of waste materials will be allowed.

E. Explosives and Blasting: The use of explosives on the work will not be permitted.

F. Noise Abatement: In inhabited areas, particularly residential, operations shall be performed in a manner to minimize unnecessary noise generation.

G. Storm & Ground Water

1. CONTRACTOR shall provide and maintain at all times during construction, ample means and devices with which to promptly remove and properly dispose of all water entering the excavation or other parts of the work, whether the water be surface or underground water.

2. In excavation, fill, and grading operations, care shall be taken to disturb the pre-existing drainage pattern as little as possible. Particular care shall be taken not to direct drainage water into private property or into streets or drainage ways inadequate for the increased flow.

3. CONTRACTOR shall maintain effective means to minimize the quantity of sediments leaving the work area either by storm water or CONTRACTOR's own dewatering operations.

H. Traffic Control: shall be the responsibility of the CONTRACTOR along any road where potential exists for traffic disruption. CONTRACTOR shall assume responsibility for materials (including barricades, flagging, signage, personnel safety equipment, etc., including storage and handling of materials), labor, equipment and incidentals required to control traffic flow for the duration of the project in accordance with all applicable local, state and federal regulations.

1.04 CONSTRUCTION FACILITIES

A. Parking: CONTRACTOR shall provide temporary parking areas to accommodate use of construction personnel. Parking shall be located in an area approved by the ENGINEER.

B. Progress Cleaning

1. CONTRACTOR shall maintain areas free of waste materials, debris, and rubbish. Maintain the site in a clean and orderly condition. Upon completion of work, repair all damage caused by equipment and leave the project free of rubbish or excess materials of any kind.

2. Thoroughly clean all spilled dirt, gravel, or other foreign materials caused by the construction operations from all streets and roads at the conclusion of each day's operation.

3. It shall be the responsibility of CONTRACTOR to promptly clean up and remove any oil and or fuel spills caused by CONTRACTOR or his Sub-contractors during the course of the project. Contaminated soil shall be properly disposed of by CONTRACTOR in accordance with all applicable laws. CONTRACTOR shall be responsible for any damages to OWNER resulting from CONTRACTOR's negligence in promptly cleaning up said spills.

1.05 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Prior to Final Application for Payment, CONTRACTOR shall remove temporary above grade or buried utilities, equipment, facilities, and materials; clean and repair damage caused by installation or use of temporary work; and restore existing facilities used during construction to original condition.

1.06 CHEMICALS

A. All chemicals used during construction or furnished for project operation whether defoliant, soil sterilant, herbicide, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instruction of the manufacturer.

1.07 CULTURAL RESOURCES

A. The CONTRACTOR's attention is directed to the National Historic Prevention Act of 1966 (16 U.S.C. 470) and 36 CFR 800 which provides for the preservation of potential historical architectural, archeological, or cultural resources (hereinafter called "cultural resources").

B. The CONTRACTOR shall conform to the applicable requirements of the National Historic Preservation Act of 1966 as it relates to the preservation of cultural resources.

C. In the event potential cultural resources are discovered during subsurface excavations at the site of construction, the following procedures shall be instituted:

1. The ENGINEER will issue a Field Order directing the CONTRACTOR to cease all construction operations at the location of such potential cultural resources find.

2. Such Field Order shall be effective until such time as a qualified archeologist can be called to assess the value of these potential cultural resources and make recommendations to the OWNER and ENGINEER.

D. If the archeologist determines that the potential find is a bona fide cultural resource, at the direction of the ENGINEER, the CONTRACTOR shall suspend work at the location of the find under the provisions for changes contained in Articles 10, 11, and 12 of the General Conditions, Section 00700.

1.08 MEASUREMENT AND PAYMENT

A. Temporary Utilities and Facilities shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

PART 2 PRODUCTS (Not Applicable)

PART 3 EXECUTION (Not Applicable)

- END OF SECTION -

SECTION 01505

MOBILIZATION

PART 1 GENERAL

1.01 GENERAL

A. This Section is provided to cover CONTRACTOR's cost of general and miscellaneous responsibilities and operations not normally attributed to, or included in, any other single bid item. This shall include, but not necessarily be limited to, work described or enumerated in this section under the following subsections. Costs for listed work shall be included in the lump-sum price for "Mobilization".

1.02 MOVING TO AND FROM THE JOB SITE

A. This shall include CONTRACTOR's preliminary arrangement for starting and stopping construction operations, work schedules, and transportation of equipment and personnel to and from the project.

1.03 CLEAN-UP

A. The cost of all clean-up work as specified and not covered under other items shall be included in the Bid.

1.04 TEMPORARY UTILITIES

A. Any temporary services and utilities such as telephone, electrical, water, toilet facilities, etc., shall be the responsibility of the CONTRACTOR and shall be included in the Bid.

1.05 PERFORMANCE BOND, PAYMENT BOND, AND INSURANCE

A. The cost of the performance bond, payment bond, and any required insurance and/or other miscellaneous cost associated with this project shall be included with the Bid.

1.06 PERMITS

A. CONTRACTOR shall provide all necessary permits for completion of the work.

1.07 PRE-CONSTRUCTION VIDEO RECORDS

A. The Contractor shall provide a video tape record with coverage to allow accurate determination of location, size and condition, etc. of existing features and improvements within the designated work area.

- END OF SECTION -

SECTION 01530

PROTECTION OF EXISTING FACILITIES

PART 1 GENERAL

1.01 GENERAL

A. Any existing facilities, disturbed which are located in or adjacent to the line of work such as curbs, gutters, drive approaches, sidewalks, driveways, fences, underground pipes, conduits, or utilities, shall be cleaned up and restored in kind by the Contractor and in accordance with the specifications contained herein governing the various types of services involved.

1.02 RESTORATION OF FENCES

A. Where it is necessary to remove any fence to facilitate the Contractor's operation, the Contractor shall obtain prior agreement with the Owner for removal of the fence, and shall be responsible for any damage due to negligence of the Contractor. As soon as practical, the fence shall be restored substantially to the same or improved condition as it was prior to the commencement of the work. Where livestock is present the Contractor shall provide temporary fencing to keep livestock away from the construction area.

1.03 INTERFERING STRUCTURES AND UTILITIES

A. The Contractor shall exercise all possible caution to prevent damage to existing structures and utilities, whether above ground or underground. It shall be the responsibility of the Contractor to locate and expose all existing underground and overhead structures and utilities in such a manner as to prevent damage to same. The Contractor shall notify all utility offices concerned at least 48 hours in advance of construction operations in which a utility agency's facilities may be involved. This shall include, but not be limited to, irrigation water, culinary water, telephone, gas, and electric. <u>The Contractor shall be responsible for any and all changes to, reconnections to public utility facilities encountered or interrupted during prosecution of the work, and all costs relating hereto shall be at the Contractor's expense.</u> The Contractor shall contract with and pay Public Utility Agencies for work required in connection with all utility interferences and handle all necessary notifications, scheduling, coordination, and details. The cost of public utility interferences shall be included in the Contractor's lump sum or unit price bid covering the major contract facility to which interference or changes are attributable.

B. Any damages to private property, either inside or outside the limits of the easements provided by the Owner, shall be the responsibility of the Contractor. Any roads, structures, or utilities damaged by the work shall be repaired or replaced in a condition equal to or better than the condition prior to the damage. Such repair or replacement shall be accomplished at the Contractor's expense without additional compensation from the Owner.

C. The Contractor shall remove and replace small miscellaneous structures such as fences and culverts which are damaged by the construction activity at his own expense without additional compensation from the Owner. The Contractor shall replace these structures in a condition as good as or better than their original condition.

D. The Contractor shall saw cut the edge of existing drive approaches, where necessary, to prevent their damage during removal and replacement of the adjacent asphalt surface. Drive approaches which are damaged by the construction activity shall be repaired by the Contractor at his own expense without additional compensation from the Owner. The Contractor shall replace these structures in a condition as good as or better than their original condition.

E. At points where the Contractor's operations are adjacent to or across properties of railway, telegraph, telephone, irrigation canal, power, gas, water, or adjacent to other property (damage to which might result in considerable expense, loss, and inconvenience), no work shall be started until all arrangements necessary for the protection thereof have been made.

F. The locations of the major existing culinary water lines, gas pipes, underground electric, cable television, and telephone lines that are shown on the plans, were taken from city maps, and maps supplied by the utility owner. It should be expected that some location discrepancies will occur. Neither the Owner nor its officers or agents shall be responsible for damages to the Contractor as a result of the locations of the utilities being other than those shown on the plans or for the existence of utilities not shown on the plans.

G. The Contractor shall be solely and directly responsible to the Owners and operators of such properties for any damage, injury, expense, loss or inconvenience, delay, suits, actions, or claims of any character brought because of an injury or damage which may result from the carrying out of the work to be done under the contract.

H. In the event of interruption to either domestic or irrigation water, or to other utility services as a result of accidental breakage, or as a result of being exposed or unsupported, the Contractor shall promptly notify the proper authority. The Contractor shall cooperate with the authority in restoration of service as soon as possible, and shall not allow interruption of any water or utility service outside working hours unless prior approval is received.

1.04 RIGHTS-OF-WAY

A. The Contractor shall be required to confine construction operations within the dedicated rights-of-way for public through fares, or within areas for which construction easements have been obtained, unless they have made special arrangements with the affected property owners in advance. The Contractor shall be required to protect stored materials, cultivated trees and crops, and other items adjacent to the proposed construction site.

B. The Contractor shall submit for approval by the Engineer the type and size of equipment used, and the methods for work performed on the rights-of-way across private properties, to avoid or minimize injury to trees, shrubs, gardens, lawns, fences, driveways, retaining walls, or other improvements within the rights-of-way.

C. Property owners affected by the construction shall be notified by the Contractor at least 48 hours in advance of the time the construction begins. During all construction operations, the Contractor shall construct and maintain such facilities as may be required to provide access by all property owners to their property. No person shall be cut off from access to his property for a period exceeding 8 hours unless the Contractor has made special arrangements with the affected persons.

The Contractor shall, daily or more frequently if necessary, grade all disturbed areas to be smooth for motor vehicle traffic.

1.05 MEASUREMENT AND PAYMENT

A. Protection of existing facilities shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01550

JOB CONDITIONS

PART 1 GENERAL

1.01 SITE INVESTIGATION

A. CONTRACTOR acknowledges that he has satisfied himself as to the nature and location of the work; the general and local conditions, particularly those bearing upon availability of transportation, access to the site, disposal, handling and storage of materials, availability of labor, water, electric power, roads, and uncertainties of weather, river stages, or similar physical conditions at the site; the conformation and conditions of the ground; the character of equipment and facilities needed preliminary to and during the prosecution of the work; and all other matters which can in any way affect the work or the cost thereof under this Contract.

1. CONTRACTOR further acknowledges that he has satisfied himself as to the character, quality, and quantity of surface and subsurface materials to be encountered from his inspection of the site and from reviewing any available records of exploratory work furnished by OWNER or included in these Documents. Failure by CONTRACTOR to acquaint himself with the physical conditions of the site and all the available information will not relieve him from responsibility for properly estimating the difficulty or cost of successfully performing the work.

2. CONTRACTOR warrants that as a result of his examination and investigation of all the aforesaid data that he can perform the work in a good and workmanlike manner and to the satisfaction of OWNER. OWNER assumes no responsibility for any representations made by any of its officers or agents during or prior to the execution of this Contract, unless (1) such representations are expressly stated in the Contract, and (2) the Contract expressly provides that the responsibility therefor is assumed by OWNER.

B. STREET USE. Nothing herein shall be construed to entitle CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the work hereunder, and CONTRACTOR shall so conduct operations as not to interfere unnecessarily with the authorized work of utility companies or other agencies in such streets, alleyways, or parking areas. No street shall be closed to the public without first obtaining permission of the ENGINEER and proper governmental authority.

1.02 CONTRACTOR'S WORK AND STORAGE AREA

A. CONTRACTOR shall make arrangements for any necessary offsite storage or shop areas necessary for the proper execution of the work.

1.03 MEASUREMENT AND PAYMENT

A. Job conditions shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 01570

TRAFFIC CONTROL

PART 1 GENERAL

1.01 GENERAL

A. The Contractor shall comply with all rules and regulations of the City, County, and State authorities regarding the closing of public streets or highways. If conditions justify, the Engineer may authorize the Contractor to conduct his work in specific areas and to specific tasks to avoid sporadic and unorganized work efforts.

B. All work performed on or within the right-of-way of state roads shall have traffic control devices in place before work begins that meet the requirements of Utah Department of Transportation's "Specifications for Excavation on State Highways".

C. No road shall be closed by the Contractor to the public except by express permission of the ENGINEER and after obtaining the required permits. Where it is necessary to close a county or city road to thru traffic, the road shall be closed to thru traffic only - not local traffic. The road shall be closed for two (2) blocks only, not over 1,500 feet. The road shall be barricaded at each point of public access with barricades meeting the Utah Department of Transportation's specifications.

D. Road closures for final paving purposes may be longer as negotiated with the ENGINEER.

E. Spring Creek Place cannot be closed. One lane of traffic must be maintained at all times on Spring Creek Place. Two lanes of traffic is to be maintained when possible.

F. Business accesses must be accessible at all times.

G. Traffic must be kept open on those roads and streets where no detour is possible. The Contractor shall, at all times, conduct his work so as to insure the least possible obstruction to traffic and normal commercial pursuits. All obstructions within traveled roadways shall be protected by approved signs, barricades, and lights where necessary for the safety of the traveling public. The convenience of the general public and residents, and the protection of persons and property is of prime importance and shall be provided for by the Contractor in an adequate and satisfactory manner.

H. Excavations on project sites from which the public is excluded shall be marked or guarded in a manner appropriate for the hazard.

1.02 TRAFFIC CONTROL

A. For the protection of traffic in public or private streets and ways, the Contractor shall provide, place, and maintain all necessary barricades, traffic cones, warning signs, lights, and other safety devices in accordance with the requirements of the "Manual of Uniform Traffic Control Devices, Part VI - Traffic Controls for Street and Highway Construction

and Maintenance Operations," published by U.S. Department of Transportation, Federal Highway Administration (ANSI D6.1). The Contractor shall take all necessary precautions for the protection of the work and the safety of the public. All barricades and obstructions shall be illuminated at night, and all lights shall be kept burning from sunset until sunrise. The Contractor shall station such guards or flaggers and shall conform to such special safety regulations relating to traffic control as may be required by the public authorities within their respective jurisdictions. All signs, signals, and barricades shall conform to the requirements of Subpart G, Part 1926, of the OSHA Safety and Health Standards for Construction.

B. If at any time the conditions indicate that the Contractor's protective facilities and service are inadequate to assure the safety of the public or the Contractor's workers, the Contractor shall provide additional facilities of services as may be necessary to assure protection at no additional cost to the Owner.

C. Where required, CONTRACTOR shall obtain a traffic control permit from the governing agency prior to beginning work, and shall comply with all requirements of the permit.

1.03 MEASUREMENT AND PAYMENT

A. Traffic control will not be measured, but shall be paid for on a lump sum basis for the completion of the work as noted in the Bid Schedule.

- END OF SECTION -

SECTION 01700

PROJECT CLOSEOUT

PART 1 GENERAL

1.01 FINAL CLEANUP

A. CONTRACTOR shall promptly remove from the vicinity of the completed work, all rubbish, unused materials, concrete forms, construction equipment, and temporary structures and facilities used during construction. Final acceptance of the work by OWNER will be withheld until CONTRACTOR has satisfactorily complied with the foregoing requirements for final cleanup of the project site.

1.02 TOUCH-UP AND REPAIR

A. CONTRACTOR shall touch up or repair all finished surfaces on structures, equipment, fixtures, or whatever, that have been damaged prior to final acceptance. Surface on which such touch-up or repair cannot be successfully accomplished shall be completely refinished or in the case of hardware and similar small items, the item shall be replaced.

1.03 CLOSEOUT TIMETABLE

A. CONTRACTOR shall establish dates for equipment testing, acceptance periods and on-site instructional periods (as required under the Contract). Such dates shall be established not less than one week prior to beginning any of the foregoing items, to allow OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.04 MAINTENANCE AND GUARANTEE

A. CONTRACTOR shall comply with the maintenance and guarantee requirements contained in Article 6 of the General Conditions, Section 00700.

B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as part of such required repair work, and any repair or resurfacing which becomes necessary by reason of such required repair work shall be completed by CONTRACTOR at no cost to OWNER.

C. CONTRACTOR shall make all repairs and replacements promptly upon receipt of written order from OWNER. If CONTRACTOR fails to make such repairs or replacement promptly, OWNER reserves the right to do the work and CONTRACTOR and his surety shall be liable to OWNER for the cost thereof.

D. The CONTRACTOR shall obtain a signed release from the property owner approving restoration of work in the construction easements across or bordering private property.

1.05 BOND

A. CONTRACTOR shall provide a bond to guarantee performance of the provisions contained in Paragraph "Maintenance and Guarantee" above, and Article 5 of the General Conditions, Section 00700.

1.06 FINAL ACCEPTANCE

A. Final acceptance and final payment shall not be made until all provisions of the General Conditions Article 14 have been satisfied.

1.07 MEASUREMENT AND PAYMENT

A. Project closeout shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

- END OF SECTION -

SECTION 024120
SELECTIVE BUILDING DEMOLITION

PART 1 – GENERAL

1.1 SECTION INCLUDES

A. Demolition and removal of building structures

B. Demolition and removal of site improvements

C. Demolition and removal of abandoned site utilities

D. Site excavation, backfill, grading, and clean-up

1.2 SUBMITTALS

A. Pre-Work Submittals -- The Contractor shall provide the following submittals prior to performing work:

1. Qualification data for qualified refrigerant recovery technician.

2. Proposed Protection Measures: Submit an informational report, including drawings, that indicates the measures proposed for protecting individuals and property, for environmental protection, for dust control and, for noise control. Indicate proposed locations and construction of barriers.

3. Schedule of Selective Demolition Activities: Be prepared to discuss the scope of demolition work at the Pre-Construction Conference. Indicate detailed sequence of selective demolition and removal work, with starting and ending dates for each activity, interruption of utility services, etc.

4. Pre-demolition Photographs or Video: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by selective demolition operations. This documentation is needed only to the extent deemed necessary by the Contractor to protect themselves of existing conditions.

B. Work Submittals -- The Contractor shall provide the following submittals during and at the conclusion of performing the work:

1. Landfill Records: Indicate receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.

2. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present

was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.3 QUALITY ASSURANCE

A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project. Note: The Project Contractor is responsible for demolition, not the demolition sub-contractor.

B. Refrigerant Recovery Technician Qualifications: Certified by EPA-approved certification program.

C. Regulatory Requirements: Comply with all applicable federal, state and City notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of Authorities having jurisdiction.

D. Standards: Comply with ANSI/ASSE A10.6 and NFPA 241.

1.4 DESCRIPTION OF WORK

Unless directed otherwise in the Contract Documents, the Contractor shall:

A. Disconnect all utility services before demolition.

B. Remove and properly dispose of all structures, trash, rubbish, basement walls, floors, foundations, sidewalks, steps and driveways from the specified parcel.

C. Remove any fuel tanks, outdoor toilets and septic tanks, cisterns, meter pits, and plug or abandon wells.

D. Remove the materials from the demolition site in accordance with federal, state and City regulations.

E. Remove and dispose of appliances and other items that may contain refrigerants in accordance with 40 CFR, Part 82. Appliances and other items that may contain refrigerants include, but are not limited to, refrigerators, freezers, dehumidifiers and portable or central air conditioners.

F. Remove and legally dispose of mercury-containing materials including fluorescent, high-pressure sodium, mercury vapor, metal halide light bulbs, and thermostats containing a liquid filled capsule. PCB-containing materials include capacitors, ballasts, and transformers where the component is contained within a metal jacket and does not have a specific, legible label stating no PCBs are present.

G. Perform site clearance, grading and restoration.

H. Complete the demolition work in accordance with the plans and these technical specifications and any special provisions included in the Contract Documents.

1.5 PROTECTION OF THE PUBLIC AND PROPERTIES

A. Littering Streets

1. The Contractor shall be responsible for removing any demolition debris or mud from any street, alley or right-of-way resulting from the execution of the demolition work. Any cost incurred by the City in cleaning up any litter or mud shall be charged to the Contractor and be deducted from funds due for the work.

2. Littering of the site shall not be permitted.

3. All waste materials shall be promptly removed from the site.

B. Street Closure

1. If it should become necessary to close any traffic lanes, it shall be the Contractor's responsibility to acquire the necessary obstruction permits and to place adequate barricades and warning signs as required by the City.

2. Street or lane closures shall be coordinated with the City Engineer.

C. Protection of the Public by the Contractor

1. Sidewalks: The Contractor shall be responsible for any damage to public sidewalks abutting or adjacent to the demolition properties resulting from the execution of the demolition work. The cost of repair or replacement shall be considered incidental to the work and the Contractor shall obtain all permits and pay any fees.

2. Pedestrian Access: It shall be the Contractor's responsibility to place and construct the necessary warning signs, barricades, fencing and temporary pedestrian sidewalks, as directed by the City Engineer; and to maintain alternate pedestrian access for sidewalks around the demolition site. The cost of these items shall be considered incidental to the work.

3. Temporary Fence: Temporary fence shall be erected around all excavation, dangerous building(s) or structure(s) to prevent access to the public. Such fence shall be at least four feet high, consistently restrictive from top to grade, and without horizontal openings wider than two inches. The fence shall be erected before demolition and shall not be removed until the hazard is removed.

D. Work Restrictions

1. The Contractor shall comply with all applicable ordinances and restrictions of the City.

2. Work Hours: Construction is limited to work during normal business working hours of 7:00 a.m. to 7:00 p.m., Monday through Saturday, unless otherwise indicated. Hours for utility shutdown shall be limited to 10:00 a.m. to 2:00 p.m.

3. Utility Shutoff: Contractor shall not interrupt utilities serving others unless approved by the City Engineer and only after having provided affected parties 48-hour minimum advanced written notice.

E. Noise Pollution: All construction equipment used in conjunction with this project shall be in good repair and adequately muffled. The Contractor shall comply with any noise pollution requirements of the City.

F. Dust Control

The Contractor shall comply with applicable federal, state and City air pollution control requirements. The Contractor shall take appropriate actions to minimize atmospheric pollution. To minimize atmospheric pollution, the City Engineer shall have the authority to require that reasonable precautions be taken to prevent particulate matter from becoming airborne. Such reasonable precautions shall include, but not be limited to:

1. The use of water or chemicals for control of dusts in the demolition of existing buildings or structures, construction operations, the grading of roads, or the clearing of land.

2. Covering, at all times when in motion, open-bodied trucks transporting materials likely to give rise to airborne dusts.

G. Requirements for the Reduction of Fire Hazards

1. Removal of Material: Before demolition of any part of any building, the Contractor shall remove all volatile or flammable materials, such as gasoline, kerosene, benzene, cleaning fluids, paints or thinners in containers, and similar substances.

2. Fire Extinguishing Equipment: The Contractor shall be responsible for having and maintaining the correct type and class of fire extinguisher on site. When a cutting torch or other equipment that might cause a fire is being used, a fire extinguisher shall be placed close at hand for instant use.

3. Fires: No fires of any kind will be permitted in the demolition work area.

4. Hydrants: No material obstructions or debris shall be placed or allowed to accumulate within fifteen feet of any fire hydrant. All fire hydrants shall be accessible at all times.

5. Debris: Debris shall not be allowed to accumulate on roofs, floors, or in areas outside of and around any structure being demolished. Excess debris and materials shall be removed from the site as the work progresses.

6. Telephone Service: The Contractor shall arrange for access to and use of, during working hours, one or more telephones in the vicinity of the work site for the purposes of making calls in case of fire or other emergencies, and shall keep all personnel on the job, and the local City informed of the location of such telephones. The Contractor's foreman, or at least one regular member of each shift, shall be charged with the responsibility of promptly calling emergency services when necessary. The same person shall be required to inspect the building and the site frequently for possible fires or fire-producing conditions and to apply appropriate corrective action, particularly at the close of work each day.

H. Protection of Public Utilities: The Contractor shall not damage existing fire hydrants, street lights, traffic signals, power poles, telephone poles, fire alarm boxes, wire cables, pole guys, underground utilities or other appurtenances in the vicinity of the demolition sites. The Contractor shall pay for temporary relocation of utilities, which are relocated at the Contractor's request for his convenience.

I. Protection of Adjacent Property

1. The Contractor shall not damage or cause to be damaged any public right-of-way, structures, parking lots, drives, streets, sidewalks, utilities, lawns or any other property adjacent to parcels released for demolition whether or not the property is scheduled for future demolition. The Contractor shall provide such sheeting and shoring as required to protect adjacent property during demolition. Care must also be taken to prevent the spread of dust and flying particles.

2. The Contractor shall restore existing agricultural drain tiles or roadway subdrains that are cut or removed, including drainable backfill, to original condition. Repairs shall be subject to approval by the property owner where applicable, and by the City Engineer.

1.6 RISK OF LOSS

The Contractor shall accept the site in its present condition and shall inspect the site for its character and the type of structures to be demolished. The City assumes no responsibility for the condition of existing buildings, structures, and other property within the demolition area, or the condition of the property before or after the solicitation for proposals. No adjustment of proposal price or allowance for any change in conditions that occur after the acceptance of the lowest responsible, responsive proposal will be allowed.

1.7 PROPERTY OWNERSHIP

A. Title: Upon execution of the contract for the work of demolition and site clearance on all or any part of the demolition area, all rights, title, and interest of the City in and to buildings, structures and other property to be demolished and/or removed by the Contractor on part or all of said project area as described in the Contract Documents and contract addenda thereto, shall be deemed to be vested in the Contractor.

B. **Land:** No property rights, title, or interest of any kind whatsoever, in or to the land or premises upon which such buildings or structures stand, is created, assigned, conveyed, granted, or transferred to the Contractor, or any other person or persons, except only the license and right of entry to remove such buildings and structures in strict accordance with the Contract Documents. Contractor shall not use the land or premises, or allow any other party to use the land or premises, for any purpose other than activities in direct support of the demolition of the building.

1.8 VACATING OF BUILDINGS

The structures identified in the Contract Documents shall be vacated before a Notice to Proceed is issued and the Contractor begins work. In case the Contractor finds that any structure is not vacated, the Contractor shall immediately notify the City Engineer and shall not begin demolition or site clearance operations on such property until further directed by the City Engineer. The Contractor's responsibility for such buildings will not begin until the City Engineer issues a Notice to Proceed or an official Demolition Order. No claim for extension of time or increase in price will be considered because of occupancy of any buildings. In case such occupancy is prolonged, the City reserves the right to delete the structure from the work.

1.9 RELEASE OF BUILDINGS

The demolition area shall be released to the Contractor upon Award of Contract and Notice to Proceed. Said Notice to Proceed shall give any sequence of the demolition and the portion of work that is available to be released if all areas are not ready at the same time. The City Engineer shall approve any change in the sequence. The Contractor shall have full control of the demolition progress and clearance of the site, subject to the provisions of the Contract Documents.

1.10 PERMITS AND FEES

The Contractor shall obtain all the necessary permits and pay all permit fees that are required by the City in conjunction with the demolition work.

PART 2 – PRODUCTS

Not Used

PART 3 – EXECUTION

3.1 DEMOLITION SCHEDULE

The Contractor shall be responsible for providing the City Engineer with a minimum of 48 hours advance notification prior to beginning the execution of demolition of any structure.

3.2 UTILITY SERVICE DISCONNECTIONS

A. **Sanitary Sewer Service Disconnection:** All sanitary sewer services shall be disconnected by the Contractor and plugged in conformance with the requirements of the City.

B. **Water Service Disconnection:** All water services and stubs for the buildings or properties within the demolition work shall be disconnected by the Contractor in onformance with the requirements of the City.

C. **Electrical Service Disconnection:** All electrical services shall be coordinated by the Contractor with the Springville City Electrical Department and disconnected in conformance with the requirements of the Electrical Department.

D. **Non-City-Owned Utility Service Disconnection:** The Contractor shall contact and coordinate with all utility services for all utilities not owned by the City and will arrange to have the utilities disconnected in conformance with the respective utility companies requirements.

E. **Backfill and Compaction within Public Right-of-Way:**

1. Streets: Unless stipulated otherwise in the Contract Documents, the Contractor shall backfill, compact as specified, and patch the surface of all excavations made in streets. This cost shall be paid by the Contractor.

2. City Right-of-Way: All areas within the City right-of-way (including parking and sidewalk areas) shall be compacted in conformance with City standards and specifications.

3.3 SALVAGE OF DEMOLITION MATERIALS

A. The Contractor shall be allowed to salvage demolition materials only from property owned by the City.

B. No salvage will be permitted on privately-owned property. Privately-owned property, if included for demolition under this contract, will be strictly to abate a public nuisance as authorized by the property owner or as directed by the Courts. The City has the authority to abate the nuisance, however, the City does not have the right to salvage any materials. The Contractor may recycle demolition debris at a licensed or permitted recycling center; however, all other debris must be disposed of at a licensed or permitted disposal facility.

C. The Contractor may salvage demolition materials on City-owned properties as long as demolition is completed within the completion provisions included in the Contract Documents. All buildings, building materials, and equipment resulting from this work shall become the property of the Contractor, and shall be removed from the premises at once. Salvaged material shall be removed immediately from the premises, right-of-way, streets or alleys. The City reserves the right to remove salvage items for use by the City.

These items shall be identified in the Contract Documents or shall be removed by City forces prior to the issuance of the Notice to Proceed.

3.4 DEMOLITION AND REMOVALS

A. Structural Parts of Buildings

1. No wall or part thereof shall be permitted to fall outwardly from any building except through chutes or by other controlled means or methods, which will ensure safety and minimize dust, noise and other nuisance.

2. Subject to site restrictions, outside chimneys or outside portions of chimneys shall be razed in advance of general demolition of each building. Any portion of a chimney inside a building shall be razed as soon as it becomes unsupported by reason of removal of other parts of the building.

3. Any part of a building, whether structural, collateral, or accessory, which has become unstable through removal of other parts, shall be removed as soon as practicable and no such unstable part shall be left free-standing or inadequately braced against all reasonably possible causes of collapse at the end of any day's work.

B. Basements and Foundation Walls: All basement floors, footings, and foundations shall be completely removed from the site unless specifically stated in the special provisions. The basement area is to be inspected and approved by the City Engineer before backfilling is started. The Contractor shall ensure that no basement excavation will remain open and exposed for more than 24 hours. The Contractor shall contact the City Engineer when removal is complete to schedule this basement inspection. Failure to do so may result in re-excavation of the basement area at the Contractor's expense.

C. Concrete Slabs: The Contractor shall remove all concrete slabs, asphalt, surface obstructions, masonry slabs and appurtenances.

D. Retaining Walls: Retaining walls or curbs near the perimeter of parcels shall be removed unless otherwise indicated in the Contract Documents. The Contractor shall employ hand labor or other suitable tools and equipment necessary to complete the work without damage to adjacent public or private property. Where such retaining walls or curbs are removed, the embankment shall be graded to a slope of not greater than 3:1 horizontal: vertical or as directed by the City Engineer. The cost of any tree or brush removal due to the removal and grading out of the retaining wall shall be considered incidental and shall be included in the lump sum bid for demolition.

E. Fences: Fences, guardrails, bumpers, signs, clotheslines, and similar facilities shall be completely removed from the site, except fences on the apparent boundary between a contract parcel and an improved non-contract parcel shall not be removed unless specifically stated in the special provisions. All posts for support shall be pulled out or dug up so as to be entirely removed.

F. **Partially Buried Objects:** All piping, posts, reinforcing bars, anchor bolts, railings and all other partly buried objects protruding from the ground shall be removed. The remaining void shall be filled with soil and compacted in accordance with these specifications.

G. **Vegetation:** The Contractor shall remove all dead trees, trees identified for removal, stumps, all trees which are not an asset to the property, bushes, vegetation, brush and weeds, whether standing or fallen, unless specifically stated otherwise in the Contract Documents or by the City Engineer. The Contractor shall protect all trees not removed from damage by the demolition operation. In the event that the Contractor damages a tree, it shall be repaired or removed by the Contractor as directed by the City Engineer.

H. **Fuel Tanks:** Fuel tanks, above or below ground, shall be carefully removed and disposed of in a safe manner in accordance with the State Fire Marshal's regulations and those of the Utah Department of Natural Resources.

1. Fuel tanks, above or below the ground, or tanks which have been used for storage of gasoline, kerosene, benzene, oils or similar volatile materials shall be carefully removed and disposed of in a safe manner. The time, place and manner of disposal will be presented by the Contractor and approved by the City Engineer prior to disposal.

2. All other tanks or receptacles shall be pumped out or emptied in a safe manner, and then shall be flushed out immediately with water, carbon dioxide or nitrogen gas until they are gas-free when checked with a “Explosimeter” or another equally efficient instrument, before the work of removal is begun. Checking with the “Explosimeter” shall be done in the presence of the City Engineer by competent personnel.

I. **Outdoor Toilets and Septic Tanks:** Outdoor toilets and septic tanks shall be pumped out by a licensed company. The toilet building or septic tank shall be demolished and removed from the site. The excavation or pit shall be backfilled and compacted in accordance with these specifications. Septic tanks shall be broken up and removed from the site and the excavation filled in accordance with the requirements of the City.

J. **Cisterns and Meter Pits:** Cisterns and meter pits shall be demolished and removed. The excavations shall be backfilled and compacted in accordance with these specifications.

3.5 DISPOSAL OF DEMOLITION DEBRIS AND SOLID WASTE

A. **Debris:** All materials, rubbish, and trash shall be removed from the demolition area leaving the basements and demolition area free of debris. Any cost incurred by the City in cleaning up such materials and debris left behind shall be deducted from funds due the Contractor under this contract.

B. **Disposal of Demolition Debris and Solid Waste:** All debris and solid waste shall be delivered by the Contractor to the City-designated disposal facilities, or to an approved

disposal facility licensed in accordance with state and/or local regulations, laws, and zoning. The Contractor shall be responsible to pay all fees for waste disposal. The Contractor shall submit to the City Engineer copies of all disposal tickets for each structure demolished, where available, which identify the specific address of the origin of the debris associated with each ticket. The cost of all disposal fees shall be considered incidental to the demolition.

C. **Asbestos Abatement:** The handling of asbestos material is subject to all applicable state and federal mandates. Asbestos removal is not required on privately owned property that may be included in this work as part of a public nuisance abatement court order; however, the Contractor shall comply with applicable regulations regarding its handling and disposal. Asbestos will be removed by a licensed abatement contractor by a separate contract or in accordance with special provisions on City-owned properties. In the event that asbestos is discovered on a City-owned property during demolition, the Contractor shall notify the City Engineer and the asbestos shall be removed by a licensed abatement contractor by contract or in accordance with the special provisions.

D. **Demolition of Structures with Transite Siding:** All demolition debris from structures containing transite siding shall be disposed of at an approved landfill. The Contractor shall be responsible for notifying said landfill prior to commencing demolition on these structures to allow for authorization to dispose of material at the landfill. The Contractor shall assume responsibility for the landfill fees for disposing of the demolition debris. All structures with transite siding shall be thoroughly sprayed with water during the execution of the demolition to contain airborne particles. All debris shall be thoroughly wetted prior to transporting to the landfill.

E. **Freon Removal and Disposal:** The handling of Freon containing appliances is subject to all applicable state and federal mandates and regulations. The Contractor shall be responsible for the identification and removal and disposal of the material in accordance with applicable regulations. All costs associated with said removal and disposal shall be considered incidental and shall be included in the lump sum bid for demolition.

F. **PCB and Mercury Removal and Disposal:** The handling of any fluorescent lighting fixtures and ballasts containing PCB or mercury is subject to all applicable state and federal mandates and regulations. The Contractor shall be responsible for the removal and disposal of the material in accordance with applicable regulations. All costs associated with said removal and disposal shall be considered incidental and shall be included in the lump sum bid for demolition.

3.6 EXCAVATION, BACKFILL, GRADING, AND CLEAN UP

A. **Topsoil:** The top 9-12 inches of topsoil shall be stripped and stockpiled on site for use as final topsoil and grading material for areas outside of proposed roadway areas. If adequate topsoil is not available on site, the Contractor shall bring in enough topsoil from off-site location(s) to place a minimum 6-inch cover for all areas to be landscaped as designated in the Contract Documents. All additional fill material shall be of equal quality to the soil adjacent to the excavation, and free of rubble or organic matter. There

shall be no payment for additional fill material, which shall be considered incidental to the demolition bid price. Excess excavation materials shall be removed from the site. Topsoil material shall not be permitted as deep fill material.

B. Backfill: Any borrow or fill material shall be approved by the City Engineer before and during the placing of the material. All areas under proposed roadways shall be backfilled with engineered fill material meeting City standards and specifications. All excavations shall be backfilled with acceptable material and compacted as per City standards and specifications.

C. Testing: The Contractor shall notify the City Engineer 48 hours in advance of placing any imported backfill or original backfill material so a soil sample may be obtained. It shall be the responsibility of the Contractor to run a density test during and after the placement of the backfill material.

D. Grading: All depressions on the property shall be filled, compacted, and graded to a uniform slope with adequate drainage. The site shall be graded to conform to all surrounding areas and shall be finished to have a uniform surface that shall not permit ponding of water. Fine grading shall be part of the lump sum price for demolition.

E. Hand Labor: The Contractor shall employ hand labor where the use of power machinery is unsafe or unable to produce a finished job. Hand labor shall also be used to clean the site of any debris.

F. Final Cleaning Up: Before acceptance of the demolition work, the Contractor shall remove all unused material and rubbish from the site of the work, remedy any objectionable conditions the Contractor may have created on private property, and leave the right-of-way in a neat and presentable condition. The Contractor shall not make agreements that allow salvaged or unused material to remain on private property. All ground occupied by the Contractor in connection with the work shall be restored to original condition or better. Final cleaning up shall be subject to approval of the City Engineer and in accordance with applicable regulations.

3.7 SAFETY AND FENCING

A. Safety: The Contractor shall comply with all applicable current federal, state and local safety and health regulations.

B. Safety Fencing: The Contractor shall furnish and place a safety fence around the site of the work adequate to secure the demolition site, including any resulting debris or excavation, and to prevent pedestrian access. The fencing, including all materials, shall be considered incidental to the demolition. The safety fence shall remain in place until the demolished materials are removed from the site and all holes or excavated areas are backfilled. The fencing material shall remain the property of the Contractor.

3.8 AUTHORIZED WORKERS

Only the Contractor and its employees are allowed to demolish, dismantle, detach or dispose of any part of the demolition structure or its contents.

3.9 DAILY CLEAN UP OF RIGHT-OF-WAY AND PRIVATE PROPERTY

At the end of each workday, the Contractor shall clean sidewalks, streets, and private property of any debris caused by the demolition operation.

END OF SECTION

SECTION 321206

T-PATCH TEMPORARY PAVEMENT

1.01 GENERAL

A. This pavement smoothness specification does not relieve the contractor from responsibility concerning workmanship in accordance with the requirements of the Specifications, other contract requirements or as defined by the Engineer.

1.01 MEASUREMENT AND PAYMENT

A. No separate payment will be made for temporary pavement installation and removal to meet the requirements of this specification and Springville City specifications. Include all costs and resources for temporary pavement installation and removal in the surfacing bid items.

- END OF SECTION -

SECTION 01 31 13
COORDINATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Coordination among CONTRACTOR's employees and Subcontractors, and any utility company, separate contractor, property owner, OWNER, and authority having jurisdiction.

1.2 COORDINATING WITH ENGINEER

A. Cooperate with ENGINEER, inspectors, and separate contractors to establish on-site lines of authority for communication.

B. Develop procedures for handling submittals, reports, records, recommendations, coordination drawings, and schedules.

C. Notify in writing of problems that develop during construction.

D. Ensure agency responsible for operation and maintenance of the completed facility is advised before a project or parts thereof are open for use.

E. Maintain and operate the Work until accepted and turned over to the agency responsible for operation and maintenance.

1.3 COORDINATING WITH PRIVATE AND PUBLIC AGENCIES

A. Notify private and public agencies affected by the proposed construction, coordinate required adjustments, and arrange for all necessary adjustments of utilities within or adjacent to the limits of construction.

B. Obtain utility locations from the one call center (Blue Stake) or other utility coordination service two (2) to seven (7) working Days before any excavation. Locations must be updated every 14 Days.

C. All utilities and utility appurtenances within the limits of the Work that are to be relocated or adjusted shall be moved by the affected utility company, unless specified otherwise.

D. Notify police, fire and transit authority.

1.4 COORDINATING WITH SEPARATE CONTRACTORS

A. Coordinate with separate contractors at no additional cost to OWNER to leave Work complete and finished.

B. Inspect and promptly report any apparent discrepancies or defects in work done by separate contractors that render Work unsuitable for proper execution and results. Failure to inspect and report shall constitute acceptance of separate contractor's work as fit and proper to receive work of this contract, except as to defects that may develop in the other separate contractor's work after the execution of the CONTRACTOR's work.

1.5 COORDINATING WITH ADJACENT PROPERTY OWNER

A. **Notice**: Notify property owner 10 Days before the start of construction and at least 48 hours in advance of the interruption of utility service or the interruption of access, or the installation of bituminous material.

B. **Access**: Provide all weather access to property owner at all times, unless property owner or ENGINEER approve otherwise.

C. **Easements**: Where work is on easements on private property, coordinate work with the property owner so that work will minimize inconvenience to property owner.

D. **Refuse Collection**:

1. Inform all affected property owners ahead of time by written notice of the place of deposit and time when their refuse will be collected.
2. If necessary haul refuse to nearest point of suitable collection as determined by the refuse collection agency.

E. **Mail**: Cooperate with the U.S. Postal Service in the delivery of mail.

1.6 INTERRUPTION OF UTILITIES

A. Notify fire and police services in local jurisdiction if emergency is safety related or if construction activities interrupt any utility service.

B. Contact the affected utility company. Find out how soon repairs can be made as well as when the repairs will begin.

C. Contact the affected local residences or businesses. Inform when repairs will begin and how long it will take to complete them.

D. Inform ENGINEER and OWNER.

1.7 INTERRUPTION OF OWNER'S OPERATIONS

A. If any aspect of normal OWNER operations needs to be interrupted for completion of the Work, notify ENGINEER in writing.

B. Submit notice with an alternate plan to cover contingency problems. In the alternate plan allow for maintenance of utilities or other essential services that must be interrupted for any period otherwise deemed necessary by OWNER to be unacceptable for necessary OWNER operations.

C. Shutdown of utilities must be accomplished during approved hours at no additional cost to OWNER. If work requires a longer shutdown, it must then be accomplished during separate periods.

D. Do not proceed with proposed shutdown without written approval.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 31 19
PRECONSTRUCTION CONFERENCE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. CONTRACTOR participation in preconstruction conference.

1.2 PRECONSTRUCTION CONFERENCE

A. Before commencement of Work at site, a preconstruction conference will be held at a mutually agreed time and place attended by CONTRACTOR, its' superintendent, and its' Subcontractors as appropriate. Other attendees will be:

1. ENGINEER and Resident Project Representative.
2. Representatives of OWNER.
3. Representatives of affected utility companies.
4. Governmental representatives as appropriate.
5. Others as requested by CONTRACTOR, OWNER, or ENGINEER.

B. Unless previously submitted, bring to the conference one copy of each of the following:

1. Progress schedule.
2. Procurement schedule of major equipment and materials and items requiring long lead time.
3. Schedule of submittals.
4. Schedule of values (lump sum price breakdown) for progress payment purposes.
5. Schedule of OWNER furnished items.

C. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the CONTRACTOR before the meeting date, which may include the following:

1. CONTRACTOR's tentative schedules.
2. Transmittal, review and distribution of CONTRACTOR's tentative schedules.
3. Processing applications for payment.
4. Maintaining Record Documents.
5. Critical work sequencing.
6. Field decisions and Change Orders.
7. Use of Project site, office and storage areas, security, housekeeping, and OWNER's needs.

8. Major equipment deliveries and priorities.
9. CONTRACTOR's assignments for safety and first aid.

D. ENGINEER will preside at preconstruction conference and will arrange for recording and distributing minutes to all persons in attendance.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

SECTION 01 35 10
ACCEPTANCE

PART 1 GENERAL

1.1 **SECTION INCLUDES**

A. ENGINEER responsibilities for acceptance.

B. Dispute resolution.

1.2 **DEFINITIONS**

A. **Acceptance Testing**: Testing done to verify product or work complies with the Contract Documents. ENGINEER usually accomplishes testing. CONTRACTOR's control testing is sometimes used.

B. **Independent Testing Agency**: A testing agency NOT owned by, affiliated with, or in any way associated with CONTRACTOR, or any of CONTRACTOR's Subcontractors and Suppliers, that is accredited by a national authority.

C. **Lot**: A lot is an isolated quantity of material produced essentially by the same process. Example: One (1) day production or 1500 tons.

D. **Sample**: A sample is (1) one measurement or count that represents a part or all of the Lot. Example: Five density measurements that represent the days' production (or Lot) are five (5) separate Samples.

1.3 **ACCEPTANCE**

A. **Acceptance of Product and Material**: Based upon visual examination or physical testing. ENGINEER may have such examination or testing done by a separate agency.

B. **Control Testing**: ENGINEER retains right to accept or reject material or work based upon CONTRACTOR's control testing. Should ENGINEER choose to use CONTRACTOR's control testing for acceptance, the following conditions must be met:

1. CONTRACTOR's testing agency meets Section 01 45 00 requirements.
2. CONTRACTOR has and follows an acceptable quality control plan.
3. Test results are submitted within 48 hours of test.
4. Acceptance criteria are met.

C. **Acceptance of Lots**: Samples in a Lot will be randomly collected:

1. A Lot may be evaluated on the basis of fewer Samples when the minimum specified number of Samples cannot be collected.
2. A Lot will not be accepted until ENGINEER accepts all sub-lots.
3. A Lot with a defective sub-lot may be accepted at reduced pay if an appropriate pay factor is used to determine pay adjustment for the whole Lot. **DO NOT apply reduced pay only against defective**

sub-lots.

D. **Submittals**: Acceptance of submittal data supersedes specified criteria. Example; Mix design acceptance may alter specified mix design criteria.

1.4 **DEFECTIVE WORK**

A. Failure to detect any defective work or materials does not prevent later rejection when such defect is discovered, nor does it obligate ENGINEER for acceptance.

B. If work or material is obviously defective, it must be corrected even if it or they are not a part of a set of random samples.

C. Product or work that is assessed a pay adjustment or is later found defective does not reduce or change warranty provisions.

1.5 **DISPUTE RESOLUTION**

A. CONTRACTOR must provide basis of disagreement in writing to ENGINEER.

B. If CONTRACTOR desires to do any retesting, CONTRACTOR must submit a written plan to ENGINEER for approval. Any testing done without ENGINEER's written approval will be rejected.

C. Retesting must be performed by a mutually acceptable Independent Testing Agency.

D. Retesting for acceptance will be done at no cost to the OWNER.

E. ENGINEER reserves sole right not to utilize the retest results for evaluation of the work.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 42 19
REFERENCES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Acronyms used in Contract Documents for reference standards.

B. Applicability of referenced standards.

C. Provision of referenced standards at site.

1.2 QUALITY ASSURANCE

A. For products or workmanship specified by trade association or government agency, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. The latest edition of the standards and their supplements referenced as a part of any Section are incorporated in that Section to the extent specified therein. In any case of conflict, the requirements of the Section shall prevail. The date of the standard is that in effect as of the bid date, or date of OWNER-CONTRACTOR agreement when there are no bids, except when a date is specified.

C. When required by individual specification Section, obtain copy of standard. Maintain copy at job site during submittals, planning, and progress of the specific work, until Substantial Completion.

1.3 TRADE ASSOCIATIONS

A. Acronyms for industry standards.

AAMA	American Architectural Manufacturer's Association.
AAN	American Association of Nurserymen, Inc.
AASHTO	American Association of State Highway and Transportation Officials:
ACI	ACI Standards:
ACPA	American Concrete Pipe Association.
AGC	Associated General Contractors of America.
AI	Asphalt Institute.
AIA	American Institute of Architects.
AISC	American Institute of Steel Construction.
AMRL	Aashto Materials Reference Library.
AISI	American Iron Standards Institute.
ANSI	American National Standards Institute.
APA	American Plywood Association.
APWA	American Public Works Association.
ASME	American Society of Mechanical Engineers.
ASPA	American Sod Producers Association.

ASSE	American Society of Sanitary Engineering.
ASTM	American Society for Testing and Materials.
ATSSA	American Traffic Safety Services Association, Inc.
AWPA	American Wood-Preservers' Association.
AWPB	American Wood-Preservers' Bureau.
AWS	American Welding Society.
AWWA	American Water Works Association.
BIA	Brick Institute of America.
CLFMI	Chain Link Fence Manufacturers Institute.
CRSI	Concrete Reinforcing Steel Institute:
CSI	Construction Specifications Institute.
EIA	Electronic Industries Association.
GRI	Geosynthetic Research Institute
ICBO	International Conference of Building Officials.
ICEA	Insulated Cable Engineer's Association.
ICPI	Interlocking Concrete Pavement Institute.
IMIAC	International Masonry Industry All-Weather Council.
IMSA	International Municipal Signal Association.
ISA	International Society of Arboriculture.
ITE	Institute of Transportation Engineers.
MBMA	Metal Building Manufacturer's Association.
NAA	National Arborist Association.
NASSCO	National Association of Sewer Service Companies
NEC	National Electric Code (from NFPA).
NEMA	NEMA.
N.F.P.A.	National Forest Products Association.
NFPA	NFPA.
NPA	National Particleboard Association.
NPCA	National Precast Concrete Association.
NSF	National Sanitation Foundation.
PCA	Portland Cement Association.
PCI	Prestressed Concrete Institute.
PPI	Plastic Pipe Institute.
S.D.I.	Steel Door Institute.
SSPC	Steel Structures Painting Council.
UBC	Uniform Building Code (from ICBO).
UL	Underwriters' Laboratories, Inc.
WAQTC	Western Alliance for Quality Transportation Construction.
WWPA	Western Wood Products Association.

1.4 GOVERNMENT AGENCIES

A. Acronyms for Federal and State governments.

CE	Corps of Engineers.
CS	Commercial Standard.
DOT	Department of Transportation (Federal Highway

	Administration).
FS	Federal Specification (General Services Administration).
MIL	Military Standardization Documents.
NBS	National Bureau of Standards.
PS	Product Standard of NBS.
REA	Rural Electrification Administration.
UCFC	Utah Community Forest Council.
UDOT	Utah Department of Transportation.
USPS	U.S. Postal Service.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 65 00

PRODUCT DELIVERY AND HANDLING

PART 1 GENERAL

1.1 **SECTION INCLUDES**

A. Basic requirements for product delivery and handling on site.

1.2 **DELIVERY**

A. Arrange for delivery of products in accordance with progress schedule to facilitate instruction before installation.

B. Coordinate deliveries to avoid conflict with work, conditions at site, and:

1. Work of separate contractors, or OWNER.
2. Limitations of storage space.
3. OWNER's use of premises.

C. Deliver products in undamaged condition in original containers or packaging, with identifying labels for handling, storing, unpacking, protecting and installing intact and legible.

D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts, and to facilitate assembly.

E. Immediately upon delivery, inspect shipment to determine:

1. Product complies with requirements of Contract Document reviewed submittals.
2. Quantities are correct.
3. Containers and packages are intact, labels are legible.
4. Products are properly protected and undamaged.

1.3 **PRODUCT HANDLING**

A. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction space.

B. Coordinate delivery with installation time to ensure minimum holding time for items that are hazardous, easily damaged, or sensitive to deterioration, theft and other losses.

C. Handle products to prevent bending or over-stressing.

D. Lift heavy components at designated lifting points.

E. Discard damaged products.

1.4 **ACCESS**

A. Identify access to CONTRACTOR's work and office area by use of signs so agents, delivery trucks, and other parties desiring contact with CONTRACTOR may do so.

B. In security zones, prevent unauthorized personnel from proceeding outside of CONTRACTOR's work and office areas.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 66 00
PRODUCT STORAGE AND PROTECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Storage, handling, and protection of products to be incorporated in the Work.

1.2 SUBMITTALS

A. Submit a copy of written permission if property other than OWNER's is used to store materials or equipment.

1.3 STORAGE

A. Store products immediately on delivery, per manufacturer's instructions, with seals and labels intact and legible.

B. Store products subject to damage by elements in weather-tight enclosures:

1. Maintain temperatures within ranges required by manufacturer's instructions.
2. Provide humidity control for sensitive products, as required by manufacturer's instructions.
3. Store unpacked products on shelves, in bins or in neat piles, accessible for Inspection.

C. Provide substantial platforms, blocking or skids to support fabricated products above ground, to prevent soiling or staining. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Provide adequate ventilation to avoid condensation.

D. Store loose granular materials on solid surfaces to prevent mixing with foreign matter. Provide surface drainage to prevent flooding or ponding of rainwater. Prevent mixing with refuse or injurious materials. Do not store construction materials and equipment in municipal rights-of-way for more than five (5) days.

E. Arrange storage in manner to provide easy access for inspection.

1.4 STORAGE ON SIDEWALK, CURB AND GUTTER

A. Do not remove, block, or otherwise render sidewalks unusable by either storage of construction equipment and materials, or construction procedures used, unless a safe, usable, alternate walkway at least four (4) feet wide is provided.

B. Maintain curb and gutter clean and clear of debris, dirt, or excavated materials at all times.

1.5 MAINTENANCE OF STORAGE

A. Maintain periodic system of inspection of stored products on scheduled basis to assure that:

1. State of storage facilities is adequate to provide required conditions.
2. Required environmental conditions are maintained.
3. Surfaces of products exposed to elements are not adversely affected.

B. Any weathering of products, coatings and finishes is not acceptable.

1.6 STORAGE AREA RESTORATION

A. Remove all plant, equipment and stockpiles from the work site.

B. Restore all storage areas and service roads to prior condition without any additional cost to OWNER.

1.7 PROTECTION

A. Installed Product: Provide protection of installed products to prevent damage from subsequent operations. Remove when no longer needed, before completion and acceptance of Work.

B. Finished Surfaces: Provide coverings to protect finished surfaces from damage:

1. Cover projections, wall corners, jambs, sills and soffits of openings, in areas used for traffic and for passage of products in subsequent work.
2. Protect finished floors and stairs from dirt and damage:
   a. In areas subject to foot traffic, secure heavy paper, sheet goods, or other materials in place.
   b. For movement of heavy products, lay planking or similar materials in place.
   c. For storage of products, lay tight wood sheathing in place.
   d. Cover walls and floor of elevator cars, and unprotected surfaces of car doors when used by construction personnel.

C. Waterproofed and roofed surfaces:

1. Prohibit use of surfaces for traffic of any kind, and for storage of any products.
2. When some activity must take place in order to complete work, obtain recommendations of Supplier and installer for protection of surface.
   a. Install recommended protection and remove on completion of that activity.
   b. Restrict use of adjacent unprotected areas.

D. Security: Provide security for materials, equipment and tools. OWNER will not protect Work from vandalism.

1.8 **PROTECTION OF LAWNS AND LANDSCAPING**

A. Protect planted lawn and landscaped areas from pedestrian and vehicular traffic.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 71 13

MOBILIZATION AND DEMOBILIZATION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Mobilization and demobilization requirements.

1.2 REFERENCES

A. **APWA (Utah) Standards**:

Plan 412 Invert Cover.

1.3 DEFINITIONS

A. **Mobilization** includes bringing all necessary equipment to the site to do the Work. It includes all labor, materials, and equipment to set up temporary offices, buildings, facilities, signs, and utilities.

B. **Demobilization** includes removing all construction equipment and debris so site is left clean.

1.4 TEMPORARY FACILITIES

A. Field Office: CONTRACTOR's choice.

B. Utilities: Provide power, telephone, water, storm and sanitary facilities, and all other temporary utilities required.

C. Security and Protection: Construct and maintain temporary fencing for the protection of materials, tools, and equipment. Obtain prior approval for all fence locations.

D. Construction and Support: Set up and maintain in a neat and orderly manner temporary roads and paving, dewatering facilities, enclosures, identification signs and bulletin boards, waste disposal and temporary heat. Provide and maintain temporary all weather pedestrian walk ways and road detours.

E. Invert Cover: Install covers as shown in APWA Plan 412 or Drawings. Installation must be tight so no debris can by-pass the cover and enter the piping below.

PART 2 PRODUCTS

2.1 MATERIALS

A. Temporary Materials: CONTRACTOR's choice.

PART 3 EXECUTION

3.1 INSTALLATIONS

A. Relocate and modify temporary facilities as required.

B. Install temporary utility service or connect to existing service.

C. Locate field offices, storage sheds, sanitary facilities and other temporary construction and support facilities for easy access. Use of gasoline-burning, open flame, or salamander type heating units is prohibited.

D. Use local standards and codes for erection of adequate fences and barricades. Maintain all signing, barricades, fencing, drainage, and other items as required to protect public and private property from damage caused by construction operations.

E. Coordinate location of storage areas to avoid interference with drainage, traffic, or private property.

F. Provide and maintain all temporary signage required by the Work.

3.2 REMOVALS

A. Completely remove temporary materials and equipment:

1. When construction needs can be met beause of permanent installation, and
2. At completion of the Work.

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

C. Restore areas to original or to specified conditions at completion of the Work.

END OF SECTION

SECTION 01 71 23
CONSTRUCTION LAYOUT

PART 1 GENERAL

1.1 **SECTION INCLUDES**

A. Construction surveying requirements.

1.2 **SUBMITTALS**

A. Before contract closeout submit:

1. Documentation to verify accuracy of survey work.
2. When required by Laws and Regulations, submit a certificate signed by a licensed professional certifying that elevations and locations of improvements conform with the Contract Documents.
3. All survey data, survey information showing dimensions, location angles and elevations of construction on contract Record Documents.

1.3 **SURVEY REFERENCE POINTS**

A. Known basic horizontal and vertical control points for the Project are indicated.

B. Locate and protect survey control points before starting site work, and preserve all permanent reference points during construction.

C. Notify ENGINEER in writing within 24 hours of any survey work changes or clarifications required for Project. Secure written authorization before making any changes or relocations.

D. Report in writing when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

E. Replace construction stakes damaged or destroyed by CONTRACTOR at no additional cost to OWNER.

PART 2 PRODUCTS

Not used

PART 3 EXECUTION

3.1 PROJECT SURVEY REQUIREMENTS

A. Any work done without line and grade established by CONTRACTOR is at CONTRACTOR's own risk.

B. Locate and layout by instrumentation and similar appropriate means to include but not limited to:

1. Pavement subgrade and finish grade.
2. Site improvements:
   a. Stakes for grading, fill and topsoil placement.
   b. Slope elevations.
   c. Utility locations and invert elevations.
3. Batter boards for structures.
4. Retaining wall locations and elevations.
5. Curb and gutter alignment and grade.
6. Building foundations, column locations and floor levels.
7. Controlling lines and levels required for civil, mechanical, and electrical trades.

END OF SECTION

SECTION 01 74 13
PROGRESS CLEANING

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Cleaning and disposal of waste materials, debris, and rubbish.

B. Cleaning of Work before Final Inspection.

1.2 SUBMITTALS

A. Before Project Closeout: Certificate of disposal of Hazardous Waste if applicable.

1.3 JOB CONDITIONS

A. On Site Burning: Not permitted.

PART 2 PRODUCTS

2.1 CLEANING MATERIALS

A. Use only materials which will not create hazards to health or property, and which will not damage surfaces.

B. Use only cleaning materials recommended by manufacturer of item being cleaned.

PART 3 EXECUTION

3.1 CLEANING DURING CONSTRUCTION

A. Initiate and maintain a specific cleaning program to prevent accumulation of debris. Maintain areas under CONTRACTOR's control free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Provide covered containers for deposit of debris and rubbish.

C. Periodically clean interior areas to provide suitable conditions for finish work.

D. Remove debris and rubbish from closed or remote spaces before closing the space.

E. Broom clean interior areas before start of surface finishing, and continue cleaning on an as-needed basis.

F. Control cleaning operations so dust and other particulate will not adhere to wet or newly-coated surfaces.

3.2 DISPOSAL DURING CONSTRUCTION

A. Regularly remove and legally dispose of waste materials, debris, and rubbish from site.

B. Provide additional collections and disposal of debris whenever the periodic schedule is inadequate to prevent accumulation.

3.3 CLEANING BEFORE FINAL INSPECTION

A. Site:

Clean exposed-to-view surfaces.

Remove waste, debris, and surplus materials from site.

Clean grounds; paved areas and sweep clean.

Rake clean other surfaces.

B. Building:

Clean interior and exterior exposed-to-view surfaces.

Remove temporary protection and labels not required to remain.

Clean finishes free of dust, stains, films and other foreign substances.

Clean transparent and glossy materials to a polished condition. Polish reflective surfaces to a clear shine.

Vacuum clean carpeted and similar soft surfaces.

Clean resilient and hard-surface floors.

Clean surfaces of equipment; remove excess lubrication.

Clean plumbing fixtures to sanitary condition.

Clean permanent filters of ventilating equipment and replace disposable filters when units have been operated during construction; in addition, clean ducts, blowers, and coils when units have been operated without filters during construction.

Clean lighting fixtures and lamps.

Continue cleaning until acceptance.

Remove waste and debris from roofs, gutters, area ways, and drainage systems.

END OF SECTION

SECTION 01 78 39
PROJECT RECORD DOCUMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Requirements for collecting, maintaining, updating, and submitting Record Documents.

1.2 DEFINITIONS

A. **Record Documents**: Those documents maintained and annotated by CONTRACTOR during construction for recording "as built" condition of the Work.

1.3 CONSTRUCTION PHOTOGRAPHS

A. Provide electronic photographs when specified in the Contract Documents starting with a series of photographs before the start of any physical construction, and continuing for as long as the Work progresses:

1. Provide not less than 12 different subjects or angles of view each time from different locations in the Project area at intervals not exceeding one (1) month.
2. On each photograph indicate the date, job title, photograph identification, and direction the camera was facing.
3. With each request for payment.
4. Upon completion of the Work, submit all electronic pictures on disc. ENGINEER may request hard copies of the pictures.

B. Secure ENGINEER's approval if a video tape is to be substituted for the photograph prints.

1.4 DOCUMENTS ON SITE

A. Keep at job site 1 copy of each of the following, if issued for the Work:

1. Contract Drawings.
2. Project Manual.
3. Addenda.
4. Reviewed Shop Drawings, product data and Samples.
5. Modifications to the Contract Documents.
6. Field test records.
7. Inspection certificates.
8. Manufacturer's certificates.
9. Survey documentation.
10. Storm water pollution prevention plan (SWPPP).
11. All related permits.

B. Do not use record documents for construction purposes.

C. Store Record Documents in a location, apart from documents used for construction.

D. Maintain Record Documents in a clean, dry, legible condition.

E. Provide adequate files and racks for storage of Record Documents that will allow ready access for review and updating.

F. Make Record Documents available at all times for review and Inspection by ENGINEER.

1.5 **MARKING DEVICES**

A. Red colored waterproof for all marking unless requested otherwise.

1.6 **RECORDING**

A. Clearly and legibly label each document "PROJECT RECORD".

B. Number Record Documents in a manner which will allow ready retrieval of documents and allow indexing of documents for submittal to ENGINEER.

C. Update Record Documents as work occurs to show the current status of the Work.

D. Do not permanently cover or conceal any work until all required information has been recorded on the Record Documents.

E. Contract Drawings: Legibly mark contract Drawings to record following actual construction information:

1. Measured depths of various elements of foundation or finish grading in relation to finish floor datum or other permanent benchmark.
2. Measured horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
3. Measured location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of construction.
4. Field changes of dimension and detail.
5. Changes made by contract Modifications.
6. Details not contained in original contract Drawings.

F. Project Manual and Addenda: Legibly update each to record:

1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
2. Changes made by contract Modifications.
3. Other technical matters and details included in the Work, but not originally specified.

G. Shop Drawings: Maintain reviewed Shop Drawings as Record Documents; legibly annotate drawings to record changes made to Shop Drawings.

H. Product Data and Samples: Maintain reviewed product data and Samples as Record Documents; update and document any variations

from the reviewed product data and Samples after acceptance.

1.7 **SUBMITTAL OF DOCUMENTS**

A. At the completion of the Work, submit all Record Documents.

B. Accompany the submittal with a transmittal letter, in duplicate, containing:

1. Submittal date.
2. Project title and number.
3. CONTRACTOR's name and address.
4. Title and number of each Record Document.
5. Certification that each document as submitted is complete and accurate.
6. Signature of CONTRACTOR, or CONTRACTOR's authorized representative.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 02316

DEWATERING

PART 1 GENERAL

1.01 DESCRIPTION

A. This section provides specifications for dewatering systems and appurtenances to be used during construction as required to keep the excavation free of water.

1.02 MEASUREMENT AND PAYMENT

A. Dewatering shall not be measured or paid as a separate item, but shall be included as part of the various items to which it relates.

PART 2 PRODUCTS

2.01 MATERIALS

A. CONTRACTOR shall be responsible for selection of dewatering means, methods and materials.

2.02 SUBMITTALS

A. Before dewatering is commenced, the CONTRACTOR shall provide information to the ENGINEER outlining the method, installation and details of the proposed dewatering system. CONTRACTOR shall provide ENGINEER with plans setting forth details of the proposed dewatering systems. The dewatering system plans shall be of sufficient detail to indicate sizes of pumps, piping, appurtenances, the ultimate disposal point for water and to indicate the overall completeness and effectiveness of the proposed system.

B. CONTRACTOR shall certify to OWNER that the design and implementation of the proposed dewatering system is sufficient to complete the Work.

PART 3 EXECUTION

3.01 DESIGN AND IMPLEMENTATION

A. CONTRACTOR shall be responsible for complete design and implementation of the dewatering system.

B. CONTRACTOR shall be responsible for the design and implementation of any modifications that may be required to the initial design of the dewatering system (at no additional cost to OWNER) to provide a dewatering system that operates adequately to complete the Work.

C. CONTRACTOR shall furnish, install, operate and maintain all machinery, appliances, and equipment to maintain all excavations free from water during construction.

D. CONTRACTOR shall dispose of water so as to not cause damage to public or private property, or to cause a nuisance or menace to the public or violate the law.

E. CONTRACTOR shall be responsible to obtain groundwater discharge permits, if required.

F. CONTRACTOR shall install and operate the dewatering system so as to not cause damage or endanger adjacent structures or property.

G. The control of groundwater shall be such that softening of the bottom of excavations, or formation of "quick" conditions or "boils," does not occur. Dewatering systems shall be designed and operated so as to prevent removal and migration of the native soils.

H. CONTRACTOR shall have sufficient stand-by equipment at the project site at all times to continuously maintain the dewatering program until Work necessitating dewatering is completed.

I. CONTRACTOR shall have on hand equipment and machinery in good working condition for emergencies and shall have personnel available for operation of such equipment and machinery.

J. CONTRACTOR shall control surface water to prevent entry into excavations.

- END OF SECTION -

SECTION 02 41 13
SELECTIVE SITE DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Remove site structural and site utility items and dispose of them off site.

B. Salvage.

1.2 PAYMENT PROCEDURES

A. Payment for structures or obstructions that are not designated for removal and disposal in the Bid documents, that cannot be removed with equipment reasonably expected to be used in the work without cutting, drilling, or blasting, will be paid for **by Change Order**.

B. Backfilling depressions left because of demolition work will not be measured or paid for separately except as provided in the preceding paragraph.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION

3.1 PREPARATION

A. Review all work procedures with ENGINEER and with representatives of any utility in the work zone.

B. Locate and preserve all active utilities which are to remain in service.

C. Implement traffic control plan requirements, Section 01 55 26.

3.2 PROTECTION

A. Protect irrigation systems.

B. Protect structures to be removed and their contents from vandalism and theft.

C. Protect trees:

1. Avoid or minimize damage to trees and tree roots.
2. Provide certified arborist observation of root cuts larger than four (4) inches diameter. Roots provide anchorage, storage of energy, and absorption and conduction of water and mineral elements. Loss of root connection affects health and stability of tree and safety of people and property. Notify ENGINEER of such root cut.

D. Repair or replace damage at no additional cost to OWNER.

3.2 **STRUCTURE DEMOLITION**

A. Remove structures and incidentals such as foundations, fences, outbuildings, etc.

B. Remove foundation walls at least two (2) feet below finished grade or two (2) feet below natural ground surface. Remove floor slab or break it into pieces no larger than three (3) feet square.

C. Backfilling and compaction of excavations for structures, Section 31 23 23.

D. Building components, Section 02 41 19.

3.3 **PIPELINE DEMOLITION**

A. General:

1. Abandoned pipelines not to be salvaged are considered as incidental excavation work, Section 31 23 16.
2. Do not damage pipe or structures that remain in service or are to be salvaged for OWNER.

B. Gravity Pipe Demolition:

1. Plug abandoned pipe with a permanent, water-tight concrete plug extending into the abandoned pipe at least two (2) feet.
2. Seal openings in walls of remaining manholes, catch basins, or structures with water-tight plugs.

C. Pressure Pipe Demolition:

1. Coordinate demolition with ENGINEER and agency owning the utility pipe.
2. Plug abandoned pipe with a permanent water-tight plug.
3. Cap and restrain the active pipe with a blind flange or equivalent type of plug.
4. For service line demolition or abandonment, disconnect the line from the mainline and shut off the corporation stop.

3.4 **BRIDGE AND ABUTMENT DEMOLITION**

A. Remove existing bridges and abutments indicated.

B. Remove structures so that no remaining portion is closer than three (3) feet to any water course or closer than two (2) feet to the Subgrade and Embankment surface, or within two (2) feet of the natural ground surface.

C. Remove structures so compacted backfill can be provided as required in backfilling operation, Section 31 23 23.

3.5 **BURIED FUEL TANK DEMOLITION**

A. Remove buried fuel storage tanks and dispose of tank contents in accordance with Laws and Regulations.

B. Do not spill fuel on Subgrade.

C. Comply with the local authority having jurisdiction over fuel tank

removals.

3.6 MISCELLANEOUS DEMOLITION

A. Remove miscellaneous structures and obstructions or cover them with backfill if the result meets the following requirements:

1. Backfill is stable.
2. Burial does not interfere with construction.
3. Permission to do so is obtained from ENGINEER.
4. No remaining portion is within two (2) feet of the final ground surface contours.

3.7 SALVAGE

A. Salvage designated equipment and materials for OWNER.

B. All other material becomes the property of CONTRACTOR unless such materials are not owned by OWNER.

END OF SECTION

SECTION 31 11 00
SITE CLEARING

PART 1 GENERAL

1.1 **SECTION INCLUDES**

A. Removal of trees, stumps, roots, and tree debris.

B. Clearing site of plant life, root systems and shrubs.

C. Removal of fences, fence posts, mail box posts, and miscellany.

1.2 **REFERENCES**

A. **NAA Standards**:

Pruning Standards for Shade Trees.

B. **Utah Shade Tree Pruning Standards**.

1.3 **QUALITY ASSURANCE**

A. Provide at least one person, who is familiar with NAA pruning standards for the type of tree involved, to be present during tree pruning operations.

1.4 **SITE CONDITIONS**

A. Repair or replace damaged trees and shrubs at no additional cost to OWNER.

1.5 **PROTECTION**

A. Protect roots and branches of trees to remain.

B. Construct temporary barricading at tree's approximated drip line. Place continuous barricades at least three (3) feet high.

C. When setting posts, avoid damaging tree roots.

D. Do not permit heavy equipment or stockpiling of materials or debris within the barricaded area, or permit earth surface to be changed.

E. Provide water and fertilizer to maintain existing trees.

PART 2 PRODUCTS

2.1 **STUMP TREATMENT SOLUTION**

A. Formulated to kill existing vegetation.

SECTION 31 25 00
EROSION AND SEDIMENTATION CONTROL

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Erosion control and slope protection facilities including blankets or mulches.

B. Construction of drainage facilities to protect work area.

1.2 SUBMITTALS

A. Submit before using:

1. Sample of blanket or geotextile materials.
2. Mulch formula.
3. Grass mixture listing.
4. Plant list.
5. Geotextile manufacturer's certification.

B. Application rate of fiber mulches recommended by tackifier manufacturer.

1.3 DELIVERY, STORAGE AND HANDLING

A. Deliver seed in original containers with certified germination test results showing analysis of seed mixture, percentage of pure seed, year of production, and date of packaging. Damaged packages are not acceptable. Store seed free of moisture.

B. Deliver fertilizer in waterproof bags showing weight, chemical composition and name of manufacturer.

C. Deliver blanket in original wrapping showing name of manufacturer and product weight.

D. Deliver plant materials immediately before placement.

E. Replace plant when original root protection system (burlap bag wrap of earth ball, plastic container with special plant bedder, etc.) has been broken or displaced before planting.

PART 2 PRODUCTS

2.1 MATERIALS

A. Riprap: Rock, Section 31 37 00.

B. Blankets: Uniform open weave jute, wood fiber, biodegradable or photodegradable synthetic fiber matting.

C. Geotextiles: Section 31 05 19.

D. Erosion Control Vegetation Mats: Permanent three dimensional mats that allow for revegetation where high water flows are expected.

E. Fiber Mulches: Straw, hay, wood or paper free from weeds and foreign matter detrimental to plant life.

F. Mulch Binder: Vegetable based gel tackifier with growth stimulant.

G. Topsoil and Fertilizer: Section 31 05 13 and Section 32 92 00.

PART 3 EXECUTION

3.1 PREPARATION

A. Remove foreign materials, roots, rocks, debris.

B. Grade to eliminate rough spots, ponding areas.

C. Grade soil to drain perimeter water away from protected areas.

D. Temporary controls, Section 01 57 00 as applicable.

3.2 SLOPE PROTECTION BLANKET

A. Cover seeded slopes where grade is greater than one (1) vertical to three (3) horizontal with blanket. Roll down over slopes carefully and loosely without stretching or pulling.

B. Lay blanket smoothly on prepared soil surface. Bury top end of each section in a narrow trench. Leave 24 inches overlap from top roll over bottom roll. Leave 12 inches overlap over adjacent section.

C. Toe-wrap fabric at bottom of slope.

D. Staple loosely the outside edges and overlaps.

E. In ditches, lay matting in upstream direction. Overlap and staple ends six (6) inches with upstream section on top.

F. If natural drainage water traverses protected or controlled area; construct a channel or riprap Section 31 37 00.

G. Lightly dress slopes with topsoil to ensure close contact between cover and soil.

H. Present alternative methods of protection for approval before starting any work.

3.3 GEOTEXTILE

A. Placement, Section 31 05 19.

3.4 MULCHES

A. Apply mulches at the rate necessary.

B. When installed with a tackifier, apply at the rate recommended by the tackifier supplier.

3.5 SURFACE COVER

A. Grass, Section 32 92 00.

B. Ground cover, Section 32 93 13.

3.6 **MAINTENANCE**

A. Maintain surfaces and supply additional topsoil where necessary, including areas affected by erosion.

B. Protect and repair geotextiles, Section 31 05 19.

C. Keep surface of soil damp only as necessary for seed germination.

D. Apply water slowly so surface of soil will not puddle and crust.

E. Replant damaged grass areas showing root growth failure, deterioration, bare or thin spots, and eroded areas.

F. Re-fertilize 60 days after planting.

G. Remove weeds that are over three (3) inches high.

END OF SECTION

SECTION 32 11 23
AGGREGATE BASE COURSES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Treated and untreated base course production and placement.

1.2 REFERENCES

A. **AASHTO Standards**:

R9 Acceptance Sampling Plans for Highway Construction.

B. **ASTM Standards**:

C29 Unit Weight and Voids in Aggregate.

C131 Resistance to Degradation of Small-Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine.

C117 Materials Finer Than 0.075mm (No. 200) Sieve in Mineral Agtgregates by Washing.

C136 Sieve Analysis of Fine and Coarse Aggregates.

D75 Sampling Aggregates.

D448 Sizes of Aggregate for Road and Bridge Construction.

D1557 Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft^3 (2,700 kN-m/m^3)).

D1883 CBR (California Bearing Ratio) of Laboratory-Compacted Soils.

D2216 Laboratory Determinations of Water (Moisture) Content of Soil and Rock.

D2419 Sand Equivalent Value of Soils and Fine Aggregate.

D2922 Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).

D3017 Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

D3665 Random Sampling of Construction Materials.

D3740 Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction.

D4318 Liquid Limit, Plastic Limit, and Plasticity Index of Soils.

D5821 Standard Test Method for Determining the Percentage of Fractured Particles in Coarse Aggregate.

1.3 DEFINITIONS

A. **Master Grading Band**: A graphical area defined by gradation limits allowed for various sieve sizes ranging from the maximum sieve size to the No. 200 sieve.

B. **Target Grading Curve**: A smooth locus of points within the limits of the Master Grading Band.

C. **Target Grading Band**: Gradation limits defined by the allowable variance from the Target Grading Curve. It is possible that these limits may lie outside of the Master Grading Band.

D. **Mean of Deviations**: The sum of the absolute values of the variance between each screen target value and each measured value divided by the number of tests in the Lot.

E. **RAP**: Acronym for reclaimed asphalt pavement. See Section 32 12 16.18.

F. **Lot**: (a) Quantity of aggregate delivered to a site when considering gradation, (b) area of aggregate placed at a site when considering density.

1.4 SUBMITTALS

A. **Mix Design**: Provide the following. Allow ENGINEER 10 days to evaluate the submittal.

1. Date of mix design. If older than 365 days from date of submission, recertify mix design.
2. Name of supplier and aggregate source.
3. Target gradation for each sieve size,
4. Percent composition of reclaimed asphalt or concrete included in the mix.
5. Unit weight, CBR, relative density, and relative moisture content.
6. Aggregate physical properties (this section article 2.1). The information is for suitability of source and not for project control. A new report may be required if aggregate source is changed. Test results shall not be older than 455 days from date of submission.

B. **At Delivery**: Submit batch delivery ticket identifying serial number of ticket, date and truck number, job name, weight of aggregate, mix identification, and description.

1.5 QUALITY ASSURANCE

A. Do not change aggregate source until ENGINEER accepts new source and new mix design.

B. Use a laboratory that follows and complies with ASTM D3740 and Section 01 45 00 requirements.

C. If requested, submit a quality control and testing report describing source and field quality assurance activities performed by CONTRACTOR and Suppliers.

1.6 ACCEPTANCE

A. **General:**

1. Acceptance is by Lot.
2. If non-complying material has been installed and no price for the material is specified, apply pay adjustment against cost of work requiring complying material as part of its installation, Section 01 29 00.
3. ENGINEER is not obligated to accept changes in gradation target after any material is delivered to site.
4. Observation of CONTRACTOR's field quality control testing does not constitute acceptance. Such testing; however, may be used by ENGINEER for acceptance if requirements in Section 01 35 10 are met.
5. Dispute resolution, Section 01 35 10.

B. **Gradation**: Lot size is one (1) day production. Sub-lot size is 500 tons. Collect samples from grade before compaction. Conduct at least one (1) gradation analysis for each lot. Lot is acceptable if gradation test deviations are within pay factor 1.00 limits. At ENGINEER's discretion, a lot with a sub-lot deviation greater than pay factor 0.70 limits may stay in place at 50 percent pay.

Table 1- Gradation Pay Factors

Criteria	Pay Factor	Mean of Deviations of Acceptance Tests From the Target Grading Curve Expressed in Percentage Points				
		1 Sample	2 Samples	3 Sample	4 Sample	5 or More Samples
1/2" and Larger Sieves	1.00	0 – 15	0.0 – 12.1	0.0 – 10.8	0.0 – 10.0	0.0 – 9.5
	0.95	16 – 17	12.2 – 13.9	10.9 – 12.4	10.1 – 11.5	9.6 – 11.
	0.90	18 – 19	14.0 – 15.1	12.5 – 13.5	11.6 – 12.5	11.1 – 11.9
	0.80	20 – 21	15.2 – 17.2	13.6 – 15.3	12.6 – 14.2	12. – 13.5
	0.70	22 – 23	17.3 – 18.8	15.4 – 16.7	14.3 – 15.5	13.6 – 14.7
3/8" Sieve	1.00	0 – 15	0.0 – 11.5	0.0 – 9.8	0.0 – 8.8	0.0 – 8.0
	0.95	16 – 17	11.6 – 13.2	9.9 – 11.3	8.9 – 10.1	8.1 – 9.2
	0.90	18 – 19	13.3 – 14.4	11.4 – 12.3	10.2 – 11	9.3 – 10.0
	0.80	20 – 21	14.5 – 16.3	12.4 – 13.9	11.1 – 12.5	10.1 – 22.4
	0.70	22 – 23	16.4 – 17.9	14.0 – 15.2	12.6 – 13.6	11.5 – 12.4
No. 4 Sieve	1.00	0 – 14	0.0 – 10.5	0.0 – 8.8	0.0 – 7.8	0.0 – 7.0
	0.95	15 – 17	10.6 – 12.1	8.9 – 10.1	7.9 – 9.0	7.1 – 8.0
	0.90	18	12.2 – 13.1	10.2 – 11	9.1 – 9.8	8.1 – 8.7
	0.80	19 – 20	13.2 – 14.9	11.1 – 12.5	9.9 – 11.1	8.8 – 10.0
	0.70	21 – 22	15.0 – 16.3	12.6 – 13.6	11.2 – 12.1	10.1 – 10.8
No. 16 Sieve	1.00	0 – 11	0.0 – 8.2	0.0 – 6.9	0.0 – 6.2	0.0 – 5.6
	0.95	12 – 13	8.3 – 9.4	7.0 – 7.9	6.3 – 7.1	5.7 – 6.4
	0.90	14	9.5 – 10.3	8.0 – 8.6	7.2 – 7.8	6.5 – 7.0
	0.80	15 – 16	10.4 – 11.6	8.7 – 9.8	7.9 – 8.8	7.1 – 8.0
	0.70	17	11.7 – 12.7	9.9 - 10.7	8.9 – 9.6	8.1 – 8.7

No. 200 Sieve	1.00	0 – 4.5	0.0 – 3.4	0.0 – 2.9	0.0 – 2.5	0.0 – 2.3
	0.95	4.6 – 5.2	3.5 – 3.9	3.0 – 3.3	2.6 – 2.9	2.4 – 2.6
	0.90	5.3 – 5.6	4.0 – 4.3	3.4 – 3.6	3.0 – 3.1	2.7 – 2.9
	0.80	5.7 – 6.4	4.4 – 4.9	3.7 – 4.1	3.2 – 3.6	3.0 – 3.3
	0.70	6.5 – 7.0	4.9 – 5.3	4.2 – 4.5	3.7 – 3.9	3.5 – 3.6

NOTES
(a) ENGINEER has 36 hours after Lot placement to accept aggregate gradation. CONTRACTOR may place material over the crushed aggregate base material during the 36 hours interval at its own risk. Pay factors for the Lot will NOT be applicable if ENGINEER performs tests after the 36 hours interval.

C. **Relative Density**: Lot size 10,000 cubic yards. Conduct at least one laboratory determination to be used as a standard for field density and field moisture content determinations.

D. **Field Density**: Lot size is one (1) day placement. Number of density tests varies according to placement type, location and sub-lot size (Table 2). Conduct at least one (1) field density test in the lot. Select each test location randomly.

Table 2 - Placement Type, Location, Sub-lot Size

Type	Location	Sub-lot Size
I	Pavement (includes curb, gutter and water way when in conjunction with pavement placement).	1,000 square yards
II	Curb, gutter, waterway	200 linear feet
	Sidewalk	400 linear feet
	Driveway approach, curb cut assembly, waterway transition structure, flat work	400 square feet
III	Landscaping and other non-structural, non- load bearing areas	--

PART 2 PRODUCTS

2.1 UNTREATED BASE COURSE

A. **Material**: Crushed rock, gravel, sand, or other high quality mineral particle, or combination that is free of organic matter, free of chemical or petroleum contamination, and meets the following physical properties.

Table 3 – Untreated Base Course Physical Properties				
	ASTMs	Aggregate Class		
		A	B	C
Coarse aggregate				
Angularity (2 fractured faces), min., percent	D5821	50	–	–
Wear (toughness or hardness), max., percent	C131	50		
Fine aggregate				
Liquid Limit, max.	D4318	25		
Plastic Index, max.	D4318	0	0	6
Sand Equivalent, min., percent	D24 19	35		
Blended aggregate				
Dry Rodded Unit Weight, min., percent	C29	75		
CBR, min., percent	D1883	70	55	--

NOTES
(a) Faces: Retained on No. 4 sieve.
(b) Wear: Retained on No. 12 sieve after 500 revolutions.
(c) Liquid limit and plastic index: Passing No. 40 sieve.
(d) Sand equivalent (clay content or cleanliness): Passing No. 4 sieve.
(e) CBR: Use a surcharge of 10 pounds measured at 0.20 inch penetration at 95 percent relative to a modified proctor density. A reduction in aggregate class may be accepted providing any costs for difference in excavation, backfill, and alternate design for CBR does not increase Concrete Price.

B. **Gradation**: Analyzed according to ASTM C136 on a dry weight and percent passing basis. Target Grading Curve must lie within the selected aggregate grade in table 4. Field gradation shall not vary from target by more than the target tolerance.

Table 4 – Master Grading Bands				
Sieve	Aggregate Grade			Target Tolerance
	Grade 1-1/2	Grade 1	Grade 3/4	
1-1/2"	100	–	–	(Pay factor 1.00 in Table 1)
1 "	–	100	–	
3/4 "	70 – 85	–	100	
1/2 "	–	79 – 91	–	
3/8 "	55 – 75	–	78 – 92	
No. 4	40 – 65	49 – 61	55 – 67	
No. 16	25 – 40	27 – 35	28 – 38	
No. 200	7 – 11	7 – 11	7 – 11	

NOTES
(a) It is assumed fine and course aggregate have same bulk specific gravity.
(b) Target tolerance for 3/4 sieve in Grade 3/4, and 1" sieve in Grade 1 is not applicable.
(c) Percentage of fines passing No. 200 sieve determined by washing, ASTM C117.

C. **Changing Source**: A new material properties report is required.

2.2 **TREATED BASE COURSE**

A. Treatment includes addition of lime, cement slurry, asphalt emulsion, RAP, crushed concrete, or any combination, or other material acceptable to ENGINEER.

B. Base course containing RAP:

1. Meet requirements of this section article 2.1 and the following:

a. Sand equivalent and fractured face measured after asphalt residue is burned off.

b. Plasticity and wear requirements apply to virgin aggregate portion only.

c. Allowable asphalt content is controlled by allowable CBR.

2. Remove debris from crushed RAP aggregate by screening.

3. Mechanically blend virgin and RAP aggregates. Do not use windrows for blending.

C. Base course containing crushed concrete.

1. Meet requirements of this section article 2.1 and the following:

a. Cement with its chemical components is allowed.

b. Wear test and fractured face test not required.

2.3 **SOURCE QUALITY CONTROL**

A. Reject crushed aggregate base products that do not meet requirements of this Section.

B. Sampling Protocol: Random location selection, ASTM D3665. Sample collection, ASTM D75.

C. Testing Protocol: Gradation, ASTM C136. Maximum density, ASTM D1557. Optimum moisture content, ASTM D2216.

PART 3 EXECUTION

3.1 **SUB-BASE PREPARATION**

A. Trenches, Section 33 05 20.

B. Structures, Section 31 23 23.

C. Landscaping, Section 32 91 19.

D. Pavements, Section 32 05 10.

3.2 **PLACEMENT**

A. General:

1. Place uniform lifts not exceeding eight (8) inches before compaction.

2. Maintain optimum moisture content plus or minus two (2) percent.

3. Use appropriate compaction equipment.
4. Do not place additional material on any unaccepted layer or on any frozen surface.

B. Provide aggregate suitable for the following locations.

Table 5 - Placement Type, Location, Aggregate Class

Type	Location	Aggregate Class		
		A	B	C
I	Pavement (includes curb, gutter and waterway when in conjunction with pavement placement)	X		
II	Concrete flat work (includes driveway approach, curb cut assembly, curb, gutter, sidewalk, waterway, etc.	X	X	
III	Landscape (includes non-structural, non-load bearing areas.	X	X	X

NOTES:
(a) **X** indicates where placement is allowed.

C. Compaction:
1. Type I and Type II Placement: 95 percent minimum.
2. Type III Placement: Suitable to overlying surface, or installation, or use. Verify compactive effort with ENGINEER.

D. Finish: Uniform with surface deviation no more than 3/8 of an inch from line and grade in 10 feet in any direction.

3.3 FIELD QUALITY CONTROL

A. Sampling Protocol: Random location selection, ASTM D3665. Sample collection, ASTM D75.

B. Testing Protocol: Gradation, ASTM C136. Field density, ASTM D2922. Moisture content, ASTM D3017.

3.4 REPAIR OR REMOVAL

A. If product is correctable and at no additional cost to OWNER, provide laboratory data showing design CBR has not been reduced and material in-place has been compacted to 97 percent minimum.

B. Remove any product that cannot be corrected and install acceptable product at no additional cost to OWNER.

END OF SECTION

SECTION 32 12 13.13
TACK COAT

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Application of asphaltic material to existing asphalt concrete or portland cement concrete surfaces preparatory to placing an asphalt concrete Pavement.

1.2 SUBMITTALS

A. Certificate showing asphaltic material complies with Section 32 12 03.
   1. Identify water/asphalt dilution ratio.
   2. Identify tack coat application rate.

B. Identify asphalt material recommended by fabric manufacturer.

1.3 WEATHER

A. Apply tack coat only when air and roadbed temperatures in the shade are greater than 40 deg. F. The temperature restrictions may be waived only upon written authorization from ENGINEER.

B. Do not apply tack coat during rain, fog, dust, or other unsuitable weather. Do not apply coat to wet surfaces.

1.4 NOTICE

A. Send written notice to residents or business owners 24 hours prior to applying coat.

PART 2 PRODUCTS

2.1 ASPHALT MATERIAL

A. Select from the following.
   1. Emulsified Asphalt: Grade MS-1, SS-1 or SS-1h, Section 32 12 03.
   2. Cationic Emulsified Asphalt: Grade CSS-1 or CSS-1h, Section 32 12 03.
   3. Rapid Cure Cutback Asphalt: Grade RC-70, Section 32 12 03.

PART 3 EXECUTION

3.1 PREPARATION

A. Select and advise ENGINEER of the type of tack material to be used.

B. Clean the surface to be treated free of dust and other foreign material. If flushed, allow surface to dry. If leaves from trees, blow clean.

C. Provide surface for pedestrian access across tack coat.

D. Prevent pedestrians, vehicles, pets, etc., access to tack surfaces.

3.2 APPLICATION

A. General:

1. Triple coverage by spray bar required. Stop application if any nozzle is not working properly.
2. Apply tack only to area covered with asphalt concrete in the same day.

B. Application rate: Typically as follows.

1. Emulsions, 0.05 to 0.15 gallons per square yard.
2. Cutback, CONTRACTOR's choice.

C. Tack Substrate for Fabric Application: Comply with manufacturer's recommendation. If none, then as follows.

1. Dry Pavement surface, 0.20 to 0.30 gallons per square yard. Within street intersections, on steep grades and in zones where vehicle speed changes are commonplace reduce the application rate to no less than 0.20 gallons per square yard.
2. Heavy duty fabrics, 0.30 to 0.40 gallons per square yard.

3.3 PROTECTION

A. Protect all surfaces exposed to public view from being spattered or marred. Remove any spattering, over-coating, or marring.

B. Do not discharge bituminous material into borrow pits or gutters.

3.4 OPENING TO TRAFFIC AND MAINTENANCE

A. Do not permit traffic to travel over the tacked surface until bituminous tack coat has cured or is not picked up by traffic.

B. If detours cannot be provided, restrict operations to a width suitable at least for one-way traffic over the remaining portion of the road.

C. If one-way traffic is provided, control traffic appropriately.

END OF SECTION

SECTION 33 05 23.40
CURED-IN-PLACE PIPE (CIPP)

PART 1 GENERAL

1.1. SECTION INCLUDES

A. Installation of a flexible resin filled pipe liner in an existing gravity pipeline. After installation, the liner is cured by use of Ultraviolet Light (UV), light, steam or hot water. The pipeline and the cured pipe liner become a continuous rigid composite pipe.

1.2 REFERENCES

A. **ASTM Standards**:

D790 Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials.

D5813 Cured-in-Place Thermosetting Resin Sewer Pipe. F1216 Rehabilitation of Existing Pipelines and Conduits by Inversion and Curing of Resin-Impregnated Tube.

F1743 Rehabilitation of Existing Pipelines and Conduits by Pulled-in-Place Installation of a Cured-in-Place Thermosetting Resin Pipe.

F2019, Section 6

1.3 PERFORMANCE REQUIREMENTS

A. **General**:

1. All portions of existing pipe are to be provided with a new composite pipe.
2. After installation there shall be completely water tight seals at and through each manhole.
3. All service connections shall be re-established with a water tight seal that eliminates infiltration and is acceptable to the OWNER.

B. **Measurements**: CONTRACTOR will take field measurements and make video observation of the host pipe to properly size the liner and verify the condition and length of the host pipe prior to ordering the liner.

1.4 SUBMITTALS

A. Tube and resin manufacturer's product data, equipment and material specifications.

B. Design calculations report by a licensed design professional showing conformance to the appendix of ASTM F1216 for each length of liner installed. Include in the report

1. Thickness of each proposed cured-in-place segment.
2. Allowance for creep.
3. Stretch allowance during installation, and
4. Comparison of strength of liner to requirements for H-20 and E-80 loading.

C. Bypass pumping plan for host pipe flow diversion. Indicate sequence of diversion operations, temporary plugs, silenced bypass pumping systems, temporary vehicle and pedestrian bypass, and site reinstatement after diversion.

D. Copy of written notice to neighborhood.

E. Traffic control plan, Section 01 55 26.

F. Pre- and post-installation video.

1.5 QUALITY ASSURANCE

A. CONTRACTOR has successfully installed over 30,000 linear feet of cured-in-place pipe.

B. Foreman has at least three (3) years of cured-in-place pipe installation experience

with two (2) years experience as an onsite foreman and has directly supervised installation of at least 10,000 linear feet of cured-in- place pipe installations.

C. Foreman's crew has at least two (2) years experience with main line set- up, bypass pumping, materials installation, curing, connecting, and re- establishing lateral connections.

1.6 NOTICE

A. Provide seven (7) days initial notification and 24 hours secondary notification before commencing work.

B. Distribute written notification to property owners, business owners and the like within the project area and areas affected by the project. Provide (1) a description of the work, (2) beginning date and time of the work, (3) work duration, (4) expected, pipeline use restrictions, etc. In the case of sanitary sewer work, inform of potential odors and smells.

C. Provide all residents and businesses 24 hours emergency contact names and phone numbers of onsite superintendent and foreman.

PART 2 PRODUCTS

2.1 RESIN

A. Composed of (1) polyester resin and catalyst, (2) epoxy resin and hardener, or (3) vinyl ester resin and catalyst. When properly cured meet the requirements of ASTM D5813, ASTM F1216, or ASTM F1743.

2.2 TUBE

A. Flexible, absorbent woven or non-woven felt fabric with the outer layer (before inversion) coated with a translucent, impermeable, flexible plastic membrane. The membrane shall not be subject to delamination after curing of the composite pipe. The tube shall be sewn or spot- welded, have sufficient strength to bridge missing segments in the host pipe, stretch to fit irregular host pipe cross-sections and have measurement marks at regular intervals (not to exceed 5 feet) along the flexible plastic membrane.

2.3 STRUCTURAL DESIGN

A. Minimum physical properties of the cured composite pipe are as follows.

Table 1 – Structural Standards

Property	Standard	Cured Composite per ASTM F1216	Resin Properties
Flexural Modulus of Elasticity (Short Term)	D790	400,000 psi	400,000 psi
Flexural Strength (Short Term)	D790	4,500 psi	4,500 psi

The manufacturer must have performed long-term testing for flexural creep of the composite pipe materials installed in other work. Such testing results are to be used to determine the long-term, time dependent flexural modulus to be utilized in the product design. This is a performance test of the materials (tube and resin) and general workmanship of the installation and curing. A percentage of the instantaneous flexural

modulus value was used in design calculations for external buckling. The percentage, or the long-term creep retention value utilized, will be verified by this testing. Retention values exceeding 50 percent of the short-term test results shall not be applied. The materials utilized for the work shall be of a quality equal to, or better than, the materials used in the long-term test with respect to the initial flexural modulus used in the pipe design.

B. The wall thickness of the cured composite pipe shall be based upon the following design parameters and design conditions.

Table 2 – Wall Thickness Design	
Design Parameter	**Criteria**
Safety Factor	2.0
Ovality 2 percent to 5 percent 5 percent to 10 percent Greater than 10 percent	ASTM F1216 Design for 5 percent Design for 10 percent Excavate and repair host pipe
Soil Modulus	1,000 psi
Groundwater Depth (above invert of existing pipe)	Ground surface
Soil Depth	As measured in the field
Live Load	E-80 and H-20 highway
Soil Load	120 lbs per cubic foot
Minimum service life	50 years
Retention Factor for Long-Term Flexural Modulus (Creep Retention)	50 percent
Host Pipe Condition	Fully Deteriorated

Design Conditions
No structural support for hydrostatic live, or earth loading comes from the host pipe. Loading for areas away from railroad, H20; for areas under railroad, E80. Assume a fully deteriorated pipe condition having ground water loading condition measured from the pipe flow-line to the ground surface. Pipe deflections are based upon actual pipe deflection and pipe damage observed in pipe inspection videos (by CONTRACTOR) but in no case less than two (2) percent. Any existing noticeable pipe deflection, structural damage, pipe ovality or pipe deterioration will require the CONTRACTOR to prove the adequacy of submitted liner thicknesses.

C. The cured composite pipe shall be homogeneous across the entire wall thickness. No dry or unsaturated layers shall be evident. The layers shall be uniformly bonded. It shall not be possible to separate any two (2) layers with a probe or point of a knife blade so that the layers separate cleanly or the probe or knife blade moves freely

between layers.

PART 3 EXECUTION

3.1 PREPARATION

A. Obtain required excavation and noise permits.
B. Implement traffic control plan requirements, Section 01 55 26.
C. Provide for bypassing host pipe flows and lateral flows received by the host pipe. Standby pumping capacity for 125 percent flow is required at all times.
D. Control groundwater.
E. Contain overflows and spills.

3.2 CLEANING, INSPECTIONS, REPAIRS

A. Clean host pipe of obstructions, solids or dropped joints, debris and gaskets. Do not use chemical cleaning. If cleaning cannot be done with conventional equipment, excavate and remove the obstruction. Such excavation must be approved by ENGINEER prior to excavation and will be considered as change order work. Pipe deflections, changes in grade and pipe installed on a radius do not qualify for excavation and removal.
B. Inspect, measure and record host pipe conditions using digital video recording equipment in MPEG 1 format with 352x240/320x240x30 fps resolution and audio bit rate of 256 Kbps.
C. Restore or repair interior of the host pipe to an ovality of five (5) percent or less. Provide a smooth, uniform pre-lined surface with no sharp edges or broken rebar.

3.3 INSTALLATION

A. For hot water and steam cured CIPP installation follow ASTM F1216, Section 7 requirement and the following.
   1. Prior to tube installation, use a vacuum process to impregnate the tube and a roller system to uniformly distribute the resin. Fill the volume of air voids in the tube. Allow for polymerization shrinkage and loss of resin through cracks and irregularities in the host pipe wall.
   2. After installation, supply a heat source and cure the pipe. Provide temperature recommended by resin manufacturer. At the invert level, monitor temperatures at the insertion point and at the remote end of the tube.
   3. After cure, cool pipe temperature below 100 deg F before relieving pressure.
B. The finished composite pipe product shall be continuous over the length of pipe reconstructed and be free from dry spots, delaminating, wrinkling, bubbles and lifts. It shall also meet the leakage requirements specified in ASTM F1216.
C. For UV cured CIPP installations, install in accordance with ASTM F2019 Section 6, manufacturer recommendations and the following for UV cured CIPP liners:
   1. The CIPP liner shall make a tight-fitting seal with the existing pipe in the access structures. If the CIPP fails to make a tight seal, the CONTRACTOR shall apply a seal at that point using a sealant or caulking material that is compatible with CIPP materials, water tight, flexible and impervious to hydrogen sulfide.
   2. The finished CIPP liner shall be continuous over the entire length of an insertion run between two manholes and be free from visual defects such as foreign inclusions, dry spots, pinholes and delamination.
   3. The ultraviolet barrier that encases the CIPP liner may be considered a preliner.
   4. The liner shall be pulled into place per the manufacturer’s recommendations. All point repairs shall be completed prior to installation so that there are no opportunities for

liner to snag or get caught on protrusions and potentially damage the pipe.

5. The liner shall be inflated with air before curing with Ultra Violet light according to the manufacturer's specifications.
6. The CIPP liner shall be impregnated to meet the manufacturer's specifications with UV Curing Resins in the manufacturing facility prior to delivery to the site or installation. No onsite wet out facility will be allowed. The CONTRACTOR shall allow the OWNER or ENGINEER to inspect the liner after delivery to the site and prior to installation.

3.4 CURING

A. HOT WATER

1. CONTRACTOR shall use a flexible and impermeable calibration hose to inflate the tube. The calibration hose may or may not remain in the complete installation. Any dry tube or inflation hose material that enters the existing pipe that has not been previously vacuum impregnated with resin under controlled conditions cannot be included in the structural wall of the CIPP. The nominal thickness of this material shall be deducted from the field sample thickness measured in order to verify that the minimum specified wall thickness is achieved. Hose material remaining in the installation shall be compatible with the resin system used, shall bond permanently with the tube, and shall be translucent to facilitate post installation inspection. Hose materials which are to be removed after curing, shall be of non-bondable material. After the tube is inserted through the pipe section, the CONTRACTOR shall heat the water by circulating it through a boiler, where the hot water will cause the resin to cure.
2. The CONTRACTOR shall monitor the temperature of the tube liner during curing by remote temperature sensors placed at the interface of the existing pipe and the CIPP. A minimum of two temperature sensors shall be installed, one at either end of the length being lined. The curing process shall not be terminated until the temperature sensor readings indicate that a satisfactory cure has been completed. Any extended cure times shall not adversely affect the properties of the CIPP lining material.
3. Circulation water shall cool down to at least 100 degrees F for 1 hour before releasing the hydrostatic head.
4. The rate of temperature rise and fall during heating and cooling shall not exceed 2 degrees F per minute.
5. The water shall be evacuated from the pipe at a controlled rate to prevent negative pressure in the pipe. The water shall not be released until the water is at an ambient air temperature.

B. STEAM CURING

1. Steam source and air compressors are used to circulate the steam/air mixture through the pipe at a temperature recommended by the manufacturer causing the resin to harden.
2. The CONTRACTOR shall monitor the temperature of the tube liner during curing by remote temperature sensors placed at the interface of the existing pipe and the CIPP. A minimum of two temperature sensors shall be installed, one at either end of the length being lined. The curing process shall not be terminated until the temperature sensor readings indicate that a satisfactory cure has been completed. Any extended cure times shall not adversely affect the properties of the CIPP lining material.
3. The temperature of the air shall cool down to at least 140 degrees F for 1 hour before releasing air pressure. The outlet hose shall be equipped with a pressure regulating valve, temperature gauge, and pressures gauge.
4. After installation is completed, suitable heat source and water circulation equipment are required to circulate heated water throughout the pipe. The equipment should be capable of delivering hot water throughout the section to uniformly raise the temperature above

the temperature required to effect curing of the resin. Water temperature in the line during the cure period should be as recommended by resin manufacturer. Once curing is complete, the CONTRACTOR shall cool the CIPP in accordance with approved CIPP manufacturer's recommendation.

C. ULTRAVIOLET CURING
   1. After inspection and complete inflation to the manufacturer's specifications, the UV light bulbs will be activated. The curing shall commence at a rate specified by the manufacturer according to the total dimensions of the liner. The CONTRACTOR shall strictly adhere to the manufacturer's specified cure schedule.
   2. As the light chain is pulled from one end of the liner to the other at a constant rate curing the liner, the equipment shall record all curing data in DVD format for the review and records of the OWNER.
   3. Initial cure shall be deemed complete when the UV chain arrives at the initial insertion point.

3.5 REINSTATEMENT OF SERVICE CONNECTIONS

A. Open branch or lateral connection to buildings, drop manholes, and intersecting mainline connections without excavation.
B. Keep a minimum of two (2) complete working cutters available during the connection process.
C. Provide full diameter lateral connections that produce water tight holes, free from burrs or projections and finished with a smooth, brushed and buffed crack free edge.
D. Collect ALL cutting coupons.
E. After mainline lining is completed and the laterals have been recently renewed, install watertight lateral-mainline interface seal, "Top Hat", and extend minimum of 18 inches into lateral to create water tight seal ensuring interface is smooth and does not impede flow from lateral.
F. Perform manufacturer's required and industry standard preparation work to alleviate lateral-mainline interface seal problems and as specified herein.
   1. As necessary for access of equipment, contour manhole bench and channel by saw cutting.
   2. Internally remove any obstructions, roots, debris, or grease that impact lateral mainline interface seal.
   3. Remove tuberculation on ductile iron lateral.
   4. Do not back-up or blow-back waste into property owners' building.
   5. Perform pre-lining leakage control by chemical grout method to eliminate cold spots.
   6. Lateral, mainline, or property damaged as result of improper use of equipment: Repaired at CONTRACTOR's expense.
G. Setup bypass pumping, if necessary, or turn off water to building with Engineer's approval.
H. Any excavation required for the purpose of reopening connections is at CONTRACTOR's expense.

3.6 POST INSTALLATION INPSETION

A. Upon completion and before acceptance of the work, the CONTRACTOR shall inspect the rehabilitated pipeline using a CCTV camera with a pan and tilt head. The inspections shall be recorded using digital video recording equipment in MPEG 1 format with 352x240/320x240x30 fps resolution and audio bit rate of 256 Kbps. The Operator will stop the camera at each lateral reinstatement and record each of the service connections. The CONTRACTOR shall submit the post-installation video to the OWNER for review and acceptance of work.

3.7 RESTORE MANHOLES

A. Acclimate pipe to atmosphere temperatures before cutting pipe.
B. Remove top of composite pipe that passes through existing manholes.
C. If the liner does not pass through the manhole, or if the liner material changes at the manhole, feather edge the composite pipe to match existing manhole flow-line.
D. Seal openings between the shaft or cone and the liner with a multi- layered poly resin composite liner system consisting of (1) epoxy primer moisture barrier, (2) a surface of polyurethane/polymeric blend foam), and (3) a final barrier coat consisting of a modified polymer.

3.8 SURFACE FINISHING

A. Restore paved surfaces, Section 33 05 25.
B. Landscapes: Restore landscaping as indicated and as follows where applicable.
   1. Section 32 92 00 for turf and grasses.
   2. Section 32 93 13 for other ground cover.
C. Repair public and private facilities damaged by CONTRACTOR.

3.9 INSTALLATION RESPONSIBILITIES FOR INCIDENTAL ITEMS

A. It shall be the responsibility of the OWNER to locate and designate all manhole access points open and accessible for the work, and provide rights of access to these points. If a street must be closed to traffic because of the orientation of the sewer, the CONTRACTOR shall institute the actions necessary to do this for the mutually agreed time period.
B. Cleaning of Sewer Lines - The CONTRACTOR, when required, shall remove all internal debris out of the sewer line that will interfere with the installation of CIPP. The OWNER shall also provide a dump site for all debris removed from the sewers during the cleaning operation. Unless stated otherwise, it is assumed this site will be at or near the sewage treatment facility to which the debris would have arrived in absence of the cleaning operation. Any hazardous waste material encountered during this project will be considered as a changed condition.
C. Bypassing Sewage - The CONTRACTOR, when required, shall provide for the flow of sewage around the section or sections of pipe designated for repair. The bypass shall be made by plugging the line at an existing upstream manhole and pumping the flow into a downstream manhole or adjacent system. The pump and bypass lines shall be of adequate capacity and size to handle the flow. The OWNER may require a detail of the bypass plan to be submitted.
D. Inspection of Pipelines - Inspection of pipelines shall be performed by experienced personnel trained in locating breaks, obstacles and service connections by close circuit television. The interior of the pipeline shall be carefully inspected to determine the location of any conditions which may prevent proper installation of CIPP into the pipelines, and it shall be noted so that these conditions can be corrected. A suitable log shall be kept for later reference by the OWNER.
E. Line Obstructions - It shall be the responsibility of the CONTRACTOR to clear the line of obstructions such as solids and roots that will prevent the insertion of CIPP.
F. Public Notification - The CONTRACTOR shall make every effort to maintain service usage throughout the duration of the project. In the event that a service will be out of service, the maximum amount of time of no service shall be 8 hours for any property served by the sewer. A public notification program shall be implemented, and shall as a minimum, require the CONTRACTOR to be responsible for contacting each home or business connected to the sanitary sewer and informing them of the work to be conducted, and when the sewer will be off-line. The CONTRACTOR shall also provide the following:
   1. Written notice to be delivered to each home or business the day prior to the beginning of

work being conducted on the section, and a local telephone number of the CONTRACTOR they can call to discuss the project or any problem which could arise.

2. Personal contact with any home or business, which cannot be reconnected within the time stated in the written notice.

3.10 FIELD QUAILTY CONTROL

A. Leakage testing of the composite pipe shall be accomplished during cure while under a positive head. Comply with Section 33 08 00 requirements for the type of service that the composite pipe provides. Cured-in-place pipe products in which the pipe wall is cured while not in direct contact with the pressurizing fluid (e.g., a removable bladder) must be tested by an alternative method acceptable to ENGINEER.

B. Monitor and record temperatures and curing data throughout the cooling process.

END OF SECTION

Add section 33 05 23.50 Sewer Main and Lateral Sealing by Chemical Grout as follows:

33 05 23.50
SEWER MAIN AND LATERAL CONNECTION SEALING BY CHEMICAL GROUT

PART 1 GENERAL

1.1 DESCRIPTION

A. Section includes requirements for rehabilitation of defective mainline joints, circumferential mainline cracks, other small mainline defects and defective lateral- mainline interfaces by application of chemical grout material.

1.2 DEFINITIONS

A. Mainline: Sewer Main.
B. Lateral: Service pipe from property line to mainline.
C. Lateral-Mainline Interface: Lateral connection to mainline.
D. Lateral-Mainline Interface Seal: Watertight seal between lateral and mainline.

1.3 QUALITY ASSURANCE

A. Follow ASTM F2304 and F2454-05.
B. Commercially Proven Products:
   1. Minimum 12,000 mainline joints and 1,000 lateral-mainline interfaces successfully grouted and documented in the United States and Internationally.
   2. Translate international installations into English to Engineers approval.
C. Personnel involved in sealing of joints and lateral connections: Certified by grout manufacturer they have successfully completed training in handling, mixing and application of grout for sanitary sewer line and joint and lateral connection sealing.
D. Third-Party Inspector: Minimum of 5 years experience in Chemical grouting applications and have no financial or directorial link to grout manufacturer or Contractor.
E. Engineer may inspect and test grout at factory, before delivery to site, while in storage, or prior to use.
F. Internally CCTV inspect host pipe prior to grouting, during grouting and post grouting.

1.4 SUBMITTALS

A. Submit following Section 0103.
   1. Catalog data showing manufacturer’s clarifications and updates, ASTM references, material composition, specifications, and physical and chemical properties of grout.
   2. Calculations of expected volumes of annular space between packer and pipe wall, to be used in calculating required gel times.
   3. Manufacturer's recommended procedures for handling, storing, mixing and injecting grout.
   4. Method of Construction.
      a. Access manholes and site locations.
      b. Work dimensions.
      c. Size of working area.
      d. Impacted portions of existing sewer.
      e. Site access points.
      f. Bypass pumping plan:
   5. Emergency plan detailing procedures to be followed in event of health and safety

emergency, pump failures, sewer overflows, service backups, and sewage spillage. Maintain copy on site for duration of project.

a. Address dangers associated with sewer rehabilitation work.
b. Identify Health and Safety officer. (i.e. crew chief)
c. Designated Health and Safety officer:
   1) Responsible for providing health and safety oversight of personnel participating on project team.
   2) Perform and document routine work area inspections, conduct safety meetings, and provide safety orientations for team members.
   3) Have in easily accessible location, the following contact information
      a) Non emergency number.
      b) Contractor's health and safety representative name and number.
      c) Occupational health clinic number(s).
d. Submit for review the following;
   1) List of critical rehabilitation equipment, to be inspected on daily basis.
   2) Recently completed (previous month) monthly maintenance log.

B. Submit following Section 103.
   1. Grout manufacturer's certification that Contractor is approved installer of their system. Certificates of training in handling, mixing, and application of grout for sanitary sewer line and joint and lateral connection sealing for grout truck operator and at least one crewmember involved in sealing process.
   2. Third party lab test results for field installations in United States of same grout system as proposed for actual installation.
      a. Test results must verify grout physical and chemical properties specified herein have been achieved in previous field applications.
   3. CCTV inspection reports and electronic downloads, before and following sewer joint sealing. Furnish original copies of CCTV inspections color DVDs to Engineer within 10 days.
   4. Documentation for Products and Installers: Engineer's approval required before acceptance or injection of grout.
   5. Proof of grout manufacturer's product liability insurance, if requested by Engineer.
   6. Pump calibration information.
   7. Field sealing records.
   8. Certification of accuracy and calibration of pressure sensing/monitoring equipment by independent testing firm within one month before use of equipment.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect, store, and handle grout or other material during transportation and delivery, while stored on-site, and during installation following manufacturer's recommendations.
B. Grout Material found defective or damaged due to manufacture or shipment:
   1. Remove from Contract site and replace, following Engineer's direction, at no cost to the City.

PART 2 PRODUCTS

2.1 MATERIALS

A. Grouting.
   1. Properties and Characteristics.
      a. Will perform in presence of infiltrating water, during injection.
      b. Packaged for field storage, handling requirements with minimum spillage and

worker safety.

2. Cured grout:
   a. Submergible in water without degrading.
   b. Not biodegradable.
      1) Additives may be used to meet this requirement, without effecting long- term strength.
   c. Chemically stable and resistant to concentrations of acids, alkalis, and organic materials found in normal sewage.
3. Composition.
   a. Acrylamide gel:
      1) Minimum of 10 percent acrylamide base material by weight in total grout mix.
      2) Higher concentration percent of acrylamide base material (maximum 20%) may be used to increase strength or offset dilution during injection.
      3) Able to tolerate some dilution and react in moving water during injection.
      4) Approximately 2 centipoise viscosity. Can be increased with additives.
      5) Constant viscosity during reaction period.
      6) Controlled reaction time from 10 seconds to 1 hour.
      7) Curing reaction producing a homogenous, chemically stable, non-biodegradable, firm, flexible gel.
      8) Able to prevent dehydration and increase-mix viscosity, density and gel strength by use of additives.
         a) Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent.
         b) Use of other additives following manufacturer's recommendation and Engineer's approval.
      9) Root control additive 2, 6-Dichlorobenzonitrile, may be added following manufacturer's recommendation and Engineer's direction.
   b. Urethane gel:
      1) Ratio: One part urethane prepolymer mixed with 5 to 10 parts water by volume.
         a) Recommended mix ratio: 1 part urethane prepolymer to 8 parts of water (11 percent prepolymer).
      2) Liquid prepolymer:
         a) Solids content: 77 to 83 percent.
         b) Specific Gravity: 1.04 (8.65 pounds per gallon)
         c) Flash Point: 20 degrees F.
         d) Viscosity: 600 to 1,200 centipoises water at 70 degrees F.
      3) Water for reacting prepolymer: pH of 6.5 to 8.
      4) Curing reaction:
         a) Produces chemically stable, non-biodegradable, tough, flexible gel.
         b) Able to increase mix viscosity, density, gel strength and resistance to shrinkage by using additives in water component of grout.
         c) Minimum 15 percent shrink control agent supplied by the same manufacturer.
   c. Acrylate gel:
      1) Minimum 10 percent acrylate base material by weight or as specified by the manufacturer.
         a) In total grout mix, a higher concentration (percent) of acrylate base

material may be used to increase strength or offset dilution during injection.

b) If acrylate base material is in 40 percent solution 27.5 percent by weight of total grout mix: 11 percent base material.

2) Able to tolerate some dilution and react in moving water during injection.

3) Viscosity: Approximately 2 centipoises.

a) Can be increased with additives.

4) Constant viscosity during reaction period.

5) Controlled reaction time:10 seconds to 1 hour.

6) Curing reaction producing homogeneous, chemically stable, non-biodegradable, flexible gel.

7) Able to prevent dehydration and to increase-mix viscosity, density and gel strength by use of additives.

a) Diatomaceous earth (Celite 209 or equal) can be added to concentration of five percent, by volume.

b) Use of other additives following manufacturer's recommendations and Engineer's approval.

8) Root control additive 2, 6-Dichlorobenzonitrile, may be added following manufacturer's recommendation and Engineer's direction.

2.2 EQUIPMENT

A. General.

1. CCTV system, necessary chemical grout containers, pumps, regulators, valves, hoses, joint sealing packers for various sizes of sewer pipes, and lateral bladders.
2. Air pressure monitoring system:
   a. Configured with no valves on air line between measuring point and pressure sensing device.
   b. Digital readouts located at control panel in grouting truck.

B. Grouting packer:

1. Diameter less than pipe size, with cables attached at each end to pull it through the line.
2. Designed to allow restricted amount of sewage to flow through device, in mainlines where sewage flows do not exceed maximum depth for joint testing/sealing following manufacturer's recommendation and following ASTM F2304 and ASTM F2454-05.
3. Approved Manufacturers:
   a. Logiball, Inc.
   b. Cues, Inc.
   c. Or Equal.

PART 3 EXECUTION

3.1 PUBLIC NOTIFICATION

1. Deliver written notices to each home or business immediately after sealing operation.

3.2 PREPARATION

A. Access.

1. Chemical grout sealing of mainline sewers: Through existing manholes.
2. Chemical grout sealing of lateral-mainline connections: Through mainline sewers.

B. Sewer Cleaning and Surface Preparation.

1. Cleaning of Main Line Sewers and Laterals.
   a. Hydraulic high pressure jetting of reaches is permitted.
   b. Before sealing work, lightly clean each line section.
   c. Remove sludge, dirt, sand, grease, root, and other materials from pipe and collect and remove resulting debris from downstream manhole of sewer section being cleaned.
   d. Collect debris and remove from site. Following jurisdictional requirements and Engineers' approval.
   e. Sewers damaged as result of improper use of cleaning equipment: Promptly repaired at no additional cost to the City.
   f. Clean sewer main within 72 hours before chemical grouting of sewer lateral connections.

C. Pre-sealing CCTV Inspection.
   1. After cleaning, perform CCTV inspection to ensure main is sufficiently clean to perform sealing operations. Document protruding taps and structural defects found during the CCTV inspection.
      a. If Engineer finds main is not sufficiently cleaned, remove CCTV and sealing equipment and re-clean at no additional cost to the City.
      b. If light cleaning is not sufficient, heavy clean sewer.

D. Pre-sealing Reaming.
   1. Ream or trim protruding taps.

E. Structural Defects.
   1. Repair defects that would interfere with sealing operation to Engineers acceptance prior to grout injection.
   2. If possible, perform a reverse set up for sealing operation from opposite manhole instead of performing a point repair.

F. Bypass Pumping: Before pre-sealing CCTV inspection, and joint testing and sealing can be performed, depth of flow should be at or below levels shown in table.
   1. If necessary, bypass pump to bring flow levels down to acceptable levels.

Pipe Diameter (inches)	Maximum Depth of Flow (as % of Pipe Diameter)
6 to 10	20
12 to 24	25
27 or greater	30

3.3 TESTING

A. Performance Test Demonstrations.
   1. Before start of work, verify accuracy and repeatability of void pressure meter and fluid pumping equipment.
   2. If test demonstrations fail to show accuracy of +/-0.5 psi for void pressure repeatability and +/- 0.1 gallon of chemical pumped into measured container or bucket, make required repairs or adjustments to equipment and gauges and retest until results meet Engineers satisfaction.
   3. Test may be required at commencement of each work shift during sealing operations.

B. Mainline Joint Pressure Air Testing.
   1. Before testing, perform control tests at ground surface to verify accuracy, integrity, and reliability of testing equipment following ASTM F2304.
   2. After entering each pipe segment through manhole, and immediately before joint pressure

air testing, perform an intermediate test on pipe between joints following ASTM F2454-05.

3. Maintain joint testing air pressure of 3 psi higher than groundwater pressure outside the pipe, up to maximum of 10 psi. If groundwater pressure data is not available, use joint testing pressure of 0.5 psi per vertical foot of pipe depth or 10 psi, whichever is greater.
4. Perform testing following ASTM F2304. Seal joints that do not maintain void pressure drop of less than 1 psi in 15 seconds.

C. Lateral Connection Pressure Air Testing.

1. Before lateral connection testing, perform control tests at ground surface to verify accuracy, integrity and reliability of testing equipment following ASTM F2454- 05.
2. Maintain joint testing air pressure of 3 psi higher than groundwater pressure outside the pipe, up to maximum 6 psi. If groundwater pressure data is not available, use joint testing pressure of 0.5 psi per vertical foot of pipe depth or 6 psi whichever is greater.
3. Perform lateral connection testing following ASTM F2454-05. Seal joints that do not maintain void pressure with pressure drop of less than 2 psi in 15 seconds.

3.4 BASIC REQUIREMENTS

A. General.

1. Seal joints, defects or leaking lateral connections that failed air testing or show sign of visible leaks, by internal chemical methods, as directed by Engineer.
2. After sealing of joint, defect or connection, perform post air test per ASTM F2304 or ASTM F2454-05 for mainline sewer sealing and lateral sealing, respectively.
3. Sewer that Engineer deems damaged as a result of Contractor's operations, will be promptly repaired to Engineer's satisfaction at no cost to the City.
4. Grouting materials that set to a hard, rigid product capable of intrusion into sewer lines are not acceptable unless specifically approved by Engineer on a case by case basis.
5. Provide qualified, independent third party inspector to observe grouting mixing process, chemical grouting injections process and post grouting pressure testing. Report findings to Engineer.

B. Application Procedures for Joint Sealing and Lateral Connection Sealing.

1. Force chemical grouting material into or through faulty joints, defects or lateral connection by system of pumps, hoses, and sealing packers.
   a. Position packer over faulty joint or lateral connection by means of measuring device and CCTV camera in line.
   b. For mainline sewers, expand packer end bladders using controlled pressure. For lateral connections use lateral packer equipped with lateral bladder and rotating mechanism.
      1) Obtain a tight seal. If a tight seal is not obtained, remove equipment and make adjustments.
      2) Pump grout material through hose system at controlled pressures high enough to overcome external pressures such as groundwater pressures.
2. Design pumping unit, metering equipment, and packer devices so proportions and quantities of materials can be regulated following type and size of leak being sealed.
3. Set chemical pumping rates and mixing ratios as specified herein, following manufacturer's recommendations and Engineer's adjustments.
4. Determine appropriate gel set times.
   a. To estimate gel set times, divide estimated volume of annular space (in gallons) by grout pumping rate (in gallons per minute), then add between 15 to 25 seconds. Adjust estimate by taking into account temperature of grout tanks, temperature of hoses, temperature of groundwater, amount of groundwater present and other field conditions.

b. The gel set time is typically between 20 and 40 seconds. Gel set times of less than 20 seconds may be required in presence of high filtration.
c. Monitor induction periods and gel characteristics through daily gel time tests for each sealing vehicle. Check each new batch once. If only one batch is used, check at least twice per day.
d. Perform new gel time test when grout additives are modified to change gel times, at beginning of new setup with new starting manhole, or when temperature in tanks and hoses changes by more than 10 degrees F from previous gel time test.
e. Use water with known and controlled pH that will be used during actual grouting operations.
f. Allow grout mixture to settle to remove entrained oxygen, before testing gel time.
g. Use plastic or stainless steel tanks. Do not use tanks that contain iron or copper.

5. During seal operations, operate void pressure monitoring equipment, described herein.
6. Integrate CCTV, grout pumping, and air pressure monitoring equipment so proportions, quantities, and void pressure for materials and sealing can be instantly monitored and regulated following type and size of joint, break, or leak.
7. Amount of chemical being pumped: Based on number of pumped strokes delivered for each sealed sewer main joint, defect or leaking connection.
   a. Record and provide results to Engineer.
8. If large voids are encountered on outside of sewer, including the possibility of “piping” holes to ground surface, which could cause excessive use of grout material, at Engineer’s direction change operating pressures and pumping rates as follows.
   a. Reduce pressures and pumping rates, such that intervals between pump strokes are shorter than gel time.
   b. Pump first stage of grout, and then stop pumping until temporary gel of the grout is obtained on outside of pipe.
   c. Increase pressure and pumping rate to pump the second stage and form a second layer.
   d. Repeat this cycle until refusal conditions are reached, or until the inspector judges the grout consumption to be excessive.
   e. Avoid sealing inner surface of pipe from inside before building up layers on the outside.
9. Grout injection complete: When chemical grout is pumped to refusal as defined in ASTM F2304.
   a. If chemical grout cannot be pumped to refusal, within a volume less than or equal to 0.5 gallons per inch of pipe diameter due to latent physical conditions, do not perform additional work until Engineer grants authorization.
   b. Lateral connections: When back pressure of grout in void at mainline level drops from 8 psi to 6 psi in greater than 20 seconds after cessation of grout pumping, following ASTM F2454-05.
      1) If using stage grouting, grout injection is complete when refusal pressure of 8 psi is achieved.
10. Sealed Defects.
   a. Remove excess grout gel ring if obtrusive and impedes air testing and CCTV inspection of work as required. If excess grout gel ring cannot be removed by use of packer, jet clean pipe prior to testing seal.
   b. Air test each sealed joint.
      1) If defect or connection fails air test after grout injection, reseal failed joints and air test again.
      2) After lateral connection has been sealed successfully as confirmed by post air test, break lateral packer seal and test service to assure grout has not blocked

lateral connection further upstream.

a) In the event sewage back-up occurs and enters a dwelling, respond within 2 hours of being notified and be responsible for cleanup, repair, property damage costs and claims.

c. After all pipe joints and lateral connections have been grouted, retest all previously unsealed pipe joints and lateral connections. Seal any pipe joints and lateral connections that do not pass the air pressure test.

11. Flush or push forward excess grouting material to next downstream manhole, and remove from sewer system.

a. Dispose of debris following grout manufacturer's recommendation, and jurisdictional regulations.

b. Excess grout material from upstream section(s) will not be allowed to accumulate in sewer.

12. Provide approved plug and/or by-pass pumping if grouting operations restrict or prevent simultaneous sewage flow passage.

a. Manage Sanitary Sewer Overflow.

C. Joint, Defect or Lateral Connection Sealing Verification.

1. Mainline joints and defects.

a. Deflate packer bladders after completing each seal until zero void pressure (±0.5 psi) is shown on the monitoring equipment.

b. If zero void pressure (±0.5 psi) is not achieved, clear residual grout material from packer or make needed equipment adjustments allowing true pressure reading.

2. Re-test joint, defect or lateral connection as described herein.

a. Re-seal joints, defects, or connections that do not meet specified test criteria and re-test until test criteria are met, or Engineer determines that joint defect, or lateral connection cannot be sufficiently sealed.

b. Additional testing and sealing will be at no additional cost to the City.

D. Residual Sealing Material.

1. Leave no residual grout material capable of reducing pipe diameter or restricting flow greater than 5 percent pipe capacity.

E. Obstructions.

1. During course of sealing operations obstructions may be encountered preventing travel of packer and camera.

a. Should obstruction not be passable, begin sealing operations from opposite end of sewer reach.

2. If additional obstructions are encountered after re-employment and no means are available for passing obstructions without damage to equipment, remaining sections of sewer main not sealed may be temporarily excluded from work requirements of Contract, until point repair is completed.

3.5 FIELD DOCUMENTATION

A. Records.

1. Keep complete, accurate, and legible records of operation for each joint, defect or connection sealed.

a. Include on Record of Operation for each joint or lateral mainline interface tested and/or routed or attempted to be grouted:

1) Identification of work site, complete component, address, county page & grid, 200 foot sheet.

2) Date and time.

3) Station of each seal measured from upstream manhole.

4) Location of any joints not tested and reason for not testing.
5) Grout mixture formation, including additives and catalyst mixture.
6) Test pressures and durations of tests maintained for each joint passing the air test.
7) Ambient outside air temperature at time of grout injection.
8) Grout tank temperatures.
9) Gel time and time last verified.
10) Verified address of lateral.
11) Estimated visible leakage (gpm) from joint/defect connection or lateral.
12) Number of pump strokes and amount of grout in place.
13) Beginning, ending, pressure losses, re-test pressures.
14) Verification lateral is clear after sealing process.
15) Remaining leakage and location after seal (gpm).

2. Work site will not be accepted until Engineer receives original record.
   a. Failure to fill out logs completely will result in non-payment for the questioned mainline joint, defect or connection.

3.6 WARRANTY

A. Provide twelve month performance and workmanship warranty for the seals from date of acceptance of the City.
B. Perform CCTV inspections during the first wet weather season after initial sealing, to evaluate quality of the initial sealing.
C. CCTV inspect initial retest area consisting of 10 percent of grouted joints and 10 percent of grouted lateral connections.
D. Provide qualified, independent third party inspector to review CCTV inspection videos to verify integrity of seals.
E. Reseal all joints sealed under this Contract that inspector finds defective within warranty period, at no additional cost to the City.
   1. Defective seals include, but not limited to those with root penetration, signs of infiltration, and cracks in pipe or grouting material.
F. If failure rate of retested joints and lateral connections is 5 percent or less of joints and lateral connections retested, work shall be considered satisfactory and no further retesting will be required. If the failure rate of retested joints and lateral connections is greater than 5 percent, the Engineer shall randomly select another retest area consisting of another 10 percent of the initially sealed joints and lateral connections. Continue this additional retesting and resealing until a failure rate of less than 5 percent is met.

3.7 ACCEPTANCE

A. When sealed joint, defect, and lateral connections pass the post air test.

Add section 33 05 23.60 Sewer Cleaning and Television Inspection as follows:

33 05 23.60
SEWER CLEANING AND TELEVISION INSPECTION

PART 1 GENERAL

1.1. SECTION INCLUDES
- A. Requirements for cleaning and television inspection of sewers

1.2. RELATED SECTIONS
- A. APWA 2017 Edition.
- B. 33 05 23.40 – Cured-in-Place Pipe (CIPP)

1.3. SUBMITTALS
- A. Submit Manufacturer Specifications for Television Equipment and Appurtenances.
- B. Submit example video inspection tapes and reports to determine video quality and capabilities.

PART 2 PRODUCTS

2.1 CAMERA AND APPURTENANCES
- A. Television camera and apparatuses specifically designed and constructed for inspections of sewers that meet the following requirements:
  1. Camera shall be capable of recording digital images.
  2. Operative in one hundred (100) percent humidity conditions and under water.
  3. Lighting quality that sufficiently lights the sewer so a clear, in-focus picture of a minimum of six (6) linear feet of the inside periphery of the sewer is obtained.
  4. A minimum of six hundred (600) lines of resolution in color.
  5. Variable intensity control on the lights to meet all lighting conditions so a clear, in-focus picture is obtained.
  6. A camera monitor capable of continuous six hundred (600) line per inch resolution in color for instant viewing television inspection in progress, located within a temperature controlled studio that allows adequate seating for two persons.
  7. A pan-and-tilt camera capable of viewing perpendicular to the sewer. The camera shall be capable of 360 degree rotation. Adequate lighting shall be provided under pan-and-tilt conditions so a clear, in-focus picture is obtained.
  8. A video recorder that records the closed-circuit television inspection on a DVD or compact disk (CD), complete with visual so the Technician can record information as it appears on the monitor. Copies submitted to Owner and Engineer shall be on DVD or USB Flash Drive.
  9. Control equipment that allows the operating technician to have complete control of the camera at all times and that allows a uniform travel speed of a maximum of thirty (30) feet per minute.
  10. The entire system shall operate with its own power source.
  11. A system that measures and displays on the video the footage with an

accuracy of plus or minus six (6) inches in five hundred (500) feet.

B. Cameras shall be capable of navigating main lines with diameters as noted on the rehabilitation schedules.

PART 3 EXECUTION

3.1. GENERAL

A. Cleaning and video inspection is required to identify pipe condition, areas that may affect rehabilitation, service line locations, configurations, and acceptability for liner installation.

3.2. RECORDS

A. Keep records of all television inspection work on a digital form that includes the following information. Submit original copies to Engineer or Representative at the completion of each television inspection run.

1. Project.
2. Date and Time of Inspection.
3. Contractor.
4. Engineer.
5. Name of Operating Technician.
6. Size of Sewer and material(s) of construction.
7. Entry (Beginning) and Exit (Ending) Manholes. These shall correspond to the manhole names/ numbers listed on the rehabilitation schedules.
8. Distance to all Service Connections from Entry Manhole.
9. Points-of-Interest which may Affect Work (Protruding Taps, Offset Joints, Blockages, Roots, etc.).
10. Distance to all Points of Interest from Entry Manhole.
11. Total Length of Line.
12. Unusual Conditions.

B. Complete the form digitally and in PDF format.

C. A video record of the television inspection shall be recorded at the time of inspection on a DVD, compact disk (CD) or USB flash drive. A copy of the video record shall be made and maintained by the Contractor. The original copy of the DVD or CD and inspection form shall be submitted to the Engineer or Representative at the completion of each television inspection run.

3.3. CLEANING

A. The Contractor shall provide all equipment and personnel necessary to clean the lines of interest for this project prior to TV inspection.

B. Cleaning and required equipment shall be to the extent necessary to allow for a television inspection of the lines, and to allow for the required construction to be performed.

1. The existing main lines have varying levels of root intrusion. Contractor shall remove all roots within the sewer main to the pipe walls and lateral connections to a level acceptable to Engineer prior to commencing pipe rehabilitation.
2. Grade problems may exist in some sections. Contractor shall fully remove debris from the entire reach.
3. The existing main lines may have varying levels of damage. Contractor shall take all necessary precautions to insure no additional damage is caused to the pipe. If

conditions exist that prevent cleaning from being accomplished or where additional damage would result if cleaning were attempted or continued, Contractor shall immediately notify Owner and Engineer of specific sections before proceeding.

C. Liquid waste similar in character to domestic wastewater may be discharged in the sewer at the downstream end of this project. CIPP fragments, gravel, or other debris shall be retained and disposed of according to local, State and Federal regulations by the Contractor.

D. All debris generated during the cleaning process shall be collected and properly disposed of at an approved site to be coordinated between Owner, Engineer, and Contractor.

E. All reasonable precautions shall be made to prevent blow-back into services during cleaning operations.

F. The line shall be re-cleaned and re-inspected, at the Contractor's expense, if the initial CCTV inspection shows incomplete cleaning and/or removal or debris and roots.

3.4. VIDEO INSPECTION

A. The Contractor shall provide all equipment and personnel necessary to perform CCTV inspection on lines as required for this project.

B. The Contractor shall provide bypass pumping or utilize jetting during video inspection to provide full pipe visibility, including visibility of the flow line. If full pipe visibility is not obtained, repeat the closed-circuit television inspection until full pipe visibility is obtained. Repeating the television inspection process to obtain a clear video recording will be at no additional cost to the Owner.

C. The CCTV inspection shall reference manhole ID names/numbers as shown on the rehabilitation schedules.

D. The television inspection and video record of the sewer shall provide a clear, in- focus color picture of a minimum of six (6) linear feet of the inside periphery of the sewer. Do not exceed thirty (30) feet per minute travel speed.

E. Stop at all service connections in the sewer so they are displayed on the screen, and record the distance from the entry manhole on the form and on audio. Provide a 360 degree view of the service connection with the pan-and-tilt camera.

F. Stop at all points-of-interest in the sewer so they are displayed on the screen, and describe the type of point-of-interest and distance from the entry manhole on the form and on audio. Provide a 360 degree view of the point-of-interest with the pan-and-tilt camera.

G. Stop at all unusual conditions in the sewer so they are displayed on the screen, and describe the unusual condition and distance from the entry manhole on the form. Provide a 360 degree view of the unusual condition with the pan-and-tilt camera.

H. If a clear video recording is not obtained or points of interest and unusual conditions are not documented and clearly displayed on the video, repeat the closed-circuit television inspection until a clear, in-focus video is obtained. Repeating the television inspection process to obtain a clear video recording will be at no additional cost to the Owner.

END OF SECTION

Part 5

CONSTRUCTION DRAWINGS