

BIDDING AND CONTRACT DOCUMENTS
for the
Construction of the

Lowell Avenue Reconstruction
Project

March 2016

PARK CITY MUNICIPAL CORPORATION
SNYDERVILLE BASIN WATER RECLAMATION
DISTRICT

Prepared By:
Stanley Consultants, Inc.
Bowen Collins and Associates

**CONTRACT DOCUMENTS
FOR THE CONSTRUCTION OF
LOWELL AVENUE**

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REFERENCE SPECIFICATIONS

1. Park City Design Standards, Construction Specifications and Standard Drawings dated April 2007. If Specifications conflict, those physically included in the contract documents apply.
2. Snyderville Basin Water Reclamation District “Development Procedures, Design Standards, and Construction Specifications for Wastewater Facilities”.
3. Park City Design Standards, Construction Specifications and Standard Drawings referenced in this project include, but are not limited to, the following list:

PARK CITY STANDARD SPECIFICATIONS

SECTION 100 – GENERAL REQUIREMENTS

SECTION 200 – GENERAL IMPROVEMENT REQUIREMENTS AND DESIGN GUIDELINES

SECTION 500 – STREET CONSTRUCTION AND RELATED WORK

SECTION 600 – SANITARY SEWERS AND STORM DRAINS

SECTION 700 – WATER MAIN AND SERVICE LINE CONSTRUCTION

4. APWA Manual of Standard Specifications most recent edition. Use only as referenced in the contract documents, or if no Park City or Snyderville Basin Water Reclamation Design Standard, Construction Specification, or Contract Technical Specification applies.

REFERENCE DRAWINGS

1. Park City Design Standards, Construction Specifications, and Standard Drawings, April 2007 and Water Details (2014).
2. APWA Manual of Standard Plans most recent Edition. Use only as referenced in the contract documents, or if no Park City, Snyderville Basin Water Reclamation District, or contract drawing applies.
3. (All work shall conform to the standards and drawings referenced above)

**PARK CITY MUNICIPAL CORPORATION
PARK CITY, UTAH
LOWELL AVENUE RECONSTRUCTION PROJECT**

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the **Lowell Avenue Reconstruction Project** will be received by **Park City Municipal Corporation**, at the **Engineering Office** located at 445 Marsac Avenue, Park City, Utah 84060 until **2:30 PM** local time by Jennifer Byrd, Analyst II on **March 29, 2015** at which time the Bids received will be publicly opened and read. The Project consists of furnishing all labor, tools, materials, equipment, transportation and services required for the construction of the above described project as included in the Contract Documents; consisting of the following items of work: 1. Roadway improvements including asphalt paving, base course, and concrete gutters 2. Storm drain including catch basins, manholes, reinforced concrete pipe and corrugated plastic pipe 3. 8 inch C900 PVC waterline, fittings, valves, services, meter boxes, temporary water bypass, and surface restoration 4. 8 inch PVC SDR 35 sanitary sewer, manholes, laterals, and temporary sewer bypass. All in accordance with the Drawings and Specifications prepared by Stanley Consultants, Inc, and Bowen Collins and Associates for Park City Municipal Corporation.

Bids will be received for a single prime Contract. Bids shall be on a unit price basis, as indicated in the Bid Form. Park City reserves the right to reject any or all proposals and to waive any minor irregularities in any proposal.

The Issuing Office for the Bidding Documents is:

Stanley Consultants, Inc.
383 West Vine Street, Suite 400, Murray Utah 84123
David Osborn, P.E.

Email: osborndavid@stanleygroup.com ~~Phone: 801-230-8088~~

Prospective Bidders may view ~~obtain~~ copies of the Bidding Documents ~~from~~ at the Issuing Office or obtain the documents as described below.

Bidding Documents may be obtained, at no cost, by emailing the Issuing Office at **osborndavid@stanleygroup.com**. Following registration, complete sets of Bidding Documents will be emailed from the Issuing Office as portable document format (PDF) files. The date that the Bidding Documents are transmitted by the Issuing Office will be considered the Bidder's date of receipt of the Bidding Documents. Partial sets of the Bidding Documents will not be available from the Issuing Office.

Bid security shall be furnished by a certified or cashier's check, or bid bond in the amount of five percent (5%) of the total bid price payable to PARK CITY MUNICIPAL CORPORATION as a guarantee that the Bidder, if his Bid is accepted, will promptly execute the contract, provide evidence of insurance, and furnish a satisfactory faithful performance bond in the amount of 100 percent of the total bid price and a payment bond in the amount of 100 percent of the total bid price.

Park City reserves the right to reject any or all proposals received. Furthermore, the City shall have the right to waive any informality or technicality in proposals received when in the best interest of the City.

INSTRUCTIONS TO BIDDERS

ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as previous experience, and present commitments, and (b) the following additional information:
- A. Evidence of Bidder's authority to do business in the state where the Project is located.
- B. Bidder's state or other contractor license number, if applicable.
- C. Provide a minimum of three (3) successfully complete projects in the past five (5) years with projects of similar description.
- D. Provide a narrative of Bidder's understanding of the temporary water and sewer bypass requirements. Drawings may be submitted in addition to the narrative.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

- 4.01 *Site and Other Areas*
- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or

storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

- A. **Underground Facilities:** Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- B. **Adequacy of Data:** 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 subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 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 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.
- B. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- C. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, obtain all permits, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- D. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;

- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- E. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid 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 required, and in accordance with the other terms and conditions of the Bidding Documents;
- F. 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;
- G. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- H. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- I. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

6.01 A non mandatory pre-Bid conference will be held at 445 Marsac Avenue, Park City, Utah 84060, on March 17, 2016 at 2:00 pm. All question are to be submitted to the engineer in writing at osbordavid@stanleygroup.com and matt.cassel@parkcity.org. The deadline for receiving questions is 5:00 pm on March 22nd, 2016. Engineer will transmit via email to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

7.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven (7) days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

7.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents.

ARTICLE 8 – BID SECURITY

8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.

8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and 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 released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

8.03 The Bid security of other Bidders that 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 Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.

8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

9.01 The number of days within which, or the dates by which the Work is to be substantially completed, and completed and ready for final payment, are set forth in the Agreement.

ARTICLE 10 – LIQUIDATED DAMAGES

10.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

11.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or "or-equal" items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or "or-equal" item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

11.02 All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

12.01 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.

ARTICLE 13 – PREPARATION OF BID

13.01 The Bid Form is included with the Bidding Documents.

A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words “No Bid” or “Not Applicable.”

13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

13.03 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 partnership’s address for receiving notices shall be shown.

13.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm’s address for receiving notices shall be shown.

13.05 A Bid by an individual shall show the Bidder’s name and address for receiving notices.

13.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture’s address for receiving notices shall be shown.

13.07 All names shall be printed in ink below the signatures.

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

13.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.

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

ARTICLE 14 – BASIS OF BID

14.01 *Unit Price*

A. Bidders shall submit a Bid on a unit price basis as set forth in the Bid Form.

ARTICLE 15 – SUBMITTAL OF BID

- 15.01 With each copy of the Bidding Documents, a Bidder is furnished one separate unbound copy of the Bid Form, and, if required, the Bid Bond Form. The unbound copy of the Bid Form is to be completed and submitted with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.
- 15.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. Bids sent by mail, Email submittal or submittal requiring download from an electronic data transfer site is not acceptable.
- 15.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same 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. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 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.

ARTICLE 17 – OPENING OF BIDS

- 17.01 Bids will be opened at 445 Marsac Avenue, Park City, Utah 84060, on March 29, 2016 at 2:30 pm and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 18.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 19.01 Owner reserves the right to reject any or all Bids for any reason, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Proposals lacking required

information will not be considered. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work. All submittals shall be public records in accordance with government records regulations ("GRAMA") unless otherwise designated by the applicant pursuant to UCA § 63G-2-309, as amended

19.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid. Award of contract is subject to approval by City Council.

19.03 Evaluation of Bids

A. 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.

B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.

C. Local bidders who are within 5% of the low bid will be extended an opportunity to meet the low bid, if they do so within 48 hours, they will be awarded the contract with possible additional negotiations.

D. When a conflict between the written and numerical amount occur, the written amount shall supersede.

E. Successful bidder will be required to enter into Park City's Standard Construction Agreement.

E.F. Park City reserves the right to reject any or all proposals and to waive any minor irregularities in any proposal.

19.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.

19.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 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 Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

21.01 When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 22 – CONTRACTS TO BE ASSIGNED

22.01 Successful bidder will be required to enter into Park City’s standard Construction agreement.

ARTICLE 23 – PROJECT TIMELINE

23.01

Advertisement	3/7/2016
Bidding Question Time Period	3/7/2016 - 3/22/2016
Bid Deadline	3/29/2016
Anticipated Date of Council Approval	4/14/2016
Anticipated Notice of Award	4/15/2016
Project Completion Date	11/15/2016

Park City Municipal Corporation reserves the right to change any dates or deadlines.

BID FORM
LOWELL AVENUE RECONSTRUCTION

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

Park City Municipal Corporation
Engineering Department
~~Matthew Cassel, P.E.~~ **Jennifer Byrd**
~~Analyst II~~ **City Engineer**
PO Box 1480
445 Marsac Avenue
Park City, Utah 84060

1.02 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.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

<u>Addendum No.</u>	<u>Addendum, Date</u>
1	3/09/16
2	3/23/16

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related

reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.

- E. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- F. 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.
- G. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- I. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. 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 collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

A. Bid Schedule

SCHEDULE A - ROADWAY				
NO.	DESCRIPTION	QUANTITY UNIT	UNIT PRICE	AMOUNT
A1	Mobilization/Demobilization (Not to exceed 10% of total bid of all schedules)	1 Lump Sum	\$	\$
A2	Traffic Control	1 Lump Sum	\$	\$
A3	Asphalt Slurry Seal Coat	1,000 Square Yards	\$	\$
A4	Untreated Base Course - 18 Inch Thick	3,060 Cubic Yards	\$	\$
A5	Warm Mix Asphalt Concrete (PG 58-28) - 6 Inch Thick	6,120 Square Yards	\$	\$
A6	Roll Gutter	5,000 Linear Feet	\$	\$
A7	Stone Pavers	1 Lump Sum	\$	\$
A8	Remove Existing Concrete Driveway	1,000 Square Feet	\$	\$
A9	Remove Existing Asphalt Concrete Pavement	6,900 Square Yards	\$	\$
A10	Remove Existing Curb and Gutter	5,000 Linear Feet	\$	\$
A11	Remove Existing Concrete Sidewalk	190 Square Yards	\$	\$
A12	Remove Existing Guardrail	45 Linear Feet	\$	\$
A13	W-Beam Guardrail Anchor Type 1	2 Each	\$	\$
A14	Concrete Sidewalk 4 inches thick	170 Square Yards	\$	\$
A15	2" Fiber Optic Conduit	2,600 Linear Feet	\$	\$

SCHEDULE A - ROADWAY				
A16	24" X 30" Sign Panel R2-1 (25 MPH Speed Limit), (includes post and foundation)	4 Each	\$	\$
A17	Concrete Driveways (Commercial)	950 Square Feet	\$	\$
A18	Guardrail	45 Linear Feet	\$	\$
A19	Roadway Excavation	3,000 Cubic Yards	\$	\$
A20	30" X 30" Sign Panel R1-1 (Stop), (includes post and foundation)	3 Each	\$	\$
A21	Pervious Concrete Rolled Gutter	40 Linear Feet	\$	\$
A22	Remove Existing Asphalt Driveway	500 Square Feet	\$	\$
A23	Seeding	1 Lump Sum	\$	\$
A24	Landscape/ Landscape Restoration	1 Lump Sum	\$	\$
A25	Pavement Marking Message Paint, 12 inch white	120 Linear Feet	\$	\$
A26	Neighborhood area sign (includes post and foundation)	2 Each	\$	\$
A27	Pedestrian Access Ramp	6 Each	\$	\$
A28	No Parking Sign (includes post and foundation)	10 Each	\$	\$
A29	Remove Sign	11 Each	\$	\$
A30	Fiber Optic Concrete Junction Box	7 Each	\$	\$

SCHEDULE A - ROADWAY				
A31	Adjust Existing Meter Box and Cover to Grade	2 Each	\$	\$
A32	Erosion and Sediment Control	1 Lump Sum	\$	\$
A33	Stamped Colored Concrete	120 Square Feet	\$	\$
A34	Restore Driveway Snow Melt System	2 Each	\$	\$
A35	4" Concrete Flatwork	120 Square Feet	\$	\$
A36	Curb Wall	220 Linear Feet	\$	\$
A37	Gutter Pavement T-Patch	220 Linear Feet	\$	\$
A38	Remove Concrete Flatwork	110 Square Feet	\$	\$
A39	Pinned Curb Wall	20 Linear Feet	\$	\$
A40	Removal of Contaminated Material	1,000 Ton	\$	\$
A41	Asphalt Concrete Driveway	56 Square Yards	\$	\$
A42	Adjust Valve Box to Grade	1 Each	\$	\$
A43	Adjust Manhole to Grade	2 Each	\$	\$

Total of All Items (Schedule A – Roadway) \$ _____

Total of (Schedule A – Roadway)

(Written Amount) \$ _____

SCHEDULE C - WATER				
NO.	DESCRIPTION	QUANTITY UNIT	UNIT PRICE	AMOUNT
C1	Install 8" C900 PVC Distribution Waterline	2,450 LF	\$	\$
C2	Install 8" Gate Valve	12 Each	\$	\$
C3	Replace Existing Water Service with New 1-1/2" Service (31 LF Max. Length)	36 Each	\$	\$
C4	Replace Existing Water Service with New 2" Service (28 LF Max. Length)	6 Each	\$	\$
C5	Replace Existing Meter Vault with New 3/4" Meter Vault	6 Each	\$	\$
C6	Replace Existing Meter Vault with New 1" Meter Vault	3 Each	\$	\$
C7	Replace Existing Meter Vault with New 3/4" Dual Meter Vault	6 Each	\$	\$
C8	Replace Existing Meter Vault with New 1-1/2" Dual Meter Vault	3 Each	\$	\$
C9	Replace Existing Meter Vault Lid with Traffic Rated Lid	1 Each	\$	\$
C10	Replace Existing Indoor Meter with New 1" Indoor Meter Assembly	1 Each	\$	\$
C11	Replace Existing 4" Fire Line with New 4" Fire Line Up to Property Line	1 Each	\$	\$
C12	Remove and Replace Fire Hydrant	5 Each	\$	\$
C13	2-inch Air Release / CAV Manhole with Heat Trace	1 Lump Sum	\$	\$

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SCHEDULE C - WATER				
C14	Temporary Above-Ground Bypass Water Service to Existing Connections	1 Lump Sum	\$	\$
C15	Temporary 6" Hot Tap Isolation Valve for Bypass Water Service	3 Each	\$	\$
C16	Landscape and Concrete Surface Restoration: Required Due to Waterline Construction in Areas Outside of Lowell Avenue Road Reconstruction	1 Lump Sum	\$	\$
C17	Asphalt T-Patch Restoration for Waterline Trench, Waterline Sta 31+00 to Sta 32+35	1 Lump Sum	\$	\$

Total of All Items (Numeric) (Schedule C – Water) \$ _____

**Total of (Schedule C – Water)
(Written Amount)** \$ _____

SCHEDULE D - SEWER

NO.	DESCRIPTION	QUANTITY UNIT	UNIT PRICE	AMOUNT
D1	Temporary bypass sewer service to existing manholes	1 Lump Sum	\$	\$
D2	Install gravity sanitary sewer main - 8-inch PVC SDR 35	2,345 LF	\$	\$
D3	Remove and dispose of existing sewer manhole	10 Each	\$	\$
D4	Abandon in place existing gravity sewer line stub	3 Each	\$	\$
D5	Install 4-ft sewer manhole w/ precast base	6 Each	\$	\$
D6	Install 5-ft sewer manhole w/ precast base	1 Each	\$	\$
D7	Install 5-ft sewer inside drop manhole w/ precast base	1 Each	\$	\$
D8	Install 5-ft sewer manhole w/ precast base and reconnect existing 8-inch HDPE sewer line	1 Each	\$	\$
D9	Connect to existing sewer line	1 Each	\$	\$
D10	Reconnect sewer lateral to new gravity sanitary sewer main - 4-inch PVC SDR 35	33 Each	\$	\$
D11	Install gravity sanitary sewer lateral stub to new gravity sanitary sewer main - 4-inch PVC SDR 35	10 Each	\$	\$
D12	Remove and replace gravity sewer lateral to back of curb - 4-inch PVC SDR 35	3 Each	\$	\$

SCHEDULE D - SEWER				
D13	Remove and replace gravity sewer lateral up to existing 14-inch Judge waterline - 6-inch PVC SDR 35	1 Each	\$	\$
D14	Abandon in place existing gravity sewer lateral	15 Each	\$	\$
D15	Adjust existing sewer manhole to grade	1 Each	\$	\$

Total of All Items (Numeric) (Schedule D – Sewer) \$ _____

**Total of (Schedule D – Sewer)
(written amount)** \$ _____

Total of All Schedules (Numeric) \$ _____

**Total of All Schedules
(written amount)** \$ _____

- I. See Section 1025 in the Technical Specifications for Measurement and Payment.
- II. Bidders must bid all schedules. Incomplete bids will not be accepted.
- III. If there is a conflict between the written and numerical amount, the written amount shall supersede.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete on or before October 15, 2016, and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before November 15, 2016.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. Required Bid security;
 - B. List of three (3) relevant projects successfully completed within the last five (5) years.

C. Copy of Contractor's License

* One Copy

D. A narrative of Bidder's understanding of the temporary water and sewer bypass requirements. Drawings may be submitted in addition to the narrative.

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By:

[Signature] _____

[Printed name] _____

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest:

[Signature] _____

[Printed name] _____

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder's License No.: _____

SAMPLE CONSTRUCTION AGREEMENT

THIS AGREEMENT is made and entered into as of this ____ day of _____, 20__, by and between PARK CITY MUNICIPAL CORPORATION, P O Box 1480, Park City UT 84060, a municipal corporation of the state of Utah (hereinafter "City"), and _____ which is a (*check one*) ____ corporation ____ partnership ____ sole proprietorship ____ limited liability company (hereinafter "Contractor").

PURPOSE: For the project known as the (project name) (hereinafter "Project"), which consists of Roadway improvements including asphalt paving, base course, and concrete gutters. Storm drain including catch basins, manholes, reinforced concrete pipe and corrugated plastic pipe. 8 inch C900 PVC waterline, fittings, valves, services, meter boxes, temporary water bypass, and surface restoration. 8 inch PVC SDR 35 sanitary sewer, manholes, laterals, and temporary sewer bypass. The work occurs on Lowell Avenue between Manor Way and the bend approaching Empire Avenue

NOW, THEREFORE, in consideration of the mutual promises contained herein, the parties hereby agree as follows:

SECTION 1. SCOPE OF WORK. Contractor shall furnish all labor, materials and equipment to complete the Project, consisting of the work described in the Information for Bidders as the Basic Bid, and the following additive alternates: __None__, as specifically set out in the contract specifications, which is made a part hereof by reference, herein called the "Project."

The Project will be bound by the specifications referenced herein, according to the Advertisement for Bid, the Information for Bidders, the General Project Requirements and Specifications provided by City, the Bid of the Contractor, Bid Bond, Drawings, Notice of Award and Notice to Proceed, collectively referred to as the Contract Documents, all of which are incorporated herein by reference and on file in the Engineering Department. To the extent that this Agreement conflicts in any way with a proposed form agreement which may have been submitted as part of the bid specifications, this Agreement shall control.

If any of the work performed by Contractor in any phase of the Project does not meet City standards as outlined in the bid documents and specifications, then Contractor shall immediately repair or correct the work at no additional cost to City.

A. SUBCONTRACTORS. No part of this contract shall be subcontracted by the Contractor without prior written approval by City through the Project Manager/Engineer. The Contractor shall be fully responsible to the City for the acts and omissions of its Subcontractors and of persons either directly or indirectly

employed by them, as it is for the acts and omissions of persons directly employed by it.

If written approval is granted to subcontract a part of this contract the Contractor shall require each subcontractor that physically performs services within Utah to submit an affidavit to the Contractor stating that the subcontractor has used E-Verify, or equivalent program, to verify the employment status of each new employee.

The Contractor shall, within ten (10) days of submittal of request for final payment, include an affidavit showing satisfactory evidence that all claims of subcontractors, laborers and material men who supplied services or materials to the Project have been fully paid, discharged, or waived. The Contractor shall submit lien waivers for each pay release.

If the City reasonably believes that Contractor has failed to pay Subcontractors, material men, or laborers for work on the Project within a reasonable time of when payment is due, then City may, after having notified the Contractor, either pay unpaid bills or withhold from the release of Contractor's payment bond for this Project, a sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged and a ten percent (10%) fee for administering such claims.

B. STANDARDS OF WORKMANSHIP. Contractor shall demonstrate workmanship equal to or better than current industry standards for this Project. Where Park City specifications exist (for example, asphalt, concrete, irrigation, sprinkling system and landscaping), they shall provide the benchmark for determination of acceptability.

C. INSPECTION AND TESTING. All materials and equipment used in the construction shall be subject to inspection by the Project Manager/Engineer. If laws, ordinances, rules or regulations of any public authority having jurisdiction require any work to specifically be inspected, tested or approved by someone other than Project Manager/Engineer, the Contractor shall give the Project Manager/Engineer timely notice of readiness. Inspections, tests or approvals by the City or appropriate authorities will not relieve the Contractor from obligations to perform the work in accordance with the requirements of the Contract Documents and/or provisions. The Project Manager/Engineer and other designated persons will at all times have access to the work. All work shall ultimately be inspected for final acceptance by the Project Manager/Engineer within a reasonable time upon receipt of notice from the Contractor that work is complete and ready for final inspection.

During construction, the work will be inspected and observed by the Project Manager/Engineer or his designated representative. All work that is deficient or does not meet specifications shall be removed and replaced with proper material at Contractor's expense.

D. WARRANTY. Contractor warrants that all materials and supplies used in the construction of the Project shall be new, except as otherwise agreed to in writing by the City's Representative. All materials, equipment, parts and labor and any necessary corrections to the Project shall be guaranteed for a period of at least one (1) year following the date of substantial completion of the Project under the terms of the performance bond or as provided in the project specifications and construction documents, whichever is longer.

E. ADOPTED CODES. All work shall be completed at a minimum in accordance with all building, electric and energy codes adopted by Park City.

SECTION 2. PERFORMANCE AND PAYMENT BONDS. Contractor shall furnish to the City payment and performance bonds satisfactory to the City guaranteeing Contractor's payment and performance, in the amount, for each separately, of one hundred percent (100%) of the Contract Amount.

SECTION 3. INSURANCE. Unless otherwise specified in the bid documents, the Contractor shall procure and maintain for the duration of the Agreement, insurance against claims for injuries to persons or damage to property which may arise from or in connection with the performance of the work hereunder by the Contractor, their agents, representatives, employees, or subcontractors.

The Contractor shall provide Park City Municipal Corporation a Certificate of Insurance evidencing:

A. General Liability insurance written on an occurrence basis with limits no less than two million dollars (\$2,000,000) combined single limit per occurrence and four million dollars (\$4,000,000) aggregate for personal injury, bodily injury and property damage. Coverage shall include but not be limited to: blanket contractual; products/completed operations; broad form property damage; explosion, collapse and underground (XCU) if specifically requested; and employer's practices.

The Service Provider shall increase the limits of such insurance to at least the amount of the Limitation of Judgments described in Section 63G-7-604 of the Governmental Immunity Act of Utah, as calculated by the state risk

manager every two years and stated in Utah Admin. Code R37-4-3.

- B.** Automobile Liability insurance with limits no less than two million dollars (\$2,000,000) combined single limit per accident for bodily injury and property damage.
- C.** Workers Compensation insurance limits written as follows:
Bodily Injury by Accident \$500,000 each accident;
Bodily Injury by Disease \$500,000 each employee, \$500,000 policy limit

“Park City Municipal Corporation” shall be named as an additional insured on general liability and auto liability insurance policies and a copy of the endorsement naming the City as an additional insured shall be attached to the Certificate of Insurance. The City reserves the right to request certified copies of any required policies. Should any of the above described policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

The Contractor's insurance shall contain a clause stating that coverage shall apply separately to each insured against whom claim is made or suit is brought, except with respect to the limits of the insurer's liability.

SECTION 4. CONTRACT AMOUNT, ACCEPTANCE OF WHOLE, ADDITIONS. City shall pay Contractor the total sum of not to exceed(**insert amount, in words**) (**\$ numerically**) (“Contract Amount”) for all work and materials expended to complete this Project, which shall include the cost of all bonds, insurance, and all charges, fees, permits (including water and sewer fees, unless waived), expenses or assessments of whatever kind or character that are or may be necessary to complete this Project, including any additive alternates listed within the Scope of Work described in Section 1.

SECTION 5. PERMITS AND FEES. As set out in Section 4 above, the Contract Amount includes the price of all normally applicable fees and permits. The City may, at its discretion, arrange for the waiver of certain fees, permits and expenses.

SECTION 6. TERMS OF PAYMENT. The City shall pay for services provided hereunder according to and in an aggregate amount not to exceed the Contract Amount or as detailed in an attached payment schedule (if attached, will be **Attachment A**) and only upon Contractor's request on forms approved by and submitted to the Project Manager. The City shall make payment within thirty (30) days thereafter. Requests for a more rapid payment may be considered if a discount is offered for early payment. At no time shall the aggregate amount of money paid to the Contractor in proportion to the Contract Amount be greater than the proportion of the work performed at that point to the total Project work. No

payment shall be made for any service rendered by the Contractor except for services set forth and identified in this Agreement. The City reserves the right to withhold payment in whole or part from the Contractor for non-compliance with the provisions of the Contract Documents.

A. RETAINAGE. The City may, in its sole discretion; (1) retain five percent (5%) of the value of all work done and materials or equipment supplied as part security for the fulfillment of the Agreement by the Contractor; or (2) retain the final payment of up to five percent (5%) of the total project amount. As work nears completion and solely at the City's discretion, the City may reduce the retainage to an amount more in line with the work remaining. The City reserves the right to retain all amounts previously withheld or due, including any liquidated damages, until all services specified herein are complete. Any money withheld pursuant to this section shall be placed in an interest bearing account and the interest shall also be payable to the Contractor upon final payment.

Before final payment is made, the Contractor must submit evidence satisfactory to the City that all payrolls, material bills, subcontracts and all outstanding indebtedness in connection with the Project have been paid for.

The City may withhold a reasonable amount of the payment bond sufficient to cover any outstanding indebtedness or monies owed or claimed by any person who supplied work or materials to the Project plus ten percent (10%) of such indebtedness as the City's cost of administering such claims until Contractor supplies a release satisfactory to the City, signed by all persons who have supplied labor or materials to the Project or, at the City's option if no claim is made, until 105 days after the date on which any person performed the last of the labor or supplied the last of the material for the Project and upon written request from the Contractor.

The Contractor shall supply to the Project Manager/Engineer within a reasonable time after his request a signed statement verifying all the suppliers, subcontractors and other persons who have supplied labor or materials to the Project.

B. FINAL PAYMENT. Acceptance by the Contractor of the final payment from the City shall release the City of all claims, demands and liability of the Contractor, its officers, agents, employees and subcontractors, whether communicated or not by the Contractor, except with respect to those matters referred to in writing delivered to the Contractor and approved in a signed writing by the Project Manager.

SECTION 7. COMPLETION TIME. The work on this Project shall commence within ten days of receipt of the Notice to Proceed and shall be substantially complete by October 15, 2016. Work stoppage due to inclement weather conditions and other factors must be approved in writing by the Project Manager. Inclement weather shall not otherwise constitute cause for delay. Unless otherwise agreed by the City by Change Order, no damages shall become due to Contractor for City caused delay. A Change Order for delay will generally be accepted for delay so excessive and unreasonable that it is beyond the scope of the Contract or delay attributed to direct, active or willful interference by the City. The Change Order must be based upon actual damages sustained by the Contractor which are directly attributed to the delay.

In the event that Contractor fails to complete all of the work required herein within the time limit set out above, then for each partial or complete day during which the work remains uncompleted thereafter, the Contractor agrees to pay the City **One Thousand Five Hundred (\$1,500.00)**, _____ (**Contractor Initials**) which the parties believe, due to the difficulty of actually assessing the damages the City will suffer in the event of such a delay, is a fair estimate of the loss the City will suffer. The parties agree that the daily liquidated damages provided for herein is reasonable and fair, and is not a penalty. TIME IS OF THE ESSENCE IN THIS AGREEMENT.

SECTION 8. ADDITIONAL WORK/CHANGE ORDERS. The City may enlarge or reduce the work to be performed by Contractor hereunder by written notification to Contractor, including changes to the plans and specifications. The City shall pay Contractor for any additional work so requested, and shall reduce the payment to the Contractor for any reduction in labor, materials, overhead and profit margin resulting from the reduction in the work. Except as the City shall so notify the Contractor in writing, it is understood and agreed by the parties hereto that no money will be paid to the Contractor for any new or additional labor or materials furnished unless a written modification is agreed to in a document signed by both parties.

The value of any work covered by a change order or of any claim for increase or decrease in the contract price shall be determined by one or more of the following methods in order of precedence listed below:

- A. An agreed lump sum; or in the event the parties cannot agree; then
- B. The unit rate for the work bid by the Contractor, if applicable, or in the event there was no such rate bid; then
- C. The actual cost for: (1) labor; (2) materials; (3) supplies; (4) equipment; (5) direct overhead (not to exceed 5% of the sum total of items 1-4, unless approved by

the City); and (6) other services necessary and approved by the City to complete the work. In the event of a net increase in the Contract Amount for a change order as a whole, the City shall allow a payment to the Contractor of an additional ten percent (10%) of the actual cost of the work, not including direct overhead or bond costs, to cover the cost of general overhead and profit. The Contractor may also charge the City for actual cost of the net increase in bond costs as a result of the overall change to the Contract Amount. The City specifically reserves the right to request documentation, including but not limited to payroll stubs, bond bills, and invoices, to validate the Contractor's calculations.

SECTION 9. DISPUTES. Except as otherwise provided in this Agreement, any disputes concerning a question of fact arising under this Agreement which is not disposed of by Agreement shall be decided by the City. The decision of the City shall be final and conclusive unless, within thirty (30) days from the date of receipt of such decision, the Contractor shall mail or otherwise furnish the City a written signed appeal addressed to the Project Manager/Engineer. In connection with any appeal proceeding under this clause, the Contractor will be afforded an opportunity to be heard and to offer evidence in support of its appeal. Pending final decision of a dispute hereunder, the Contractor will proceed diligently with the performance of the contract and in accordance with the City's decision. The decision of the City shall be final and conclusive, but shall not be arbitrary or unreasonable. Although this Contract has been drafted by the City, the Contractor expressly agrees that any ambiguity herein shall be resolved in favor of the City.

SECTION 10. DEFAULT, REMEDY AND TERMINATION. The City may terminate this agreement upon the occurrence of one or more of the following events:

- A. If Contractor or any Subcontractor should substantially violate any of the provisions of this contract;
- B. If Contractor substantially fails to perform any part of this Agreement;
- C. If Contractor repeatedly fails or becomes unable to perform the services under this Agreement as required herein, or substantially fails to provide services under this Agreement for a period of seventy two (72) hours;
- D. If Contractor (1) shall become insolvent in a bankruptcy sense; (2) shall be generally not paying its debts as they become due, or within a reasonable time thereafter; (3) shall suffer, voluntarily or involuntarily, the entry of an order by any court or governmental authority authorizing the appointment of or appointing of a custodian (as that term is defined in 11 U.S.C. '101[10]), receiver, trustee, or other officer with similar powers with respect to it or any portion of its property which

remains undismissed for a period of ninety (90) days; (4) shall suffer, voluntarily or involuntarily, with or without judicial or governmental authorization, any such custodian, receiver, trustee, or other officer with similar powers to take possession of any part of its property which third party remains in possession for an excess of ninety (90) days; (5) shall suffer, voluntarily or involuntarily, the filing of a petition respecting an assignment for the benefit of creditors which is not dismissed for a period of ninety (90) days; (6) shall be dissolved; (7) shall become the subject of any proceeding, suit, or action at law or in equity under or relating to any bankruptcy, reorganization or arrangement of debt, insolvency, readjustment of debt, receivership, liquidation, or dissolution law or statute or amendments thereto to be commenced by or against it or against any of its property which remains undismissed for a period of ninety (90) days; (8) shall voluntarily suspend substantially all of its business operations; (9) shall be merged with, acquired by, or otherwise absorbed by any individual, corporation, or other business entity or organization of any kind except for any individual corporation or other business entity or organization which is controlled by, controlling, or under common control with the Contractor; or (10) shall take action for the purpose of any of the foregoing,

After serving ten (10) days written notice on the Contractor and its surety of its intention to terminate the services of Contractor, and if within ten (10) days after serving such notice, the violation is not corrected to City's reasonable satisfaction, the City then may take over the work and prosecute it to completion by contract or by any other method it may deem advisable at the expense of the Contractor. The Contractor and the bonding company shall be liable to the City for any reasonable cost occasioned by the City in excess of the amount agreed for the service herein.

The Contractor shall be entitled to a hearing before a City hearing officer upon the issue of termination if it submits a written request therefore within seven (7) days of the service of the notice of the City's intent to terminate. The Contractor shall be entitled to be heard at such hearing on the issue of termination. The Contractor shall not bring an action against the City, its officers, agents or employees arising out of or relating to the termination of this Agreement before the decision is issued by the City's hearing officer(s).

Waiver of any default shall not be deemed to be a waiver of any subsequent default. Waiver of any provision of this Agreement shall not be construed to be modification of the terms of this Agreement, unless stated to be such in writing, signed by the City's authorized representative.

The Contractor shall continue the performance of this agreement to the extent not terminated under the provisions of this section.

The rights and remedies of the City provided in this clause shall not be exclusive and are in addition to any other rights and remedies provided by law or under this agreement.

SECTION 11. HOLD HARMLESS INDEMNIFICATION. The Contractor clearly and unequivocally agrees to indemnify and to hold the City and its agents, employees, and officers, harmless from and shall process and to defend at its own expense any and all claims, demands, suits, at law or equity, actions, penalties, losses, damages, or costs, of whatsoever kind or nature, brought against the City arising out of, in connection with, or incident to the execution of this Agreement and/or the Contractor's performance or failure to perform any aspect of this Agreement; provided, however, that if such claims are caused by or result from the concurrent negligence of the City, its agents, employees, and officers, this indemnity provision shall be valid and enforceable only to the extent of the negligence of the Contractor or others; and provided further, that nothing herein shall require the Contractor to hold harmless or defend the City, its agents, employees and/or officers from any claims arising from the sole negligence of the City, its agents, employees, and/or officers. The Contractor expressly agrees that the indemnification provided herein constitutes the contractor's waiver of immunity under Utah Code Section 34A-2-105 for the purposes of this Agreement. This waiver has been mutually negotiated by the parties. The provisions of this section shall survive the expiration or termination of this Agreement. No liability shall attach to the City by reason of entering into this Agreement except as expressly provided herein.

SECTION 12. CONTROLLING LAW. These general conditions shall be construed in accordance with and enforced under the laws of the State of Utah. Any action of law, suit in equity, or judicial proceeding for the enforcement of the Agreement, or any provisions thereof, shall be instituted and maintained only in any of the courts of competent jurisdiction in Summit County, Utah.

SECTION 13. ASSIGNMENT. The Contractor shall not assign nor transfer any interest in this agreement without the prior written consent of the City, provided however, that claims for compensation due or to become due the Contractor from the City under this agreement may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment shall be promptly furnished to City.

SECTION 14. SAFETY AND TRAFFIC CONTROL. Contractor shall take all reasonable precautions to protect the safety of pedestrians, school children, motorists, and others who may use or come near to the Project site, including but not limited to compliance with the Manual of Uniform Traffic Control Devices.

SECTION 15. SAFETY AND PROTECTION OF THE WORK. Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs

in connection with the project work. Contractor shall provide reasonable protection to prevent damage, injury or loss to employees on the Project work and all other persons who may be affected thereby, materials and equipment, whether on or off the site, and other property at the work site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. In addition, the Contractor shall give all notices and comply with all applicable laws, ordinances, rules, regulations and lawful orders of any public authority bearing on the safety of persons or property or their protection from damage, injury or loss.

The Contractor shall erect and maintain, as required by the existing conditions and progress of the work, all reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards, setting safety regulations, and notifying owners and user of adjacent utilities.

The Contractor shall promptly remedy all damage or loss to any property referred to in this Section caused in whole or in part by the Contractor, any subcontractor, sub-subcontractor or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable and for which the Contractor is responsible, except for acts or omissions by the City or anyone directly or indirectly employed by it, or by anyone for whose acts it may be liable, and not attributable to the fault or negligence of the Contractor. Contractor shall remove from the site all cuttings, debris, equipment and unused material.

SECTION 16. UNENFORCEABLE CONTRACT, WAIVERS. In the event that any provision of this contract shall be ruled invalid and unenforceable, the remaining provisions shall be valid and binding upon the parties. One or more waivers by either party of any provision, term or covenant shall not be construed by the other party as a waiver of a subsequent breach of the same provision by the other party.

SECTION 17. ENTIRE AGREEMENT. This contract represents the entire integrated agreement between City and Contractor and supersedes all prior negotiations, representations or agreements, either written or oral. This agreement may be amended only by written modification signed by both parties.

SECTION 18. COMMENCEMENT OF WORK. Contractor will commence work as required by the specifications within ten calendar days after receiving the NOTICE TO PROCEED.

SECTION 19. UTILITIES. The right is reserved to the owners of public utilities and franchises to enter upon the street or work site for the purpose of making repairs or

changes of their property that may become necessary by the work. The City shall also have the privilege of entering upon the street or work site for the purpose of repairing culverts, storm drains, water system repairs or adjustments and any and all other necessary City work.

The Contractor takes the whole risk, responsibility and expense with respect to the location of utilities, and in working with utility owners about locating, moving, repairing, and modifying utilities. All utility locations shown on the plans and specifications are approximate and are marked on the plans, if at all, only for convenience. The City makes no representation about the location of any such utilities, and Contractor is encouraged to contact utility companies and owners about the location of all utilities that may be impacted by or impact the Project work.

The Judge Pipeline is a high-pressure raw water conveyance line that cannot be shut down. Disruption of continuous flow through the pipeline as a result of the Contractor's actions will result in liquidated damages at \$500,000 per occurrence.

SECTION 20. HOURS AND DAYS OF WORK. All work performed by the Contractor, its subcontractors, material men, agents and employees shall be performed during work hours of 7:00 a.m. to 7:00 p.m. Monday through Friday unless otherwise specified in a Conditional Use Permit or Construction Mitigation Plan. In individual Construction Mitigation Plans, the Building Official may further reduce the hours or days of work for Special Events or as other circumstances may reasonably warrant. When work is prohibited, no exterior construction, excavation or delivery of supplies and concrete are allowed. Interior work, however, may be allowed Monday through Sunday, with no limitation on hours for the following types of construction:

- A. Interior work on individual single-family home construction or addition projects not involving materials or supply deliveries
- B. Construction of decks, patios, landscape walls less than 4 feet in height, and fences on individual single-family lots
- C. Non-mechanized exterior painting on individual single-family residences
- D. Non-mechanized landscaping on individual single-family residences
- E. Survey work not involving grading or use of power equipment to cut vegetation.

Extended Hours Special Permit. The Building Official may authorize extended hours for construction operations or procedures which, by their nature, require continuous operation or modify or waive the hours of work on projects in generally isolated areas where the extended hours do not impact upon adjoining property occupants. In such cases, the Building Official shall issue a Special Permit identifying the extended hours. Contractor shall display the special permit on site.

Special Event Regulations. The Building Official and/or Police Chief may, at their discretion, restrict construction activity, including governmental or special improvement agencies, in order to assure the public safety during special events within the City. Special events shall include, but not be limited to the Art Festival, Film Festival, ski events, and holiday events.

SECTION 21. CONSTRUCTION MANAGEMENT PLANS. Contractor shall submit a Construction Mitigation Plan to be approved by the City Engineer or his designee, for all building permits. The Community Development Department may waive this requirement for minor remodels, additions and interior construction where the impact on adjacent property is minimal. This plan shall be written and shall address, to the satisfaction of the City Engineer or his designee.

A. Hours and Days of Operation. The Construction Mitigation Plan shall specify the daily construction start and finish times. Construction activity occurring outside of the times specified in Section 11-14-6 of the Park City Municipal Code may only be allowed by Special Permit issued by the Building Official or the City Engineer.

B. Parking. The Construction Mitigation Plan shall include a parking plan. Construction vehicle parking may be restricted at construction sites so as to not block reasonable public and safety vehicle access along streets and sidewalks. Construction parking in paid or permit only parking areas require the Public Works Department review and approve a parking plan. The plan shall also include anticipated temporary parking, e.g. delivery vehicles, large equipment parking.

C. Deliveries. The Construction Mitigation Plan shall identify proposed delivery locations and routes. Deliveries of construction materials and supplies including concrete may be regulated as to time and routing if such deliveries will cause unreasonable noise, parking, or access issues. In order to reduce the number of delivery trips to construction sites, the stockpiling of materials on or near the site may be required. In the case of multiple construction sites in close proximity, a common materials storage and staging site may be required.

D. Construction Phasing. Due to the narrow streets, small lot configuration, topography, traffic circulation, weather, construction parking and material staging problems, projects in the Historic District and other areas of the City may be required to be phased if more than one project is under construction in close enough proximity to create public safety or nuisance problems. In cases where phasing is deemed necessary by the City Engineer or his designee, the first project to receive a building permit shall have priority, however, the Building Official shall have the authority to phase projects as necessary to assure efficient, timely and safe construction.

E. Trash Management and Recycling. Construction sites shall provide adequate storage and a program for trash removal.

F. Control of Dust and Mud on Streets. A program for the control of dust or other airborne debris shall be required. Provision must be made to eliminate the tracking of mud on streets and a program shall be required to remove any such mud daily.

G. Noise. Construction activity shall not exceed the noise standards as specified in Section 6-3-9 of the Park City Municipal Code.

H. Grading and Excavation. Because of the truck hauling involved in grading and excavation, restrictions on trucking routes as well as the hours of operation may be necessary to mitigate the adverse impacts from such operations. Destination and total cubic yards of excavated material shall be noted.

I. Construction Sign Requirements. A sign, indicating the name of the party responsible for the Project shall be posted in a location where such sign is readable from the street or driveway to the construction site. The sign shall not exceed 12 square feet in size, six feet in height and shall not exceed a letter type of 4". Information on the sign shall include, at a minimum:

1. Name, address and phone number of contractor;
2. Name, address, and phone number of person responsible for the project; and
3. Phone number of party to call in case of emergency.

No additional fee is required for this sign.

SECTION 22. TOILET FACILITIES AND CONTAINERIZED TRASH SERVICE REQUIRED.

A. The Contractor shall obtain and maintain on the site a container of suitable size and design to hold and confine trash, scraps, and other construction related refuse created or accumulated on the site. All such construction refuse shall be maintained in a closed container at all times, until transferred to the landfill. Containers may be placed in setback areas, provided that the placement of the container does not obstruct the view of motorists on adjoining streets and thereby create traffic hazards. Contractor shall not permit accumulated debris, litter, or trash on the construction site to blow or scatter onto adjoining properties, including the public street or to accumulate on the site outside of the container, or on transit to the landfill or dump. The owner or contractor shall service the container as frequently as needed to prevent trash from over-flowing.

B. The Project site shall have permanent toilets, or an approved temporary toilet facility positioned in a location approved by the Building Department, at the rate of one toilet per fifteen on-site employees (1-15 employees = one toilet, 16-30 employees= two toilets and so on).

SECTION 23. OBEY LAWS.

A. The Contractor shall obey all laws, ordinances and regulations of the United States, the State of Utah, and Park City in performing this Agreement.

B. The Contractor shall register and participate in E-Verify, or equivalent program. The Contractor agrees to verify employment eligibility through E-Verify, or equivalent program, for each new employee that is employed within Utah, unless exempted by Utah Code Ann. § 63G-12-302.

SECTION 24. NONDISCRIMINATION.

A. The City is an equal opportunity employer.

B. In the performance of this Agreement, the Contractor will not discriminate against any employee or applicant for employment on the grounds of race, creed, color, national origin, sex, marital status, age or the presence of any sensory, mental or physical handicap; provided that the prohibition against discrimination in employment because of handicap shall not apply if the particular disability prevents the proper performance of the particular worker involved. The Contractor shall ensure that applicants are employed, and that employees are treated during employment without discrimination because of their race, creed, color, national origin, sex, marital status, age or the presence of any sensory, mental or physical

handicap. Such action shall include, but not be limited to: employment, upgrading, demotion or transfers, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and programs for training including apprenticeships. The Contractor shall take such action with respect to this Agreement as may be required to ensure full compliance with local, state and federal laws prohibiting discrimination in employment.

C. The Contractor will not discriminate against any recipient of any services or benefits provided for in this Agreement on the grounds of race, creed, color, national origin, sex, marital status, age or the presence of any sensory, mental or physical handicap.

D. If any assignment or subcontracting has been authorized by the City, said assignment or subcontract shall include appropriate safeguards against discrimination. The Contractor shall take such action as may be required to ensure full compliance with the provisions in the immediately preceding paragraphs herein.

SECTION 25. THIRD PARTY RIGHTS. Nothing herein is intended to confer rights of any kind in any third party. No member, officer, or employee of the City shall have any interest, direct or indirect, in this Agreement or the proceeds thereof.

SECTION 26. PROJECT MANAGER/ENGINEER. The Project Manager/Engineer for this Project is David Osborn, Stanley Consultants, Inc., or such other person designated by the City Engineer or Public Works Director to the Contractor orally or in writing.

SECTION 27. PARTIES' REPRESENTATIVES. For purposes of notice required or desired by the parties, or communication involving the services under this Agreement, such notice or communication shall be deemed to have been given when personally delivered or mailed, or sent by facsimile transmission certified mail, postage pre-paid, to the parties at the following addresses:

Contractor: _____, or such other person designated in writing by the Contractor's chief administrative officer, at the Contractor's address set out first above;

Park City: Project Manager/Engineer, at the address set out first above for the City, or when given to such other person as either of the above representatives shall designate in writing. The designation of any address may be changed by notice given in the same manner as provided in this paragraph.

SECTION 28. SEVERABILITY. Should any part of this Agreement for any reason be declared invalid, such decision shall not affect the validity of any remaining provisions,

which remaining provisions shall remain in force and effect as if this Agreement had been executed with the invalid portion thereof eliminated, and it is hereby declared the intention of the parties that they would have executed the remaining portion of this Agreement without including any such part, parts, or portions which may, for any reason, be hereafter declared invalid. If any provision of this Agreement is held invalid or unenforceable with respect to particular circumstances, such provision shall nevertheless remain in full force and effect in all other circumstances.

IN WITNESS WHEREOF, the parties have entered into this agreement on the day and year set out at the top of this Agreement.

PARK CITY MUNICIPAL CORPORATION

Diane Foster, City Manager

ATTEST:

City Recorder's Office

APPROVED AS TO FORM:

City Attorney's Office

INSERT CONTRACTOR NAME

Address:

Address:

City, State, Zip:

Utah Contractor License No.

Tax ID#: _____

Signature

Printed name

Title

BID BOND

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____

\$ _____

(Words)

(Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____

Signature

By: _____

Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____

Signature

Attest: _____

Signature

Title

Title

Note: Addresses are to be used for giving any required notice.

Provide execution by any additional parties, such as joint venturers, if necessary.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:
 - 1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and
 - 1.2 In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.
 - 1.3 Recovery under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of 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 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 the 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 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.

NOTICE OF AWARD

Date of Issuance:

Owner: Park City Municipal Corporation

Owner's Contract No.:

Project: Lowell Avenue Reconstruction

Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

Water Service Line Replacement.

The Contract Price of the awarded Contract is: \$ _____

unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically.

a set of the Drawings will be delivered separately from the other Contract Documents.

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

1. Deliver to Owner [_____] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security [*e.g., performance and payment bonds*] and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner: Park City Municipal Corporation

Authorized Signature

By: Matthew Cassel, PE

Title: City Engineer

NOTICE TO PROCEED

Owner: Park City Municipal Corporation

Owner's Contract No.:

Contractor:

Contractor's Project No.:

Engineer:

Engineer's Project No.:

Project: Lowell Avenue Reconstruction

Contract Name:

Effective Date of Contract:

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [REDACTED], 20[REDACTED]. [see Paragraph 4.01 of the General Conditions]

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is **October 15, 2016**, and the date of readiness for final payment is **November 15, 2016**

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

PERFORMANCE BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER: Park City Municipal Corporation
PO Box 1480
445 Marsac Avenue
Park City, Utah 84060

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
Contractor's Name and Corporate Seal

(seal)
Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the

Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven 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 5.4, and the Owner refuses the payment 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.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, 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 Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 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 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction 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, successors, and assigns.

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

11. 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 a declaration of 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 periods of limitations 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 page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for 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 Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER: Park City Municipal Corporation
 PO Box 1480
 445 Marsac Avenue
 Park City, Utah 84060

CONSTRUCTION CONTRACT
 Effective Date of the Agreement:
 Amount:
 Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
 Contractor's Name and Corporate Seal

(seal)
 Surety's Name and Corporate Seal

By: _____
 Signature

By: _____
 Signature *(attach power of attorney)*

 Print Name

 Print Name

 Title

 Title

Attest: _____
 Signature

Attest: _____
 Signature

 Title

 Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and 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, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction 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 Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, 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 of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.
16. **Definitions**
 - 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 7. The total amount of previous payments received by the Claimant; and
 - 16.2 **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 Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction 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.
 - 16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.
 - 16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
 - 16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.
18. Modifications to this Bond are as follows:

Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner): Park City Municipal Corporation	From (Contractor):	Via (Engineer):
Project: Lowell Avenue Reconstruction	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

**Application For Payment
Change Order Summary**

Approved Change Orders	Number	Additions	Deductions		
				1. ORIGINAL CONTRACT PRICE.....	\$ _____
				2. Net change by Change Orders.....	\$ _____
				3. Current Contract Price (Line 1 ± 2).....	\$ _____
				4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates).....	\$ _____
				5. RETAINAGE:	
				a. X _____ Work Completed.....	\$ _____
				b. X _____ Stored Material.....	\$ _____
				c. Total Retainage (Line 5.a + Line 5.b).....	\$ _____
				6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c).....	\$ _____
				7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	\$ _____
				8. AMOUNT DUE THIS APPLICATION.....	\$ _____
				9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above).....	\$ _____
TOTALS					
NET CHANGE BY					
CHANGE ORDERS					

Contractor's Certification	
The undersigned Contractor certifies, to the best of its knowledge, the following:	
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;	
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and	
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.	
Contractor Signature	
By: _____	Date: _____

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ (Owner) _____ (Date)

Approved by: _____ (Date)
Funding or Financing Entity (if applicable)

Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner): Park City Municipal Corporation	From (Contractor):	Via (Engineer):
Project: Lowell Avenue Reconstruction	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

**Application For Payment
Change Order Summary**

Approved Change Orders	Number	Additions	Deductions		
				1. ORIGINAL CONTRACT PRICE.....	\$ _____
				2. Net change by Change Orders.....	\$ _____
				3. Current Contract Price (Line 1 ± 2).....	\$ _____
				4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates).....	\$ _____
				5. RETAINAGE:	
				a. X Work Completed.....	\$ _____
				b. X Stored Material.....	\$ _____
				c. Total Retainage (Line 5.a + Line 5.b).....	\$ _____
				6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c).....	\$ _____
				7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application).....	\$ _____
				8. AMOUNT DUE THIS APPLICATION.....	\$ _____
				9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above).....	\$ _____
TOTALS					
	NET CHANGE BY CHANGE ORDERS				

Contractor's Certification	
The undersigned Contractor certifies, to the best of its knowledge, the following:	
(1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;	
(2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and	
(3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.	
Contractor Signature	
By: _____	Date: _____

Payment of: \$ _____
(Line 8 or other - attach explanation of the other amount)

is approved by: _____ (Owner) _____ (Date)

Approved by: _____ (Date)
Funding or Financing Entity (if applicable)

Date of Issuance:
 Owner: Park City Municipal Corporation
 Contractor:
 Engineer:
 Project: Lowell Avenue Reconstruction Project

Effective Date:
 Owner's Contract No.:
 Contractor's Project No.:
 Engineer's Project No.:
 Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:

Attachments: *[List documents supporting change]*

CHANGE IN CONTRACT PRICE	CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i>
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____	[Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
[Increase] [Decrease] of this Change Order: \$ _____	[Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates

RECOMMENDED:	ACCEPTED:	ACCEPTED:
By: _____ Engineer (if required)	By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____	Title: _____
Date: _____	Date: _____	Date: _____

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner: Park City Municipal Corporation
 Contractor:
 Engineer:
 Project: Lowell Avenue Reconstruction Project

Owner's Contract No.:
 Contractor's Project No.:
 Engineer's Project No.:
 Contract Name:

This [preliminary] [final] Certificate of Substantial Completion applies to:

- All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

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

RECEIVED:	RECEIVED:
By: _____ Owner (Authorized Signature)	By: _____ Contractor (Authorized Signature)
Title: _____	Title: _____
Date: _____	Date: _____

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 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. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document 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, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.

23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice 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.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and

submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.

37. *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, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *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.
40. *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.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *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 a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *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 but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the

result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.

48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.

2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.
- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:

1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
2. a preliminary Schedule of Submittals; and
3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.

- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, 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, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract 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, reference standard, 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 part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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 part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. *Resolving Discrepancies:*

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); 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 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract

Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.

- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *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 Contract 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 Contract. 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 Contract, whichever date is earlier.

4.02 *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 such date.

4.03 *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.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 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 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. 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, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility

that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.

- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 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.
- 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 permanent improvements are to be made 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.

5.02 Use of Site and Other Areas

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise;

(b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) 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 directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas 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 of 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 structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, 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.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site 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 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; 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 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, 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 fall within any one or more of the categories described in Paragraph 5.04.A;
 - 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 Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent 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 do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; 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 information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;

- c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then 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 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
 - 1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - 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 Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.

2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors 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 removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required

by Paragraph 7.15); and (3) 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. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.

- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. 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, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. 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, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this

Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.
- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or

authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.

- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, 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.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation*: Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered*: Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 2. claims for damages insured by reasonably available personal injury liability coverage.
 3. 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.
- C. *Commercial General Liability—Form and Content*: Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
 2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, “Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured” or its equivalent.
- D. *Automobile liability*: Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor’s pollution liability insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds*: The Contractor’s commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor’s professional liability insurance*: If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.
- I. *General provisions*: The policies of insurance required by this Paragraph 6.03 shall:
1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.

4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that 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.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, 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.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (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 Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."
 2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or 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; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available

under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.

3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.
- C. *Deductibles:* The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner:* If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will

provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, 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 insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 - 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of

recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.

- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

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

- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"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 Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item 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 is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that 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, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;

- 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
- b. Contractor certifies that, if approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 *Substitutes*

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:

- a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.

- F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. 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 the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. 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.

- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. 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.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors 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 specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

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

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, 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 the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *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.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

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

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. 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, other work in progress, 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 Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.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 at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer 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).

- F. Contractor's duties and responsibilities for safety and protection 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 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *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.

7.14 *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.

7.15 *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.

7.16 *Shop Drawings, Samples, and Other Submittals*

- A. *Shop Drawing and Sample Submittal Requirements:*
 - 1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
 3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.

3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
 8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
 2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
 3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.

- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 - 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 - 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:
 - 1. observations by Engineer;
 - 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 - 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 - 4. use or occupancy of the Work or any part thereof by Owner;
 - 5. any review and approval of a Shop Drawing or Sample submittal;
 - 6. 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.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors 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 7.18.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 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner

may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.

- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. 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 such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, 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.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor

must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

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

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

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

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

9.06 *Insurance*

- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.

9.07 *Change Orders*

- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.

9.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.

9.09 *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.

9.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.

9.11 *Evidence of Financial Arrangements*

- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).

9.12 *Safety Programs*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 *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.

10.02 *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 10.08. 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.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. 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.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

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

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, 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 15.06.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 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.
 - 3. *Field Orders:* Engineer may authorize minor changes in the Work if the changes 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. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change

involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *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, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. 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, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee:* When applicable, 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 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and

11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

- d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole,

approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

3. *Binding Decision*: Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 *Execution of Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. 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;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety 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), 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.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
1. Appeals by Owner or Contractor of Engineer’s decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor’s knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.
 3. Owner and Contractor shall each pay one-half of the mediator’s fees and costs.
- E. *Partial Approval:* If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim:* If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction,

the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.

- G. *Final and Binding Results:* If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
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 on the Work. 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, and 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 13.01.
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, as 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 6.05), 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 communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.

- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here 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 Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole 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, Change Proposal, Claim, set-off, or other 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 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, 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.

13.02 Allowances

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. *Cash Allowances:* Contractor agrees that:
1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.

- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. 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 the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price 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;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it 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 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- 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, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. 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, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.

- C. *Notice of Defects*: Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement*: Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties*: When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages*: In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then 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, and provide all necessary labor, material, and equipment.

1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages 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 pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *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, then 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.

14.07 *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, 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, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, 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 incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 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 during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, 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.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, 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 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, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for

Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. 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;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, 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, if Contractor remedies the reasons for such action. The reduction

imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *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 and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor

may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *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, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *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, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, 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, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

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

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. 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 15.07. 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. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.

D. *Payment Becomes Due:* Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer

(less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. 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 repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with

respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *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 written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and 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);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, 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 complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs,

losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds 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.

- F. 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, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) 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 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the

Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal 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 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
 - 1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 - 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
 - 1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 - 2. agree with the other party to submit the dispute to another dispute resolution process; or
 - 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
 - 1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 - 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract 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.

18.03 *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. 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.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Headings*

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

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

- A. Owner shall furnish to Contractor one copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.

SC-3.03 Add the following new paragraph immediately after Paragraph 3.03.B.1.b:

- c. The governing ranking in case of a discrepancy is:
 - i. Addenda
 - ii. Plans
 - iii. Technical Specifications
 - iv. Contract Documents
 - v. Park City Standard Specifications and Drawings
 - vi. APWA standard drawings and specifications – latest edition.

SC-5.01 Delete Paragraph 5.01.C in its entirety and insert the following new paragraph in its place:

- A. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment. Contractor shall provide a copy of the written agreement between contractor and property owner for all additional lands to the Engineer and Owner.

SC 5.02 Add the following new paragraph immediately after Paragraph 5.02.A.2:

3. Notify Kim Clark, Public Information Coordinator and the Engineer of any resident concerns. Respond to any resident concerns within 24 hours.

SC 5.03 Delete Paragraphs 5.03.A and 5.03.B in their entirety and insert the following:

- A. Reports: The Supplementary Conditions hereby identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site (other than any Geotechnical Data Report or Geotechnical Baseline Report), and Technical Data contained in such reports. Such reports are as follows:
 - a. Report dated December 15, 2015, prepared by AGEC Applied GeoTech “Geotechnical Investigation Lowell Avenue Reconstruction”. The Technical Data contained in such report upon whose accuracy Contractor may rely are none. The document is provided for information only and is not considered part of the contract documents.
- B. Reliance by Contractor on Technical Data
 - 1. Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 2. 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
 - 3. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

SC 5.06 Delete Paragraphs 5.06.A and in it’s entirety and insert the following:

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used.

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:

- 1. Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman’s):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>N/A</u>
Bodily injury by disease, aggregate	\$ <u>N/A</u>

Employer's Liability:

Bodily injury, each accident	\$ <u>500,000</u>
Bodily injury by disease, each employee	\$ <u>500,000</u>
Bodily injury/disease aggregate	\$ <u>500,000</u>

For work performed in monopolistic states, stop-gap liability coverage shall be endorsed to either the worker's compensation or commercial general liability policy with a minimum limit of:

\$ N/A

Foreign voluntary worker compensation Statutory

2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:

General Aggregate	\$ <u>4,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>2,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>2,000,000</u>

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

Each person	\$ _____
Each accident	\$ _____

Property Damage:

Each accident	\$ _____
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[or]

Combined Single Limit of	\$ <u>2,000,000</u>
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4. Excess or Umbrella Liability:

Per Occurrence	\$ <u>N/A</u>
General Aggregate	\$ <u>N/A</u>

5. Contractor's Pollution Liability:

Each Occurrence	\$ <u>N/A</u>
General Aggregate	\$ <u>N/A</u>

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: *[Here list by name (not category, role, or classification) other persons or entities to be included on the commercial general liability, automobile liability, umbrella or excess, and pollution liability policies as additional insureds.]*

7. Contractor's Professional Liability:

Each Claim	\$ <u>N/A</u>
Annual Aggregate	\$ <u>N/A</u>

SC-7.02.B. Amend the first and second sentences of Paragraph 7.02.B to state "...all Work at the Site shall be performed during regular working hours, 7 AM through 7 PM. Contractor will not perform Work on a Saturday without prior permission from the Owner and Engineer. Additional restrictions during special events may apply. A list of these events is located in Section 01010 Summary of Work. Sunday and holiday work is not allowed.

SC-7.12 Add the following at the end of Paragraph 7.12.E: ... The Judge Pipeline is a high-pressure raw water conveyance line that cannot be shut down. Disruption of continuous flow through the pipeline as a result of the Contractor's actions will result in liquidated damages of \$500,000 per occurrence. The Owner's Field Representative must be present during all excavation activities in and around the Judge Pipeline. Any damage, including scarring or marring of the pipe, will require replacement of the damaged section of pipe. All repairs must be made by a qualified HDPE solid wall fusing contractor approved by the City. Replacement will consist of fully cutting out/removing the damaged pipe area and installing/fusing in a new pipe section. Pipe repairs shall be made as soon as possible after damage occurs. All repairs will be performed at no additional cost to the Owner.

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.
 - 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.

2. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.
4. Liaison:
 - a. Serve as Engineer's liaison with Contractor. Working principally through Contractor's authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
6. Samples:
 - a. Record date of receipt of Samples.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer.
8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
10. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
 - b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
 - c. Maintain records for use in preparing Project documentation.
11. Reports:
 - a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
 - b. Obtain backup material from Contractor for approved Change Orders, Work Change Directives, and Field Orders.
 - c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.

SC 13.01.B.5.c Delete Paragraph 13.01.B.5.c in its entirety and insert the following in its place:

C. Construction Equipment and Machinery:

- 1) Rentals of all construction equipment and machinery, and the parts thereof, 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.
- 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the *blue book*. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The

EJCDC® C-800 (Rev. 1), Guide to the Preparation of Supplementary Conditions.

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cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

SC 13.03.E Delete Paragraph 13.03.E in its entirety and insert the following in its place:

- E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
1. if the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25 percent 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, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

**SECTION 01010
SUMMARY OF WORK**

PART 1 – GENERAL

1.1 GENERAL

- A. The Work to be performed under this Contract shall consist of the reconstruction of Lowell Avenue roadway including storm drain, water, and sewer improvements. The Work shall be complete, and all Work, materials, and services not expressly indicated or called for in the Contract Documents which may be necessary for the complete, safe and proper construction of the Work in good faith shall be provided by the CONTRACTOR as though originally so indicated, at no increase in cost to the OWNER.
- B. Complete all utility work, temporary 2 inch pavement patch of utility trenches, storm drain, sidewalk, gutter, and curb in the Manor Way intersection prior to June 15, 2016. The project must be substantially complete by October, 15, 2016.
- C. The project will be considered Substantially Complete once all work items, including associated testing and certifications, except for minor grading, seeding, landscaping, and general cleanup are completed.
- D. OWNER'S representative will make periodic site visits to sample excavated materials for contamination. CONTRACTOR shall accommodate OWNER'S representative for testing and inspection, and make every effort to incorporate any materials deemed contaminated back into utility trenches.
- E. Contractor shall be responsible to sort trench excavation to retain the most suitable material to reincorporate as trench backfill between the pipe zone and the bottom of the new road base, and is responsible to meet compaction as defined in the Park City standard specifications. The cost for this sorting is incidental to the item of work that requires the excavation. The goal is to reuse excavated material on site and achieve trench backfill compaction according to the standard specification.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. For the project known as the LOWELL AVENUE RECONSTRUCTION (hereinafter "Project"), the Work consists of the furnishing and installing of asphalt roadway, gutter, sidewalk, water, sewer, and storm drain improvements as indicated on the Drawings.
- B. The Work is located along Lowell Avenue and adjacent areas as indicated on the Drawings.

1.3 CONTRACT METHOD

The Work hereunder will be constructed under a unit price contract.

1.4 EXPRESSION OF CONTRACTOR RESPONSIBILITY IN THE TECHNICAL SPECIFICATIONS

- A. Whenever in the Technical Specifications, requirements are expressed with active verbs and no subjects, the words, "The CONTRACTOR shall," have been omitted as a matter of style, and it is intended that the CONTRACTOR is the party responsible for taking the action required.

1.5 WORK BY OTHERS

- A. The CONTRACTOR's attention is directed to the fact that work may be conducted at or adjacent to the Site by other contractors during the performance of the Work under this Contract. Conduct operations so as to cause a minimum of interference with the Work of such other contractors, and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the Site, as required to perform Work under their respective contracts.
- B. Interference With Work On Utilities: Cooperate and coordinate fully with all utility forces of the OWNER or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.

1.6 WORK SEQUENCE AND SCHEDULING CONSTRAINTS

- A. The CONTRACTOR shall schedule and perform the Work in such a manner as to result in the least possible disruption to the public's use of roadways, driveways, and utilities. Existing utilities shall include but not be limited to water, sewer, drainage structures, gas, electric, cable television, and telephone. Refer to the plans and profile sheets for approximate location of utilities. However, there is no guarantee as to accuracy or completeness. The CONTRACTOR shall incorporate as-built locations on the reproducible record plans, in red ink, showing proper location on each sheet where these utilities are located.
- B. The CONTRACTOR shall complete all utility work, surface restoration (excluding slurry seal), storm drain, sidewalk, gutter, and curb in on the north end of the project between roadway station 12+00 and 15+80 prior to June 15, 2016.
- C. Sanitary sewer construction shall begin at the north end (bottom) of the project area and proceed south.
- D. **All work including excavations must be backfilled or plated and access to driveways and businesses must be unrestricted overnight, on weekends, special events, and holidays. Provide a minimum of two 10 foot lanes at these times.**
- E. Complete roadway closures shall be limited to the working hours and shall be limited to the area where construction is occurring.
- F. Daily excavation shall not exceed the length that may be constructed in the same day or 100' whichever is less.
- G. Work hours are limited to 7:00 AM to 7:00 PM Monday through Friday unless approved by the ENGINEER and Park City. Provide requests to the ENGINEER by noon on Wednesday before any Saturday work. Sunday work is not allowed.

- H. No work on the existing water system or portions of the water system that have been placed in service can be performed until the water line bypass plan and procedures have been submitted, reviewed, and no exceptions have been taken by Park City Water. Water bypass piping must be installed and in operation prior to any work, including sanitary sewer or storm drain installation that may disturb existing water service laterals.
- I. Apply three applications of seeding. Apply the first application after placing topsoil as required by the project specifications. The remaining two applications shall be scheduled with the OWNER and completed within 1 year of project substantial completion.
- J. Special Events and Holidays
1. CONTRACTOR is not allowed to perform work on holidays and special events defined below. All excavations must be backfilled, and all roads within the project limits must be open to two way traffic. Roadway surfaces must be paved or untreated base course, swept clean, and drivable.
 - a. Memorial Day Weekend – Friday May 27th 3:00 PM to Tuesday 31st 7:00 AM
 - b. Independence Day Weekend – Friday July 1rd 3:00 PM to Tuesday July 5th 7:00 AM
 - c. Pioneer Day – Monday July 25th
 - d. Labor Day Weekend – Friday September 2nd 3:00 PM to Tuesday September 6th 7:00 AM
 - e. Park City Arts Festival – Friday August 12th to Sunday August 14th
 2. CONTRACTOR is responsible to provide a single point of contact to coordinate with the Public Involvement Coordinator, **Kim Clark (phone 801-860-7354)**, for additional dates and events that will require work restrictions.
 3. Coordination with Park City Mountain Resort
 - a. A prioritized contact list will be provided at the preconstruction meeting.
 - b. Coordinate with public involvement and the resort weekly on upcoming events.
 - c. Discuss resort events and work schedule at every weekly construction meeting.
 - d. Accommodate traffic for events added to calendar after construction begins and are not specified in this section.
 - e. Assume 5 additional events not listed in this specification that will require either no work for the day, or no work after 3:00 PM.
 - f. Provide wayfinding signing at Manor intersection as part of traffic control to clearly demonstrate to pedestrians and vehicles how to access the resort and other businesses along the project corridor. All signing shall be professionally produced according to MUTCD standards.
 4. CONTRACTOR may be required by OWNER to vacate the project site within one hour. All roadways must be made drivable and open to two way traffic.
 5. Slurry seal may not occur on any public event day involving more than 100 participants. Coordinate with the Public Involvement Coordinator and obtain ENGINEER approval for slurry seal date.

1.7 CONTRACTOR USE OF PROJECT SITE

- A. The CONTRACTOR's use of the Project Site shall be limited to its construction operations.
- B. Storage of materials or equipment is not allowed within the Right-of-Way except in designated locations approved by the ENGINEER. See Project Area and Site Access Route Detail, drawing sheets CO-01 and CO-02, for potential storage area locations. All equipment and materials at storage locations must allow for a minimum of two travel lanes 10-feet wide on evenings and weekends and be securely fenced, and within the Park City right of way.
- C. CONTRACTOR is responsible to obtain a hydrant meter from public works for any project water use. All costs for water are incidental to other items of work.
- D. All work must occur within Park City Right-of-Way, unless a construction easement has been secured by the CONTRACTOR. CONTRACTOR must provide written documentation of land use agreements with property owners.
- E. All construction access to the project site is restricted to routes and areas shown on the drawings. The CONTRACTOR may not use any other roads to access the project site or make deliveries. Refer to Project Area and Site Access Route Detail, drawing sheets CO-01 and CO-02.
- F. All work must occur within the designated project locations shown on Project Area and Site Access Route Detail, drawing sheets CO-01 and CO-02.
- G. CONTRACTOR is responsible to protect all pedestrians and cyclists that enter the project site. CONTRACTOR is responsible to maintain pedestrian access and crossings in areas of existing sidewalk between Sta 12+18 and 15+80.
- H. This project falls outside of the Park City Soil Ordinance Boundary. In the event that contaminated soils are encountered immediately contact the ENGINEER.
- I. Existing roadway and/or Right-of-Way may be utilized to dry excavated materials that will be utilized as backfill. Use of the roadway to dry excavated materials shall be in accordance with other work restrictions.
- J. CONTRACTOR is permitted to enter into agreements to do additional non project work for residents adjacent to the project area. The OWNER is not responsible for payment for this additional work. CONTRACTOR must negotiate and receive payment directly from property owners. CONTRACTOR must provide copy of written agreement for this work and permission to access property. Additional non project work must not delay project schedule.

1.8 HOURS OF OPERATION

Work hours are limited to 7:00 AM to 7:00 PM Monday through Friday unless approved by the ENGINEER and Park City. Provide requests to the ENGINEER by noon on Wednesday before any Saturday work, Sunday and holiday work is not allowed.

1.9 STORAGE

- A. Storage conditions shall be acceptable to OWNER for all materials and equipment not incorporated into the Work but included in Applications for Payment. Such storage arrangements and conditions shall be presented in writing for OWNER review and approval and shall afford adequate and satisfactory security and protection. Off-site storage facilities shall be accessible to ENGINEER. The stored materials shall be insured for full value. Certificates of liability insurance coverage must be submitted to the ENGINEER with the request for payment by the CONTRACTOR. All arrangements and costs for storage facilities shall be paid by the CONTRACTOR, unless specifically designated in the Contract Documents to be furnished by the OWNER.

1.10 NOTICES TO OWNERS OF ADJACENT PROPERTIES, UTILITIES, AND TRANSIT

- A. CONTRACTOR shall notify owners of adjacent property and utilities when prosecution of the Work may affect them.
- B. When it is necessary to temporarily deny access by owners or tenants to their property in excess of one day of work, or when any utility service connection must be interrupted, CONTRACTOR shall give notices at least 7 days in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit any resulting inconvenience.
- C. Utilities and other concerned agencies shall be contacted at least 7 days prior to cutting or closing streets or other traffic areas or excavating near underground utilities or pole lines.
- D. CONTRACTOR shall review with the various utility companies the construction methods, safety procedures, and work to be done in the vicinity of utilities. When temporary relocation of utilities is necessary, sufficient advance notice shall be given by the CONTRACTOR to the utility involved.
- E. CONTRACTOR shall notify local fire, police, transit, and emergency services of construction and provide access for emergency services.

1.11 LINES AND GRADES

- A. All Work shall be done to the lines, grades, and elevations shown on the Drawings.
- B. Basic horizontal and vertical control points will be established or designated as provided in General Conditions paragraph. Use these points as datum for the Work. Any additional survey, layout, or measurement Work needed for proper construction of the Work shall be performed by CONTRACTOR as a part of the Work at no additional cost to the OWNER.
- C. Employ experienced instrument personnel, competent assistants, and such instruments, tools stakes, and other materials required to complete the survey, layout, and measurement Work. In addition, furnish, without charge, competent personnel from its force and such tools, stakes, and other materials as ENGINEER may require in establishing or designating control points or in checking survey, layout, and measurement of Work performed by CONTRACTOR.

- D. Keep ENGINEER informed, a reasonable time in advance, of the times and places at which CONTRACTOR wishes to do Work, so that horizontal and vertical control points may be established and any checking deemed necessary by ENGINEER may be done with minimum delay to CONTRACTOR.
- E. CONTRACTOR shall remove and reconstruct Work which is improperly located.

1.12 PROJECT MEETINGS

A. Public Meeting

- 1. Prior to the commencement of Work at the Site, a public meeting will be held which shall be attended by the CONTRACTOR'S Project Manager and Superintendent. Other attendees will be:
 - a. ENGINEER;
 - b. Representatives of OWNER;
 - c. Governmental representatives as appropriate;
 - d. Others as requested by CONTRACTOR, OWNER, or ENGINEER

B. Preconstruction Conference

- 1. 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 the CONTRACTOR'S Project Manager, its Superintendent, its Safety Representative, and its Subcontractors as the CONTRACTOR deems appropriate. Other attendees will be:
 - a. ENGINEER;
 - b. Representatives of OWNER;
 - c. Governmental representatives as appropriate;
 - d. Others as requested by CONTRACTOR, OWNER, or ENGINEER.
- 2. Bring to the conference the submittals indicated in Section 01300 – Contractor Submittals.
- 3. The purpose of the conference is to designate responsible personnel, discuss contract requirements 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 prior to the meeting date. However, CONTRACTOR shall be prepared to discuss all of the items listed below.
 - a. CONTRACTOR's assignments for safety and first aid, including Designated Competent person(s) and CONTRACTOR's safety Representative.
 - b. Status of CONTRACTOR's insurance and bonds.
 - c. CONTRACTOR's tentative schedules.
 - d. Transmittal, review, and distribution of CONTRACTOR's submittals.

- e. Processing applications for payment.
 - f. Maintaining record documents.
 - g. Critical Work sequencing.
 - h. Field decisions and Change Orders.
 - l. Use of project site, office and storage areas, security, housekeeping, and OWNER's needs.
 - j. Major equipment deliveries and priorities.
 - k. Permits required for construction.
 - l. Utilities required for construction.
 - m. Contract OWNER and channels of communication.
 - n. Coordination with others.
4. The ENGINEER will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.

C. Progress Meetings

1. The ENGINEER shall schedule and hold regular on-Site progress meetings at least weekly and at other times as requested by ENGINEER or as required by progress of the Work. The CONTRACTOR, ENGINEER and all Subcontractors active on the Site must attend each meeting. CONTRACTOR may at its discretion request attendance by representatives of its Suppliers, manufacturers, and other Subcontractors.
2. The ENGINEER shall preside at the meetings and will arrange for keeping and distributing the minutes. The purpose of the meetings will be to review the progress of the Work, discuss safety, maintain coordination of efforts, discuss commercial issues, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the CONTRACTOR is required to present any issues which may impact his Work, with a view to resolve these issues expeditiously.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01025
MEASUREMENT AND PAYMENT**

PART 1 – GENERAL

1.1 DESCRIPTION

- A. This section defines the manner in which the Lump Sum Prices, Unit Prices, and the Allowances listed in the Bid Schedule will be used to determine measurement and payment for all Work and describes the procedures required to be followed for monthly progress payments to the CONTRACTOR.
- B. Bid amounts will include all plant, equipment, tools, materials, labor, service, and all other items required to complete the Work included in the Agreement unless specifically excluded by this section. Work required for which no separate Bid item is identified will be considered as a subsidiary obligation of the CONTRACTOR, and the cost therefore shall be included in the most applicable Bid item. Bid amounts for each item will be the basis for development of budget values for activities included in Section 01301 – Schedule of Values. Adjustments to Allowance Bid Item amounts will be applied to the Contract Price when Work is completed, and actual Allowance item amounts are known.
- C. Payment for all items of the Bid Schedule shall include all compensation to be received by the CONTRACTOR for furnishing all tools, equipment, supplies, and manufactured articles, and for all labor, operations, and incidentals appurtenant to the items of Work being described, as necessary to complete the various items of the Work all in accordance with the requirements of the Contract Documents, including all appurtenances thereto, and including but not limited to all costs of permits and cost of compliance with the regulations of public agencies having jurisdiction, including Safety and Health Requirements of the Utah Division of Industrial Safety and the Occupational Safety and Health Administration of the U.S. Department of Labor (OSHA).
- D. All costs shall be included in the prices named in the Bid Schedule for the various items of Work. Except as otherwise provided herein, no separate payment will be made for any item that is not specifically set forth in the Bid Schedule.
- E. All estimated quantities stipulated in the Bid or other Contract Documents are approximate and are to be used only (a) as a basis for estimating the probable cost of the Work and (b) for the purpose of comparing the Bids submitted for the Work. The actual amounts of Work done and materials furnished under unit price items may differ from the estimated quantities. The basis of payment for work and materials will be the actual amount of work done and materials furnished. CONTRACTOR agrees that he will make no claim for damages, anticipated profits, or otherwise on account of any difference between the amounts of work actually performed and materials actually furnished and the estimated amounts thereof.
- F. The unit or lump sum item of work which involves excavation or trenching shall include all costs for such work. No direct payment shall be made for excavation or trenching. All excavation and trenching shall be unclassified as to materials which may be encountered; in addition, trenches shall be unclassified as to depth. No additional payment will be made

for rock or caliche excavation, nor for blasting which the CONTRACTOR determines is required for rock or caliche excavations.

- G. Ground water and runoff may be present during construction. No direct or additional payments will be made for the mitigation of surface ground water or water in excavated areas. The cost for such mitigation is incidental to the item of work.
- H. No direct or additional payment will be made for dust control and watering. Dust control and watering will be necessary on weekends and holidays when no work is occurring in addition to regular hours of construction operation.
- I. Monthly pay requests are due on the 25th of each month, and while pay requests will be accepted prior to this date, pay request processing will not begin until this date for purposes of meeting the OWNER pay request processing obligations. Failure of the CONTRACTOR to submit its pay request by this day may be cause for the rejection of the pay request. If rejected, the CONTRACTOR may have to resubmit the pay request the next month. Should the submittal date fall on a holiday or weekend day during the month, then the CONTRACTOR shall consider the next working day as the due date.

1.2 MEASUREMENT AND PAYMENT

A. Lump Sum Bid Items

1. All Work Required by the Contract Documents Lump Sum Items.

- a. Payment for Work under lump sum Bid item will be based on the breakdown of costs for each scheduled activity in the Schedule of Values described in Section 01301 – Schedule of Values and the percentage of completion for each activity in accordance with the Contract Documents.

B. Unit Price Bid Items

1. All Work Required by the Contract Documents Unit Price Items.

- a. Measurement and calculation of quantities for payment to be as indicated in this section.
- b. Unit prices or lump sum amounts to include full compensation for furnishing all labor, materials, products, tools, equipment, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit, and doing all work shown on the Drawings, defined in the Specifications, and/or stipulated herein.
- c. Payment covers the cost of incidental work which includes: Construction Quality Control program and material testing; safety procedure plan; dust control; irrigation, surface water and drainage management; connection of ends of new water main pipeline to existing water main pipelines except for connections specifically identified as bid items; coordination with property owners, businesses, contractors, and government agencies; all provisions required to provide and maintain full and continuous access to all properties

affected by construction operations; saw cutting, removal, and disposal of existing trench pavement; unclassified excavation; pot hole excavations; trench excavations; trench shoring or trench boxes as applicable; removal and disposal of waste materials; trench dewatering; pipe zone material; select import fill material; compaction of trench backfill materials; compaction density testing; construction surveying; preparation of record drawings; fees from the County Surveyor for monument restoration; untreated base course at depth indicated; hauling and stockpiling of materials and equipment; protection and support of existing surface and subsurface features except as identified as bid items; providing assistance to other utility companies in locating and relocating service laterals and mains, as needed; replacement of concrete drive approach(es); plantings; tree root trimming; tree pruning; replacement and restoration of existing utilities (mains and services) and other items damaged by the CONTRACTOR's operations; replacement of irrigation culverts damaged by CONTRACTOR's operations; removal and replacement of landscape materials and irrigation systems equal to or better than existing if damaged by the CONTRACTOR's operations; and all other necessary work, to install the Work complete in place.

C. Measurement and Payment to be as follows:

Bid Item A1 – Mobilization / Demobilization

- a. Payment Covers: Cost of mobilization; demobilization; video and photo documentation of site conditions prior to construction; temporary facilities; project sign; bonds; insurance; permits; grading and restoration of staging areas to preconstruction conditions; other general cost items; obtaining any additional permits not already obtained by the OWNER and administrative items. This pay item shall constitute full compensation for all labor, equipment, tools, supplies and materials required to complete this portion of the Work for this construction project.
- b. Payment for mobilization, as defined in Section 01505 Mobilization, shall not exceed ten percent (10.0%) of the total base bid price. A separate activity for mobilization items shall be included in the Schedule of Values. This activity shall include all principal items and all submittals specified in Section 01505 – Mobilization, as applicable. Payment for mobilization will be approved in accordance with the status of completion of each mobilization component as defined in the approved mobilization plan required in Section 01505; except that no payment for mobilization will be approved until Items 1, 2, 8, 9, 10, and 11 of paragraph 3.1.A of Section 01505 are complete. No more than one-half of the payment for mobilization will be paid until all submittals required by paragraph 3.2 of Section 01505 have been approved by the ENGINEER.
- c. Measured and paid for on a lump sum basis.

- d. Paid according to the following if requirements above are met:
 - a. 25% of Mobilization with the first pay request
 - b. Remaining portion of the bid item paid as percentage of the contract completed with each subsequent estimate.

Bid Item A2 – Traffic Control

- a. Payment covers costs associated with all labor, materials, and equipment required to develop and implement a traffic control plan in accordance with the requirements of Park City; maintain smooth vehicular traffic flow in the project area during construction; perform partial or complete road closures as allowed in the Contract Documents; including but not limited to: signage, electronic message boards, barriers, warning devices, flaggers, public notification, and cleaning of roads to maintain a clean condition with no accumulation of dirt, debris, or other foreign objects as required by the Contract Documents and street cut permits.
- b. Payment shall also include all labor, materials, and equipment required to maintain safe vehicle, pedestrian, and bicycle access through the project area during construction; including but not limited to signage, warning devices, safety fencing, water barriers, concrete barriers, trench plating, and maintaining a clean roadway that is free of dirt, gravel, and other construction debris.
- c. Measured and paid for on a lump sum basis.
- d. Paid according to the following:
 - a. 25% of the bid amount with the first estimate
 - b. Remaining portion of the bid item paid as percentage of the contract completed with each subsequent estimate.

Bid Item A3 – Asphalt Slurry Seal Coat

- a. Measured and paid for on a square yard basis.
- b. Payment: Payment for asphalt slurry seal coat shall include all materials, labor, and equipment required to install slurry seal coat in areas shown on the plans and any required existing street restoration areas across the entire width of the roadway.
- c. Slurry seal coat application and materials shall be in accordance with Park City and contract requirements.

Bid Item A4 – Untreated Base Course – 18 inch thick

- a. Measured and paid for on a cubic yard basis, in place.

- b. Payment covers costs associated with all labor, materials, and equipment required to place untreated base course with the requirements of the Contract Documents, including, but not limited to, water and compaction.

Bid Item A5 – Asphalt Concrete (PG 58-28) Warm Mix 6 - inches thick

- a. Measured and paid for on a square yard basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place asphalt concrete, including, but not limited to, compaction, prime coat, and tack coat. Asphalt concrete shall be provided per following:
 - a. APWA Specifications – Most recent edition
 - i. 32-12-03 PG 58-28, 15% RAP max
 - ii. 32-12-05 DM-1/2, Medium Traffic Classification
 - iii. 32-12-16 (Rice Method)

Bid Item A6 – Roll Gutter

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place roll gutter, including, but not limited to, excavation, untreated base course, water, compaction; saw cutting, removal, and replacement of concrete driveway and snow melt systems if the Contractor elects to remove driveway to facilitate curb and gutter installation or protection of concrete driveways.

Bid Item A7 – Stone Pavers

- a. Measured and paid for on a lump sum basis.
- b. Payment covers the costs associated with all labor, materials, and equipment required to place stone pavers to extend from existing pavers to new gutter, includes, but not limited to, excavation, grading, sand, and pavers.
- c. This item is only for the single location shown on the plans. All other pavers disturbed will be restored as part of the Landscape Restoration bid item.

Bid Item A8 – Remove Existing Concrete Driveway

- a. Measured and paid for on a square foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing pavement, including, but not limited to, any necessary sawcutting, and disposal of removed material.

Bid Item A9 – Remove Existing Asphalt Concrete Pavement

- a. Measured and paid for on a square yard basis.

- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing pavement, including, but not limited to, any necessary saw cutting, and disposal of removed material.
- c. Depth assumed to be 7 inches based on geotechnical report.

Bid Item A10 – Remove Existing Curb and Gutter

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing curb and gutter, including, but not limited to, any necessary saw cutting, protection of adjacent landscaping, driveways, stairs, landscaping, irrigation systems, and retaining walls. Includes disposal of removed material.

Bid Item A11 – Remove Existing Concrete Sidewalk

- a. Measured and paid for on a square yard basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing sidewalk, including, but not limited to, any necessary saw cutting, protection of adjacent landscaping, driveways, stairs, landscaping, irrigation systems, and retaining walls, removal of curb wall behind sidewalk as necessary to facilitate construction, and disposal of removed material.

Bid Item A12 – Remove Existing Guardrail

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing guardrail, including, but not limited to, removal of posts, rail, hardware, and concrete foundations. Includes disposal of removed materials.

Bid Item A13 – W-Beam Guardrail Anchor Type 1

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to construct guardrail anchor as shown in the plans, Including, but not limited to, W-beam guardrail with posts, foundation tube, blocks, cable, hardware, object marker, and marker post.

Bid Item A14 – Concrete Sidewalk 4 inches thick

- a. Measured and paid for on a square yard basis, in place.

- b. Payment covers costs associated with all labor, materials, and equipment required to construct concrete sidewalk, including, but not limited to, excavation, untreated base course, water, and compaction.

Bid Item A15 – 2” Fiber Optic Conduit

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to install 2 inch schedule 40 PVC conduit at locations shown on the drawings. Includes excavation, conduit, backfill, surface restoration and providing and placing underground utility marking tape on conduits.
- c. Includes adjusting location as necessary to avoid other existing utilities.

**Bid Item A16 – 24" X 30" Sign Panel R2-1 (25 MPH Speed Limit)
(includes post and foundation)**

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to install sign including post and foundation as shown in the plans.

Bid Item A17 – Concrete Driveways (Commercial)

- a. Measured and paid for on a square foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place drain gutter, including, but not limited to, excavation untreated base course, water, and compaction.

Bid Item A18 – Guardrail

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place guardrail, including, but not limited to, core ten rail with post, blocks, and all other necessary hardware.

Bid Item A19 – Roadway Excavation

- a. Measured and paid for on a cubic yard basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to excavate for the roadway pavement section as shown in the plans, including, but not limited to, cutting and capping slurry lines, any necessary disposal of material, and proof rolling and preparing the subgrade.
- c. Removal of asphalt pavement is paid for as a separate bid item. Asphalt removal is assumed to be 7 inches. Additional pavement thickness over 7

inches is included as roadway excavation.

- d. Item only includes quantity to excavate for pavement section. Excavation for sidewalk, gutter, driveways, etc is included in those items of work. Excavation and grading behind gutter is included in landscaping items.

Bid Item A20 – 30" X 30" Sign Panel R1-1 (Stop), (includes post and foundation)

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to install sign including post and foundation as shown in the plans.

Bid Item A21 – Pervious Concrete Rolled Gutter

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place roll gutter, including, but not limited to, excavation, base, concrete, and geotextile.

Bid Item A22 – Remove Existing Asphalt Driveway

- a. Measured and paid for on a square foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing pavement, including, but not limited to, any necessary sawcutting, and disposal of removed material.

Bid Item A23 – Seeding

- a. Measured and paid for on a lump sum basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to seed at locations without existing landscaping and as indicated in the plans, includes 6 inches of topsoil, grading, and preparing existing ground.
- c. Some areas are indicated on the plans. These are for information only and not all inclusive.
- d. Provide seeding on all disturbed areas and undisturbed areas adjacent to Lowell Avenue that do not have existing landscaping vegetation.

Bid Item A24 – Landscape/Landscape Restoration

- a. Measured and paid for on a lump sum basis.
- b. Payment covers the cost of restoring any damaged irrigation systems and restoring all disturbed landscape, vegetation, trees, stairs, retaining walls, to

match existing, including, but not limited to, restoration of all base course, gravel, stamped concrete, decorative pavers, rocks, and sprinkler system adjustments, as necessary to complete the work in accordance with the Plans and Specifications.

- c. This bid item is for restoration of landscape and concrete improved areas disturbed by roadway reconstruction behind the proposed gutter between driveways.
- d. Applies to schedule A - Roadway only. Landscape restoration for water, sewer, and storm drain items that extend beyond the limits of full depth roadway and gutter construction is included in those items of work.

Bid Item A25 – Pavement Marking Paint, 12 inch white

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place pavement marking paint.

Bid Item A26 – Neighborhood Area Sign (includes post and foundation)

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to install sign including post and foundation as shown in the plans.

Bid Item A27 – Pedestrian Access Ramp

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, equipment, and materials necessary for a complete pedestrian access ramp. Including, but not limited to concrete, detectable warning surface, excavation, and untreated base course.

Bid Item A28 – No Parking Sign (includes post and foundation)

- c. Measured and paid for on an each basis.
- d. Payment covers costs associated with all labor, materials, and equipment required to install sign including post and foundation as shown in the plans.

Bid Item A29 – Remove Sign

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove sign including post and foundation as shown in the plans.

Bid Item A30 – Fiber Optic Concrete Junction Box

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to place utility junction box as shown in the plans, including, but not limited to, excavation, foundation, backfill, surface restoration, and bedding.

Bid Item A31 – Adjust Existing Meter Box and Cover to Grade

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to adjust meter box and cover to grade.

Bid Item A32 – Erosion and Sediment Control

- a. Measured and paid for on a lump sum basis.
- b. Payment covers costs associated with all labor, materials, and equipment required for installation, monitoring, inspection, maintenance, and removal of erosion and sediment controls. Includes preparation of storm water pollution prevention plan, obtaining UPDES permit and NOI. Also includes managing stormwater runoff during construction to prevent flooding of adjacent properties.

Bid Item A33 – Stamped Colored Concrete

- a. Measured and paid for on a square foot basis.
- a. Payment covers costs associated with all labor, materials, and equipment required to construct stamped colored concrete, including, but not limited to excavation, untreated base course, water, and compaction.
- b. Provide color and stamp patterns to Owner for approval.

Bid Item A34 –Restore Driveway Snow Melt System

- a. Measured and paid for on an each basis.
- b. Payment covers all costs associated with labor, equipment, tools, supplies, and materials to protect existing driveway snow melt systems during driveway removal. Includes cost to repair any systems damaged during driveway removal, including, but not limited to, labor, equipment, tools, supplies, materials, materials disposal, snow melt system pipe, fittings, wire, testing, glycol, and installation of quick connect at the right of way line.
- c. Item is only paid when indicated on plans or in cases where driveways must be adjusted to accommodate field changes approved by the Engineer in gutter grades.

Bid Item A35 – 4 inch Concrete Flatwork

- a. Measured and paid for on a square foot basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to construct concrete flatwork, including, but not limited to excavation, untreated base course, water, and compaction.

Bid Item A36 – Curb Wall

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to construct concrete curb wall, including, but not limited to concrete, shoring, forming, excavation, base, testing, required for concrete curb wall as shown on the drawings.

Bid Item A37 – Gutter Pavement T-Patch

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to patch new gutter to existing pavement. Includes, but is not limited to pavement cutting, asphalt removal, excavation, base course, compaction, and asphalt pavement as shown in the drawings.
- c. This item is only used at the bend between Lowell Avenue and Empire Avenue where gutters are replaced, but full width pavement reconstruction is not occurring.

Bid Item A38 – Remove Concrete Flatwork

- a. Measured and paid for on a square foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to remove existing flatwork, including, but not limited to, any necessary saw cutting, protection of adjacent landscaping, driveways, stairs, landscaping, irrigation systems, and retaining walls, and disposal of removed material.

Bid Item A39 – Pinned Curb Wall

- a. Measured and paid for on a linear foot basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to construct concrete pinned curb, including, but not limited to concrete, reinforcement, reinforcing, forming, excavation, and base course, required for pinned curb wall as shown on the drawings.

Bid Item A40 – Removal of Contaminated Material

- a. Measured and paid for on a per ton basis.
- b. Payment covers all labor, equipment, to dispose of contaminated material from excavations for roadway or storm drain construction to an approved location for disposal by the OWNER. OWNER will pay tipping fees directly to the disposal facility.

Bid Item A41 – Asphalt Concrete Driveway

- a. Measured and paid for on a square yard basis, in place.
- b. Payment covers costs associated with all labor, materials, and equipment required to place asphalt concrete driveway, including, but not limited to, excavation, base course, compaction, prime coat, and tack coat.
- c. Asphalt concrete shall be provided per following:
 - a. APWA Specifications – Most recent edition
 - i. 32-12-03 PG 58-28, 15% RAP max
 - ii. 32-12-05 DM-1/2, Medium Traffic Classification
 - iii. 32-12-16 (Rice Method)

Bid Item A42 – Adjust Valve Box to Grade

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to adjust valve box and to grade. Includes concrete collar.

Bid Item A43 – Adjust Manhole to Grade

- a. Measured and paid for on an each basis.
- b. Payment covers costs associated with all labor, materials, and equipment required to adjust manhole to grade. Includes concrete collar.
- c. The sanitary sewer manhole on Empire Avenue shall be reconstructed per Snyderville Basin Water Reclamation District standards and specifications.

Bid Item B1 – Adjust Catch Basin to Grade

- a. Measured and paid for on an each basis.
- b. Payment covers all labor, equipment, tools, supplies, and materials required to adjust catch basin to grade.

Bid Item B2 – Connect new pipe to existing box

- a. Measured and paid for on an each basis.
- b. Payment covers all labor, equipment, tools, supplies, and materials required to connect new pipe to existing box.

Bid Item B3 – Single Gutter Inlet Box

- a. Measured and paid for on an each basis.
- b. Payment covers all labor, equipment, tools, supplies, and materials, incidental accessories, trench excavation, backfill; backfill shall including reuse of existing excavated material, existing excavated material shall be sorted and unsuitable material shall be disposed of at an approved offsite location acceptable excavated material shall be mixed with acceptable imported material; surface restoration; surface restoration includes but is not limited to restoring any irrigation systems, vegetation, trees, stamped concrete, decorative pavers, rocks, rolled gutter and pavement on Empire Avenue disturbed during construction; and testing as shown on plans.
- c. Includes connections to new and existing pipes for all boxes, and cutting and removing existing pipe for the catch basin at Sta 12+33.

Bid Item B4 – Double Gutter Inlet Box

- a. Measured and paid for on an each basis.
- b. Payment covers all labor, equipment, tools, supplies, and materials, incidental accessories, trench excavation, backfill; backfill shall including reuse of existing excavated material outside the pipe zone, existing excavated material shall be sorted and unsuitable material shall be disposed of at an approved offsite location acceptable excavated material shall be mixed with acceptable imported material; surface restoration; surface restoration includes but is not limited to restoring any irrigation systems, vegetation, trees, stamped concrete, decorative pavers, and rocks disturbed during construction; and testing as shown on plans.
- c. Includes connections to new and existing pipes.

Bid Item B5 – Storm Drain Cleanout Box

- a. Measured and paid for on an each basis.
- b. Payment covers all labor, equipment, tools, supplies, and materials, incidental accessories, trench excavation, backfill; backfill shall including reuse of existing excavated material, existing excavated material shall be sorted and unsuitable material shall be disposed of at an approved offsite location acceptable excavated material shall be mixed with acceptable imported material; and testing as shown on plans.

Bid Item B6 – 12 Inch Corrugated Plastic Pipe

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers all labor, equipment, tools, supplies, and materials, incidental accessories, trench excavation, backfill; backfill shall including reuse of existing excavated material outside the pipe zone, existing excavated material shall be sorted and unsuitable material shall be disposed of at an approved offsite location acceptable excavated material shall be mixed with acceptable imported material; surface restoration; surface restoration includes but is not limited to restoring any irrigation systems, vegetation, trees, stamped concrete, decorative pavers, retaining walls, and rocks disturbed during construction; and testing as shown on plans.
- c. Includes T-Patch per Park City Standards and gutter replacement for locations on Empire Avenue
- d. Pipe shall be corrugated on the inside.

Bid Item B7 – 12 Inch Reinforced Concrete Pipe – Class V

- a. Measured and paid for on a linear foot basis, in place.
- b. Payment covers all labor, equipment, tools, supplies, and materials, incidental accessories, trench excavation, backfill; backfill shall including reuse of existing excavated material outside the pipe zone, existing excavated material shall be sorted and unsuitable material shall be disposed of at an approved offsite location acceptable excavated material shall be mixed with acceptable imported material; surface restoration; surface restoration includes but is not limited to restoring any irrigation systems, vegetation, trees, stamped concrete, decorative pavers, retaining walls, and rocks disturbed during construction; and testing as shown on plans.
- c. Includes T-Patch per Park City Standards and gutter replacement for locations on Empire Avenue

Bid Item B8 – Water Line Pipe Insulation (SP-546)

- a. Measured and paid for on an linear foot basis
- b. Payment Covers costs associated with all labor, materials, and equipment required to install pipe insulation at storm drain crossings for the width required on existing waterlines in accordance with Park City Standard Plan 546 and the detail in the plans at the locations shown on the drawings.

Bid Item C1 – Install 8” C900 PVC Distribution Waterline

- a. Measured along the pipe to the nearest foot with no reduction in length because of valves and fittings.
- b. Payment covers the cost of furnishing and installing the pipe of the size and type identified on the drawings and the cost of incidental work including but not limited to potholing ahead of construction; all sheeting, shoring and bracing; fittings, couplings, joint lubricants, nuts, bolts and washers; mechanical and physical concrete thrust restraints; corrosion protection on all metallic fittings, valves, couplers, with wax tape coating system on bolts and nuts and anode protection on fittings and valves; tracer wire; tracer wire access box; pipe insulation at storm drain crossings; flowable fill at existing utility crossings; saw cutting and removal of pavements; removal and disposal of interfering structures and obstructions; concrete rings, cast iron rings, frame and lid as applicable; grout; jackhammer work; underground utility line markers; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; rerouting of existing water service connections; connecting to new and existing waterlines, including additional couplings as required for phased waterline installation; temporary valves, fittings, ports, pipe, and connections for flushing, disinfecting, and testing waterlines; abandonment and capping of existing abandoned sewer line and structures; removal or capping and abandonment of existing waterlines and associated valves on waterlines designated to be abandoned; disconnecting abandoned waterlines from existing system; site dewatering; pipe line cleaning; water main repair or replacement if damaged by CONTRACTOR; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; adjustments to grade of existing valve boxes or traffic lids or manholes; construction surveying, and all other work required to complete the installation of the water line including cleaning, disinfection, and commissioning of the pipeline.
- c. Surface restoration is paid under separate bid items. Temporary water bypass systems are paid under separate bid items. Valves are paid under separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Item C2 – Install 8” Gate Valve

- a. Measurement: Will be measured and paid for on a per each basis.
- b. Payment Covers: Costs of valve, nuts, bolts, gaskets, restraints, corrosion protection on metallic fittings and valves with wax tape coating system on bolts and nuts and anode protection on fittings and valves; connection to existing or new pipe; cast iron valve box of depth required; valve nut extension; and concrete collar.

Bid Items C3 and C4 – Replace Existing Water Service

- a. Measured and paid for on a per each basis for the connection size installed, as identified in the bid schedule. Measurement to be by actual field count of each type and size of existing service to be replaced.
- b. Payment Covers materials, labor, equipment, and tools required for the replacement of the existing water service with a new water service of the size indicated including, but not limited to: new service connection to new water main; tracer wire; service saddle clamp; corporation stop; fittings; adapters necessary for a watertight connection to the existing house side service; flushing the service prior to acceptance; removal and disposal of existing structures, valves, fittings and pipe; flowable fill at existing utility crossings; removal and disposal of unsuitable soils; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing, all in accordance with Contract Documents.
- c. Payment for surface restoration is included as separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Items C5, C6, C7, C8 – Replace Existing Meter Vault

- a. Measured and paid for on a per each basis for the vault size installed, as identified in the bid schedule. Measurement to be by actual field count of each type and size of existing vault to be replaced.
- b. Payment Covers materials, labor, equipment, and tools required for the replacement of the existing meter vault, but not limited to: new vault; meter setter(s), valves, fittings; curb valve; adapters necessary for a watertight connection to the existing house side service; additional piping required to connect to house side service; flushing the service prior to acceptance; removal and disposal of existing structures, fittings and pipe; removal and disposal of unsuitable soils; bracing power poles or electrical boxes; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing, all in accordance with Contract Documents.

- c. Payment for surface restoration is included as separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Item C9 – Replace Existing Meter Vault Lid with Traffic Rated Lid

- a. Measured and paid for on a per each basis for the size and type of meter vault lid replaced. Measurement to be by actual field count of each type and size of meter vault lid installed. This bid item is to be used at the sole discretion and direction of the Owner to replace lids that otherwise would not be replaced. Actual quantities may vary from those listed on the bid schedule.
- b. Payment Covers materials, labor, equipment, and tools required for the replacement of existing meter vault lid with new lid, complete.
- c. Payment for surface restoration is included as separate bid items.
- d. Unit price for this bid item shall be independent of the quantity actually used. No adjustment in unit price will be allowed for quantities that are significantly more or less than the quantities listed in the bid schedule.

Bid Item C10 – Replace Existing Indoor Meter

- a. Measured and paid for on a per each basis for the size installed, as identified in the bid schedule. Measurement to be by actual field count of each type and size of existing indoor meter assembly to be replaced.
- b. Payment covers materials, labor, equipment, and tools required for the reconnection of water service of the size indicated including, but not limited to: new saddle; meter setter(s), valves, fittings; curb valve; adapters necessary for a watertight connection to the existing house side service; additional piping required to connect to house side service; flushing the service prior to acceptance; removal and disposal of existing structures, fittings and pipe; all in accordance with Contract Documents.

Bid Items C11 – Replace Existing Fire Line

- a. Measured and paid for on a per each basis for the connection size installed, as identified in the bid schedule. Measurement to be by actual field count of each type and size of existing fire service to be installed.
- b. Payment Covers materials, labor, equipment, and tools required for the replacement and reconnection of fire service of the size indicated including, but not limited to: pipe connection to new water main in size as shown; gate valve and box; ductile iron tee; installation of ductile pipe of the size indicated; fittings; corrosion protection on metallic fittings and valves with wax tape coating system on bolts and nuts and anode protection on fittings and valves; adapters necessary for a watertight connection to the existing house side service; flushing the service prior to acceptance; removal and disposal of existing structures, valves, fittings and pipe; flowable fill at existing utility crossings;

removal and disposal of unsuitable soils; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing, all in accordance with Contract Documents.

- c. Payment for surface restoration is included as separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Item C12 – Remove and Replace Existing Fire Hydrant

- a. Measurement: Removing and replacing an existing fire hydrant, piping, fittings, and valve will be measured and paid for on a per each basis.
- b. Payment covers the cost of removal and disposal of existing fire hydrant, furnish and install new hydrant, tee, 6” gate valve and piping installation per the plans and Park City standard details, including but not limited to: additional saw cut and removal of trench pavement; excavation; all sheeting, shoring and bracing; new hydrant, valve, valve box, fittings, pipe, concrete collars, traffic lids; miscellaneous tees, sleeves, bends, gaskets, bolts, nuts; approved joint restraining devices; corrosion protection on metallic fittings and valves with wax tape coating system on bolts and nuts and anode protection on fittings and valves; pipeline dewatering; mechanical and concrete thrust restraints; adjustment of valve box lids to final grade with concrete and painting; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; removal and disposal of displaced soils; abandonment and/or disposal of existing water pipe(s), fittings, and structures; and other appurtenant items necessary to complete the work including cleaning, disinfection, and commissioning of the pipeline. Payment covers the cost of painting the new hydrants in accordance with the City’s standard color code.
- c. Payment for surface restoration is included as separate bid items. 8-inch and larger valves are included as separate bid items. There will be no payment for over excavation unless approved in writing by the ENGINEER prior to the excavation.
- d. Owner shall have salvage rights on all hydrants and valves.

Bid Items C13 – 2-inch Air Release / CAV Manhole with Heat Trace

- a. Measured and paid for on a lump sum basis for each air/vacuum manhole identified in the bid schedule.

- b. Payment Covers: All costs associated with installing the air valve and vault complete with equipment, piping, and appurtenances as shown on the Drawings; Work under this pay item includes, but is not limited to: concrete work; manhole piping; valves; misc. pipe taps, manhole frame and cover; misc. metals including ladder rungs, vent structure, and pipe supports as necessary; bolts and nuts, miscellaneous fittings and couplings; cathodic protection; and all other necessary work to install the air valve and manhole, complete, as specified in the Contract Documents.
- c. Payment covers electrical conduit, import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; conductor; heat trace; connected to existing panel; circuit breakers; pipe insulation; thermal blanket; and all electrical work and components for manholes designated with heat trace wire.
- d. Payment for surface restoration is included as separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation.

Bid Item C14 – Temporary Above-Ground Water Service Bypass to Existing Connections

- a. Temporary Above-Ground Water Service Bypass to existing meter connections shall be measured on a lump sum basis.
- b. Payment covers the cost of furnishing, installing, maintaining, and protecting the temporary bypass water service lines for existing affected service connections and covers the cost of providing the Owner with a detailed copy of the bypass plan for approval. Temporary bypass flows shall include capacity for laterals as well as fire flows on dead end lines. Payment will be made in installments at the same proportion as the portion of the temporary bypass that is installed during the period covered by each pay request.

Bid Item C15 – Temporary 6” Hot Tap Isolation Valve for Bypass Water Service

- a. Measurement: Will be measured and paid for on a per each basis.
- b. Payment Covers: Costs of valve, nuts, bolts, gaskets, restraints, connection to existing pipe; cast iron valve box of depth required; hot tapping existing active waterline to isolate it for bypass water service; and removal of hot tap valve and restoring pipe as necessary.
- c. Payment for surface restoration is included as separate bid items. There will be no payment for over excavation unless approved in written form by the ENGINEER prior to the excavation

Bid Item C16 – Landscape and Concrete Surface Restoration

- a. Measured and paid for on a lump sum basis.
- b. Payment covers the cost as it relates to restoration from waterline construction outside of the road reconstruction disturbance areas to include: restoring any damaged irrigation systems and restoring all disturbed landscape, vegetation, trees, stairs, all retaining walls, and concrete walk and driveway improved areas to match existing, including restoration of all base course, gravel, stamped concrete, decorative pavers, and rocks, as necessary to complete the work in accordance with the Plans and Specifications.
- c. This bid item is for restoration of landscape and concrete improved areas disturbed by waterline construction that are not already included and covered in the road reconstruction.

Bid Item C17 – Asphalt T-Patch Restoration for Waterline Trench

- a. Measured and paid for on a lump sum basis.
- b. Payment covers the cost as it relates to asphalt t-patch restoration for waterline construction outside of the roadway full depth reclamation to include: restoration of all base course and asphalt in accordance with Park City's pavement t-patching standards, as necessary to complete the work in accordance with the Plans and Specifications.
- c. This bid item is for restoration of asphalt for the waterline trench that is not already included and covered in the road reconstruction.

Bid Item D1 - Temporary Bypass Sewer Service to Existing Manholes

- a. Description – This item includes all materials, equipment, and labor necessary to maintain existing wastewater flows during the construction of the Sanitary Sewer System. Extensive sewer bypass pumping will be required at multiple locations. The Contractor shall prepare and submit a sewer bypass plan to Engineer for approval by SBWRD prior to beginning construction.
- b. Materials and Construction Requirements – All work under this item shall conform to Section 503.3 of the SBWRD Standards and Specifications (February 22, 2016 edition). This item includes the preparation of an acceptable bypass plan; maintaining wastewater flows, including temporary routing or pumping of sewage at multiple locations as necessary to maintain uninterrupted sanitary sewer service during the construction of the sewer main and laterals and the removal or abandonment of the existing system; providing 24/7 personnel observing and maintaining any sewer bypass pumping system used during construction; providing a backup bypass pumping system on-site in case of primary bypass system failure; providing protection to bypass pumping lines used during construction that cross driveways, streets, etc. It

shall also include the removal and disposal of the temporary service after completion.

- c. Method of Measurement – This item shall be measured as a lump sum for the entire project.
- d. Basis of Payment – Payment for this item shall be made as a lump sum. Progress payments shall be made equal to the percentage of completion of the sanitary sewer schedule.

Bid Items D2 - Install Gravity Sanitary Sewer Main – 8-inch PVC SDR 35

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install PVC Sanitary Sewer Main of the size and type indicated at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: potholing ahead of construction; construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of interfering structures and obstructions; jackhammer work; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; abandonment and capping of existing abandoned sewer lines and structures; site dewatering; tracer wire and marking tape installation; sewer main repair or replacement if damaged by Contractor; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; and all other work required to complete the installation of the sewer line including cleaning. Remove and dispose existing sewer main if necessary to install new sewer main. Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Pipe materials shall comply with section 402.4. Acceptance testing shall be per Section 515, and the following: a) A TV inspection of each segment (manhole to manhole) will be required before payment of that segment b) A continuity test will be required for all tracer wire along each segment, and c) A final TV inspection of the entire installation will be required after completion of the sewer system, including final manhole adjustment. Provide inspection video to SBWRD.
- c. Method of Measurement – This item shall be measured by the linear foot of PVC Sanitary Sewer installed of the size and type indicated, measured horizontally along the centerline of the pipe and includes distances through manholes and fittings.

- d. Basis of Payment – Payment for this item shall be made at the contract unit price for PVC Sanitary Sewer Main installed. Payment for each segment shall not be made until the TV inspection is completed and accepted.

Bid Item D3 - Remove and Dispose of Existing Sewer Manhole

- a. Description – This item includes all materials, equipment, and labor necessary to remove and dispose existing manholes at the locations shown on the Construction Plans. This item shall be used to remove and dispose existing manholes that are encountered during construction and cannot be abandoned. Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Remove manhole base, wall sections, cone and grade rings and dispose. Remove and dispose manhole section. Do not reuse materials in new construction. Existing frame and cover to be salvaged and delivered to SBWRD.
- c. Method of Measurement – This item shall be measured per each sewer manhole removed.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each manhole removed.

Bid Item D4 - Abandon in Place Existing Gravity Sewer Line Stub

- a. Description – This item includes all materials, equipment, and labor necessary to abandon any existing sewer main line stubs not excavated and removed during the normal course of installation by the new sewer main.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). All abandoned sewer main line stubs shall be filled with cement treated fill materials conforming to Section 408.3. Placement of the fill materials shall be made at a rate to insure that the sewer pipe stub is filled in its entirety without voids and air gaps. Special provisions shall be taken to allow entrapped air in the pipeline to escape. Seal inlets and/or outlets of sewer main stub with plugs where indicated on the Construction Plans.
- c. Method of Measurement – This item shall be measured per each sewer main stub abandoned and filled.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each sewer main stub abandoned.

Bid Items D5 – Install 4-ft Sewer Manhole w/ Precast Base

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install a new sewer manhole of the diameter and type indicated

at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of existing sewer manholes; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; tracer wire installation; and all other work required to complete the installation of the sewer manhole including cleaning. Connections of sewer lines directly to manholes as indicated at the locations shown on the Construction Plans are included. Final manhole adjustments shall be included in this bid item as shown on standard detail MH-07 (CU-102). Asphalt surface with base course restoration is paid under a separate bid item.

- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Manholes shall be constructed per standard detail MH-01 (CU-100) for precast bases. The cone section shall be set to meet the tolerance requirements shown on standard detail MH-07 (CU-102). Acceptance testing shall be per Section 515.5.
- c. Method of Measurement – Sewer Manhole shall be measured per size and type of sewer manhole installed.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for the size and type of sewer manhole installed.

Bid Items D6 - Install 5-ft Sewer Manhole w/ Precast Base

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install a new sewer manhole of the diameter and type indicated at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of existing sewer manholes; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; tracer wire installation; and all other work required to complete the installation of the sewer manhole including cleaning. Connections of sewer lines directly to manholes as indicated at the locations shown on the Construction Plans are included. Final manhole adjustments shall be included in this bid item as shown on

standard detail MH-07 (CU-102). Asphalt surface with base course restoration is paid under a separate bid item.

- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Manholes shall be constructed per standard detail MH-01 (CU-100) for precast bases. The cone section shall be set to meet the tolerance requirements shown on standard detail MH-07 (CU-102). For manholes, acceptance testing shall be per Section 515.5. Pipe materials shall comply with section 402.4. For piping, acceptance testing shall be per Section 515 and the following: a) A TV inspection of all connecting sewer lines (manhole to manhole) will be required before payment of that manhole and b) A final TV inspection of the entire installation will be required after completion of the sewer system, including final manhole adjustment. Provide inspection video to SBWRD.
- c. Method of Measurement – Sewer Manhole shall be measured per size and type of sewer manhole installed.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for the size and type of sewer manhole installed.

Bid Item D7 - Install 5-ft Sewer Inside Drop Manhole w/ Precast Base

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install a new sewer inside drop manhole of the diameter and type indicated at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of existing sewer manholes; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; tracer wire installation; and all other work required to complete the installation of the sewer inside drop manhole including cleaning. Connections of sewer lines directly to manholes as indicated at the locations shown on the Construction Plans are included. Final manhole adjustments shall be included in this bid item as shown on standard detail MH-07 (CU-102). Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Inside drop manholes shall be constructed per standard detail MH-03 (CU-104) for precast bases. The cone section shall be set to meet the tolerance requirements shown on standard detail MH-07 (CU-102). For manholes, acceptance testing shall be per Section 515.5. Pipe materials shall comply with section 402.4. For piping, acceptance testing shall be per Section 515 and the following: a) A TV

inspection of all connecting sewer lines (manhole to manhole) will be required before payment of that manhole and b) A final TV inspection of the entire installation will be required after completion of the sewer system, including final manhole adjustment. Provide inspection video to SBWRD.

- c. Method of Measurement – Sewer Inside Drop Manhole shall be measured per size and type of sewer inside drop manhole installed.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for the size and type of sewer inside drop manhole installed.

Bid Items D8 - Install 5-ft Sewer Manhole w/ Precast Base and Reconnect Existing 8-inch HDPE Sewer Line

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install a new sewer manhole of the diameter and type indicated at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of existing sewer manholes; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; tracer wire installation; landscape and concrete surface restoration including revegetation; flowable fill under Park City's existing 14-inch Judge waterline; and all other work required to complete the installation of the sewer manhole including cleaning. Connections and adjustments of sewer lines directly to manholes as indicated at the locations shown on the Construction Plans are included. Final manhole adjustments shall be included in this bid item as shown on standard detail MH-07 (CU-102). Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Manholes shall be constructed per standard detail MH-01 (CU-100) for precast bases. The cone section shall be set to meet the tolerance requirements shown on standard detail MH-07 (CU-102). For manholes, acceptance testing shall be per Section 515.5. Pipe materials shall comply with section 402.3. For piping, acceptance testing shall be per Section 515 and the following: a) A TV inspection of all connecting sewer lines (manhole to manhole) will be required before payment of that manhole and b) A final TV inspection of the entire installation will be required after completion of the sewer system, including final manhole adjustment. Provide inspection video to SBWRD.
- c. Method of Measurement – Sewer Manhole shall be measured per size and type of sewer manhole installed.

- d. Basis of Payment – Payment for this item shall be made at the contract unit price for the size and type of sewer manhole installed.

Bid Item D9 - Connect to Existing Sewer Line

- a. Description – This item includes all materials, equipment, and labor necessary to connect to existing sewer lines at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: all sheeting, shoring and bracing; saw cutting and removal of pavements; connect sewer line; installing PVC repair coupling; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; sewer main repair or replacement if damaged by Contractor; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; tracer wire installation; and all other work required to complete the connection of sewer line to sewer manhole. Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). New PVC repair coupling shall be installed at connection between existing sewer line and new sewer line of the size indicated on the Construction Plans and the coupling materials shall comply with Section 407.1.
- c. Method of Measurement – This item shall be measured per each connection to existing sewer line.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each connection to existing sewer line.

Bid Items D10 - Reconnect Sewer Lateral to New Gravity Sanitary Sewer Main – 4-inch PVC SDR 35

- a. Description – This item includes all materials, equipment, and labor necessary to reconnect a PVC sewer lateral of the size and type indicated at the locations shown on the Construction Plans. This item also includes the cost of incidental work including, but not limited to: removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; flowable fill under Park City’s existing 14-inch Judge waterline; and all other work required to complete the reconnection of the sewer lateral. Connect PVC sewer lateral to a new sewer main. Remove existing sewer

lateral if necessary to install new sewer lateral. Asphalt surface with base course restoration is paid under a separate bid item.

- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Materials shall comply with Section 402.4. Pipe joints shall comply with Section 402.4C1. Reconnection shall comply with standard details LAT-05 (CU-107) and LAT-11 (CU-106) as shown on the Construction Plans. Install bends and couplings as necessary to match the existing sewer laterals. Coupling materials shall comply with Section 407.1. Install PVC sewer lateral at a min. 2% slope. Coordinate reconnection with residents. Install during periods of no flow or low flows. Complete lateral reconnection in the same day or provide temporary bypass.
- c. Method of Measurement – This item shall be measured per each PVC sewer lateral reconnection to sewer main.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each PVC sewer lateral reconnection to sewer main.

Bid Items D11 - Install Gravity Sanitary Sewer Lateral Stub to New Gravity Sanitary Sewer Main – 4-inch PVC SDR 35

- a. Description – This item includes all materials, equipment, and labor necessary to furnish and install a PVC sewer lateral of the size and type indicated at the locations shown on the Construction Plans and the cost of incidental work including, but not limited to: all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction density testing; landscape and concrete surface restoration including revegetation; flowable fill under Park City's existing 14-inch Judge waterline; and all other work required to complete the installation of the sewer lateral. Remove existing sewer lateral if necessary to install new sewer lateral. Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Install shall comply with standard detail LAT-01 (CU-105) as indicated at the locations shown on the Construction Plans. Install PVC sewer lateral stub at a min. 2% slope. Materials shall comply with Section 402.4. Pipe joints shall comply with Section 402.4C.1.
- c. Method of Measurement – This item shall be measured per each PVC sewer lateral installed.

- d. Basis of Payment – Payment for this item shall be made at the contract unit price for sewer lateral installed of the size and type indicated.

Bid Items D12- Remove and Replace Gravity Sewer Lateral to Back of Curb – 4-inch PVC SDR 35

- a. Description – This item includes all materials, equipment, and labor necessary to remove existing sewer lateral of the size and type indicated on the Construction Plans and replace it with new PVC sewer lateral of the size and type indicated on the Construction Plans. This item also includes the cost of incidental work including, but not limited to: all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; landscape and concrete surface restoration including revegetation; flowable fill under Park City’s existing 14-inch Judge waterline; and all other work required to complete the removal and replacement of the sewer lateral. Asphalt surface with base course restoration is paid under a separate bid item.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Materials shall comply with Section 402.4. Pipe joints shall comply with Section 402.4C1. Reconnection and installation shall comply with standard details LAT-01 (CU-105) and LAT-05 (CU-107) as indicated on the Construction Plans. Install lateral at min. 2% slope from the sewer main wye to back of curb. Install bends and couplings as necessary to match the existing building sewer and as shown on the Construction Plans. Coupling materials shall comply with Section 407.1. Coordinate installation with residents. Install during periods of no flow or low flows. Complete lateral installation and connection in the same day or provide temporary bypass.
- c. Method of Measurement – This item shall be measured per each existing sewer lateral removed and replaced with new PVC sewer lateral and connecting to sewer main.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each existing sewer lateral removed and replaced with new PVC sewer lateral and connecting to sewer main.

Bid Items D13- Remove and Replace Gravity Sewer Lateral up to Existing 14-inch Judge Waterline – 6-inch PVC SDR 35

- a. Description – This item includes all materials, equipment, and labor necessary to remove existing sewer lateral of the size and type indicated on the

Construction Plans and replace it with new PVC sewer lateral of the size and type indicated on the Construction Plans. This item also includes the cost of incidental work including, but not limited to: all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; installing PVC repair coupling; import pipe bedding material; import trench backfill material, two feet thick for the width of the trench located directly below road base course; backfilling trench with suitable native material plus import up to subgrade prior to topsoil in unimproved areas and up to but excluding road base course in improved areas; compaction of pipe zone and trench backfill materials; compaction density testing; and all other work required to complete the removal and replacement of the sewer lateral. Asphalt surface with base course restoration is paid under a separate bid item.

- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Materials shall comply with Section 402.4. Pipe joints shall comply with Section 402.4C1. Reconnection and installation shall comply with standard details LAT-01 (CU-105) and LAT-05 (CU-107) as indicated on the Construction Plans. Install lateral at min. 2% slope from the sewer main wye to back of curb. Install bends and couplings as necessary to match the existing building sewer and as shown on the Construction Plans. Coupling materials shall comply with Section 407.1. Coordinate installation with residents. Install during periods of no flow or low flows. Complete lateral installation and connection in the same day or provide temporary bypass.
- c. Method of Measurement – This item shall be measured per each existing sewer lateral removed and replaced with new PVC sewer lateral and connecting to sewer main.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each existing sewer lateral removed and replaced with new PVC sewer lateral and connecting to sewer main.

Bid Item D14 - Abandon in Place Existing Gravity Sewer Lateral

- a. Description – This item includes all materials, equipment, and labor necessary to abandon any existing sewer laterals not excavated and removed during the normal course of installation by the new sewer main.
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). All abandoned sewer laterals shall be filled with cement treated fill materials conforming to Section 408.3. Placement of the fill materials shall be made at a rate to insure that the sewer lateral is filled in its entirety without voids and air gaps. Special provisions shall be taken to allow entrapped air in the lateral to escape. Seal inlets and/or outlets of sewer lateral with caps where indicated on the Construction Plans.

- c. Method of Measurement – This item shall be measured per each sewer lateral abandoned and filled.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each sewer lateral abandoned.

Bid Item D15 - Adjust Existing Sewer Manhole to Grade

- a. Description – This item includes all materials, equipment, and labor necessary to adjust existing manhole rim and cover to grade as indicated on the Construction Plans. This item also includes the cost of incidental work including, but not limited to: construction staking and surveying; clean-up work; dust control; all sheeting, shoring and bracing; selective clearing and tree removal; saw cutting and removal of pavements; removal and disposal of waste materials; removal and disposal of unsuitable soils; restoration of all utilities damaged as a result of operations; site dewatering; import trench backfill material; import base course material; compaction density testing; pavement restoration; and all other work required to complete the adjustment of the sewer manhole rim and cover including cleaning. Final manhole adjustments shall be included in this bid item as shown on standard detail MH-08 (CU-110).
- b. Materials and Construction Requirements – All work shall comply with SBWRD Standards and Specifications (February 22, 2016 edition). Adjustments shall comply with Section 509. Adjustment of sewer manholes to grade shall comply with standard details MH-08 (CU-110) as shown on the Construction Plans.
- c. Method of Measurement – This item shall be measured per each manhole rim and cover adjusted to grade.
- d. Basis of Payment – Payment for this item shall be made at the contract unit price for each manhole rim and cover adjusted to grade.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 GENERAL PROGRESS PAYMENT REQUIREMENTS

- A. Payment for Work performed shall be in accordance with installed quantities as assessed in comparison to the Schedule of Values. The ENGINEER will verify measurements and quantities. Each activity necessary to manage and complete the Work is identified on the Contract schedules. Each activity will be assigned its respective value, a portion of the Contract Price, as shown on the Schedule of Values (Roll-up) and detailed cost loaded activity schedule. Refer to Section 01301 - Schedule of Values.

- B. Payment for all lump sum costs and services incurred on this Agreement shall be based on the earned value of Work accomplished during the reporting period. Earned value is determined by the completion percentage of each activity as determined by the Schedule of Values applied to the total value of the activity. No construction activity shall be deemed 100 percent complete until the CONTRACTOR has completed the physical check out and inspection of the completed Work and has submitted the signed inspection form to the ENGINEER. Refer to Section 01301 – Schedule of Values.
- C. Earned value is derived from the current status of the CONTRACTOR Construction Schedule as determined by the monthly schedule status submittals (Reference Section 01301 – Schedule of Values). Each schedule status submittal is reviewed and approved by the ENGINEER prior to the CONTRACTOR obtaining approval for the Summary of Earned Values or quantities installed and the Application for Payment.

3.2 APPLICATION FOR PAYMENT

- A. Application for payment shall be on the OWNER's form and be certified by signature of an Authorized Officer of the CONTRACTOR.
- B. The Application for Payment shall contain all necessary references and attachments that substantiate the invoice for progress payment (e.g., certified payrolls, labor reports, progress schedule data, and Summary of Earned Values). It shall substantiate the invoice for progress payment and shall be preceded or accompanied by status data as a condition of payment, in accordance with Section 01301 – Schedule of Values.

3.3 PAYMENT FOR SUPPLIES AND MATERIALS

- A. Payment based on the actual cost of supplies, materials and equipment on hand shall be made by the OWNER with or without a paid invoice. "Actual cost" of materials shall be the invoice amount, whether paid or not, and shall not include any costs associated with installation, testing, etc. The CONTRACTOR shall be entitled to payment of the actual cost of supplies, materials and equipment only if he (1) presents an invoice to the OWNER with the application for payment and (2) states in the application for payment that the materials have been delivered and stored in the time and manner specified in the contract between the CONTRACTOR and his Supplier or Subcontractor. If the CONTRACTOR fails to comply with those conditions, the OWNER may withhold payment in accordance with the provisions. The OWNER expressly reserves the right to withhold retention until the CONTRACTOR presents to the OWNER a paid invoice, or some other proof of payment satisfactory to the OWNER, for the OWNER use in verifying the accuracy of the actual cost of the supplies, materials or equipment. If the amount paid does not match the actual cost, the OWNER shall adjust the amount of retention accordingly. Payment for supplies, materials or equipment on hand does not alter the responsibility of the CONTRACTOR for all supplies, materials and equipment until Final Acceptance of the Work.

-END OF SECTION -

**SECTION 01300
CONTRACTOR SUBMITTALS**

PART 1 – GENERAL

1.1 GENERAL

- A. CONTRACTOR "Submittals" may be Shop Drawings, schedules, surveys, reports, samples, plans, lists, drawings, documents, findings, programs, manuals, data, or any other item or information required by the Contract Documents to be submitted or offered by the CONTRACTOR in accomplishing the Work.
- B. Wherever Submittals are required hereunder, all such documents shall be furnished to the ENGINEER.
- C. The CONTRACTOR shall be responsible for the accuracy, completeness, and coordination of all Submittals. The CONTRACTOR shall not delegate this responsibility in whole or in part to any Subcontractor. Submittals may be prepared by the CONTRACTOR, Subcontractor, or Supplier, but the CONTRACTOR shall ascertain that each Submittal meets the requirements of the Contract and the Project. The CONTRACTOR shall ensure that there is no conflict with other Submittals and shall notify the ENGINEER in each case where its Submittal may affect the work of another Contractor or the OWNER. The CONTRACTOR shall ensure coordination of Submittals of related crafts and Subcontractors.
- D. Failure to make timely submittals in accordance with the requirements of the specifications shall constitute grounds for the OWNER to withhold 20 percent of compensation for the equipment to which the submittal is related, or, in the case of information lists, record drawings, investigation findings, safety plans, quality plans, and similar items, the OWNER may withhold 20 percent of the value of the information in the submittal.

1.2 PRECONSTRUCTION CONFERENCE SUBMITTALS

- A. At the preconstruction conference referred to in Section 01010 - Summary of Work, submit the following items for review:
 - 1. A preliminary schedule of Shop Drawings, Samples, and proposed Substitute ("Or-Equal") submittals listed in the Bid, in accordance with Section 01505 – Mobilization.
 - 2. A list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.
 - 3. A preliminary schedule of values in accordance with Section 01301 – Schedule of Values.
 - 4. The names and qualifications of Designated Safety Representative and Designated Competent Persons, in accordance with Section 01505 – Mobilization.

1.3 PROGRESS REPORTS

- A. Furnish a progress report to ENGINEER with each Application for Payment. If the Work falls behind schedule, submit additional progress reports at such intervals as ENGINEER may request.
- B. Each progress report shall include sufficient narrative to describe any current and anticipated delaying factors, effect on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to ENGINEER, must be substantiated with satisfactory evidence.
- C. Each progress report shall include a list of the activities completed with their actual start and completion dates, a list of the activities currently in progress, and the number of working days required to complete each.

1.4 CONSTRUCTION MANAGEMENT PLAN

- A. Furnish a construction management plan as per the Agreement.

1.5 SHOP DRAWINGS

- A. Wherever called for in the Contract Documents, or where required by the ENGINEER, furnish to the ENGINEER for review, an electronic copy (PDF format preferred) of each Shop Drawing Submittal. If electronic copy is not provided, then provide six (6) copies of each submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items. Whenever the CONTRACTOR is required to submit design calculations as part of a Submittal, such calculations shall bear the signature and seal of a professional engineer registered in the appropriate branch in Utah unless otherwise directed.
- B. All Shop Drawing Submittals shall be accompanied by a Submittal transmittal form acceptable to the ENGINEER. Any Submittal not accompanied by such a form, or where all applicable items on the form are not completed, will be returned for resubmittal.
- C. Organization
 - 1. A single Shop Drawing Submittal transmittal form shall be used for each technical specification section or item or class of material or equipment for which a Submittal is required. A single Submittal covering multiple sections will not be acceptable, unless the primary specification references other sections for components. Example: If a pump section references other sections for the motor, protective coating, anchor bolts, local control panel, and variable frequency drive, a single Submittal would be accepted; a single Submittal covering vertical turbine pumps and horizontal split case pumps would not be acceptable.
 - 2. On the transmittal form, index the components of the Submittal and insert tabs in the Submittal to match the components. Relate the Submittal components to specification paragraph and subparagraph, drawing number, detail number, schedule title, or room number or building name, as applicable.

3. Unless indicated otherwise, terminology and equipment names and numbers used in Submittals shall match the Contract Documents.
- D. Format
1. Minimum sheet size shall be 8.5 inches by 11 inches. Maximum sheet size shall be 24 inches by 36 inches. Every page in a Submittal shall be numbered in sequence. Each copy of a Submittal shall be collated and stapled or bound, as appropriate. The ENGINEER will not collate copies.
 2. Where product data from a manufacturer is submitted, clearly mark which model is proposed, with all pertinent data, capacities, dimensions, clearances, diagrams, controls, connections, anchorage, and supports. Sufficient level of detail shall be presented for assessment of compliance with the Contract Documents.
 3. Each Submittal shall be assigned a unique number. Submittals shall be numbered sequentially. The Submittal numbers shall be clearly noted on the transmittal. Original Submittals shall be assigned a numeric Submittal number. Resubmittals shall bear an alpha-numeric system which consists of the number assigned to the original Submittal for that item followed by a letter of the alphabet to represent that it is a subsequent Submittal of the original. For example, if Submittal 25 requires a resubmittal, the first resubmittal will bear the designation "25-A" and the second resubmittal will bear the designation "25-B" and so on.
- E. Disorganized Submittals which do not meet the requirements above will be returned without review.
- F. Except as may otherwise be indicated herein, the ENGINEER will return each Submittal to the CONTRACTOR, with its comments noted thereon, within 14 calendar days following their receipt by the ENGINEER. For resubmittal of Submittals, the ENGINEER will be allowed the same review period as for the original Submittal. It is considered reasonable that the CONTRACTOR shall make a complete and acceptable Submittal to the ENGINEER by the second submission of a Submittal item. The OWNER reserves the right to withhold monies due to the CONTRACTOR to cover additional costs of any review beyond the second Submittal.
- G. If a Submittal is returned to the CONTRACTOR marked "NO EXCEPTIONS TAKEN", formal revision and resubmission of said Submittal will not be required.
- H. If a Submittal is are returned to the CONTRACTOR marked "MAKE CORRECTIONS NOTED", formal revision and resubmission of said Submittal will not be required.
- I. If a Submittal is returned to the CONTRACTOR marked "REVISE-RESUBMIT", the CONTRACTOR shall revise said Submittal and resubmit the required number of copies. Resubmittal of portions of multi-page or multi-drawing Submittals will not be allowed. For example, if a Shop Drawing Submittal that consists of ten drawings contains only one drawing that needs to be amended and resubmitted, the Submittal as a whole is deemed as "REVISE-RESUBMIT", and all ten drawings of the Submittal are required to be resubmitted.

- J. If a Submittal is returned to the CONTRACTOR marked "REJECTED-RESUBMIT", the CONTRACTOR shall revise said Submittal and resubmit the required number of copies. Resubmittal of portions of multi-page or multi-drawing Submittals will not be allowed. For example, if a Shop Drawing Submittal that consists of ten drawings contains only (one) drawing that is rejected and needs to be resubmitted, the Submittal as a whole is deemed as "REJECTED-RESUBMIT", and all ten drawings of the Submittal are required to be resubmitted.
- K. Any changes made on a resubmittal, other than those made or requested by ENGINEER, shall be identified and flagged on the resubmittal.
- L. Fabrication of an item shall commence only after the ENGINEER has reviewed the pertinent Submittals and the ENGINEER has returned copies to the CONTRACTOR marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS 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 for changes to the Contract requirements.
- M. All CONTRACTOR Shop Drawing Submittals shall be carefully reviewed by an authorized representative of the CONTRACTOR prior to submission. Each Submittal shall be dated and signed with the following: "I have verified that the equipment or material in this Submittal meets all the requirements specified or shown in the Contract Documents without exception." In the case of Shop Drawings, each sheet shall be so dated, signed, and certified. No consideration for review of any submittals will be made for any items which have not been so certified. All non-certified submittals will be returned without action taken, and any delays caused thereby shall be the total responsibility of the CONTRACTOR. Submittals which the CONTRACTOR wishes to have reviewed that cannot bear this certification because they contain an exception or deviation to the Contract Documents shall be submitted in accordance with Section 01600 – Products, Materials, Equipment and Substitutions.
- N. The ENGINEER's and/or ENGINEER's review of Shop Drawing Submittals shall not relieve the CONTRACTOR of the entire responsibility for the correctness of details and dimensions and for compliance with the Contract Documents. The CONTRACTOR shall assume all responsibility and risk for any misfits due to any errors in Submittals. The CONTRACTOR shall be responsible for the dimensions and the design of adequate connections and details.
- O. No changes in the Contract times will be considered for schedule delays resulting from non-compliant Submittals.
- P. Within 30 days of the Notice to Proceed, the CONTRACTOR shall submit a complete list of anticipated Submittals which includes Specification and Drawing references. The list shall be updated with "early start" Submittal dates within 15 days of Submittal of the CONTRACTOR's construction schedule. The Submittal dates shall be updated whenever the schedule is updated. Any additional Submittals identified after the initial Submittal shall be included in the updates.
- Q. If the CONTRACTOR submits an incomplete Submittal, the Submittal may be returned without review. A complete Submittal shall contain sufficient data to demonstrate that the items contained therein comply with the Contract Documents, meet the minimum

requirements for Submittals as described in the Contract Documents, and include all corrections as required from previous Submittals.

1.6 CONTRACTOR'S SCHEDULE

- A. The CONTRACTOR's construction schedules and reports shall be prepared and submitted to the ENGINEER.

1.7 SAMPLES

- A. Whenever in the Specifications samples are required, submit not less than two samples of each item or material to the ENGINEER for acceptance at no additional cost to the OWNER.
- B. Samples, as required herein, shall be submitted for acceptance a minimum of 21 days 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 delays in the Work.
- C. All samples shall be individually and indelibly labeled or tagged, indicating thereon all specified physical characteristics and Manufacturer's name for identification. Upon receiving acceptance of the ENGINEER, one set of the samples will be stamped and dated and returned to the CONTRACTOR and shall remain at the job site until completion of the Work.
- D. Unless indicated otherwise, all colors and textures of specified items presented in sample Submittals shall be from the manufacturer's standard colors and standard materials, products, or equipment lines. If the samples represent non-standard colors, materials, products, or equipment lines and their selection will require an increase in contract time or price, clearly indicate same on the transmittal page of the Submittal.

1.8 SURVEY DATA

- A. The CONTRACTOR shall make available for examination throughout the construction period all field books, notes, and other data developed by CONTRACTOR in performing the surveys required by the Work and shall submit all such data to ENGINEER with documentation required for final acceptance of the Work.

1.9 UTILITY INVESTIGATION

- A. The CONTRACTOR shall submit the findings of the utility investigation in accordance with Section 01530 – Protection of Existing Facilities.

1.10 QUALITY ASSURANCE/QUALITY CONTROL PLAN

- A. The CONTRACTOR shall prepare and submit a Quality Assurance/Quality Control Plan for the Work contained in the Contract in accordance with Section 01400 – Quality Assurance/Quality Control.

1.11 DAILY FORCE REPORT

- A. The CONTRACTOR and each Subcontractor shall submit to the ENGINEER, or designee, a daily force report for all force account change orders where the amount cannot be determined. Deliver report not later than 9:00 A.M. of the work day following the report date and include the following:
1. Day of week, date, CONTRACTOR name and Report number.
 2. Summary of work in process (segregated by CONTRACTOR and Subcontractor).
 3. Details of work accomplished including quantities of work installed.
 4. Summary of equipment working and where working.
 5. Summary of manpower by work element and Subcontractor.
 6. Receipt of major equipment or materials.
 7. All required testing performed and, if available, documented results.

1.12 OPERATIONS AND MAINTENANCE MANUAL

- A. The CONTRACTOR shall submit technical operation and maintenance information for each item of mechanical, electrical and instrumentation equipment in an organized manner in the OPERATIONS AND MAINTENANCE MANUAL. It shall be written so that it can be used and understood by the OWNER'S operation and maintenance staff.
- B. The initial submittal of the OPERATIONS AND MAINTENANCE MANUALS shall be furnished to the ENGINEER upon delivery of the respective equipment.
1. Anticipated Items Requiring Operations and Maintenance Manuals:
 - a. Pressure Reducing Valve Vault, electrical, mechanical etc.
 - b. Valves
- C. The OPERATIONS AND MAINTENANCE MANUAL shall be subdivided first by specification section number; second, by equipment item; and last, by "Part." "Parts" shall conform to the following (as applicable):
1. Part 1 – Equipment Summary:
 - a. Summary: A summary table shall indicate the equipment name, equipment number, and process area in which the equipment is installed.
 - b. Form: The ENGINEER will supply an Equipment Summary Form for each item of mechanical, electrical and instrumentation equipment in the Work. Fill in the relevant information on the form and include it in Part 1.

2. Part 2 – Operational Procedures:

- a. Procedures: Manufacturer-recommended procedures on the following shall be included in Part 2:

Installation

Adjustment

Startup

Location of controls, special tools, equipment required, or related instrumentation needed for operation

Operation procedures

Load changes

Calibration

Shutdown

Troubleshooting

Disassembly

Reassembly

Realignment

Testing to determine performance efficiency

Tabulation of proper settings for all pressure relief valves, low and high-pressure switches, and other protection devices

List of all electrical relay settings including alarm and contact settings

Lubrication.

3. Part 3 – Preventive Maintenance Procedures:

- a. Procedures: Preventive maintenance procedures shall include all manufacturer-recommended procedures to be performed on a periodic basis, both by removing and replacing the equipment or component, and by leaving the equipment in place.
- b. Schedules: Recommended frequency of preventive maintenance procedures shall be included. Lubrication schedules, including lubricant SAE grade, type, and temperature ranges, shall be covered.

4. Part 4 – Parts List:

- a. Parts List: A complete parts list shall be furnished, including a generic description and manufacturer's identification number for each part. Addresses and telephone numbers of the nearest supplier and parts warehouse shall be included.
- b. Drawings: Cross-sectional or exploded view drawings shall accompany the parts list.

5. Part 5 – Wiring Diagrams:

- a. Diagrams: Part 5 shall include complete internal and connection wiring diagrams for electrical equipment items.

6. Part 6 – Shop Drawings:

- a. Drawings: This part shall include approved shop or fabrication drawings, complete with dimensions.

7. Part 7 – Safety:

- a. Procedures: This part describes the safety precautions to be taken when operating and maintaining the equipment or working near it.

8. Part 8 – Documentation:

- a. All equipment warranties, affidavits, and certifications required by the Technical Specifications shall be placed in this part.

D. The CONTRACTOR shall furnish to the ENGINEER four identical OPERATIONS AND MAINTENANCE MANUALS. Each set shall consist of one or more volumes, each of which shall be bound in a standard size, 3-ring, looseleaf, vinyl plastic hard cover binder suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches. A table of contents indicating all equipment in the manuals shall be prepared. The title of each volume shall be displayed on the cover and spine.

E. OPERATIONS AND MAINTENANCE MANUALS shall be submitted in final form not later than the 75 percent of construction completion date. All discrepancies found by the ENGINEER or ENGINEER in the OPERATIONS AND MAINTENANCE MANUALS shall be corrected by the CONTRACTOR within 30 days from the date of written notification.

F. Incomplete or unacceptable OPERATIONS AND MAINTENANCE MANUALS at the 75 percent construction completion point shall constitute sufficient justification to withhold the amount stipulated in paragraph "OPERATIONS AND MAINTENANCE MANUAL Submittals" of Section 01700, from any monies due the CONTRACTOR.

1.13 SPARE PARTS LIST

A. The CONTRACTOR shall furnish to the ENGINEER five identical sets of spare parts information for all mechanical, electrical, and instrumentation equipment. The spare parts list shall include the current list price of each spare part. The spare parts list shall be limited to those spare parts which each manufacturer recommends be maintained by the OWNER in inventory at the plant site. Each manufacturer or supplier shall indicate the name, address, and telephone number of its nearest outlet of spare parts to facilitate the OWNER in ordering. Cross-reference all spare parts lists to the equipment numbers designated in the Contract Documents. The spare parts lists shall be bound in standard size, 3-ring, looseleaf, vinyl plastic hard cover binders suitable for bookshelf storage. Binder ring size shall not exceed 2.5 inches.

1.14 RECORD DRAWINGS

A. The CONTRACTOR shall prepare and maintain one record set of Drawings at the job site. On these, mark, in red ink, all project conditions, locations, configurations, and any other changes or deviations which may vary from the details represented on the original Contract Drawings, including buried or concealed construction and utility features which are revealed during the course of construction. Record Drawings shall also include survey of meters and valves for inclusion in the Park City GIS, and locations where wet soil was encountered during excavation. Special attention shall be given to recording the horizontal and vertical location of all buried utilities that differ from the locations indicated,

or which were not indicated on the Contract Drawings. Said record drawings shall be supplemented by any detailed sketches as necessary or directed to indicate, fully the Work as actually constructed. These master record drawings of the CONTRACTOR'S representation of as-built conditions, including all revisions made necessary by addenda and change orders shall be maintained up-to-date during the progress of the Work.

- B. Copies of the record drawings shall be audited regularly by the ENGINEER after the month in which the notice to proceed is given as well as on completion of Work. Failure to properly maintain record drawings in an up-to-date condition may result in the withholding of payments due the CONTRACTOR at the sole discretion of the OWNER.
- C. In the case of those drawings which depict the detail requirement for equipment to be assembled and wired in the factory, such as motor control centers and the like, the record drawings shall be updated by indicating those portions which are superseded by change order drawings or final shop drawings, and by including appropriate reference information describing the change orders by number and the shop drawings by manufacturer, drawing, and revision numbers.
- D. Record drawings shall be accessible for the ENGINEER's review at all times during the construction period.
- E. Final payment will not be acted upon until the record drawings have been prepared and delivered to the ENGINEER. Said up-to-date record drawings shall be in the form of a set of prints with carefully plotted information overlaid in red.
- F. Upon substantial completion of the Work and prior to final acceptance, finalize and deliver a complete set of record drawings to the ENGINEER for transmittal to the OWNER, conforming to the construction records of the CONTRACTOR. This set of drawings shall consist of corrected drawings showing the reported location of the Work. The information submitted by the CONTRACTOR and incorporated by the ENGINEER into the Record Drawings will be assumed to be correct, and the CONTRACTOR shall be responsible for the accuracy of such information, and for any errors or omissions which may appear on the Record Drawings as a result.

1.15 SAFETY PROGRAM

- A. The CONTRACTOR shall prepare and submit safety plans, programs, and permits to the ENGINEER.
- B. ENGINEER's receipt of any safety plans, programs or permits will not relieve CONTRACTOR in any way from the full and complete responsibility for safety.
- C. ENGINEER will not review or monitor programs.

1.16 REQUESTS FOR INFORMATION

- A. In the event that the CONTRACTOR, Subcontractor or supplier, at any tier, determines that some portion of the drawings, specifications, or other Contract Documents requires clarification or interpretation by the OWNER, the CONTRACTOR shall submit a Request for Information in writing to the ENGINEER. Requests for Information may only be submitted by the CONTRACTOR and shall only be submitted on the Request for

Information form provided by the ENGINEER. The CONTRACTOR shall clearly and concisely set forth the issue for which clarification or interpretation is sought and why a response is needed from the OWNER. In the Request for Information the CONTRACTOR shall set forth their own interpretation or understanding of the requirement along with reasons why they have reached such an understanding.

- B. The ENGINEER will review all Requests for Information to determine whether they are Requests for Information within the meaning of this term. If the ENGINEER determines that the document is not a Request for Information it will be returned to the CONTRACTOR, unreviewed as to content, for resubmittal on the proper form and in the proper manner.
- C. Responses from the ENGINEER will not change any requirement of the Contract Documents unless so noted by the ENGINEER in the response to the Request for Information. In the event the CONTRACTOR believes that a response to a Request for Information will cause a change to the requirements of the Contract Documents the CONTRACTOR shall immediately give written notice to the ENGINEER stating that the CONTRACTOR considers the response to be a Change Order. Failure to give such written notice immediately shall waive the CONTRACTOR's right to seek additional time or cost under the Contract.

1.17 TRAINING

- A. CONTRACTOR shall conduct a minimum of one (1) 8-hour training session for OWNER personnel on the operation and maintenance of the new pressure reducing valve vault. Training shall be scheduled and coordinated in advance with OWNER personnel.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01301
SCHEDULE OF VALUES**

PART 1 – GENERAL

1.1 GENERAL

- A. This Section defines the process whereby the Schedule of Values shall be developed. Monthly progress payment amounts shall be determined from the weekly progress updates of the Bar Chart Schedule activities. The Schedule of Values shall, as a minimum, list the value of every activity on the Bar Chart Construction Schedule, and shall include such additional breakdowns as required herein. The values in the Schedule of Values do not establish a commitment by either the CONTRACTOR or the OWNER when negotiating changes to the Contract Documents.

1.2 DETAILED SCHEDULE OF VALUES

- A. The CONTRACTOR shall prepare and submit a detailed Schedule of Values to the ENGINEER. Because the ultimate requirement is to develop a detailed Schedule of Values sufficient to determine appropriate monthly progress payment amounts, sufficient detailed breakdown shall be provided to meet this requirement. The Schedule of Values shall have a one-to-one relationship to the work activities of the CONTRACTOR's Bar Chart Construction Schedule even though additional detailed breakdowns for the Schedule of Values may be required. The OWNER will be the sole judge of acceptable breakdowns, details, and descriptions of the values established. If, in the opinion of the ENGINEER, a greater number of Schedule of Values items than proposed by the CONTRACTOR is necessary, the CONTRACTOR shall add the additional items so identified.
- B. The minimum details of a breakdown of the major Work components are indicated below. Greater detail shall be provided as directed by the ENGINEER.
1. Mobilization shall be broken down by each principal item as described in Section 01505 – Mobilization.
 2. Protective coating Work shall be broken down by system. Where specific coating Work may be critical to performing the Work to meet milestone and Contract dates, such Work shall be included as individual pay and Schedule activity items.
 3. Utility relocation Work shall be broken down into individual pipelines running from and to Contract termination points. Each pipeline shall be an individual pay item unless otherwise allowed by the ENGINEER.
 4. Civil site Work shall be broken down into roadways, individual drainage systems, individual flood control structures, site concrete, soil cement, paving, excavation cut and fill, clearing and grubbing and any other items determined to be necessary for the establishment of Pay and Schedule Activity items.
 7. All other Work not specifically included in the above items shall be broken down as necessary for establishment of pay and Schedule activity items.

8. Operations and Maintenance (O & M) Manuals shall be broken down into one O & M Manual per piece of equipment or one O & M Manual per group of like-kind pieces of equipment for establishment of Pay and Schedule activity items.

C. After submittal of the Schedule of Values, the CONTRACTOR and ENGINEER shall meet and jointly review the schedules. The value allocations and extent of detail shall be reviewed to determine any necessary adjustments to the values and to determine if sufficient detail has been proposed. Any adjustments deemed necessary to the value allocation or level of detail shall be made by the CONTRACTOR and a revised detailed Schedule of Values shall be submitted within 5 work days from receipt of comments from ENGINEER.

1.3 CHANGES TO SCHEDULE OF VALUES

A. Changes to the Construction Schedule which add activities not included in the original Construction Schedule but included in the original Work (schedule omissions) shall have values assigned as approved by the ENGINEER. Other activity values shall be reduced to provide equal value adjustment increases for added activities as approved by the ENGINEER.

B. In the event that the CONTRACTOR and ENGINEER agree to make adjustments to the original Schedule of Values because of inequities discovered in the original accepted detailed Schedule of Values, increases and equal decreases to values for activities may be made. The ENGINEER may direct changes to the schedule when inequities are discovered and agreement on the reallocation cannot be achieved.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01310
BAR CHART SCHEDULE**

PART 1 – GENERAL

1.1 GENERAL

- A. A bar chart schedule shall be employed by the CONTRACTOR for the planning and scheduling of all work required under the Contract Documents.
- B. In addition to the scheduling aspect, the same chart shall show an “S” curve for scheduled dollar expenditures versus time.
- C. CONTRACTOR hereby agrees that in the process of preparing its baseline schedule and monthly updates, it will consult with all key Subcontractors and suppliers to assure concurrence with the feasibility and achievability of CONTRACTOR’s planned start dates, sequencing, durations, and completion dates.

1.2 QUALIFICATIONS

- A. The CONTRACTOR shall demonstrate competence through the submission of a fully compliant Construction Schedule with the initial schedule submission. In the event the CONTRACTOR fails to so demonstrate competence in scheduling, the ENGINEER may direct the CONTRACTOR to employ the services of a Scheduler that can demonstrate competence. The CONTRACTOR shall comply with such directive.

1.3 SUBMITTAL PROCEDURES

A. Submittal Requirements

- 1. Schedule will be submitted on a standard drawing sheet, size 11 inches x 17 inches.
- 2. The time scale (horizontal) shall be in weeks. The activities shall be listed on the left hand side (vertical).
- 3. Activities shall be broken down into sufficient detail to show all work activities. The listing from top to bottom shall be in a logical manner of which the work will be accomplished. Space shall be provided between activities or within bars to allow for marking of actual progress.
- 4. A written narrative of the planning logic along with a description of work and quantities included in each activity shall be submitted with the bar chart schedule.
- 5. Duration: The duration indicated for each activity shall be in units of whole working days and shall represent the single best time considering the scope of the Work and resources planned for the activity including time for holidays and inclement weather. The calendar for the network shall be in calendar days. Except for certain nonlabor activities, such as curing concrete or delivering materials, activity durations shall not exceed 14 days, be less than one Day, nor exceed \$50,000 in value unless otherwise accepted by the ENGINEER.

B. Time of Submittals

1. Within fifteen (15) working days after Notice to Proceed, CONTRACTOR shall submit a bar chart schedule with "S" curves and narrative for review by the ENGINEER. The schedule submitted shall indicate a project completion date the same as the contract completion date.
2. A copy of the schedule, clearly showing progress made and actual "S" curves, shall be submitted on a two or four week basis depending on the duration of the project and reporting time agreed to in the preconstruction meeting.

C. Acceptance

1. The bar chart schedule and "S" curves, when accepted by the ENGINEER, shall constitute the Construction Schedule unless a revised schedule is required due to one or more of the following:
 - a) Substantial changes in the Work scope.
 - b) A change in contract time.
 - c) Delinquency by CONTRACTOR that requires a recovery schedule.
2. The OWNER's review and acceptance of the CONTRACTOR's Construction Schedule is for conformance to the requirements of the Contract Documents only. Review and acceptance by the OWNER of the CONTRACTOR's Construction Schedule does not relieve the CONTRACTOR of any of its responsibility whatsoever for the accuracy or feasibility of the Construction Schedule, or of the CONTRACTOR's ability to meet interim milestone dates and the Contract completion date, nor does such review and acceptance expressly or impliedly warrant, acknowledge, or admit the reasonableness of the logic, durations, and resource value loading of the CONTRACTOR's Construction Schedule.

1.4 SCHEDULE UPDATES

- A. The Construction Schedule shall be updated to reflect the as-built conditions of the Work and to accurately forecast the status of incomplete activities. Progress reports shall be given at each weekly progress meeting, stating actual percent earned versus percent planned. Construction Schedule updates shall be submitted to the ENGINEER with each payment request. Updates shall include approved changes in the Work and shall accurately depict the current status and sequence of all activities.
- B. The updated Construction Schedule shall be submitted in the form, sequence, and number of copies requested for the initial schedule.
- C. The ENGINEER shall review each monthly Construction Schedule update and provide the CONTRACTOR comments within seven days of the submittal. The CONTRACTOR shall revise and resubmit the schedule within five days of receipt of comments from the ENGINEER. The ENGINEER will review the re-submittal within five days and provide comments if the schedule update is still unacceptable. The CONTRACTOR shall revise and resubmit the schedule within five days of receipt of comments from the ENGINEER.

1.5 PROGRESS MEETINGS AND LOOK-AHEAD SCHEDULES

- A. For the weekly progress meetings, the CONTRACTOR shall submit a Look-Ahead Schedule. This schedule will cover four weeks: the immediate past week, the current week, and the forthcoming two weeks. This schedule shall list all activities from the accepted Construction Schedule which are complete, are scheduled for Work during the period, are currently planned to be worked, even if out of sequence, and Work which is unfinished but scheduled to be finished. Actual start and completion dates shall be provided for the Work that has been completed the prior week; forecast early start and early finish dates shall be provided for the Work that is in process or upcoming.
- B. Each activity noted above shall be identified by activity number corresponding to the accepted Construction Schedule and detailed description of the activity.
- C. The Look-Ahead Schedule shall be delivered to the ENGINEER 24 hours prior to the weekly progress meeting.
- D. The Look-Ahead Schedule shall be in a format approved by the ENGINEER.

1.6 CONSTRUCTION SCHEDULE REVISIONS

- A. The ENGINEER may direct and, if so directed, the CONTRACTOR shall propose, revisions to the Construction Schedule upon occurrence of any of the following instances:
 - 1. The actual physical progress of the Work falls more than five percent (5%) behind the accepted Construction Schedule, as demonstrated by comparison to the accepted monthly Construction Schedule updates or as determined by the ENGINEER if a current accepted Construction Schedule does not exist.
 - 2. The ENGINEER considers milestone or completion dates to be in jeopardy because of "activities behind schedule". "Activities behind schedule" are all activities that have not or cannot be started or completed by the dates shown in the Construction Schedule.
 - 3. A Change Order has been issued that changes, adds, or deletes scheduled activities or affects the time for completion of scheduled activities.
- B. When the instances requiring revision to the Construction Schedule occur, the CONTRACTOR shall submit the proposed revised Construction Schedule within ten (10) working days after receiving direction from the ENGINEER to provide such Schedule. No additional payment will be made to the CONTRACTOR for preparation and submittal of proposed revised Construction Schedules. However, if the ENGINEER accepts the proposed revised Construction Schedule, it shall replace and supersede all previous Construction Schedules and substitute for the next monthly Construction Schedule update that would otherwise be required.
- C. Revisions to the Construction Schedule shall comply with all of the same requirements applicable to the original schedule.

1.7 SCHEDULE RECOVERY

- A. If a revised Construction Schedule accepted by the ENGINEER requires the CONTRACTOR to employ additional manpower, equipment, hours of work or work shifts, or to accelerate procurement of materials or equipment, or any combination thereof, as schedule recovery measures to meet Contract milestones, the CONTRACTOR shall implement such schedule recovery measures without additional charge to the OWNER.

1.8 EARLY COMPLETION SCHEDULES

- A. Early completion schedules are generally not acceptable to the OWNER but may be accepted as a convenience to the CONTRACTOR and under the following conditions.
 - 1. The CONTRACTOR must submit a specific written request outlining the specific reasons for using the early completion schedule.
 - 2. CONTRACTOR acknowledges and agrees in writing that the proposed reduction in time represents Project time already paid for by the OWNER as part of the Bid Price, and available to both the CONTRACTOR and the OWNER for the mitigation of impacts to the Project from any source. The CONTRACTOR shall not be entitled to any increase in Contract price for failure to achieve the early completion and waives all claim to same.
 - 3. Early completion schedules shall not be based upon or rely on expedited approvals by the OWNER, the ENGINEER, or the ENGINEER.
 - 4. Early completion schedules must meet all other requirements of the Contract.
- B. Early completion schedules which have activities behind schedule shall be revised as and when requested by the ENGINEER.

1.9 BASIS OF SCHEDULE NARRATIVES

- A. CONTRACTOR shall furnish a basis of schedule narrative to the ENGINEER with each Application for Payment. If the Work falls behind schedule, CONTRACTOR shall submit additional narrative at such intervals as the ENGINEER may request.
- B. Each narrative shall include a summary of progress for the month, description of any current and anticipated delaying factors, a variance analysis for varying activities, impacts on the construction schedule, and proposed corrective actions. Any Work reported complete, but which is not readily apparent to the ENGINEER, must be substantiated with satisfactory evidence.
- C. Each narrative shall include a list of the activities completed during the preceding month and a list of the activities started during the month but not yet completed.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01400
QUALITY ASSURANCE/QUALITY CONTROL

PART 1 – GENERAL

1.1 SITE INVESTIGATION AND CONTROL

- A. CONTRACTOR shall check and verify all dimensions and conditions in the field continuously during construction. CONTRACTOR shall be solely responsible for any inaccuracies built into the Work due to CONTRACTOR's (including Subcontractor's) failure to comply with this requirement.
- B. CONTRACTOR shall inspect related and appurtenant Work and report in writing to the ENGINEER any conditions which will prevent proper completion of the Work. Failure to report and such conditions shall constitute acceptance of all Site conditions, and any required removal, repair, or replacement caused by unsuitable conditions shall be performed by the CONTRACTOR solely and entirely at CONTRACTOR's expense.

1.2 INSPECTION OF THE WORK

- A. All work performed by the CONTRACTOR and Subcontractors shall be inspected by the CONTRACTOR and nonconforming Work and any safety hazards in the work area shall be noted and promptly corrected. The CONTRACTOR is responsible for the Work to be performed safely and in conformance to the Contract Documents.
- B. The Work shall be conducted under the general observation of the ENGINEER and is subject to inspection by representatives of the OWNER acting on behalf of the OWNER to ensure strict compliance with the requirements of the Contract Documents. Such inspection may include mill, plant, shop, or field inspection, as required. The ENGINEER, OWNER, or any inspector(s) shall be permitted access to all parts of the Work, including plants where materials or equipment are manufactured or fabricated.
- C. The presence of the ENGINEER, OWNER, or any inspector(s), however, shall not relieve the CONTRACTOR of the responsibility for the proper execution of the Work in accordance with all requirements of the Contract Documents. Compliance is the responsibility of the CONTRACTOR. No act or omission on the part of the ENGINEER, OWNER, or any inspector(s) shall be construed as relieving CONTRACTOR of this responsibility. Inspection of Work later determined to be nonconforming shall not be cause or excuse for acceptance of the nonconforming Work. The OWNER may accept nonconforming Work when adequate compensation is offered and it is in the OWNER's best interest as determined by the OWNER.
- D. All materials and articles furnished by the CONTRACTOR or Subcontractors shall be subject to rigid documented inspection, by qualified personnel, and no materials or articles shall be used in the Work until they have been inspected and accepted by the CONTRACTOR's Quality Control representative and the ENGINEER or other designated representative. No Work shall be backfilled, buried, cast in concrete, covered, or otherwise hidden until it has been inspected. Any Work covered in the absence of inspection shall be subject to uncovering. Where uninspected Work cannot be easily

uncovered, such as in concrete cast over reinforcing steel, all such Work shall be subject to demolition, removal, and reconstruction under proper inspection.

- E. All materials and articles furnished to the CONTRACTOR by the OWNER shall be subject to rigid inspection by CONTRACTOR's Quality Control representative before being used or placed by CONTRACTOR. CONTRACTOR shall inform ENGINEER, in writing, of the results of said inspections within one working day after completion of inspection. In the event CONTRACTOR believes any material or articles provided by OWNER to be of insufficient quality for use in the Work, CONTRACTOR shall immediately notify ENGINEER.

1.3 TIME OF INSPECTION AND TESTS

- A. Samples and test specimens required under these Specifications shall be furnished and prepared for testing in ample time for the completion of the necessary tests and analyses before said articles or materials are to be used. CONTRACTOR shall furnish and prepare all required test specimens at CONTRACTOR's own expense. As provided in the Contract Documents, performance of certain tests may be by the OWNER at the sole option of the OWNER, and all costs therefore will be borne by the OWNER at no cost to the CONTRACTOR except that the costs of any test which shows unsatisfactory results shall be backcharged to the CONTRACTOR.
- B. Whenever the CONTRACTOR is ready to backfill, bury, cast in concrete, hide, or otherwise cover any Work under this Contract, the ENGINEER shall be notified not less than three Work Days in advance to request inspection before beginning any such Work of covering. Failure of the CONTRACTOR to notify the ENGINEER at least three Work Days in advance of any such inspections shall be reasonable cause for the ENGINEER to order a sufficient delay in the CONTRACTOR's schedule to allow time for such inspection. The costs of any remedial or corrective work required, and all costs of such delays, including its impact on other portions of the Work, shall be borne by the CONTRACTOR.

1.4 SAMPLING AND TESTING

- A. When not otherwise specified, all sampling and testing shall be in accordance with the methods prescribed in the current standards of the ASTM, as applicable to the class and nature of the article or materials considered. However, the ENGINEER reserves the right to use any generally-accepted system of inspection which, in the opinion of the ENGINEER, will ensure the ENGINEER that the quality of the workmanship is in full accord with the Contract Documents.
- B. The OWNER reserves the right to waive tests or quality assurance measures, but waiver of any specific testing or other quality assurance measure, whether or not such waiver is accompanied by a guarantee of substantial performance as a relief from the specified testing or other quality assurance requirements as originally specified, and whether or not such guarantee is accompanied by a performance bond to assure execution of any necessary corrective or remedial work, shall not be construed as a waiver of any technical or qualitative requirements of the Contract Documents.
- C. Notwithstanding the existence of such waiver, the OWNER shall reserve the right to make independent investigations and tests as specified in the following paragraph and failure of

any portion of the Work to meet any of the qualitative requirements of the Contract Documents, shall be reasonable cause for the OWNER to require the removal or correction and reconstruction of any such Work.

- D. In addition to any other inspection or quality assurance provisions that may be specified, the OWNER shall have the right to independently select, test, and analyze, at the expense of the OWNER, additional test specimens of any or all of the materials to be used. Results of such tests and analyses shall be considered along with the tests or analyses made by the CONTRACTOR to determine compliance with the applicable specifications for the materials so tested or analyzed provided that wherever any portion of the Work is discovered, as a result of such independent testing or investigation by the ENGINEER, which fails to meet the requirements of the Contract Documents, all costs of such independent inspection and investigation and all costs of removal, correction, reconstruction, or repair of any such Work shall be borne by the CONTRACTOR.

1.5 RIGHT OF REJECTION

- A. The ENGINEER or designated representative, acting for the OWNER, shall have the right at all times and places to reject any articles or materials to be furnished hereunder which, in any respect, fail to meet the requirements of the Contract Documents, regardless of whether the defects in such articles or materials are detected at the point of manufacture or after completion of the Work at the Site. If the ENGINEER or designated representative, through an oversight or otherwise, has accepted materials or Work which are defective or in any way contrary to the Contract Documents, such materials, no matter in what stage or condition of manufacture, delivery, or erection, may be rejected.
- B. CONTRACTOR shall promptly remove or replace rejected articles or materials from the Site of the Work after notification of rejection.
- C. All costs of removal and replacement of rejected articles or materials, as specified therein, shall be borne by the CONTRACTOR.
- D. Failure to promptly remove and replace rejected Work shall be considered a breach of this Contract and the OWNER may, after 7 days' notice, terminate the CONTRACTOR's right to proceed with the affected Work and remove and replace the Work and issue a back charge to cover the cost of the Work.

1.6 CONTRACTOR'S QUALITY ASSURANCE/QUALITY CONTROL REQUIREMENTS

- A. The CONTRACTOR shall establish and execute a Quality Assurance/Quality Control (QA/QC) program for the services which are being procured from the CONTRACTOR. The program shall provide the CONTRACTOR with adequate measures for verification and conformance to defined requirements by his personnel and lower-tier subcontractors (including fabricators, suppliers, and sub-subcontractors). This program shall be described in a Plan responsive to this Section.
- B. Within the submittal requirements of Section 01300 - Contractor Submittals, the CONTRACTOR shall furnish the ENGINEER a project specific QA/QC Plan. The Plan shall contain a comprehensive account of CONTRACTOR'S QA/QC procedures as applicable to this job. The detailed requirements for this Plan are delineated in the

following paragraphs. No payments will be made to the CONTRACTOR until the QA/QC Plan is fully accepted by the ENGINEER.

- C. The QA/QC Plan shall describe and define the personnel requirements described herein. The CONTRACTOR shall provide personnel with assigned QA/QC functions reporting to a Field QA/QC representative. The Field QA/QC representative shall report to a Senior Manager of the CONTRACTOR and shall have no supervisory or managerial responsibility over the work force. Persons performing QA/QC functions shall have sufficient qualifications, authority, and organizational freedom to identify quality problems and to initiate and recommend solutions. The CONTRACTOR QA/QC representative(s) shall be on-site as often as necessary (but not less than the daily hours specified in the Contract Documents) to remedy and demonstrate that Work is being performed properly and to make multiple observations of all Work in progress. The QA/QC Plan shall include a statement by the Senior Manager designating the QA/QC representative and specifying authorities delegated to the QA/QC representative to direct cessation or removal and replacement of defective Work.
- D. The CONTRACTOR's QA/QC program shall ensure the achievement of adequate quality throughout all applicable areas of the contract. The QA/QC Plan shall describe the program and include procedures, work instructions and records. In addition, the Plan shall describe methods relating to areas which require special testing and procedures as noted in the specifications.
- E. Identification And Control of Items And Materials: Procedures to ensure that items or materials that have been accepted at the site are properly used and installed shall be described in the QA/QC Plan. The procedures shall provide for proper identification and storage, and prevent the use of incorrect or defective materials.
- F. Inspection and Tests: The CONTRACTOR shall have written procedures defining a program for control of inspections performed and these procedures shall be described in the QA/QC Plan.
 - 1. Inspections and tests shall be performed and documented by qualified individuals. At a minimum, "qualified" shall mean having performed similar QA/QC functions on similar type projects. Records of personnel experience, training and qualifications shall be maintained and made available for review by the ENGINEER upon request.
 - 2. The CONTRACTOR shall have his independent testing laboratory email all test results directly to the ENGINEER and Park City Engineer. Inspection and test results shall be documented and evaluated to ensure that requirements have been satisfied.
- 3. Procedures shall include:
 - a. Specific instructions defining procedures for observing all Work in process and comparing this Work with the Contract requirements (organized by specification section).
 - b. Maintaining and providing Daily Inspection Reports. Such reports shall, at a minimum, include the following:
 - 1) Item(s) inspected

- 2) Quality characteristics in compliance
 - 3) Quality characteristics not in compliance
 - 4) Corrective/remedial actions taken
 - 5) Statement of certification
 - 6) QC Manager's signature
- c. Specific instructions for recording all observations and requirements for demonstrating through the reports that the Work observed was in compliance or a deficiency was noted and action to be taken.
 - d. Procedures to preclude the covering of deficient or rejected Work.
 - e. Procedures for halting or rejecting Work.
 - f. Procedures for resolution of differences between the QA/QC representative(s) and the production representative(s).
4. The QA/QC Plan shall identify all contractual hold/inspection points as well as any CONTRACTOR imposed hold/inspections points.
 5. The QA/QC Plan shall include procedures to provide verification and control of all testing provided by CONTRACTOR including:
 - a. Maintaining and providing to the ENGINEER Daily Testing Records. Such records shall, at a minimum, contain the following:
 - 1) Item(s) tested
 - 2) Quality characteristics in compliance
 - 3) Statement of correctness & certification
 - 4) Quality characteristics not in compliance
 - 5) Corrective/remedial actions taken
 - 6) QC Manager's signature
 - b. Individual test records will contain the following information:
 - 1) Item tested –item number and description
 - 2) Test results
 - 3) Test designation
 - 4) Test work sheet including location sample was obtained
 - 5) Acceptance or rejection
 - 6) Date sample was obtained
 - 7) Retest information, if applicable
 - 8) Control requirements
 - 9) Tester signature
 - 10) Testing QC staff initials
 - c. Providing for location maps for all tests performed or location of Work covered by the tests.
 - d. Maintaining copies of all test results.

- e. Ensuring ENGINEER receives independent copy of all tests.
 - f. Ensuring testing lab(s) are functioning independently and in accordance with the specifications.
 - g. Ensuring re-tests are properly taken and documented.
- G. Control of Measuring and Test Equipment: Measuring and/or testing instruments shall be adequately maintained, calibrated and adjusted to maintain accuracy within prescribed limits. Calibration shall be performed at specified periods against valid standards traceable to nationally recognized standards and documented.
- H. Supplier Quality Assurance: The QA/QC Plan shall include procedures to ensure that procured products and services conform to the requirements of the Specifications. Requirements of these procedures shall be applied, as appropriate, to lower-tier suppliers and/or Subcontractors.
- I. Deficient and Nonconforming Work and Corrective Action: The QA/QC Plan shall include procedures for handling of deficiencies and nonconformances. Deficiencies and Nonconformances are defined as documentation, drawings, material, and equipment or Work not conforming to the specified requirements or procedures. The procedure shall prevent Nonconformances by identification, documentation, evaluation, separation, disposition and corrective action to prevent recurrence. Conditions having adverse effects on quality shall be promptly identified and reported to the senior level management. The cause of conditions adverse to quality shall be determined and documented and measures implemented to prevent recurrence. In addition, at a minimum, this procedure shall address:
1. Personnel responsible for identifying deficient and non-complying items within the work.
 2. How and by whom deficient and non-compliant items are documented "in the field".
 3. The personnel and process utilized for logging deficient and non-compliant work at the end of each day onto a Deficiency Log.
 4. Tracking processes and tracking documentation for deficient and Non-Compliant items.
 5. Personnel responsible for achieving resolution of outstanding deficiencies.
 6. Once resolved, how are the resolutions documented and by whom.
- J. Special Processes And Personnel Qualifications
1. The QA/QC Plan shall include detailed procedures for the performance and control of special process (e.g. welding, soldering, heat treating, cleaning, plating, nondestructive examination, etc.).
 2. Personnel performing special process tasks shall have the experience, training and certifications commensurate with the scope, complexity, or nature of the activity. They shall be approved by the ENGINEER before the start of Work on the Project.
- K. Audits: The CONTRACTOR's QA/QC program shall provide for documented audits to verify that QA/QC procedures are being fully implemented by the CONTRACTOR as well as its subtiers. Audit records shall be made available to the ENGINEER upon request.

L. Documented Control/Quality Records

1. The CONTRACTOR shall establish methods for control of Contract Documents which describe how Drawings and Specifications are received and distributed to assure the correct issue of the document being used. The methods shall also describe how as-built data are documented and furnished to the ENGINEER.
2. The CONTRACTOR shall maintain evidence of activities affecting quality, including operating logs, records of inspections and tests, audit reports, material analyses, personnel qualification and certification records, procedures, and document review records.
3. Quality records shall be maintained in a manner that provides for timely retrieval, and traceability. Quality records shall be protected from deterioration, damage, and destruction.
4. The CONTRACTOR shall provide a list with specific records as specified in the Contract Documents which will be furnished to the ENGINEER at the completion of activities.

M. Acceptance of QA/QC Plan: ENGINEER's review and acceptance of the CONTRACTOR's QA/QC Plan shall not relieve the CONTRACTOR from any of its obligations for the performance of the Work. The CONTRACTOR's QA/QC staffing is subject to the ENGINEER's review and continued acceptance. The OWNER, at its sole option, without cause, may direct the CONTRACTOR to remove and replace the QA/QC representative. No Work covered by the QA/QC Plan shall start until ENGINEER's acceptance of CONTRACTOR's QA/QC plan has been obtained.

N. ENGINEER may perform independent quality assurance audits to verify that actions specified in CONTRACTOR's QA/QC Plan have been implemented. No ENGINEER audit finding or report shall in any way relieve CONTRACTOR from any requirements of this Contract.

1.7 TESTING SERVICES

A. All tests which require the services of a laboratory to determine compliance with the Contract Documents shall be performed by an independent commercial testing firm acceptable to ENGINEER. The testing firm's laboratory shall be staffed with experienced technicians, properly equipped and fully qualified to perform the tests in accordance with the specified standards.

B. CONTRACTOR shall have his independent testing laboratory email all test results directly to the ENGINEER and Park City Engineer.

C. CONTRACTOR's independent testing laboratory shall be accredited by the American Association of State Highway and Transportation Officials (AASHTO) for the tests they will perform and as appropriate to the construction work being performed. The CONTRACTOR's laboratory shall also be AASHTO accredited in: ASTM C1077-92, "Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation"; ASTM D3740, "Practice for

Evaluation of Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design/Construction”; and ASTM D3666, “Specifications for Minimum Requirements for Agencies Testing and Inspecting Bituminous Paving Materials”.

- D. The ENGINEER shall have the right to inspect work performed by the independent testing laboratory both at the project and at the laboratory. This shall include inspection of the independent testing laboratory’s internal quality assurance records (quality assurance manual, equipment calibrations, proficiency sample performance, etc.).
- E. CONTRACTOR shall obtain ENGINEER’s acceptance of the testing firm before having services performed, and shall pay all costs for these testing services.
- F. Testing services provided by OWNER, if any, are for the sole benefit of OWNER, however, test results shall be available to CONTRACTOR. Testing necessary to satisfy CONTRACTOR’s internal quality control procedures shall be the sole responsibility of CONTRACTOR.
- G. Testing Services furnished by CONTRACTOR: Unless otherwise specified, and in addition to all other specified testing requirements, CONTRACTOR shall provide all testing services in connection with the following materials and equipment incorporated in the Work:
 - 1. Concrete materials and mix designs.
 - 2. Embankment, fill, and backfill materials.
 - 3. QC testing of all precast concrete.
 - 4. All other tests and engineering data required for ENGINEER’s review of materials and equipment proposed to be used in the Work.
 - 5. In addition, the following QC tests shall be performed by CONTRACTOR:
 - a. Holiday testing of pipeline coatings.
 - b. Air testing of field-welded joints for steel pipe or pipe cylinders and fabricated specials.
 - c. All testing and inspection of welding work including, but not limited to, welding procedure qualifications, welder operator qualifications, all work performed by the certified welding inspector, all appropriate nondestructive testing of welds and all repair and retest of weld defects.
 - 6. Concrete strength tests.
 - 7. Moisture-density and relative density tests on embankment, fill, and backfill materials.
 - 8. In-place field density test on embankments, fills, and backfill.
 - 9. Asphalt concrete materials, compaction, and thickness.

10. Other materials and equipment as specified herein.
 11. Testing, including sampling, shall be performed by the testing firm's laboratory personnel, in general manner and frequency indicated in the Specifications.
 12. The testing firm's laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and will furnish a written report of each test.
 13. CONTRACTOR shall furnish all sample materials and cooperate in the testing activities, including sampling. CONTRACTOR shall interrupt the Work when necessary to allow testing, including sampling to be performed. CONTRACTOR shall have no claim for an increase in Contract Price or Contract Times due to such interruption. When testing activities, including sampling, are performed in the field by the testing firm's laboratory personnel, CONTRACTOR shall furnish personnel and facilities to assist in the activities.
 14. The testing firm's laboratory shall perform all laboratory tests within a reasonable time consistent with the specified standards and will furnish a written report of each test.
- H. Transmittal of Test Reports: Written reports of tests and engineering data furnished by CONTRACTOR for ENGINEER's review of materials and equipment proposed to be used in the Work shall be submitted as specified for Shop Drawings.
- I. The testing firm retained by CONTRACTOR for material testing shall furnish five copies of written report of each test. Three copies of each test report will be transmitted to the ENGINEER within three Work Days after each test is completed. Each report for each type of test shall be consecutively numbered.
- J. CONTRACTOR will furnish one copy of each field and laboratory QC test to ENGINEER.
- K. All materials testing along the waterline alignment shall be completed in accordance with the latest edition of the American Public Works Association's (APWA) minimum testing specifications.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01450
PERMITS**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall obtain permits required for the execution of work in accordance with the Contract Documents. Copies of these permits shall be provided to the OWNER.
- B. The intent of this Section is to furnish CONTRACTOR with the known list of required permits for the Work under the Contract Documents. CONTRACTOR should note that the list is not necessarily complete and that additional permit requirements may exist or arise.
- C. The CONTRACTOR shall include in the Bid the cost of obtaining all necessary permits, including application fees and other costs, and the costs of complying with the conditions of all permits. Any fees listed in this section are estimates and for CONTRACTOR information only. The CONTRACTOR shall verify and pay all actual fees.
- D. Completeness of the list is not guaranteed by the OWNER. The absence of information does not relieve the CONTRACTOR of responsibility for determining and verifying the extent of permits required and of obtaining permits.
- E. The CONTRACTOR shall submit within 30 Days of the Limited Notice to Proceed a list of all permits and licenses the CONTRACTOR shall obtain indicating the agency required to grant the permit, the expected date of submittal for the permit, and required date for receipt of the permit.

1.2 SUMMARY OF PERMITS TO BE OBTAINED BY CONTRACTOR

- A. The following permits shall be obtained by CONTRACTOR. Copies of these permits shall be submitted to ENGINEER and be held on-site. CONTRACTOR shall comply with all conditions of the permits.
 - 1. Park City Right-of-Way Permit. The CONTRACTOR shall obtain the right-of-way permit for construction within the City right-of-way and for cutting asphalt from the City Engineer.
 - 2. The CONTRACTOR shall obtain Utah Division of Environmental Protection, Storm water General Discharge Permit for Construction Activities.
 - 3. The CONTRACTOR shall obtain a partial street closure permit for the work. This permit must be submitted weekly.
 - 4. A Conditional Use Permit (CUP) is required from the planning department if a trailer will be used.
 - 5. A Conditional Use Permit (CUP) is required from the planning department and City Engineer for retaining walls over 4 feet.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

SECTION 01505 MOBILIZATION

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall mobilize according to the Contract Documents.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION

3.1 GENERAL

- A. Mobilization shall include the following principal items:
 - 1. Providing all required insurance certificates and bonds.
 - 2. Moving on to the site, or portion of site as available, of all the CONTRACTOR's plant and equipment required for first month operations including office and storage trailers.
 - 3. Installing temporary construction power, wiring, and lighting facilities.
 - 4. Developing construction water supply.
 - 5. Providing all on-site communication facilities, including telephones, cordless phone antenna, and radio pagers.
 - 6. Providing on-site sanitary facilities and potable water facilities.
 - 7. Arranging for and erection of CONTRACTOR's work and storage yard.
 - 8. Constructing and implementing security features and requirements complying with Section 01520 – Security.
 - 9. Obtaining all required permits.
 - 10. Posting all OSHA required notices and establishment of safety programs.
 - 11. Having the CONTRACTOR's Superintendent at the job site full time.
 - 12. Submitting initial submittals in accordance with Section 01300 – Contractor Submittals, Article 1.2 – Preconstruction Conference Submittal.

3.2 SUBMITTAL REQUIREMENTS

- A. The following submittals are due by the day indicated and must be approved by the OWNER as a condition precedent to completion of mobilization.

Submittal	Specification Section
1. Schedule of Submittals	01300
2. Schedule of Values	01301
3. Bar Chart Schedule	01310
4. Quality Assurance/Control Plan	01400
5. List of Permits and Licenses	01450
6. Mobilization Plan	01505
7. Contractor's Security Program	01520

3.3 MOBILIZATION PLAN

- A. Within fifteen (15) Days after receipt of the Notice to Proceed, submit a mobilization plan to the ENGINEER for approval.
- B. The mobilization plan shall include a bar chart schedule showing each item of mobilization listed in paragraphs 3.1 and 3.2 herein and shall include scheduled start date, finish dates, and total duration. The plan shall also list each activity the CONTRACTOR expects to initiate in the first 90 Days following Notice to Proceed, complete, with scheduled start date, finish date, and total duration.

3.4 PAYMENT FOR MOBILIZATION

- A. Payment for mobilization shall be as described in Section 01025 – Measurement and Payment.

END OF SECTION

**SECTION 01510
TEMPORARY UTILITIES**

PART 1 – GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall provide temporary utilities as required to provide the Work and perform the services, complete, in accordance with the Contract Documents.
- B. The types of utility services required for general temporary use at the project site include the following:
 - Water service (potable for certain uses)
 - Storm sewer
 - Sanitary sewer
 - Electric power service
 - Telephone service
 - Gas service.

1.2 JOB CONDITIONS

- A. Scheduled Uses: In conjunction with establishment of the job progress schedule, establish a schedule for implementation and termination of service for each temporary utility or facility; at earliest feasible time, and when acceptable to OWNER, change over from use of temporary utility service to permanent service.

PART 2 – PRODUCTS

2.1 MATERIALS

- A. Provide either new or used materials and equipment, which are in substantially undamaged condition and without significant deterioration and which are recognized in the construction industry, by compliance with appropriate standards, as being suitable for intended use in each case. Where a portion of temporary utility is provided for CONTRACTOR by OWNER or another utility company, provide the remainder with matching and compatible materials and equipment that comply with applicable standards and codes and requirements of OWNER and that company.

PART 3 – EXECUTION

3.1 INSTALLATION OF TEMPORARY UTILITY SERVICES

- A. General: Wherever feasible, engage the utility company to install temporary service to project, or as a minimum, to make connection to existing utility service; locate services where they will not interfere with total project construction Work, including installation of permanent utility services; and maintain temporary services as installed for required period of use; and relocate, modify or extend as necessary from time to time during that period as required to accommodate total project construction Work.

- B. Approval of Electrical Connections: All temporary connections for electricity shall be subject to approval of the ENGINEER and the power company representative, and shall be removed in like manner at the CONTRACTOR's expense prior to final acceptance of the Work.
- C. Separation of Circuits: Unless otherwise permitted by the ENGINEER, circuits separate from lighting circuits shall be used for all power purposes.
- D. Construction Wiring: All wiring for temporary electric light and power shall be properly installed and maintained and shall be securely fastened in place. All electrical facilities shall conform to the requirements of Subpart K of the OSHA Safety and Health Standards for Construction.

3.2 INSTALLATION OF POWER DISTRIBUTION SYSTEM

- A. Power: Provide all necessary power required for its operations under the Contract, and provide and maintain all temporary power lines required to perform the Work in a safe and satisfactory manner.
- B. Temporary Power Distribution: Provide a weatherproof, grounded, temporary power distribution system sufficient to accommodate performance of entire Work of project, including temporary electrical heating where indicated, operation of test equipment and test operation of building equipment and systems which cannot be delayed until permanent power connections are operable, temporary operation of other temporary facilities, including permanent equipment and systems which must be placed in operation prior to use of permanent power connections (pumps, HVAC equipment, elevators, and similar equipment), and power for temporary operation of existing facilities (if any) at the site during change-over to new permanent power system. Provide circuits of adequate size and proper power characteristics for each use; run circuit wiring generally overhead, and rise vertically in locations where it will be least exposed to possible damage from construction operations, and result in least interference with performance of the Work; provide rigid steel conduit or equivalent raceways for wiring which must be exposed on grade, floors, decks, or other recognized exposures to damage or abuse. All temporary construction power wiring shall be on a Ground Fault Installation System.

3.3 INSTALLATION OF LIGHTING

- A. Construction Lighting: All Work conducted at night or under conditions of deficient daylight shall be suitably lighted to insure proper Work and to afford adequate facilities for inspection and safe working conditions. All construction lighting shall be hooded and directed downward away from residences.
- B. Temporary Lighting: Provide a weatherproof, grounded temporary lighting system in every area of construction work, as soon as overhead floor/roof deck structure has been installed; and provide sufficient illumination for safe work and traffic conditions; and run circuit wiring generally overhead, and rise vertically in locations where it will be least exposed to possible damage from construction operations on grade, floors, decks, or other recognized areas of possible damage or abuse.

3.4 WATER SUPPLY

- A. Water Connections: The CONTRACTOR shall not make connection to, or draw water from, any fire hydrant or pipeline without first obtaining a permit and meter/backflow preventer from Park City Public Utilities. Park City will not charge for construction water.

3.5 INSTALLATION OF GAS SERVICE

- A. Gas Service: The CONTRACTOR may install gas service and distribution piping, in lieu of electricity, of size adequate for temporary heating of enclosed construction Work, construction offices, toilets, fabrication shops and similar temporary facilities requiring heat.

3.6 COMMUNICATIONS

- A. Telephone Services: Provide and maintain at all times during the progress of the Work a cellular telephone system or radio pager system which will allow the OWNER OR ENGINEER telephone access to the CONTRACTOR and staff.

END OF SECTION

**SECTION 01520
SECURITY**

PART 1 – GENERAL

1.1 SECURITY PROGRAM

- A. CONTRACTOR shall be responsible for controlling all access to active construction areas. However, CONTRACTOR shall not unreasonably limit the personnel of OWNER, ENGINEER, and the operations and maintenance groups from performing their assigned duties. Temporary access limitations will be identified to ENGINEER and the operations and maintenance groups at least 24 hours prior to such limitation.
- B. The CONTRACTOR shall:
1. Protect Work and existing premises, including the field office trailers and their contents, from theft, vandalism, and unauthorized entry during working and non-working hours.
 2. Initiate the security program at job mobilization.
 3. Maintain the security program throughout construction period.
 4. Lighting will be limited to basic safety and security requirements, and shielded when possible.
 5. CONTRACTOR and its Subcontractors are wholly responsible for the security of their storage compound and lay down area, and for all their plant material, equipment, and tools at all times.
 6. Provide ENGINEER with a list of 24-hour emergency phone numbers.
 7. Prohibit firearms for the Site.
 8. Prohibit dogs from the Site, with the exception of those clearly used for security purposes within fenced areas.

1.2 ENTRY CONTROL

- A. The CONTRACTOR shall:
1. Restrict entry of unauthorized persons and vehicles into Project Site.
 2. Allow entry only to authorized persons with proper identification.

NOTE: CONTRACTOR has the right to refuse access to the Site or require that a person or vehicle be removed from the Site if found violating any of the Project Rules.

PART 2 – PRODUCTS (Not Used)
PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01530
PROTECTION OF EXISTING FACILITIES**

PART 1 – GENERAL

1.1 GENERAL

- A. The CONTRACTOR shall protect all existing utilities and improvements not designated for removal and shall restore damaged or temporarily relocated utilities and improvements to a condition equal to or better than they were prior to such damage or temporary relocation, in accordance with the Contract Documents.
- B. Verify the exact locations and depths of all utilities indicated and make exploratory excavations of all utilities that may interfere with the Work. All such exploratory excavations shall be performed as soon as practicable after award of the contract and, in any event, a sufficient time in advance of construction to avoid possible delays to the CONTRACTOR's work. When such exploratory excavations show the utility location as shown to be in error, so notify the ENGINEER.
- C. The number of exploratory excavations required shall be that number which is sufficient to determine the alignment and grade of the utility.
- D. Call BlueStakes before commencing any digging for location of underground utility lines and cable locations. The number is (800) 662-4111.

1.2 RIGHTS-OF-WAY

- A. Do not do any work that would affect any oil, gas, sewer, or water pipeline; any telephone, telegraph, or electric transmission line; any fence; or any other structure, nor enter upon the rights-of-way involved until notified by the ENGINEER that the OWNER has secured authority therefore from the proper party. After authority has been obtained, give said party due notice of its intention to begin work, if required by said party, and remove, shore, support or otherwise protect such pipeline, transmission line, ditch, fence, or structure or replace the same. When two or more contracts are being executed at one time on the same or adjacent land in such manner that work on one contract may interfere with that on another, the OWNER shall determine the sequence and order of the Work. When the territory of one contract is the necessary or convenient means of access for the execution of another contract, such privilege of access or any other reasonable privilege may be granted by the OWNER to the CONTRACTOR so desiring, to the extent, amount, in the manner, and at the times permitted and in full conformance with the conditions of the Contract Documents. No such decision as to the method or time of conducting the Work or the use of territory shall be made the basis of any claim for delay or damage, except as provided for temporary suspension of the Work in the General Conditions of the Contract.

1.3 PROTECTION OF STREET OR ROADWAY MARKERS

- A. Do not destroy, remove, or otherwise disturb any existing survey markers or other existing street or roadway markers without proper authorization. No pavement breaking or excavation shall be started until all survey or other permanent marker points that will be disturbed by the construction operations have been properly referenced. All survey

markers or points disturbed by the CONTRACTOR shall be accurately replaced after all street or roadway resurfacing has been completed according to Park City standards.

1.4 RESTORATION OF PAVEMENT

- A. General: All paved areas cut or damaged during construction shall be replaced with similar materials and of equal thickness to match the existing adjacent undisturbed areas, except where specific resurfacing requirements have been called for in the Contract Documents or in the requirements of the agency issuing a permit. All pavement shall conform to the requirements of the plans and specifications. All pavements which are subject to partial removal shall be neatly saw cut in straight lines.
- B. Temporary Resurfacing: Wherever required by the public authorities having jurisdiction, place temporary surfacing promptly after backfilling and shall maintain such surfacing for the period of time fixed by said authorities before proceeding with the final restoration of improvements.
- C. Permanent Resurfacing: In order to obtain a satisfactory junction with adjacent surfaces, saw cut back and trim the edge so as to provide a clean, sound, vertical joint before permanent replacement of an excavated or damaged portion of pavement. Damaged edges of pavement along excavations and elsewhere shall be trimmed back by saw cutting in straight lines. All pavement restoration and other facilities restoration shall be constructed to finish grades compatible with adjacent undisturbed pavement.
- D. Restoration of Sidewalks or Private Driveways: Wherever sidewalks or private roads have been removed for purposes of construction, place suitable temporary sidewalks or roadways promptly after backfilling and shall maintain them in satisfactory condition for the period of time fixed by the authorities having jurisdiction over the affected portions before proceeding with the final restoration or, if no such period of times is so fixed, maintain said temporary sidewalks or roadways until the final restoration thereof has been made.

1.5 EXISTING UTILITIES AND IMPROVEMENTS

- A. General
 - 1. CONTRACTOR shall protect, shore, brace, support, and maintain all underground pipes, conduits, drains, and other underground construction uncovered or otherwise affected by his construction operations. All pavement, surfacing, driveways, curbs, walks, buildings, utility poles, guy wires, fences, and other surface structures affected by construction operations, shall be restored to their original condition, whether within or outside the easement. All replacements shall be made with new materials.
 - 2. It shall be the CONTRACTOR's responsibility to ascertain the actual location of all existing utilities and other improvements that will be encountered in its construction operations, and to see that such utilities or other improvements are adequately protected from damage due to such operations. Take all possible precautions for the protection of unforeseen utility lines to provide for uninterrupted service and to provide such special protection as may be necessary.

3. Before commencement of excavations, CONTRACTOR shall notify Blue Stakes, and comply with state and local laws.
- B. Right of Access: The right is reserved to the OWNER and to the owner's of public utilities and franchises to enter at any time upon any public street, alley, right-of-way, or easement for the purpose of making changes in their property made necessary by the Work of this Contract.
 - C. Underground Utilities: All existing utility lines and service laterals or utilities constructed during project operations shall be protected from damage during excavation, backfilling, and other construction activities and, if damaged, shall be immediately repaired or replaced by the CONTRACTOR at no additional cost.
 - D. A written report shall be made immediately to the ENGINEER for any utilities damaged by the CONTRACTOR.
 - E. Damages
 1. CONTRACTOR shall be responsible for all damage to streets, roads, highways, shoulders, ditches, embankments, culverts, bridges, and other public or private property, regardless of location or character, which may be caused by transporting equipment, materials, or men to or from the Work or any part or Site thereof, whether by him or his Subcontractors. CONTRACTOR shall make satisfactory and acceptable arrangements with the owner of, or the agency or authority having jurisdiction over, the damaged property concerning its repair or replacement or payment of costs incurred in connection with the damage.
 2. The CONTRACTOR will be paid for the reconstruction of damaged roadway if the ENGINEER deems the CONTRACTOR took all reasonable measures necessary to protect the existing roadway.
 - F. Approval of Repairs: All repairs to a damaged utility or improvement are subject to inspection and approval by an authorized representative of the utility or improvement OWNER before being concealed by backfill or other work.
 - G. Fire Hydrants: All fire hydrants and water control valves shall be kept free from obstruction and available for use at all times.
 - H. Maintaining in Service: All oil and gasoline pipelines, power, and telephone or the communication cable ducts, gas and water mains, irrigation lines, sewer lines, storm drain lines, poles, and overhead power and communication wires and cables encountered along the line of the Work shall remain continuously in service during all the operations under the Contract, unless other arrangements satisfactory to the ENGINEER are made with the owner of said pipelines, duct, main, irrigation line, sewer, storm drain, pole, or wire or cable. The CONTRACTOR shall be responsible for and shall repair all damage due to its operations, and the provisions of this Section shall not be abated even in the event such damage occurs after backfilling or is not discovered until after completion of the backfilling.
 - I. Any trenching greater than 30" depth (vertical) and within 60" (horizontal) from RMP'S existing facilities may require a temporary hold of these facilities during construction phase. The associated cost with the temporary hold will be the contractor's responsibility

for payment. The contractor will be required to coordinate with RMP, as to their construction schedule and provide adequate time for RMP to schedule equipment and personal for any necessary temporary hold of RMP equipment. All requests for temporary holds will require a minimum of 72 hours notification from the contractor.

1.6. UNFAVORABLE CONSTRUCTION CONDITIONS

- A. During unfavorable weather, wet ground, or other unsuitable construction conditions, CONTRACTOR shall confine his operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would affect adversely the quality or efficiency thereof, unless special means or precautions are taken by CONTRACTOR to perform the Work in a proper and satisfactory manner.

1.7 DAMAGE TO EXISTING PROPERTY

- A. CONTRACTOR will be held responsible for any damage to existing structures, Work, materials, or equipment because of his operations and shall repair or replace any damaged structures, Work, materials, or equipment to the satisfaction of, and at no additional cost to, OWNER.
- B. CONTRACTOR shall protect all existing structures and property from damage and shall provide bracing, shoring, or other Work necessary for such protection.
- C. CONTRACTOR shall be responsible for all damage to streets, roads, curbs, sidewalks, highways, shoulders, ditches, embankments, culverts, bridges, or other public or private property, which may be caused by transporting equipment, materials, or men to or from the Work. CONTRACTOR shall make satisfactory and acceptable arrangements with the agency having jurisdiction over the damaged property concerning its repair or replacement.

1.8 NOTIFICATION BY THE CONTRACTOR

- A. Prior to any excavation in the vicinity of any existing underground facilities, including all water, sewer, storm drain, gas, petroleum products, or other pipelines; all buried electric power, communications, or television cables; all traffic signal and street lighting facilities; and all roadway and state highway rights-of-way, notify the owners or agencies responsible for such facilities not less than three days nor more than seven days prior to excavation so that a representative of said owner or agencies can be present during such Work if they so desire.
- B. When it is necessary to temporarily deny access to property, or when any utility service connection must be interrupted, CONTRACTOR shall give notices sufficiently in advance to enable the affected persons to provide for their needs. Notices shall conform to any applicable local ordinance and, whether delivered orally or in writing, shall include appropriate information concerning the interruption and instructions on how to limit inconvenience caused thereby.
- C. CONTRACTOR shall post a notice to the public in two local daily newspapers advising the public of the project boundaries including a scale map showing the project area and suggested detour routes, the project time limits, the General Contractor's name, and the

need to be alert for construction signs and traffic control. The notice, dimensioned 3" x 5" minimum, shall appear once fourteen days prior to the start of Work and continuously for seven days beginning five days before the start of Work.

- D. CONTRACTOR shall contact, cooperate with, and provide written notice (including the CONTRACTOR's phone number) at least seven days prior to beginning Work on each street. The written notice shall include the approximate schedule and explanation of Work and shall be given to each homeowner, business, all emergency agencies, schools, and residents which will be affected by the project; particularly in reference to temporary interruptions to vehicular access. At least twenty-four hours prior to initiation of Work, a second notice shall confirm the scope of scheduled Work. A copy of the notifications shall be submitted to the ENGINEER, for approval, prior to the start of construction. Verbal door-to-door communication shall be made prior to construction to remind all affected parties of the construction to take place. In addition, CONTRACTOR is responsible to answer and resolve any conflicts that may arise between a homeowner or business owner and himself during the construction process. CONTRACTOR shall be responsible to maintain adequate dust control measures and to protect the private property along the roadway construction.
- E. CONTRACTOR shall log all complaints from residents and property owners, and notify the ENGINEER, project public involvement representative, and Park City. All complaints must be addressed within 24 hours. All complaints must be discussed at each project meeting.
- F. CONTRACTOR shall maintain a written record of all notices, along with names, addresses and dates of distribution. Copies of the record shall be provided to the OWNER at the time notices are distributed.
- G. CONTRACTOR shall minimize interaction with the public and media. CONTRACTOR shall refer questions and comments from the public or media to the OWNER at Park City Municipal Corporation, except that this requirement shall not nullify CONTRACTOR's responsibility to notify impacted residents or businesses.

1.9 TRAFFIC CONTROL

- A. CONTRACTOR shall provide, place, and maintain VMS electronic boards announcing the project 2 weeks prior to beginning construction.
- B. CONTRACTOR shall provide flagging operations when restricting access to one lane. The flagging operations must be flexible to adjust for traffic needs. Accommodations for all traffic including passenger vehicles, other construction project equipment, bicyclists, etc. must be accommodated during all lane restrictions and considered for all traffic delays. Keep roadway swept and free of debris.

- C. Road closures are allowed with the following conditions:
1. Contractor must demonstrate that closure is necessary to perform the work.
 2. Road closure permit must be obtained from the City.
 3. Emergency services must be notified of the closure.
 4. The closure must be limited to the length of work that will be accomplished during the day of the closure. Secondary work areas will require at least one open lane and a flagging operation. Closing Lowell Avenue for the entire project length will not be allowed.
 5. Lane closures are not allowed overnight or on weekends. Provide a minimum of two 10 foot wide lanes at these times.
- D. CONTRACTOR shall provide two 10 foot wide unobstructed lanes from 7 PM to 7 AM every night and from Friday 7 PM to Monday 7 AM, unless approval from the ENGINEER is received. No traffic control devices may be present inside the right-of-way unless at the designated storage area. Any vertical drop greater than 1/2 foot and steeper than 4:1 is considered an obstruction and must be mitigated.
- E. CONTRACTOR is required to: maintain vehicle access for emergency vehicles, fire trucks, ambulances, and police vehicles; provide barricades, and flagmen as necessary while working all areas; and in particular, at intersections on the project; complete roadway delineation within five days of pavement completion. Excavation openings which isolate businesses, schools, and other areas as specified by ENGINEER shall be provided with an approved bridge system capable of withstanding traffic loads to these areas. No road or business driveway may be closed without the approval of ENGINEER unless CONTRACTOR has received written authorization from the OWNER affected.
- F. Prior to the date set for the preconstruction conference, CONTRACTOR shall submit his proposed "Traffic Control and Barricading Plans", to the ENGINEER, and the City Engineer. The plan shall address traffic control during each portion of Work.
- G. Temporary access during construction shall be provided with asphaltic concrete surface, minimum of 2 inch thick or untreated base course, minimum of six-inches thick. Disturbed areas between the north end of the project and roadway station 15+80 must have temporary asphalt in place prior to June 15, 2016. Temporary surfacing is incidental to other items of work and no separate payment will be made.
- H. The profile grades of all temporary driveway access, both commercial and residential, will be such that a vehicle with minimum legal clearance will not "bottom-out" at a speed of five miles per hour. Contractor is required to provide temporary ramps in and out of driveways overnight and on weekends if required.
- I. Work is only allowed on one driveway at a time at all businesses or residences with multiple accesses. Coordinate with businesses at least 7 days prior to driveway work.
- J. Construct driveways in two segments to maintain access if width allows.
- K. Contractor shall notify residents that parking is not allowed in Park City Mountain Resort parking lots. Contractor parking is also not allowed in these lots.

- L. Flagmen must be used to assist trucks or equipment for safe ingress and egress whenever truck movements may interfere with travel lanes or safe passage through the Work zone. Flagmen shall also be used whenever the Contracting Agency or ENGINEER deems it necessary.
- M. CONTRACTOR will be required to accommodate mail delivery, other deliveries, refuse collection, school busing, and all other regularly scheduled services within the project area.
- N. CONTRACTOR shall be responsible for the public's safety in relation to the job. If any situation is found or deemed to be unsafe, ENGINEER shall direct CONTRACTOR to take the appropriate measures to improve the situation and make it safe.
- O. CONTRACTOR shall not shut off the utility supply to any residence, or hydrant, nor in any way prevent access to a fire hydrant until they have secured permission to do so from the proper authorities and the OWNER.
- P. When CONTRACTOR's construction operations encroach upon a sidewalk, walkway, or crosswalk area, CONTRACTOR shall take special precautions to protect the pedestrian's safety including provisions to separate pedestrian traffic from the Work area and vehicular traffic.

1.10 TRAFFIC CONTROL DEVICES

- A. All traffic control devices that are not in use or will not be used for a period greater than 24 hours shall be removed by CONTRACTOR from the public right-of-way. All traffic control devices that are determined by ENGINEER to be unnecessary, confusing, or causing an unsafe condition, shall be removed by CONTRACTOR from the public right-of-way immediately upon notification by ENGINEER. CONTRACTOR shall not, at any time, use any area within the right-of-way to store unused barricades unless the area is closed and an approved barricade plan is provided for rerouting traffic.
- B. CONTRACTOR shall maintain all barricades and other traffic control devices in clean and effective condition. CONTRACTOR shall replace poorly maintained devices immediately upon notification by ENGINEER.

1.11 TRAFFIC CONTROL AND BARRICADE PLAN

- A. CONTRACTOR shall submit "Traffic Control and Barricade Plans" to ENGINEER for approval. The "Traffic Control Plan" shall address traffic control for each section of Work.
 - 1. As an absolute minimum, for each phase of the construction, the Traffic Control and Barricade plan shall show placement and spacing of all the traffic control devices (including signs, markings, channelizing devices, lighting devices, flagmen, etc.) and their spacing within the following traffic control areas:
 - a. Advance Warning Signs
 - b. Transition Areas
 - c. Buffer Spaces
 - d. Work Areas
 - e. Termination Areas.

2. Additionally, the traffic control and barricade plans must clearly show the following minimum requirements:
 - a. Method for protecting excavations, work sites and school zone crosswalks;
 - b. Method of barricading at intersections;
 - c. Driveway access plan;
 - d. Provisions for emergency vehicle access;
 - e. All set-up changes to accommodate different phasing of the work;
 - f. Lane widths and transitions;
 - g. 24-hour emergency telephone number;
 - h. Business access signs;
 - i. Sidewalk closed / cross here signs;
 - j. No parking signs;
 - k. Project signs;
 - l. Fresh oil signs;
 - m. Duration of traffic control and barricade plan;
 - n. All advance warning signs;
 - o. Delineation patterns, lengths, etc., including laterals;
 - p. All regulatory signs;
 - q. Location of flagmen.
- B. There shall be no deviations from the approved barricade plan unless a revised barricade plan is submitted and approved. The submittal shall be made at least 15 working days prior to the need for the proposed revision.
- C. CONTRACTOR shall begin placing the barricades in the direction of traffic. CONTRACTOR shall remove the barricades in a direction opposing traffic.
- D. CONTRACTOR shall provide ENGINEER with information relative to the Subcontractor for barricade control, including name of firm, address of firm, telephone number of firm, name of responsible agent for this project and a 24-hour number for emergency responses.
- E. The "Traffic Control and Barricade Plan" must be carried out to ENGINEER's satisfaction and all necessary traffic control devices for each section of Work installed according to the approved plans before construction on that section of Work begins.
- F. Traffic control may need to be adjusted on site if the planned configuration does not function adequately. CONTRACTOR shall coordinate with the ENGINEER, field adjust traffic control devices, and revise the "Traffic Control and Barricade Plan" so that traffic moves safely around and through the project.
- G. Barricades which significantly restrict the flow of traffic or access shall not be placed before nor left in place any longer than is absolutely necessary to protect the Work actually in progress. For example, when preparing to adjust manholes and valve lids, it has been customary to barricade long stretches of useful pavement even when the adjustment work may take two to three weeks, working from one end to the other. This specification requires that in this example the restricted area be reduced to several days' Work. Barricades shall not be placed sooner than the afternoon prior to the actual beginning of Work, nor shall

they remain in place longer than one day after completion of the Work. CONTRACTOR is reminded that meeting this objective will require:

1. Careful and reliable scheduling of Work
2. Careful coordination with barricade crew.

H. It is likely that it will also require the barricade crew to:

1. Respond on short notice
2. Perform placement/removal during off-hours.

I. Failure to meet this requirement may require ENGINEER to take special measures to assure that reliable work scheduling and coordination is being achieved. For instance, ENGINEER may permit barricades to be placed early in the morning of the day Work is scheduled only after ENGINEER is assured the Work crew(s) will be dispatched to the Site that day.

1.12 REQUIRED PROTECTION FOR OPEN EXCAVATIONS AND EQUIPMENT DURING NON-WORKING HOURS

- A. Any open trench excavation farther than 30 feet and less than 300 feet from any building or roadway shall be fenced and plated.
- B. Barrier rails and fencing may be required, during working hours, at the direction of the ENGINEER, in the interest of public safety.
- C. All equipment shall be fenced during non-working hours.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01550
SITE ACCESS AND STORAGE**

PART 1 – GENERAL

1.1 ROADWAY AND TRAFFIC LIMITATIONS

- A. The CONTRACTOR shall investigate the condition of available public and private roads and of clearances, restrictions, bridge load limits, and other limitations affecting transportation and ingress and egress to the site of the Work. The CONTRACTOR shall comply with the provisions specified in the Traffic Management Plan. It shall be the CONTRACTOR'S responsibility to modify, maintain, remove, and restore to preconstruction condition any storage areas used for the project.
- B. A maximum speed limit of 10 mph shall be maintained while on the construction site.
- C. All CONTRACTOR vehicles shall be confined to the designated construction area. Cross-country travel is prohibited.
- D. Contractor vehicles and equipment are not allowed to use driveways to turn around.

1.2 TEMPORARY CROSSINGS

- A. General: Continuous, unobstructed, safe, and adequate pedestrian and vehicular access shall be provided to fire hydrants, commercial and industrial establishments, churches, schools, parking lots, service stations, motels, fire and police stations, and hospitals. Safe and adequate public transportation stops and pedestrian crossings at intervals not exceeding 300 feet shall be provided. Cooperate with parties involved in the delivery of mail and removal of trash and garbage so as to maintain existing schedules for such services. Vehicular access to residential driveways shall be maintained to the property line except when necessary construction precludes such access for reasonable periods of time.
- B. Street Use: Nothing herein shall be construed to entitle the CONTRACTOR to the exclusive use of any public street, alleyway, or parking area during the performance of the Work hereunder, and it shall so conduct its 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. Where excavation is being performed in primary streets or highways, one lane in each direction shall be kept open to traffic at all times unless otherwise indicated. Toe boards shall be provided to retain excavated material if required by the ENGINEER or the agency having jurisdiction over the street or highway. Fire hydrants on or adjacent to the Work shall be kept accessible to fire-fighting equipment at all times. Temporary provisions shall be made to assure the use of sidewalks and the proper functioning of all gutters, storm drain inlets, and other drainage facilities.
- C. Traffic Control: For the protection of traffic in public or private streets and ways, 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).

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. Station such guards or flaggers and 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.

- D. Temporary Street Closure: If closure of any street is required during construction, the CONTRACTOR shall apply in writing to the authority having jurisdiction to obtain a closure permit. The CONTRACTOR shall provide at least 48 hours notice to affected residents prior to any permitted closure. and provide all closure and detour signage. Overnight and weekend closures are not allowed.

1.3 CONTRACTOR'S WORK AND STORAGE AREA

- A. The OWNER will designate as indicated in the Contract Documents, a portion of the property adjacent to the Work for its use during the term of the Contract as a storage and shop area for its construction operations relative to this Contract. The CONTRACTOR will provide a plot plan of intended storage/work area use to the ENGINEER.
- B. The CONTRACTOR shall make its own arrangements for any necessary off-site storage or shop areas necessary for the proper execution of the Work.
- C. Nothing herein shall imply that the CONTRACTOR has exclusive use of roadways or public and/or private land employed to perform the Work.
- E. The area indicated on the plans at the South end of Lowell Avenue near the bend cannot be used to store materials that require constant access to reduce equipment noise in the area. It is suggested that this area might be suitable for a project office.

1.4 PARKING/CONSTRUCTION TRAILER

The CONTRACTOR shall:

1. Direct its employees to park in areas to keep streets and Site clear. Only three employee vehicles will be allowed on the project site in the designated storage areas. Make arrangements to carpool. Parking in Park City Mountain Resort lots is not allowed.
2. Traffic and parking areas shall be maintained in a sound condition, free of excavated material, construction equipment, mud, and construction materials. The CONTRACTOR shall repair breaks, potholes, low areas which collect standing water, and other deficiencies.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01560
TEMPORARY ENVIRONMENTAL CONTROLS**

PART 1 – GENERAL

1.1 EXPLOSIVES AND BLASTING

- A. The use of explosives on the Work will not be permitted.

1.2 DUST ABATEMENT

- A. Furnish all labor, equipment, and methods required to prevent, control, and mitigate fugitive dust from CONTRACTOR's activities. In complying with this requirement, the CONTRACTOR shall conform to all local requirements in all circumstances. The CONTRACTOR shall be responsible for damage resulting from dust generated by its activities. Dust abatement measures shall be continued until the ENGINEER relieves the CONTRACTOR of further responsibility. Dust control will be required on weekends and holidays. Costs for dust control are incidental to other items of work and will not be paid separately.

1.3 RUBBISH CONTROL

- A. CONTRACTOR shall place all litter, trash, garbage, construction debris, and refuse in scavenger-proof, resealable containers. Trash includes, but is not limited to, cigarettes, cigars, gum wrappers, tissue, cans, paper, and bags. During the progress of the Work, keep the Site of the Work and other areas used by it in a neat and clean condition, and free from any accumulation of rubbish. Dispose of all rubbish and waste materials of any nature occurring at the Work Site, and establish regular intervals of collection and disposal of such materials and waste. Each trash container shall be emptied when full or weekly, whichever comes first. Keep haul roads free from dirt, rubbish, and unnecessary obstructions resulting from its operations. Disposal of all rubbish and surplus materials shall be off the Site of construction in accordance with local codes and ordinances governing locations and methods of disposal, and in conformance with all applicable safety laws, and to the particular requirements of Part 1926 of the OSHA Safety and Health Standards for Construction.
- B. The CONTRACTOR shall clean up and properly dispose of any oil, fuel, and other equipment leaks at the time of occurrence. Service/maintenance vehicles shall carry a bucket and pads to absorb leaks and spills. CONTRACTOR shall notify ENGINEER of any spills or leaks at the time of occurrence.

1.4 SANITATION

- A. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of employees. Toilets at construction job sites shall conform to the requirements of Part 1926 of the OSHA Standards for Construction.
- B. Sanitary and Other Organic Wastes: Establish a regular collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the CONTRACTOR or organic material wastes from any other source related to the

CONTRACTOR's operations shall be disposed of away from the Site in a manner satisfactory to the ENGINEER and in accordance with all laws and regulations pertaining thereto.

1.5 CHEMICALS

- A. All chemicals used during project construction or furnished for project operation, whether soil sterilant, pesticide, disinfectant, polymer, reactant or of other classification, shall show approval of either the U.S. Environmental Protection Agency or the U.S. Department of Agriculture. Use of all such chemicals and disposal of residues shall be in strict accordance with the printed instructions of the manufacturer.
- B. Herbicides, pesticides, and SDWA regulated compounds shall not be used unless prior approval is obtained. If CONTRACTOR decides that herbicides are needed, the CONTRACTOR shall submit a written request specifying the type of herbicide to be used to the ENGINEER. The OWNER shall obtain written approval to use the herbicide from the U.S. Fish and Wildlife Service. The ENGINEER shall notify the CONTRACTOR if approval has been obtained.

1.6 FIRE PREVENTION

- A. Fire Reporting: There shall be readily available telephone service to the Site of the Work. Appropriate telephone numbers shall be conspicuously posted near each telephone. Instructions shall be issued to notify the proper authorities immediately in case of fire.
- B. Access for Fire Fighting: Every building adjacent to the Work shall be accessible to fire department apparatus by way of access roadways.

Access roadways shall not be obstructed in any manner, including parking vehicles. "No Parking" signs or other appropriate notice, or both, prohibiting obstruction may be required.

Access for use of heavy fire fighting equipment shall be provided to the immediate job site at the start of the Contract and maintained until completion.

C. General Fire Prevention Provisions

- 1. Smoking. Smoking shall be prohibited at all times in the underground excavations and at or in the vicinity of hazardous operations or combustible/flammable materials. "No Smoking" signs shall be posted in these areas.
- 2. Refueling. Special care shall be taken to prevent fires when refueling equipment.
- 3. Oil Filters, Cartridges, and Oily Rags. Used and discarded oil filters, cartridges, and oil rags or waste shall be removed from the Site and disposed of properly.
- 4. Storage of Flammables. Glass jugs or bottles shall not be used as storage containers for flammable materials. Gasoline, oil, grease, and other highly flammable materials shall be stored either in a separate building, or at a site where all debris is cleared within a radius of 25 feet. Storage buildings or sites shall be a minimum distance of 50 feet from other structures. Storage buildings shall be

adequately posted with highly visible signs to warn of the flammables and to prohibit smoking in or around the buildings.

5. Welding. Welding shall be accomplished in service areas when possible. If welding at field locations is required, all flammable materials shall be cleared for a distance of 15 feet around the area.

1.7 CULTURAL RESOURCES

- A. The CONTRACTOR's attention is directed to the National Historic Preservation Act of 1966 (16 U.S.C. 470) and 36 CFR 800 and NRS 383.121 which provide for the preservation of potential historical architectural, archaeological, or cultural resources (hereinafter called "cultural resources").
- B. Conform to the applicable requirements of the National Historic Preservation Act of 1966 and NRS 383.121 as they relate 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 shall issue a Field Order directing the CONTRACTOR to cease all construction operations at the location of such potential cultural resources find. The area shall be marked by the CONTRACTOR in an appropriate manner to ensure that all construction equipment, activities, and personnel remain clear of the area until further notice.
 2. The ENGINEER shall notify the OWNER of the find. The OWNER shall retain a qualified archaeologist to evaluate the find, and, in consultation with the State Historic Preservation Office, determine if any additional mitigation is required. The OWNER shall implement any required study or removal. The ENGINEER shall notify the CONTRACTOR when the mitigation is complete and construction in the affected area can resume.

1.8 AIR QUALITY

- A. The CONTRACTOR shall maintain all vehicles and equipment in proper tune.
- B. The CONTRACTOR shall use Best Available Control Technology on construction equipment, including a timing retardation.
- C. The CONTRACTOR shall use natural-gas powered construction equipment where possible.
- D. The CONTRACTOR shall encourage employee car-pooling.

1.9 NOISE

- A. The CONTRACTOR shall comply with the hours of Work as allowed by the local jurisdiction or land management agency.

- B. Noise limits on construction equipment will comply with the noise limits of the local jurisdiction or land management agency. All construction equipment shall be equipped with manufacturer's standard noise control devices (i.e., mufflers, acoustical lagging, and/or engineer enclosures). The CONTRACTOR shall take special care not to throttle the engine excessively and shall keep engine speed as low as possible. The CONTRACTOR shall not leave the equipment running or idling needlessly, especially when near noise-sensitive land uses. Noise-sensitive land uses include, but are not limited to, residences, schools, hospitals, libraries, retirement and elderly care centers, religious and worship facilities, courts of law, certain noise-sensitive professional offices, and quiet recreational areas such as campgrounds and hiking trails.
- C. The CONTRACTOR shall use newer equipment whenever possible. The CONTRACTOR shall inspect all construction equipment at periodic intervals to ensure proper maintenance and the presence of noise control devices (i.e., mufflers and shrouding, etc.)
- D. Heavy, noisier equipment shall not come closer than 100 feet to the property line of any noise-sensitive land use for any length of time, and shall avoid coming closer than 200 feet if multiple pieces of equipment are operating simultaneously. If such cases are unavoidable, the CONTRACTOR shall avoid throttling the engine excessively or leaving the equipment running needlessly. Heavy equipment will be operated in a manner to comply with the City's noise ordinance and vibration performance standard. In order to comply with these requirements, it may be necessary to operate heavy equipment only 30 minutes out of each one hour period at distances closer than 200 feet from an occupied property. During the remaining 30 minutes, the equipment should move further away or be shut down, but may resume 30 minutes later.
- E. The CONTRACTOR shall locate stationary noisy equipment away from construction boundaries that are near noise-sensitive uses.
- F. Concrete trucks shall perform initial mixing and other activities that require high-revving of the truck engine a minimum of 600 feet from noise-sensitive land uses. Engine revolutions per minute shall be kept as low as possible at closer distances.
- G. Electric hand tools shall be used instead of gas-powered, whenever possible.
- H. If dewatering pumps and generators are required to be operated between the hours of 6 p.m. and 7 a.m. within 600 feet of a noise-sensitive land use, they shall be treated with acoustical noise control measures (e.g., mufflers, shrouding, and/or enclosures) so as not to exceed 56 dba at 50 feet or other appropriate requirements of the local jurisdiction.
- I. If requested by the ENGINEER, the CONTRACTOR shall install temporary noise barriers for construction activities, including staging areas, that occur closer than 100 feet from noise-sensitive land uses. Noise barriers can be made of plywood, heavy vinyl curtain material, natural or temporary earth berms, or stockpiles of construction material.

1.10 CONTROL OF SURFACE WATER

- A. All control of surface water shall conform with the requirements of CONTRACTOR obtained discharge permit identified in Section 01450 – Permits.
- B. CONTRACTOR is advised that portions of the Project site are subject to flooding from surface waters. Many portions of the site are located directly in washes or drainage ways. Other portions of the Work are located outside major drainage ways, but are still subject to minor channelized flows and overland sheet flow during some rainfall events.
- C. CONTRACTOR shall be fully responsible for protecting the Work, adjacent properties, and CONTRACTOR's own temporary facilities from damage due to flooding, runoff, surface water flows, and related subsurface flows until final Project closeout. Protection shall be provided for all aspects of the Work whether temporary or permanent. CONTRACTOR shall provide all materials and equipment required to protect the Work. No additional payment will be made by OWNER for providing protective measures or for any damage resulting from said flows. All damage from said flows shall be completely replaced in accordance with the Contract Documents at no additional cost to OWNER.

1.11 GROUND WATER CONTROL

- A. Provide a dewatering system sufficient to maintain Excavations and foundations dry and free of water on a 24 hour basis.
- B. Remove all dewatering facilities when no longer required.
- C. Dispose of water in a manner that will not cause damage to adjacent areas or facilities.
- D. Obtain a dewatering permit from the Department of Environmental Quality (DEQ).

1.12 POLLUTION CONTROL

- A. Soil: Prevent contamination of soil from discharge of noxious substances (including engine oils, fuels, lubricants, etc.) during construction operations. Excavate and legally dispose of any such contaminated soil off-site, and replace with acceptable compacted fill and topsoil.
- B. Water: Prevent disposal of wastes, effluent, chemicals, or other such substances adjacent to or into streams, waterways, sanitary sewers, storm drains, or public waterways. Perform any emergency measures that may be required to contain any spillage.
- C. Air: Control atmospheric pollutants.

1.13 EROSION CONTROL

- A. Use measures such as berms, dikes, dams, sediment basins, fiber mat netting, gravel, mulches, slopes, drains and other erosion control devices or methods to prevent erosion and sedimentation. Provide controls that prevent sediment from leaving the project area.
- B. Provide construction and earthwork methods which control surface drainage from cut, fill, borrow, and waste disposal areas, to prevent erosion and sedimentation.

- B. Inspect earthwork during execution to detect any evidence of the start of erosion. Apply corrective measures as required.
- C. An erosion control concept is included in the plans. This plan is not all inclusive and does not show every necessary BMP. Prepare and submit a storm water pollution prevention plan, NOI and obtain necessary construction stormwater and erosion permits.
- D. Inspect and maintain all erosion and stormwater controls after each storm event and at least weekly when no storm events have occurred. Weekend and holiday storms will require a site visit to maintain and adjust controls as necessary.
- E. Erosion and stormwater controls will need to be adjusted on site if the planned configuration does not function adequately. Coordinate with the Engineer, field adjust or provide additional controls to prevent flooding and erosion. Update stormwater pollution prevention plan as necessary.
- F. Provide track out controls at each end of the project to prevent tracking of material by contractor or residential vehicles. Provide immediate street cleaning of any material tracked out of the project area.
- G. Existing gutters may be used to convey stormwater runoff during construction. Keep gutters clean and free of debris. Provide alternate means of conveying stormwater runoff to project adjacent properties from flooding when gutters are removed.
- H. Clean any sediment deposited as a result of project activities in the gutters, storm drain pipes, manholes, and inlets on Lowell Avenue, Empire Avenue and Manor way.

1.14 INLET PROTECTION

- A. Use measures such as silt sacks, witches hats, or other approved media in accordance with manufacturer's installation recommendations. Geotextile fabric directly under the grate will not be allowed.

PART 2. – PRODUCTS (Not Used)

PART 3. – EXECUTION (Not Used)

END OF SECTION

**SECTION 01600
PRODUCTS, MATERIALS, EQUIPMENT AND SUBSTITUTIONS**

PART 1 – GENERAL

1.1 DEFINITIONS

- A. The word "Products," as used herein, is defined to include purchased items for incorporation into the Work, regardless of whether specifically purchased for the project or taken from CONTRACTOR's stock of previously purchased products. The word "Materials," is defined as products which must be substantially cut, shaped, worked, mixed, finished, refined, or otherwise fabricated, processed, installed, or applied to form units of work. The word "Equipment" is defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including products with service connections (wiring, piping, and other like items). Definitions in this paragraph are not intended to negate the meaning of other terms used in the Contract Documents, including "specialties," "systems," "structure," "finishes," "accessories," "furnishings," "special construction," and similar terms, which are self-explanatory and have recognized meanings in the construction industry.
- B. Neither "Products" nor "Materials" nor "Equipment" includes machinery and equipment used for preparation, fabrication, conveying and erection of the Work.

1.2 QUALITY ASSURANCE

- A. Source Limitations: To the greatest extent possible for each unit of work, provide products, materials, and equipment of a singular generic kind from a single source.
- B. Compatibility of Options: Where more than one choice is available as options for CONTRACTOR's selection of a product, material, or equipment, select an option which is compatible with other products, materials, or equipment. Compatibility is a basic general requirement of product, material and equipment selections.

1.3 PRODUCT DELIVERY AND STORAGE

Deliver and store the Work in accordance with manufacturer's written recommendations and by methods and means which will prevent damage, deterioration, and loss including theft. Delivery schedules shall be controlled to minimize long-term storage of products at site and overcrowding of construction spaces. In particular, ensure coordination to ensure minimum holding or storage times for flammable, hazardous, easily damaged, or sensitive materials to deterioration, theft, and other sources of loss.

1.4 TRANSPORTATION AND HANDLING

- A. Products shall be transported by methods to avoid damage and shall be delivered in undamaged condition in manufacturer's unopened containers and packaging.
- B. Furnish equipment and personnel to handle products, materials, and equipment, including those provided by OWNER, by methods to prevent soiling and damage.

- C. Provide additional protection during handling to prevent marring and otherwise damaging products, packaging, and surrounding surfaces.

1.5 STORAGE AND PROTECTION

- A. Products shall be stored in accordance with manufacturer's written instructions and with seals and labels intact and legible. Sensitive products shall be stored in weather-tight climate controlled enclosures and temperature and humidity ranges shall be maintained within tolerances required by manufacturer's recommendations.
- B. For exterior storage of fabricated products, products shall be placed on sloped supports above ground. Products subject to deterioration shall be covered with impervious sheet covering and ventilation shall be provided to avoid condensation.
- C. Loose granular materials shall be stored on solid flat surfaces in a well-drained area and shall be prevented from mixing with foreign matter.
- D. Storage shall be arranged to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.
- E. Storage shall be arranged in a manner to provide access for maintenance of stored items and for inspection.

1.6 MAINTENANCE OF STORAGE

- A. Stored products shall be periodically inspected on a scheduled basis. Maintain a log of inspections and make the log available on request.
- B. Comply with manufacturer's product storage requirements and recommendations.
- C. Maintain manufacturer-required environmental conditions continually.
- D. Ensure that surfaces of products exposed to the elements are not adversely affected and that weathering of finishes does not occur.
- E. For mechanical and electrical equipment, provide a copy of the manufacturer's service instructions with each item and the exterior of the package shall contain notice that instructions are included.
- F. Products shall be serviced on a regularly scheduled basis, and a log of services shall be maintained and submitted as a record document prior to acceptance by the OWNER in accordance with the Contract Documents.

1.7 PROPOSED SUBSTITUTIONS OF "OR-EQUAL" ITEMS

- A. Whenever materials or equipment are indicated in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the naming of the manufacturer is intended to establish the type, function, and quality required.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 01700
PROJECT CLOSEOUT**

PART 1 – GENERAL

1.1 FINAL CLEANUP

- A. The 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 completion of the Work by the OWNER will be withheld until the CONTRACTOR has satisfactorily complied with the requirements for final cleanup of the project site and the requirements below.

1.2 CLOSEOUT TIMETABLE

- A. 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 the OWNER, the ENGINEER, and their authorized representatives sufficient time to schedule attendance at such activities.

1.3 COMPLETION PROCEDURES

- A. When the CONTRACTOR believes Substantial Completion has been achieved, request in writing to the ENGINEER that Substantial completion be recognized as having been achieved and request that the OWNER issue a Certificate of Substantial Completion. Prior to making such a request, the CONTRACTOR must have:
 - 1. Completed all work necessary for the safe, proper, and complete use or operation of the facility as intended.
 - 2. Prepared a CONTRACTOR-generated punch list for submission with the request for issuance of a Certificate of Substantial Completion.
 - 3. Submitted and received acceptance of accurate record drawings for all work completed to date.
 - 4. Submitted and received acceptance of all specified warranties, bonds, guarantees and operation and OPERATIONS AND MAINTENANCE MANUALS.
 - 5. Completed all required vendor training, testing, and where required, start-up.
 - 6. Delivered all required spare parts, maintenance stock items, and special tools.
 - 7. All equipment testing shall be successfully completed.
- B. Upon receipt of the request from the CONTRACTOR, the ENGINEER and designated representatives will review the request, the Work and the above requirements to determine whether the CONTRACTOR has achieved Substantial Completion. If this review fails to support Substantial Completion, the ENGINEER will notify the CONTRACTOR in writing

citing the reasons for rejection. If the ENGINEER determines the CONTRACTOR has reached Substantial Completion, the following procedures will be followed:

1. The ENGINEER, his/her representative and user representatives will review the Work and the CONTRACTOR's punch list to assure all deficiencies are noted on a final punch list.
2. The ENGINEER will schedule and conduct a pre-final walk-through of the facility with representatives of the OWNER, the ENGINEER, the CONTRACTOR, and others, for the purpose of formally reviewing the Work, the final punch list, and the readiness of the Work for use. A copy of the final punch list will be furnished to all participants and any additional items noted during the walk-through will be added to the list.
3. Upon completion of the pre-final walk-through, the ENGINEER will prepare a request to the OWNER requesting establishing the date for Substantial Completion as date of the walk-through, provided the walk-through has verified that the Work is in fact ready for use and occupancy by the OWNER for its intended purpose. Upon approval of this request by the OWNER, the facility will be considered Substantially Complete.

C. Final Completion will be deemed to have occurred when all Work is completed including the following:

1. All final punch list items have been corrected, signed off by the CONTRACTOR and the ENGINEER, and demonstrated to the OWNER during a final walk-through.
2. All updates to the record drawings, and operations and maintenance manuals have been made.
3. Demobilization and site clean up are complete.
4. All facilities and/or equipment have been properly demonstrated to be functioning as required.
5. The CONTRACTOR has furnished to the OWNER proof of payment in full and releases from all parties who are entitled to claims against the subject project, property, or improvement pursuant to the provisions of law.
6. The CONTRACTOR has submitted all Final Submittals.
7. The CONTRACTOR has sent a letter to the OWNER stating the project is complete.

D. Partial Utilization may be desired at the OWNER'S option, as described in the General Conditions. If Partial Utilization is requested, the same procedure for completion of that portion of the Work as indicated in paragraphs A and B above, will be used.

1.4 OPERATIONS AND MAINTENANCE MANUAL SUBMITTALS

- A. The CONTRACTOR'S attention is directed to the condition that one percent of the contract price will be withheld from any monies due the CONTRACTOR as progress payments, if at the 75 percent construction completion point, the approved OPERATIONS AND

MAINTENANCE MANUAL complying with Section 01300 – Contractor Submittals has not been submitted. The aforementioned amount will be withheld by the OWNER as the agreed, estimated value of the approved OPERATIONS AND MAINTENANCE MANUALS. Any such retention of money for failure to submit the approved OPERATIONS AND MAINTENANCE MANUALS on or before the 75 percent construction completion point shall be in addition to the retention of any payments due to the CONTRACTOR under Article 14 of the General Conditions.

1.5 CLOSE-OUT PROCEDURE

- A. ENGINEER and CONTRACTOR shall meet and resolve all outstanding issues including, but not limited to:
 - 1. Claims and adjustments for time or costs
 - 2. Outstanding, unused allowances
 - 3. Procedures for handling warranty issues.
- B. A Final Change Order shall be processed if required. Final payment and close out procedures shall comply with all requirements of the Contract Documents.

1.6 FINAL SUBMITTALS

- A. Prior to requesting final payment, obtain and submit the following items to the ENGINEER for transmittal to the OWNER:
 - 1. Written guarantees, where required.
 - 2. Operating manuals and instructions.
 - 3. Maintenance stock items; spare parts; special tools.
 - 4. Completed record drawings.
 - 5. Bonds for roofing or maintenance, if indicated.
 - 6. Certificates of inspection and acceptance by local governing agencies having jurisdiction.
 - 7. Payment in full and release of liens or release of claims forms submitted by all Subcontractors and Suppliers, if requested by OWNER.
 - 8. Post construction topographic mapping and surveys.
 - 9. CONTRACTOR's certification of final payment.
 - 10. Consent of Surety to final payment.

1.7 MAINTENANCE AND GUARANTEE

- A. Comply with the maintenance and guarantee requirements contained in the General Conditions.
- B. Replacement of earth fill or backfill, where it has settled below the required finish elevations, shall be considered as a part of such required repair work, and any repair or resurfacing which becomes necessary by reason of such settlement shall likewise be considered as a part of such required repair work unless the CONTRACTOR shall have obtained a statement in writing from the affected private authority or public agency releasing the OWNER from further responsibility in connection with such repair or resurfacing.
- C. Make all repairs and replacements promptly upon receipt of written order from the OWNER. If the CONTRACTOR fails to make such repairs or replacements promptly, the OWNER reserves the right to do the Work and the CONTRACTOR and his surety shall be liable to the OWNER for the cost thereof.

1.8 BOND

- A. Furnish a Performance Bond as required by the General Conditions.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION

**SECTION 02761
PERVIOUS CONCRETE**

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Pervious Concrete placed as roll gutter at various locations on Lowell Avenue. Concrete shall be standard roll gutter shape on 6 inches of base.
- B. Includes But Not Limited To:
 - 1. Furnish and install pervious concrete paving, including subgrade testing and preparation for storm water storage layer for temporary detention or groundwater recharge for parking lots, sidewalks and other pedestrian areas as described in Contract Documents.

1.2 REFERENCES

- A. Association Publications:
 - 1. American Concrete Institute, Farmington Hills, MI www.concrete.org. Abstracts of ACI Periodicals and Publications:
 - a. ACI 221.3R, 'Guide for Selecting Proportions for No-Slump Concrete'.
 - b. ACI 224R-01, 'Control of Cracking in Concrete Structures (Reapproved 2008)'.
 - c. ACI 224.1R-07, 'Causes, Evaluation, and Repair of Cracks in Concrete Structures (March 1, 2007)'.
 - d. ACI 224.3R-95, 'Joints in Concrete Construction (Reapproved 2008)'.
 - e. ACI 305R-10, 'Guide to Hot Weather Concreting'.
 - f. ACI 306R-10, 'Guide to Cold Weather Concreting'.
 - g. ACI CP-1-08, 'Technical Workbook for ACI Certification of Concrete Field Testing Technician – Grade 1 (Jan 01, 2008)'.
 - h. ACI Flatwork Finisher Certification Program. i. ACI Field Technician Certification Program.
 - 2. Carolinas Ready Mixed Concrete Association, Inc. (CRMCA), Charlotte, NC www.crmca.com:
 - a. 'Recommended Specifications For Portland Cement Pervious Pavement'.
 - 3. Council of American Structural Engineers. CASE Form 101: Statement of Special Inspections. Washington, DC: CASE, 2001. (c/o American Council of Engineering Companies, 1015 15th St., NW, Washington, DC 20005; 202-347-7474; www.acec.org).
 - 4. International Code Council (IBC):
 - a. IBC Chapter 17, 'Structural Tests and Special Inspections'.
 - 5. National Concrete Pavement Technology Center, Iowa State University, Ames, IA www.cptechcenter.org:
 - a. 'Mix Design Development for Pervious Concrete in Cold Weather Climates' (Final Report February 2006).
 - 6. National Ready Mixed Concrete Association (NRMCA), Silver Spring, MD www.nrmca.org (available for a fee):
 - a. 'Freeze Thaw Resistance of Pervious Concrete'.
 - b. 'Pervious Concrete: Hydrological Software Resource'.
 - c. 'Pervious Concrete Pavements'.
 - d. 'Pervious Concrete Contractor Certification'.

- e. 'Pervious Concrete: Mixture Proportioning – CD' (Software).
 - 7. Ohio Aggregate & Industrial Minerals Association (OAIMA), Gahanna, OH
www.oaima.org:
 - a. 'Going Green with Rocks' Technical Guide for Void Percentages.
 - 8. Ohio Ready Mixed Concrete Association (ORMCA), Columbus, OH
www.ohioconcrete.org:
 - a. 'Specifier's Guide for Pervious Concrete Pavement with Detention (PCP-2795, October 23, 2009)'.
 - 9. University of New Hampshire Stormwater Center (UNHSC), Durham, NH
www.unh.edu:
 - a. 'Pervious Pavements- New findings about their functionality and performance in cold climates' (September 2008).
- B. Definitions:
1. Aggregate Base Course: Layer in paving system between top of subbase and bottom of pervious concrete paving, or between top of subgrade and bottom of pervious concrete paving. Base course is detention layer or recharge bed.
 2. Detention Layer (Stormwater Detention Layer): Base beneath pervious concrete paving intended to store water which is collected in drainage system built into base and removed from site. Detention layer usually has impervious liner underneath.
 3. Early-Entry Dry-Cut Saw: Saw designed to cutting joints in concrete that uses diamond impregnated blades and skid plate to help prevent spalling. Commences 1 to 4 hours after finishing and without raveling cut edges.
 4. Exposure Condition, Moderate: Environment, normally in temperate climate regions, in which concrete will only occasionally be exposed to moisture and will not be saturated before freezing and where no deicing agents or other aggressive chemical are used.
 5. Exposure Condition, Severe: Environment, normally in cold climate regions, in which concrete may be saturated or in almost continuous contact with moisture before freezing, and where deicing agents are used.
 6. Filter Fabric: Term relating to geotextiles used in filtration applications but has also become a generic term to cover all geotextiles. Allows free liquid flow (but no soil loss) across or through plane of fabric over an indefinitely long period of time.
 7. Freeze Thaw Types:
 - a. Dry Freeze: 15 or more cycles with little precipitation.
 - b. Hard Dry Freeze: Ground freezes and stays frozen with little precipitation.
 - c. Wet Freeze: 15 or more cycles with significant precipitation.
 - d. Hard Wet Freeze: Ground freezes and stays frozen with significant precipitation.
 8. Geotextile: Any permeable textile used with foundation, soil, rock earth or any other geotechnical engineering related material.
 9. Joint, Construction (or Cold): Surface where two successive placements of concrete meet, across which it may be desirable to achieve bond, and where first has undergone final set before next placement.
 10. Joint, Contraction (or Control): Formed, sawed, or tooled joint in concrete structure to create weakened plane to regulate location of cracking resulting from dimensional change of different parts of structure.
 11. Joint, Expansion: Normally vertical interface allowing relative movement without transferring sufficient tension, compression, or traction forces to negatively affect performance of structure or paving.
 12. Needle-Punched: Mechanically bonded by needling with barbed needles.

13. Nonwoven Geotextile: Textile structure produced by bonding or interlocking of fibers, or both, accomplished by mechanical, chemical or solvent means.
14. Panel: Concrete element that is relatively thin with respect to other dimensions and is bordered by joints or edges.
15. Paving (Pervious Concrete): Paving comprising material with sufficient continuous voids to allow water to pass from surface to underlying layers.
16. Pavement, pervious: Pavement comprising material with sufficient continuous voids to allow water to pass from surface to underlying layers.
17. Recharge Bed (Groundwater Recharge Bed): Base beneath pervious concrete paving through which water flows into subgrade. Recharge bed always has fabric filter or sand layer underneath.
18. Subbase: Layer in paving system between top of subgrade and bottom of base course, or between top of subgrade and bottom of pervious concrete paving.
19. Subgrade: Soil prepared and compacted to support pervious paving system.

C. Definitions (Following are specifically referenced for testing):

1. Accreditation: Process in which certification of competency, authority, or credibility is presented. Verify that laboratories have an appropriate quality management system and can properly perform certain test methods (e.g., ANSI, ASTM, and ISO test methods) and calibration parameters according to their scopes of accreditation.
2. Approved: To authorize, endorse, validate, confirm, or agree to.
3. Contract Documents: Engineering and Architectural Drawings and Specifications issued for construction, plus clarification drawings, addenda, approved change orders and contractor designed elements.
4. Experienced: When used with an entity, "experienced" means having successfully completed minimum of five previous projects similar in size and scope to this Project; being familiar with requirements indicated; and having complied with requirements of authorities having jurisdiction.
5. Field Quality Control: Testing, Inspections, Special Testing and Special Inspections to assure compliance to Contract Documents.
6. Inspection/Special Inspection: Inspection of materials, installation, fabrication, erection or placement of components and connections requiring special expertise to ensure compliance with approved construction documents and referenced standards:
 - a. Inspection: Not required by code provisions but may be required by Contract Documents.
 - b. Special Inspection: Required by code provisions and by Contract Documents.
 - c. Inspection-Continuous: Full-time observation of the Work requiring inspection by approved inspector who is present in area where the Work is being performed.
 - d. Inspection-Periodic: Part-time or intermittent observation of the Work requiring inspection by approved inspector who is present in area where the Work has been or is being performed and at completion of the Work.
7. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform particular construction operation, including installation, erection, application, and similar operations.
 - a. Using term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of corresponding generic name, such as "carpenter."

- b. It also does not imply that requirements specified apply exclusively to trades people of corresponding generic name.
- 8. Observation: Visual observation of building / site elements or structural system by registered design professional for general conformance to approved construction documents at significant construction stages and at completion. Observation does not include or waive responsibility for performing inspections or special inspections.
- 9. Owner's Representative: Owner's Designated Representative (Project Manager or Facilities Manager) who will have express authority to bind Owner with respect to all matters requiring Owner's approval or authorization.
- 10. Preconstruction Testing: Tests and inspections that are performed specifically for Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.
- 11. Quality Assurance: Testing, Inspections, Special Testing and Special Inspections provided for by Owner.
- 12. Quality Control: Testing, Inspections, Special Testing and Special Inspections provided for by Contractor.
- 13. Service Provider: Agency or firm qualified to perform required tests and inspections.
- 14. Source Quality Control Testing: Tests and inspections that are performed at source, i.e., plant, mill, factory, or shop.
- 15. Special Inspection: See Inspection.
- 16. Special Inspector: Certified individual or firm that implements special inspection program for project.
- 17. Special Test: See Test.
- 18. Test/Special Test: Field or laboratory tests to determine characteristics and quality of building materials and workmanship.
 - a. Test: Not required by code provisions but may be required by Contract Documents.
 - b. Special Test: Required by code provisions and by Contract Documents.
- 19. Testing Agency: Entity engaged to perform specific tests, inspections, or both.
- 20. Testing Agency Laboratory: Agency or firm qualified to perform field and laboratory tests to determine characteristics and quality of materials and workmanship.
- 21. Verification: Act of reviewing, inspecting, testing, etc. to establish and document that product, service, or system meets regulatory, standard, or specification requirements.

D. Reference Standards:

- 1. American Association of State Highway and Transportation Officials (AASHTO):
 - a. AASHTO M288-06 (R2011), 'Standard Specification for Geotextile Specification for Highway Applications'.
 - b. AASHTO T-180-10, 'Moisture-Density Relations of Soils Using a 101 pound (454 kg) Rammer and an 18 in. (457 mm) Drop'.
- 2. American Concrete Institute:
 - a. ACI 117-10, 'Specifications for Tolerances for Concrete Construction and Materials and Commentary'.
 - b. ACI 117M-10: 'Specifications for Tolerances for Concrete Construction and Materials and Commentary (Metric)'.
 - c. ACI 301-10, 'Specification for Structural Concrete'.
 - d. ACI 305.1-06, 'Specification for Hot Weather Concreting'.
 - e. ACI 306.1-90(R2002), 'Standard Specification for Cold Weather Concreting'.
 - f. ACI 318-08, 'Building Code Requirements for Structural Concrete and Commentary'.

- g. ACI 522.1-08, 'Specification for Pervious Concrete'.
- 3. ASTM International:
 - a. ASTM C29/C29M-09, 'Standard Test Method for Bulk Density (Unit Weight) and Voids in Aggregate'.
 - b. ASTM C33/C33M-11a, 'Standard Specification for Concrete Aggregates'.
 - c. ASTM C42/C42M-11, 'Standard Test Method for Obtaining and Testing Drilled Cores and Sawed Beams of Concrete'.
 - d. ASTM C94 / C94M-11b, 'Standard Specification for Ready-Mixed Concrete'.
 - e. ASTM C117-04, 'Standard Test Method for Materials Finer than 75- μ m (No. 200) Sieve in Mineral Aggregates by Washing'.
 - f. ASTM C138/C138M-10b, 'Standard Test Method for Density (Unit Weight), Yield, and Air Content (Gravimetric) of Concrete'.
 - g. ASTM C140-11a, 'Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units'.
 - h. ASTM C150/C150M-11, 'Standard Specification for Portland Cement'.
 - i. ASTM C172/C172M-10, 'Standard Practice for Sampling Freshly Mixed Concrete'.
 - j. ASTM C174/C174M-06, 'Standard Test Method for Measuring Thickness of Concrete Elements Using Drilled Concrete Cores'.
 - k. ASTM C260/C260M-10a, 'Standard Specification for Air-Entraining Admixtures for Concrete'.
 - l. ASTM C309-11, 'Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete'.
 - m. ASTM C494/C494M-11, 'Standard Specification for Chemical Admixtures for Concrete'.
 - n. ASTM C595/C595M-11, 'Standard Specification for Blended Hydraulic Cements'.
 - o. ASTM C618-08a, 'Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete'.
 - p. ASTM C989-10, 'Standard Specification for Slag Cement for use in Concrete and Mortars'.
 - q. ASTM C1077-11b, 'Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation'.
 - r. ASTM C1116/C1116M-10a, 'Standard Specification for Fiber-Reinforced Concrete'.
 - s. ASTM C1602 / C1602M-06, 'Standard Specification for Mixing Water Used in the Production of Hydraulic Cement Concrete'.
 - t. ASTM C1688/C1688M-10a, 'Standard Test Method for Density and Void Content of Freshly Mixed Pervious Concrete'.
 - u. ASTM C1701/C1701M-09, 'Standard Test Method for Infiltration Rate of In Place Pervious Concrete'.
 - v. ASTM D994-11, 'Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type)'.
 - w. ASTM D1751-04(2008), 'Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)'.
 - x. ASTM D1752-04a(2008), 'Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction'.

- y. ASTM D2434-68(2006), 'Standard Test Method for Permeability of Granular Soils (Constant Head)'.
- z. ASTM D3385-09, 'Standard Test Method for Infiltration Rate of Soils in Field Using Double- Ring Infiltrometer'.
- aa. ASTM D3665-07e1, 'Standard Practice for Random Sampling of Construction Materials'.
- bb. ASTM D4397-10, 'Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications'.
- cc. ASTM D5084-10, 'Standard Test Methods for Measurement of Hydraulic Conductivity of Saturated Porous Materials Using a Flexible Wall Permeameter' (Falling Head, Method C).
- dd. ASTM D5093-02(2008), 'Standard Test Method for Field Measurement of Infiltration Rate Using Double-Ring Infiltrometer with Sealed-Inner Ring'.
- ee. ASTM D6391-06, 'Standard Test Method for Field Measurement of Hydraulic Conductivity Limits of Porous Materials Using Two Stages of Infiltration from a Borehole'.
- ff. ASTM D7357-07, 'Standard Specification for Cellulose Fibers for Fiber-Reinforced Concrete'.
- gg. ASTM E329-11b, 'Specification for Agencies Engaged in Construction Inspection and / or Testing'.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Pre-Installation Conferences:

1. Participate in pre-installation conference.
2. Schedule pre-installation conference prior to preparation of subgrade. Include pervious concrete supplier, pervious concrete placing contractor and entire team that will form and place pervious concrete paving and testing agency.
3. In addition, review following:
 - a. Installation scheduling, coordination, and placement of pervious concrete paving.
 - b. Review requirements for preparation of subgrade.
 - c. Review requirements for Groundwater Recharge Bed and installation of filter fabric or sand layer.
 - d. Review requirements of Stormwater Detention Layer and installation of impervious liner.
 - e. Review if check dams will be required.
 - f. Review formwork requirements.
 - g. Review approved mix design requirements and use of admixtures.
 - h. Review cold and hot weather requirements.
 - i. Review jointing requirements and joint layout.
 - j. Review pervious concrete paving tolerances and corrective measures if tolerances are not met.
 - k. Review safety issues.
 - l. Review frequency of testing and inspections.

B. Sequencing:

1. Surrounding earthwork/landscape operations should be completed and stabilized prior to Groundwater Recharge Bed or Stormwater Detention Layer installation and placing and finishing pervious concrete paving.

C. Scheduling:

1. Notify Testing Agency and Architect forty eight (48) hours minimum before placing subgrade (compacted fill), filter fabric or impervious liner, and check dams (if any).
2. Notify Architect after completion of subgrade before proceeding.
3. Notify Architect forty eight (48) minimum prior to Groundwater Recharge Bed or Stormwater Detention Layer placement.
4. Notify Testing Agency and Architect forty eight (48) minimum before placing pervious concrete paving.

1.4 SUBMITTALS

A. Action Submittals

1. Shop Drawings:

- a. Project details: Specific plans including jointing plan, details, schedule, construction procedures and quality control plan.

B. Informational Submittals:

1. Certificates:

a. Installers:

- 1) Certification for National Ready Mixed Concrete Association (NRMCA).

2. Design Data:

a. Mix Design:

- 1) Proposed pervious concrete paving mixture proportions including all material weights, volumes, design density (unit weight), water-cementitious ratio and design void content per ASTM C1688 (fresh density and void content calculated from this procedure may differ from in-place density and void content and is only used to check mixture proportion consistency). Provide aggregate type, source, grading, dry-rodded unit weight and void content and per ASTM C29/C29M and ASTM C140 for hardened concrete properties.
- 2) Cement, supplementary cementitious materials, synthetic (polypropylene) or cellulose fibers, chemical admixture manufacturer certifications, usage instructions, and justification for proposed use.
- 3) Aggregate subbase (if any) and base materials: Washed aggregate type, source, grading and void content (percent porosity).

b. Ready-Mix Supplier:

- 1) Mix plant to furnish delivery ticket for each batch of concrete. Keep delivery tickets at job-site for use of Owner. Tickets shall include following:
 - a) Name of ready-mix batch plant.
 - b) Serial number of ticket.
 - c) Date and truck number.
 - d) Name of Contractor.
 - e) Name and location of Project.
 - f) Specific class or designation of concrete conforming to that used in Contract Documents.
 - g) Amount of concrete.
 - h) Amount and type of cementitious material.
 - i) Total water content allowed by mix design.
 - j) Amount of water added at plant.
 - k) Size and weight of aggregate.
 - l) Time loaded.
 - m) Type, name, manufacturer, and amount of admixtures used.
 - n) Design Data.
- 2) Provide certificates with supporting testing reports verifying compliance with Contract Document requirements and that materials provided are from single source for following:
 - a) Cementitious Materials.
 - b) Aggregate.

3. Manufacturer's Instructions:

- a. Provide Manufacturer's installations for following:
 - 1) For each admixture used.
- 4. Manufacturer's Reports:
 - a. Provide Manufacturer's performance and testing data for following:
 - 1) Each admixture used.

1.5 QUALITY ASSURANCE

A. Qualifications:

- 1. Installers and Installation Supervisor:
 - a. Furnish statement of experience for following:
 - 1) Certified Installers:
 - a) Provide no less than one National Ready Mixed Concrete Association (NRMCA) certified Pervious Concrete Craftsman who must be on site, overseeing each placement crew during all concrete placement.
 - (or)
 - b) Employ no less than three NRMCA certified Pervious Concrete Installers, who shall be on site working as members of each placement crew during all concrete placement.
 - (or)
 - c) Employ no less than five NRMCA certified Pervious Concrete Technicians, who shall be on site working as members of each placement crew during all concrete placements unless otherwise specified.
 - (1) Minimum number of certified individuals listed above must be present on each pervious concrete placement including any test panel placements, and certified individual must be in charge of placement crew and procedures.
 - (2) Alternative documentation of qualifications shall be permitted with Architect written approval.
 - 2) Experience:
 - a) Minimum of three (3) successfully completed pervious concrete projects of not less than 10,000 sq. ft. (930 sq. m) with name of project, address, owner's name, and contact information.
 - (1) Provide Architect written and photographic evidence of project experience.
 - 3) Equipment:
 - a) Identify proposed equipment to be used for placement and compaction.
 - (1) Requirements may be waived if installer demonstrates successful experience and constructs test panels with acceptable inspection and test results.
 - (2) Installer shall retain experienced consultant to monitor production, handling and placement operations at own expense.
- 2. Ready-Mix Supplier:
 - a. Comply with ASTM C94/C94M requirements and be certified according to NRMCA's 'Certification of Ready Mixed Concrete Production Facilities'
 - 1) ASTM C1077, 'Standard Practice for Testing Concrete and Concrete Aggregates for use in Construction, and Criteria for Laboratory Evaluation'.

- a) ACI Concrete Field Testing Technicians, Grade I or equivalent.
- b) ACI-certified Laboratory Testing Technicians, Grade I, and laboratory supervisor shall be ACI-certified Laboratory Testing Technician, Grade II.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Delivery And Acceptance Requirements

1. General:
 - a. Materials shall be delivered in original, unopened packages with labels intact.

B. Storage And Handling Requirements:

1. General:
 - a. Store in cool, dry location, out of direct sunlight and weather in accordance with Manufacturer's instructions and storage temperature requirements.
 - b. Store in original unopened container.
 - c. Store elevated off ground and protect from damage.
2. Geotextile:
 - a. Cover to protect from precipitation, sunlight, and chemicals that are strong acids or bases, flames, and excess temperatures.
3. Evaporation Retardant:
 - a. Store in a cool, well ventilated area away from incompatible materials.
 - b. Store above 40 deg F (4 deg C) and protect from freezing.
 - c. Handling: Follow Manufacturer MSDS requirements for handling product including following:
 - 1) Avoid contact with the eyes, skin and clothing. Avoid breathing vapors or mists. Use only in well ventilated areas.
 - 2) Wash thoroughly with soap and water after handling.
 - 3) Wear appropriate protective gloves, clothing, and eye protection.
 - 4) Keep containers closed when not in use.

1.7 FIELD CONDITIONS

A. Ambient Conditions:

1. Cold Weather Limitations:
 - a. Follow requirements of ACI 306 for cold weather concreting.
 - 1) When air temperature has probability of falling to 40 deg F (4 deg C) at jobsite within twenty four (24) hours of placing (as forecast by the nearest official meteorological office), all materials and equipment needed for adequate protection and curing shall be on hand and ready for use before pervious concrete placement is started.
 - 2) Do not place pervious concrete paving when ambient air temperature is at or below 40 deg F (4 deg C).
 - 3) Do not place pervious concrete paving on frozen aggregate base course or subgrade.
 - b. Evaporation Retardant:
 - 1) Required for all applications.
2. Hot Weather Limitations:
 - a. Follow requirements of ACI 305 for hot weather concreting.

- 1) When ambient air temperature is at or above 80 deg F (27 deg C) at jobsite or when there is probability of temperature rising to 80 deg F (27 deg C) during placing period (as forecast by nearest official meteorological office), facilities shall be provided for protection of pervious concrete in place from effects of hot and/or drying weather conditions.
 - 2) Do not place pervious concrete paving when ambient air temperature is at or above 90 deg F (32 deg C).
 - 3) Evaporation control measures shall be applied from time of discharge until paving is covered with polyethylene sheeting to prevent moisture loss during placement operations.
- b. Evaporation Retardant:
- 1) Required for all applications.

PART 2 - PRODUCTS

2.1 SYSTEMS

A. Manufacturers:

1. Manufacturer Contact List:

- a. Axim Concrete Technologies, Middlebranch, OH or Cambridge, ON
www.aximconcrete.com.
- b. BASF Admixtures, Cleveland, OH www.basf-admixtures.com.
- c. Forta Ferro, Grove City, PA www.fortacorp.com.
- d. Euclid Chemical Company, Cleveland, OH www.euclidchemical.com.
- e. Mirafi by TenCate, Pendergrass, GA www.tencate.com.
- f. Sika Corporation, Lyndhurst, NJ. www.sikausa.com.
- g. Stego Wrap by Stego Industries, San Juan Capistrano, CA
www.stegoindustries.com.

B. Materials:

1. Groundwater Recharge Bed (Aggregate Base):

- a. Subgrade
 - 1) Prepare subgrade as per Geotechnical Evaluation Report which also includes subgrade permeability in accordance with ASTM D422, ASTM D698, ASTM D2487 or ASTM D3385.
- b. Filter Fabric:
 - 1) Description: Needle-punched nonwoven geotextile composed of polypropylene fibers.
 - 2) Location: Beneath groundwater recharge bed.
 - 3) Design Criteria:
 - a) Meet requirements of AASHTO M288-06 Class 3 for elongation >50 percent.
 - b) Inert to biological degradation and resist naturally encountered chemicals, alkalis, and acids.
 - 4) Type Two Acceptable Products:
 - a) Mirafi 140N by TenCate, Pendergrass, GA www.tencate.com.
 - b) Equal as approved by Architect before installation.
- c. Aggregate base course:
 - 1) Aggregate shall be an open graded, clean coarse aggregate, with wash loss of no more than 5 percent or approved equal and with less than 1 percent passing #200 sieve.

- 2) Optional choker base course of aggregate meeting same requirements above may be used also as top layer to facilitate construction operations.
 - 3) Void content should be approximately 40 percent.
 - 4) Aggregate size:
 - a) Actual size(s) of washed, open graded, coarse aggregate for stormwater detention layer (or groundwater recharge bed), shall be at Contractor's option for best availability, percent void and economics.
 - d. Expansion joint material:
 - 1) Color: gray or black.
 - 2) Size 1/2 inch (12.7 mm) thick.
 - 3) Comply with requirements of ASTM D994, D1751 or ASTM D1752.
- C. Mixes:
1. Mixture Proportions:
 - a. Aggregate /cementitious ratio:
 - 1) Range of 4:1 to 5:1.
 - 2) Aggregate shall be granite.
 - b. Concrete mixture unit weight:
 - 1) Range of 115 to 135 lbs per cu ft (1 842 to 2 162 kg per cu m).
 - c. Concrete mixture void content:
 - 1) Range of 15 percent to 22 percent. The infiltration rate of the pervious concrete shall be greater than 350 in/hr (890 cm/hr).
 - d. Cementitious content:
 - 1) Range of 450 to 600 lbs per cu yd (267 to 356 kg per cu m), total cementitious content.
 - 2) Supplementary cementitious content allowed:
 - a) Fly ash: 20 percent maximum.
 - b) Slag: 20 percent maximum, or combined supplementary cementitious content: 20 percent maximum.
 - c) Micro Silica: 4 percent maximum required.
 - e. Water/Cementitious ratio (w/cm):
 - 1) Range from 0.28 to 0.33.
 - f. Compressive strength:
 - 1) 2500 psi (17.24 MPa) minimum compressive strength at 28 days according to ASTM C39. (this test will be used only as guide since compressive strength tests of pervious concrete paving are not strictly valid).
 - g. Slump: Not required to be measured.
 - h. Aggregate content:
 - 1) Bulk volume of aggregate per cubic yard (cubic meter) shall be 27 cu ft (1 cu m) when calculated from dry rodded density (unit weight) as determined per C29/C29M jigging or rodding procedure.
 2. Admixtures:
 - a. Admixtures as per Manufacturer's instructions and recommendations. Dosage of air- entraining admixture, if used, shall be 2 oz /cwt (130 mL/100kg) minimum of cementitious material.
 - 1) Air entrainment:
 - a) Required in environments susceptible to freezing and thawing and to help disperse cement.
 - 2) Fiber Reinforcement:
 - a) Synthetic polypropylene:
 - (1) Category Four Product.
 - (a) Add 1 lb per cu yd of concrete (16.02 kg per cu m of

concrete).

(b) Ferro-Green by Forta Ferro.

- 3) Fly ash:
 - a) Do not exceed 20 percent of weight of cementitious materials.
 - 4) Micro silica:
 - a) Use 4 percent (do not exceed or add less than 4 percent) of weight of cementitious materials.
 - 5) Hydration stabilizer:
 - a) Use 10 oz to 15 oz (284 to 425 grams) of hydration stabilizer meeting requirements of ASTM C494/C494M Type B Retarding or Type D Water Reducing/Retarding admixtures per 100 lb (45 kg) of cement. (Note: Hydration stabilizer helps concrete remain plastic during placement, to slow reaction, to increase concrete placement time to 90 minutes, or to improve finishing operations).
 - 6) Superplasticizer:
 - a) Use 2 oz (56.7 grams) per 100 lb (45 kg) of cement of high range superplasticizer (minimum).
 - 7) Viscosity modifier:
 - a) Use viscosity modifying admixtures (VMA) to reduce rundown of cement paste to bottom of paving after placement.
 - b) Use viscosity modifying admixtures (VMA) to facilitate discharge of concrete from truck and placement in forms.
- b. Mix water:
- 1) Quantity of mixing water shall be established to produce pervious concrete mixture of desirable workability to facilitate placing, compaction and finishing to desired surface characteristics.
 - 2) Mix water shall be such that cement paste displays wet metallic sheen without causing paste to flow from aggregate.
 - 3) Cement paste with dull-dry appearance has insufficient mix water for hydration. Jobsite addition of mix water is permitted to adjust for dry mixtures in concrete transit mixers.

PART 3 - EXECUTION

3.1 PREPARATION

A. Surface Preparation:

1. Survey and stake parking surfaces to show grading required by Contract Documents.
2. Groundwater Recharge Bed (Aggregate Base):
 - a. Subgrade preparation (flat subgrade is preferred for recharge bed):
 - 1) Grade parking surface area to grades required by Contract Documents.
 - 2) Subgrade permeability shall be determined in accordance with ASTM D3385 and confirm that it meets requirements of contract documents prior to concrete placement. Do not proceed with the pervious concrete pavement placement until the Architect has confirmed that permeability value complies with their initial design.
 - 3) Subgrade under recharge bed areas shall NOT be compacted or subject to excessive construction equipment traffic prior to coarse aggregate bed placement.

- 4) Keep all traffic off subgrade during construction to maximum extent practical. Regrade and recompact prior to concrete placement subgrade disturbed by concrete delivery vehicles or other construction traffic, as needed.
- 5) Subgrade shall be prepared to ensure that required pavement thickness is obtained in all locations.
- 6) Where erosion of subgrade has caused accumulation of fine materials and/or surface ponding, material shall be removed with light equipment and underlying soils scarified to minimum depth of 8 inch (200 mm) with York rake or equivalent and light tractor.
- 7) Bring subgrade of coarse aggregate recharge bed to line, grade, and elevations required.
- 8) Fill and lightly regrade any areas damaged by erosion, ponding, or traffic compaction before placing of coarse aggregate.
- 9) Do not use loose material to obtain final subgrade elevation.
- 10) Protect adjacent footings and foundations from stored stormwater by installing 15 mil (0.381 mm) impervious liner.

3.2 INSTALLATION

A. Special Techniques:

1. Cold Weather Concreting Procedures:
 - a. Follow Cold Weather Limitations as outlined in Field Conditions in Part One of this specification.
2. Hot Weather Concreting Procedures:
 - a. Follow Hot Weather Limitations as outlined in Field Conditions in Part One of this specification.

B. Groundwater Recharge Bed (Aggregate Base):

1. Install check dams if required.
2. Remove any accumulation of debris or sediment prior to installation of filter fabric.
3. Filter fabric:
 - a. Place filter fabric immediately after approval of subgrade preparation with pipe or any other storage devices, and recharge bed aggregate.
 - b. Place filter fabric per Manufacturer's standards and recommendations.
 - 1) Adjacent strips of filter fabric shall overlap minimum of 16 inches (400 mm).
 - 2) Secure fabric at least 2 ft (610 mm) outside of bed and take steps necessary to prevent any runoff or sediment from entering storage bed.
 - 3) Protect adjacent building foundations by installing 15 mil (0.381 mm) over filter fabric extending 6 feet (1.80 m) beyond toe of slope face at building face, and secure as recommended by Manufacturer.
4. Aggregate Base Course:
 - a. Thickness for each Freeze thaw type:
 - 1) Dry Freeze:
 - a) Even for soils with infiltration rates in excess of 1-1/2 in/hr (38 mm/hr), minimum total thickness of coarse aggregate for stormwater storage shall be 8 inch (200 mm).
 - 2) Hard Dry Freeze:

- a) Even for soils with infiltration rates in excess of 1-1/2 in/hr (38 mm/hr), minimum total thickness of coarse aggregate for stormwater storage shall be 8 inch (200 mm).
 - 3) Wet Freeze:
 - a) Even for soils with infiltration rates in excess of 1-1/2 in/hr (38 mm/hr), minimum total thickness of coarse aggregate for stormwater storage shall be 8 inch (200 mm).
 - 4) Hard Wet Freeze:
 - a) Even for soils with infiltration rates in excess of 1-1/2 in/hr (38 mm/hr), minimum total thickness of coarse aggregate for stormwater storage shall be 8 inch (200 mm) to 24 inch (610 mm).
- b. Install aggregate base course in 6 inch (150 mm) maximum lifts:
 - 1) Lightly compact each layer with equipment, keeping equipment movement over storage bed subgrades to minimum.
 - 2) Compact aggregate base to 90 percent maximum of modified proctor.
 - 3) Install aggregate to grades required on Contract Documents.
- c. Choker base course if used shall be installed with minimum 2 inch (50 mm) nominal thickness using size No. 57 (AASHTO) aggregate placed evenly over surface of larger sized aggregate bed, sufficient to allow placement of paving.
- d. After placement of bed aggregate, filter fabric shall be folded back along all bed edges to protect from sediment washout along bed edges.
 - 1) Protect beds from adjacent bare soil with 2 ft (610 mm) minimum strip.
 - a) Edge strip shall remain in place until all bare soils contiguous to beds are stabilized and vegetated.
 - 2) Place hay bales at toe of slopes adjacent to beds to further prevent sediment from washing into beds during site development.
 - 3) As site is fully stabilized, excess filter fabric along bed edges can be cut back to coarse aggregate edge.

C. Pervious concrete paving:

- 1. Paving thickness:
 - a. Paving thickness will be 6 inch (150 mm) thick for parking areas and requires single-course placement.
 - b. Paving thickness will be 8 inch (200 mm) thick for driveways and requires single-course placement.
 - c. Paving thickness will be 10 inches (255 mm) thick for vehicles heavier than single axle service/delivery trucks and requires single-course placement.
- 2. Formwork:
 - a. Form release agent must be applied to the form face, which will be in contact with the concrete, immediately before placing concrete.
 - b. Vertical face of previously placed concrete may be used as a form. Form release agent must not be applied to previously placed concrete. Previously placed concrete must be protected from damage.
 - c. Forms shall be clean and free of debris, rust, and hardened concrete. d. Forms shall be set, aligned, and braced to meet tolerances specified.
 - e. Form materials are permitted to be of wood or steel and shall be full depth of paving.
 - 1) Protect impermeable membranes from puncture or tear when placing forms and form pins.

- 2) Forms shall be of sufficient strength and stability to support mechanical equipment without deformation of plan profiles following spreading, strike-off and compaction operations.
 - 3) Forms may have removable spacer of 1/2 inch (13 mm) to 3/4 inch (19 mm) thickness placed above depth of paving. Spacers shall be removed following placement and vibratory strike-off to allow roller compaction. (Removable spacers may not be necessary if other means of strike-off and consolidation are used, such as hydraulically actuated pipe roller screed.).
3. Batching, mixing and delivery:
 - a. Batch and mix in compliance with ASTM C 94/C 94M except that the discharge shall be completed within sixty (60) minutes of the introduction of mix water to the cement:
 - 1) Discharge time can be increased to ninety (90) minutes when utilizing an extended set control admixture meeting the requirements of ASTM C 494/C 494M, Type B.
 - 2) Each truckload shall be visually inspected for consistency of concrete mixture.
 - 3) Water addition, in accordance with ASTM C 94/C 94M, is permitted at the point of discharge throughout unloading process in order to maintain necessary material consistency.
 - a) Do not exceed the maximum w/cm ratio specified or submitted.
 - 4) Discharge shall be continuous operation and shall be completed as quickly as possible.
 - a) Concrete shall be deposited as close to its final position as practical and such that discharged concrete is incorporated into previously placed plastic concrete.
 - b) If consolidation occurs during concrete discharge, placement shall be halted and wet concrete removed.
 4. Placing and finishing:
 - a. Paving placement:
 - 1) Place paving shall not exceed 20 feet (6.1 m) width:
 - a) If approved by Architect, paving placement at widths greater than maximum may be approved if Installer can demonstrate competence to provide paving placement at widths greater than maximum.
 - 2) Large scale mechanized placement of pervious concrete with slip form concrete paving machines, laser screeds or asphalt paving machines may preclude use of fixed forms.
 - b. Prior to placing concrete, surface of aggregate Stormwater Detention Layer or Groundwater Recharge Bed shall be soaked and be in wet condition at time of pervious concrete placement (failure to moisten aggregate surface will result in reduction in strength of paving).
 - c. Concrete may be deposited into forms by mixer truck chute, conveyor or buggy. Concrete pumping cannot be used to place pervious concrete paving.
 - d. Concrete shall not be placed onto frozen subgrade, subbase, or aggregate base.
 - e. Concrete shall be placed within forms to approximately uniform height.

- f. Spread concrete using come-along, shorthandle, square-ended shovel, or rake.
 - g. Do not allow foot traffic on fresh concrete.
 - h. Strike off concrete between forms using vibratory screed. Strike off concrete to between 3/8 inch (9.5 mm) and 1/2 inch (13 mm) high to allow for compaction operation. Similarly, strike off by hand straightedge may be permitted for sidewalks and other small areas followed by compaction.
 - i. Following strike-off, remove spacers and compact concrete to form level, utilizing steel pipe vibratory roller screed that provides 10 psi (69 kPA) minimum vertical force.
 - 1) If approved by Architect in writing, place pervious concrete with either slip form or vibratory form riding equipment with following compactive unit that will provide minimum of 10 psi (69 kPA) vertical force to concrete.
 - 2) Longitudinal rolling shall be followed immediately by cross rolling and joint rolling.
 - 3) Care shall be taken during compaction that sufficient compactive force is achieved without excessively working concrete surface that might result in sealing off surface porosity.
 - 4) Rollers may require cleaning and treatment to prevent aggregate pick-up during rolling operations.
 - j. Do not use steel trowels or power finishing equipment.
 - k. Care must be taken to prevent closing void structure of pervious concrete. After mechanical or other approved strike-off and compaction operation, no other finishing operation will be allowed.
 - l. Placed concrete shall not be disturbed while in plastic state. Low spots after screeding operation shall be over-filled for surface repair and either tamped to desired elevation with hand tampers or passing screed second time to correct elevation.
 - m. Pervious concrete paving shall be compacted to required cross-section and shall not deviate more than +/- 3/8 inch in 10 feet (+/-9.5 mm in 3 m) from profile grade.
 - n. Concrete shall be finished to elevations and thickness as specified.
 - o. Hand tampers and edging tool with 1/2 inch (13 mm) radius shall be used to compact concrete along slab edges immediately adjacent to forms.
 - p. After compaction, inspection and surface repair, no further finishing shall be performed on concrete. Surface curing shall begin immediately.
5. Jointing:
- a. General:
 - 1) Joints in pervious paving can be omitted by Owner, who may choose to accept or prefer appearance of random cracking.
 - 2) If it is deemed desirable to specify joints, they shall be constructed at locations, depths, and with horizontal dimensions indicated in contract documents.
 - 3) If it is deemed desirable to specify joints, and requirements are not indicated on project drawings, submit drawings describing proposed jointing in accordance with requirements of this specification. Work shall not proceed until jointing requirements have been accepted by Architect.

- a) Designate position for control joints, construction joints, and expansion joints.
 - b) Larger horizontal dimension of slab panel shall not exceed 125 percent of smaller dimension.
 - c) Angle between two intersecting joints shall be between 80 – 100 degrees.
 - d) Joints shall intersect the pavement free edges at 90 degree angles and shall extend straight for minimum of 0.02 inch (0.5 mm) from pavement edge where possible.
 - e) Align joints from adjacent pavement panels.
 - f) Joints in attached or adjacent curbs shall be aligned within 1/4 inch (6 mm) of joints in pavement.
 - g) Spacing between contraction joints shall be installed at regular intervals not to exceed 20 feet (6.1 m), unless otherwise specified.
- b. Jointing plastic concrete:
- 1) Joints installed in plastic concrete shall be constructed utilizing small rolling groover as described in Special Equipment in Part One Quality Assurance of this specification.
 - a) Performed immediately after longitudinal and transverse roller compaction with one (1) single pass and prior to evaporation retardant and covering. (Note: Improper use of rolling groover may cause "de-consolidation" of material within 2 inch (50 mm) band along either side of groove joint, and result in raveling under traffic).
 - b) Rollers may require cleaning and treatment to prevent aggregate pick-up during rolling operations.
 - 2) Alternatively, joints may be tooled.
 - a) Tooled to specified depth and width in fresh concrete immediately after concrete is compacted.
- c. Jointing hardened concrete:
- 1) Contraction joint depth shall be 1/4 to 1/3 of pavement thickness. Minimum joint width for saw cutting is 1/8 inch (3 mm).
 - 2) Contraction joints may be constructed using either of following methods, when joints are specified:
 - a) Saw cut:
 - (1) Saw cut concrete after it has hardened sufficiently to prevent aggregate from being extricated and soon enough to control random pavement cracking. Only remove curing materials as needed to minimize drying.
 - (2) Saw cuts shall be made as soon as paving has hardened sufficiently to prevent raveling and uncontrolled cracking; after seven day minimum curing period.
 - (3) Early entry sawing may be used. Depth shall be at least one inch (25 mm).
 - (4) Sawdust or slurry shall be promptly removed to protect pervious concrete pores.
 - (5) After sawing, curing cover shall be securely replaced for remainder of curing cycle.
 - b) Curing cover shall be temporarily removed and surface kept misted to prevent moisture loss during sawing.
- d. Transverse construction joints:
- 1) Transverse construction joints shall be installed whenever placing is suspended for thirty (30) minutes or whenever concrete is no longer

- workable.
- 2) Transverse construction joints shall be installed whenever placing is suspended sufficient length of time that concrete may begin to harden.
- 3) In order to assure aggregate bond at construction joints, bonding agent suitable for bonding fresh concrete to existing concrete shall be brushed, rolled or sprayed on existing paving surface edge.
- e. Expansion joints:
 - 1) Expansion joints shall be used where pavement abuts fixed objects such as light pole bases, building foundations, plain concrete, etc. and extend full depth of pavement.
 - 2) Joints shall be filled with expansion joint material and installed in accordance with respective Manufacturers' installation and application instructions. Expansion joints are not required to be sealed.
 - 3) Install so top of expansion joint material is 1/4 inch (6 mm) below finished surface of concrete.
- f. Control joints:
 - 1) Do not seal joints.
- g. Edging:
 - 1) Use tool with 1/2 inch (13 mm) radius and additional compaction with hand tamping tools shall be performed along all form lines and along all expansion joints and construction joints to reduce potential for raveling under traffic.
- 6. Curing:
 - a. Curing procedures shall begin within twenty (20) minutes, from time pervious concrete is discharged from truck and within two (2) to four (4) minutes of finishing operation.
 - b. Placing, screeding, cross rolling, transverse tooled jointing, and edging must be completed within ten (10) minutes from discharge.
 - c. Prior to covering, spray evaporation retardant or soybean oil sealer on surface.
 - 1) Follow ambient conditions requirement as outlined in Field Conditions in Part One of this specifications for hot weather concreting and cold weather concreting.
 - 2) Follow Manufacturer's instruction for evaporation retardant mixing and applying product.
 - d. Polyethylene sheet:
 - 1) Cover paving surface completely with minimum clear polyethylene sheet. Sheets shall be cut to a minimum of a full placement width prior to concrete placement.
 - 2) Overlap all exposed edges and secure, with sandbags, or equal without using dirt or sand or gravel, to prevent dislocation due to winds or adjacent traffic conditions.
 - e. Cover shall remain securely in place for seven (7) days minimum at minimum temperature of 50 deg F (10 deg C), unless otherwise specified for Portland Cement Type I, II, I/II, V or IS (ten (10) days for Portland Cement Type I, II, I/II, or V with Class F fly ash or Type IP), uninterrupted.
- 7. Paving markings:
 - a. Apply paving markings after seven (7) days.

D. Tolerances:

1. Pavement shall be constructed to comply with the following tolerances:
 - a. Elevation: + 3/4 inch (19 mm), - 0 inch (0 mm).
 - b. Thickness: + 1-1/2 inches (38 mm), - 1/4 inch (6 mm).
 - c. Contraction Joint Depth: + 1/4 inch (6 mm), - 0 inch (0 mm).
 - d. Prior to testing for compliance to tolerances, pavement surface must be mechanically swept.

3.3 FIELD QUALITY CONTROL

A. Testing and Inspection:

1. Pervious Concrete:
 - a. General:
 - 1) Testing Agency shall test and inspect concrete materials and operations as Work progresses. Failure to detect defective work or material early will not prevent rejection if defect is discovered later, nor shall it constitute final acceptance.
 - b. Testing and Inspections shall include following:
 - 1) Subgrade:
 - a) Minimum of one (1) gradation test of subgrade is required every 5,000 sq. ft. (465 sq. m) to determine percent passing No. 200 sieve per ASTM C117.
 - 2) Ready-Mix Supplier:
 - a) Aggregate moisture tests shall be provided before batching operations.
 - b) Test density and void content per ASTM C1688/C1688M at batch plant on every load of concrete.
 - 3) Field tests:
 - a) Density (unit weight)
 - (1) Fresh concrete:
 - (a) Test density of fresh concrete for each 2,500 sq. ft. (232 sq. m) or portion thereof. Also provide three (3) density tests for each mockup test panel.
 - (b) Density (unit weight) of plastic concrete shall be measured per ASTM C1688/C1688M.
 - (c) Density (unit weight) of delivered concrete shall be +/- 5 lb per cu ft (80 kg per cu m) of submitted fresh density (unit weight).
 - (2) Hardened concrete:
 - (a) Test density (unit weight) of hardened concrete for each after minimum of seven (7) days at rate of one set of three (3) cores per 5,000 sq. ft. (465 sq. m) or fraction thereof. Also provide three (3) density tests for each mockup test panel.
 - (b) Cores shall be drilled per ASTM C42/C42M.
 - (c) Cores shall be minimum nominal 4 inch (100 mm) diameter. Select locations per ASTM D3665.
 - (d) Cores shall be tested for average density (unit weight) per ASTM C140.
 - (e) Density (unit weight) of cores trimmed and tested in

saturated condition per ASTM C140, shall be +/- 5 percent of design unit weight or approved hardened density from test panels.

- b) Void content:
 - (1) Test void content of fresh concrete for each 2,500 sq. ft. (232 sq. m) or portion thereof.
 - (a) Void content of plastic concrete shall be calculated as per ASTM C1688/C1688M and compared to submitted fresh void content.
 - (b) Unless otherwise specified, void content shall be within plus or minus 2 percent of submitted fresh void content.
 - (c) Also provide three (3) density tests for each mockup test panel.
 - (2) Test void content of hardened concrete after minimum of seven (7) days at rate of one set of three cores per 5,000 sq. ft. (465 sq. m) or fraction thereof.
 - (a) Cores shall be drilled per ASTM C42/C42M.
 - (b) Cores shall be minimum nominal 4 inch (100 mm) diameter. Select locations per ASTM D3665.
 - (c) Cores shall be measured for thickness, void structure and unit weight.
 - (d) Cores shall be taken at minimum 2 ft (610 mm) away from edge of placement to ensure representative sample.
 - (e) Hardened void content shall not be lower than 2 percent below specified design void content or approved hardened void content from test panels.
 - (f) Also provide three (3) density tests for each mockup test panel.
- c) Infiltration Rate:
 - (1) Test infiltration rate of hardened placed pervious concrete after seven (7) days minimum complying with requirements of ASTM C1701/C1701M at rate of one (1) set of three (3) tests per 5,000 sq. ft. (465 sq. m) or fraction thereof.
 - (a) Infiltration rate of hardened placed pervious concrete shall be at least 350 in/hr.
- d) Thickness:
 - (1) Untrimmed hardened core samples shall be used to determine placement thickness.
 - (2) Average of all production cores when measured for length shall not be more than 1/2 inch (13 mm) less than specified design thickness.
 - (3) Measure cores thickness per ASTM C174.
- e) Satisfactory performance shall be determined by:
 - (1) Fresh concrete results:
 - (a) Density (unit weight) plus or minus 5 lb per cu ft (80 kg per cu m) of submitted fresh density (unit weight).
 - (b) Void content plus or minus 2 percent of submitted fresh void content.
 - (2) Hardened concrete results:

- (a) Compacted thickness no less than 1/4 inch (6 mm) less than specified thickness.
- (b) Hardened density (unit weight) plus or minus 5 percent of design density (unit weight).
- (c) Void content shall be not lower than 2 percent below design void content.

- (3) Test infiltration rate of pervious concrete, not less than seven (7) days after placement per ASTM C1701/C1701M.

B. Non-Conforming Work:

- 1. Remove and replace defective material at Architect's direction and at no additional cost to Owner.
- 2. Surface drainage:
 - a. At or before twenty eight (28) days after placement either average infiltration rate of multiple locations or infiltration rate of determined localized area of in-place pervious concrete shall be determined per ASTM C1701/C1701M.
 - b. Any areas of insufficient surface porosity, as determined by Architect, shall be removed and replaced by Contractor at no additional cost to Owner.
- 3. Excessive raveling:
 - a. At or before twenty eight (28) days after placement, any areas of excessive surface raveling, as determined by Architect, shall be removed and replaced or repaired at no additional cost to Owner.

3.4 CLEANING

A. Waste Management:

- 1. General:
 - a. Clean up debris from site and dispose in approved landfill or recycling facility at no cost to Owner.
 - b. Dispose according to local, state, and federal regulations at no cost to Owner.
- 2. Pervious Concrete Paving:
 - a. Remove defective pervious concrete including defective test panels from site and dispose of in approved landfill or recycling facility at no cost to Owner.
- 3. Evaporative Retardants:
 - a. Clean-up:
 - 1) Use personal protective clothing and equipment as recommended by Manufacturer.
 - 2) Clean up spill immediately. Avoid release to the environment. Avoid runoff to waterways and sewers.

3.5 PROTECTION

A. Vehicular Traffic:

- 1. Mechanically sweep paving before it is opened to vehicular traffic.
- 2. No vehicular traffic shall be permitted on paving until the concrete has been continuously cured for minimum of seven (7) days at temperature of at least 50 deg F (10 deg C) and accepted by Architect.
- 3. No truck traffic shall be permitted for at least fourteen (14) days.

B. Pedestrian Traffic:

1. Pedestrian traffic may be permitted on curing concrete after twenty four (24) hours.

3.6 MAINTENANCE

A. Inspection/Maintenance Plan:

1. At or before twenty eight (28) days after placement of pervious concrete, submit to Architect written inspection/maintenance plan to prevent clogging of pervious concrete paving. Refer to Pervious Concrete Attachment included with specifications.
2. Plan shall include periodic testing of infiltration rate per ASTM C1701 / C1701M and methods to restore porosity if rate drops below 75 percent of original determined rate.
 - a. Acceptable methods to restore levels of porosity are either to power vacuum or power vacuum with simultaneous power wash pervious concrete sections.
 - b. Schedule may include the following:
 - 1) Each Month:
 - a) Ensure that pervious concrete paving is clean of debris. Sweep as needed.
 - b) Ensure that area is clean of sediments.
 - 2) Each Year:
 - a) Inspect surface for deterioration or spalling.
 - b) Inspect for proper stormwater drainage.
 - 3) As Needed:
 - a) Seed bare upland areas.
 - b) Sweep, power vacuum and power wash once or twice a year.
 - c) Percolation tests.
3. Preparation of inspection/maintenance plan shall be at no additional cost to Owner.

END OF SECTION

**SECTION 02762
RESTORE DRIVEWAY SNOW MELT SYSTEM**

PART 1 – GENERAL

1.1 SECTION INCLUDES

- A. Repair and restoration of existing driveway snow melt systems.

1.2 REFERENCES

- A. Not used

1.3 SUBMITTALS

- A. Not used

PART 2 – PRODUCTS

2.1 SNOW MELT SYSTEMS

- A. Provide materials that match the existing system. Follow manufacturer requirements.

PART 3 – EXECUTION

3.1 CONSTRUCTION EQUIPMENT

- A. Use equipment that will not damage snow melt systems (bush hammer).

3.2 PREPARATION

- A. Contact and coordinate with each property owner to determine presence or absence of driveway snow melt systems.
- B. Use concrete removal techniques to avoid damaging the snow melt system when present.
 - 1. Do not full depth sawcut driveways with snow melt systems.
- C. If a system is damaged:
 - 1. Capture and properly dispose of glycol.
 - 2. Restore system using equivalent parts and fittings.
 - 3. Remove air from the system.
 - 4. Perform a 24 hour pressure test for hydronic systems and repair any leaks prior to concrete construction.

5. Test functionality of electric system prior to concrete construction.
6. Install a quick connect at the right of way line so that the system can be disconnected at the right of way in the future while allowing the portion of the system on private property to continue to function.

3.3 WARRANTY

1. Warranty repaired snow melt systems for one year after completion of project according to Section 00500 – Construction Agreement.

END OF SECTION

SECTION 329150

LANDSCAPING

This specification supersedes APWA Sections 32 92 00, 32 93 13, 32 93 43, and 32 01 90.

PART 1 - GENERAL

1.1 THE REQUIREMENT

- A. The CONTRACTOR shall perform all the landscaping and all appurtenant work, complete, in accordance with the requirements of the Contract Documents.
- B. Scope of Work: Landscaping as referred to herein shall include, but not be limited to the following work: soil preparation, seeding, weed control, finish grading, furnishing and installing plant materials, cleanup, maintenance, and guarantee.
- C. The Section cross references the following sections:
 - 1. References APWA 01 42 19
 - 2. Contractor Submittals 01300
 - 3. Project Closeout 01700

1.2 REFERENCE SPECIFICATIONS, CODES, AND STANDARDS

- A. Codes: All codes, as referenced herein, are specified in APWA Section 014219 - References.
- B. Federal Specifications:
 - FS O-F-241 D Fertilizer, Mixed, Commercial
- C. Commercial Standards
 - ANSI/ASTM D 422 Method for Particle-Size Analysis of Soils
 - ANSI Z601 Nursery Stock
 - American Association of Rules and Grading Provisions Nurserymen, Inc.

1.3 CONTRACTOR SUBMITTALS

- A. General: The CONTRACTOR shall furnish a certificate with each delivery or bulk material delivery, stating source, quantity, and type of material. All materials shall conform to specification requirements. All certificates shall be delivered to the LANDSCAPE ARCHITECT (here in referred to as L.A.) at time of each delivery. All bulk delivered materials shall be delivered with level load volume plainly marked on the truck bed.
- B. Topsoil Report: Topsoil report as well as literature on fertilizers, mulch and seed mixes, shall be submitted as specified in Section 01300 - Contractor Submittals

1.4 QUALITY ASSURANCE

- A. General: All plants furnished by the CONTRACTOR shall be true to type or name as shown in the Contract Documents and shall be tagged in accordance with the standard

practice recommended by the Agricultural Code of the State of Utah; however, determination of plant species or variety will be made by the L.A.

- B. All plants shall comply with Federal and State laws requiring inspection for plant diseases and infestations. Inspection certificates required by law shall accompany each shipment of plants, and certificates shall be delivered to the L.A.
- C. All inspections herein specified will be made by the L.A. or its representative. The CONTRACTOR shall request inspection at least 24 hours in advance of the time inspection is required. Inspection will be required on the following stages of the WORK:
 - 1. During preliminary grading, soil preparation, and initial weeding.
 - 2. When finish grading has been completed.
 - 3. When all specified work, except the maintenance period has been completed.
 - 4. Final inspection at the completion of the maintenance period.
- D. Plants shall be subject to inspection and approval or rejection by the L.A. at place of growth and upon delivery to the site at any time before or during progress of the WORK and according to:
 - 1. Quantity, quality, size, and variety;
 - 2. Ball and root condition; and
 - 3. Latent defects and injuries resulting from handling, disease, and insects.
- E. Plants approved at pre-planting inspection shall still be subject to rejection during planting if found to be below Specifications.
- F. Rejected plants shall be identified in an obvious manner, removed from the site and replaced with acceptable equals.
- G. Plants shall have been grown in nurseries which have been inspected by the governing authorities. Inspection of plant materials required by City, County, State, or Federal authorities shall be the responsibility of the CONTRACTOR, who shall have secured permits or certificates prior to delivery of plants to site.

1.5 CLEANUP

- A. Upon completion of all planting operations, the portion of the project site used for a work or storage area by the CONTRACTOR shall be cleaned of all debris, superfluous materials, and equipment. All such materials and equipment shall be entirely removed from the project site as specified in Section 01700 - Project Closeout.
- B. All walks or pavement shall be swept or washed clean upon completion of the WORK of this Section.
- C. During the entire Contract period, plant containers that have been cut or removed from plant materials shall be removed from the project site daily, in accordance with the

provisions for maintenance and guarantee as specified in Section 01700 - Project Closeout.

1.6 MAINTENANCE OF LANDSCAPE PLANTING PRIOR TO ACCEPTANCE OF PROJECT

- A. General: The CONTRACTOR shall be responsible for protecting, watering, and maintaining all planting and irrigation systems until final acceptance of all work under the contract.
- B. Watering: Trees and shrubs shall be thoroughly soaked after planting and provided with additional water at intervals as necessary to provide for good health and growth of the planting.
- C. The new planting of homes that will have extended landscape into disturbed areas shall be kept watered by the sprinkling system existing on the site during dry weather or whenever necessary for proper establishment of the lawn. Care shall be taken to avoid excessive washing or puddling on the surface and any such damage caused thereby shall be repaired by the CONTRACTOR at its own expense.
- D. Protection: The CONTRACTOR shall provide adequate protection to all newly planted areas including the installation of approved temporary fences to prevent trespassing and damage, as well as erosion control, until acceptance.
- E. The CONTRACTOR shall replace any materials or equipment it has damaged or which has been damaged by its employees or subcontractors.
- F. Partial utilization of the project shall not relieve the CONTRACTOR of any of the requirements contained in the Contract Documents.
- G. Plants shall be maintained in a vigorous, thriving condition by watering, cultivating, weeding, pruning, spraying, and other operations necessary. No trees or shrubs will be accepted unless they are healthy and show satisfactory foliage conditions.
- H. All planted areas shall be cultivated at least every 2 weeks and raked smooth, to present a neat appearance and additional mulch shall be added where necessary.
- I. Maintenance shall include, in addition to the foregoing, cleaning, edging, repairs to stakes, wire, and wrappings, the repair of erosion, and all other necessary work of maintenance. Sidewalks and other paved areas shall be kept clean while planting and maintenance are in progress.
- J. Any and all sprinkler lines broken or disrupted during this construction shall be replaced to proper working order prior to contract work and be acceptable to the OWNER.

1.7 PARK CITY INSPECTION SCHEDULE, MAINTENANCE AND WARRANTY

- A. Inspections: All contractors are required to follow an Inspection schedule. Should any of the work be covered or completed before inspections and test, the contractor shall uncover the work at their own expense.

- B. Due to Utah having limited growing season, no inspections will be performed from October 31 through March 31, unless conditions permit and at the Park Divisions discretion.
- C. The contractor shall set up an inspection schedule with the Parks Division. Prior to each inspection date, the contractor shall give twenty-four (24) hours notice to the Parks Division. There shall be a minimum of five inspections. The contractor may not proceed to the next phase of construction until the previous phase has been inspected and approved.

The inspections are as follows:

First inspection	Open main line & pressure test impacted homes
Second inspection	Final irrigation system & coverage test
Third inspection	Plant material & location
Fourth inspection	Start of maintenance
Fifth inspection	Final release

- D. The developer/contractor shall maintain the property for a period of twelve months following the 75 percent bond release. During this warranty period the contractor is responsible for all aspects of maintenance including but not limited to; mowing, fertilizing, irrigation scheduling and repair, and all safety inspections.
- F. At the end of the twelve month warranty period a fifth Inspection shall be scheduled by the contractor. If at that point the project is still termed satisfactory, the city shall assume the maintenance of the property. The contractor shall obtain written approval from the Parks Division, the City has officially assumed maintenance and that all work has been completed to City Standards.
- G. As built: the Landscape Architect/Contractor shall furnish the Parks Division with two (2) preliminary sets of blue line prints for review, showing all irrigation and landscape work required. After initial review by the City, the Landscape Architect shall make all noted corrections as discussed with the staff. The Landscape Architect shall submit two (2) final sets of blue line prints to be signed and approved by the Parks Division. Upon completion of the installation, the contractor shall submit the as-built to the Parks Division. The Parks Division shall receive the corrected set of as-built plans prior to accepting the project for final release.

1.8 INSPECTION SCHEDULE

- A. Weekly construction inspections will be conducted by the Landscape Architect during the Landscape and Irrigation work and installation with the Landscape Contractor.

PART 2 -- PRODUCTS

2.1 GENERAL

- A. All landscaping materials for soil conditioning, weed abatement, or planting shall be first-grade, commercial quality and shall have certificates indicating the source of material, analysis, quantity, or weight attached to each sack or container or provided with each delivery. Delivery certificates shall be given to the L.A. as each shipment of material is

delivered. A list of the materials used, together with typical certificates of each material, shall be submitted to the L.A. prior to the final acceptance of the job.

2.2 TERMINOLOGY AND QUALIFICATIONS

- A. Plants or plant material having characteristics not conforming to terms as defined will not be accepted. The terms "plant material" or "plants" refer to all vegetation, whether trees, shrubs, ground cover, or herbaceous vegetation.

2.3 TOPSOIL

- A. Existing on site topsoil may be stripped and stockpiled on site for landscape use.
 - B. Topsoil shall be imported and placed at a depth of **6-inches** in areas that will require an extended landscape treatment of existing manicured landscape including turf seed and sodding as well as areas that are to be seeded with native seed.
 - B. Imported topsoil shall be obtained from naturally drained areas and shall be fertile, friable loam suitable for plant growth. Topsoil shall be subject to inspection and approval at the source of supply and upon delivery.
 - C. The topsoil shall be of uniform quality, free from subsoil stiff or lumpy clay, hard clods, hardpan, rocks, disintegrated debris, plants, roots, seeds, and any other materials that would be toxic or harmful to plant growth. Topsoil shall contain no noxious weeds or noxious weed seeds.
 - D. Imported topsoil shall contain at least 6 percent organic matter as determined by loss of weight after ignition of dried (moisture-free) samples in accordance with current methods of the Association of Official Agricultural Chemists.
 - E. Imported acidity range of the topsoil shall be (pH 5.5 to pH 7.5). The salinity level shall be less than 3 millimhos/cm.
 - F. Imported topsoil clay, as determined by the Bouyoucous hydrometer or by the Recantation method, shall not exceed 60 percent of the topsoil material.
 - G. Mechanical analysis shall be performed and shall conform to ANSI/ASTM D 422.
- QUALITY ASSURANCE

2.4 FERTILIZER AND ADDITIVES

- A. Fertilizer shall be furnished in bags or other standard containers with name, weight, and guaranteed analysis of contents clearly marked thereon.
- B. Chemical fertilizers shall be a mixed commercial fertilizer "Evergreen Simplot Best" conforming to FS O-F-241 D, Type I, with percentages of nitrogen, phosphoric acid, and potash at 5-3-1. The combined N-P-K content shall be following percentages of total weight: 5 percent nitrogen 3 percent phosphoric acid and 1 percent potash. Fertilizers shall be uniform in composition, dry, and free flowing.
- C. Tablets shall be 21 grams each 20-10-5 "Agriform," "Lesslie", or equal

PART 3 -- EXECUTION

3.1 GENERAL

- A. The landscape work shall not be performed at any time when it may be subject to damage by climatic conditions.
- B. The CONTRACTOR shall carefully scale or otherwise verify all dimensions in the Contract Documents. Dimensions and plant locations shown shall be coordinated with L.A. and final location shall be site-oriented by the planter and L.A. Any discrepancies or inconsistencies discovered shall be brought to the attention of the L.A.
- C. The CONTRACTOR shall provide temporary fencing, barricades, covering, or other protections to preserve existing landscaping items indicated to remain and to protect the adjacent properties and other structures when they may be damaged by the landscape work.
- D. Waste materials shall be removed and disposed of off the Owner's property, unless otherwise indicated.
- E. It shall be the responsibility of the CONTRACTOR to avail itself of any information regarding utilities which are in the area of work and to prevent damage to the same. The CONTRACTOR shall provide protection to the utilities as necessary.
- F. Burning of combustible materials on the site shall not be permitted.
- G. The CONTRACTOR shall provide protection to structures, sidewalks, pavements, and other facilities in areas of work which are subject to damage during landscape work. Open excavations shall be provide with barricades and warning lights which conform to the requirements of governing authorities and the State's OSHA safety requirements from dusk to dawn each day and when needed for safety.
- H. Planting areas include all areas to be landscaped unless, specified or shown, otherwise.

3.2 SOIL PREPARATION

- A. The landscape work shall not begin until all other trades have repaired all areas of settlement, erosion, rutting, etc., and the soils have been re-established, recompacted, and refinished to finish grades. The L.A. shall be notified of all areas which prevent the landscape work from being executed.
- B. Areas requiring grading by the landscaper including adjacent transition areas shall be uniformly level or sloping between finish elevations to within 0.10-ft above or below required finish elevations.
- C. The landscape work shall not proceed until after walks, curbs, paving, edging, and irrigation systems are in place. The contract operations shall be completed to a point where the landscape areas will not be disturbed. The sub grade shall be cleaned free of waste materials of all kinds.
- D. During grading waste materials in the planting areas such as weeds, rocks (1 inches and larger) building materials, rubble, wires, cans, glass, lumber, sticks, etc., shall be removed from the site. Weeds shall be dug out by the roots.

- E. Fertilizers, additives, seed, peat, etc. subject to moisture damage shall be kept in a weatherproof storage place in such a manner that they will be kept dry.
- F. After removal of waste materials the planting areas sub grade shall be scarified and pulverized to a depth of not less than 12 inches in the proposed planting area and all surface irregularities below the cover of topsoil removed.
- G. Finish sub grade and topsoil placement and grading shall consist of:
 - 1. Prepare sub grade by rough grading and removing all irregularities and debris, then till and scarify subsoil to a depth of 6 inches before placing topsoil. Dig sub grade down as required in shrub beds for the placement of topsoil. Provide laser leveling on large flat areas to create a uniform level sub grade.
 - 2. Place 6 inches of topsoil over all lawn and irrigated grass seeding areas. Sub grade soil shall be in a loosened and rough surface finish before topsoil is placed over sub grade. (Sub-grade surface shall not be smooth, but a rough surface shall exist for a transition zone of topsoil to subsoil.) If areas of sub grade become compacted before topsoil is placed, sub grade shall be tilled again before topsoil placement.
 - 3. Placing all soil additives and fertilizers for the areas as noted on the plan.
 - 4. Tilling planting area sub soils and top soils that are compacted.
 - 5. After tilling, bring areas to uniform grades by floating and/or hand raking. In large open level areas, perform laser leveling to create uniform level areas.
 - 6. Make minor adjustment of finish grades as directed by the landscape architect or owner.
 - 7. Remove waste materials over 1" in size such as stones, roots, or other undesirable foreign materials and finish raking, dishing, dragging, and smoothing soil ready for planting.
 - 8. No grading or soil placement shall be undertaken when soils are wet or frozen.
 - 9. Provide dust control measures at all times by wetting down the soil surface as required to prevent blowing dust.
- H. Any unusual subsoil condition that will require special treatment shall be reported to the L.A.
- I. Topsoil shall be uniformly distributed over all areas where required. Sub grade and topsoil shall be damp and free from frost.
- J. Surface drainage shall be provided as shown by molding the surfaces to facilitate the natural run-off of water. Low spots and pockets shall be filled with topsoil and graded to drain properly.
- K. Finish grade of all planting areas shall be 2 inches below finish grades of adjacent pavement of any kind for sod areas.

3.3 GENERAL SEEDING

- A. Weather Conditions: Fertilizing, seeding, or mulching operations will not be permitted when wind velocities exceed 5 miles per hour or when the ground is frozen, unduly wet, or otherwise not in tillable conditions. Seeding shall not be conducted when temperatures exceed 80°F.
- B. Topsoil: 6 inches of approved, imported, amended topsoil shall be placed in all planting areas. Imported, amended topsoil shall be placed and raked smooth prior to seeding or planting.
- C. Soil Preparation: The ground to be seeded shall be graded in conformance with the Drawings and shall be loose and reasonably free of large rocks, roots, and other material which will interfere with the work.
- D. Grass seed mix for lawn areas shall consist of 80% Kentucky bluegrass, 20% Perennial Ryegrass. Seeding rate: 4-5 pounds per 1000 square feet. Seed mix to be supplied by the Granite Seed Company.
- E. Native seed mix shall consist of native grasses and wildflowers for the Park City area. Seed to be supplied by the Granite Seed Company at their recommended seeding rate.

3.4 DRILL SEEDING, NON IRRIGATED SEEDING

- A. Drill seeding of the grass mixture shall occur from March 15 – May 15. The actual seeding period must be approved by the L.A. because weather conditions vary from year to year. No seed shall be conducted until approved.
- B. Only those areas that are too steep to drill may be broadcast or hydro-seeded.
- C. Seeding: Seed shall be uniformly drilled to an average depth of 1/4 to 1/2 inch at the rate specified using equipment having drills not more than 6-1/2 inches apart. Row markers shall be used with the drill seeder. Drill seeding shall take place 3 days after application of herbicide.
- D. Rolling: Immediately after seeding, the entire area shall be firmed with a roller not exceeding 90 pounds for each foot of roller width. Areas seeded with drills equipped with rollers shall not be rolled.
- E. Hydro mulch: Apply hydro mulch over the entire seeded area at a rate of 2000 pounds per acre as noted in the hydro seeding section.

3.5 HYDRO SEEDING

- A. Hydro seeding shall only be used in areas that are too steep for drill seeding.
- B. Hydro seeding shall occur from March 15 – May 15. . The actual seeding period must be approved by the L.A. because weather conditions vary from year to year. No seed shall be conducted until approved.
- C. Hydro mulch or slurry shall conform to the following:

1. Apply specified seed at twice the listed rate with one half the seed to be applied to the prepared ground surface by broad casting. The remaining seed shall be mixed with the slurry mix.
 2. Echofiber or Conwed or approved equal wood fiber mulch, applied at a rate of 2000 pounds per acre.
 3. M-binder or Plantego tackifier, applied at a rate of 150 pounds per acre.
 4. 16-16-8 slow release fertilizer, applied at a rate of 150 pounds per acre
 5. Water at a rate of 4000 gallons per acre.
- D. Hydro mulch shall be applied using a hydro seeding equipment manufactured by Finn or Bowie or approved equal. Machines shall be equipped with heavy duty cast iron pumps and agitators capable of thoroughly mixing the slurry.
- E. Spray of hydro mulch shall begin immediately after the tank is full and the slurry components are mixed.
- F. Apply hydro mulch in a downward drilling motion using a fan stream nozzle. It is important to ensure that all of the components enter and mix with the topsoil.
- G. Only qualified and trained personnel shall perform hydroseeding to insure the uniformity of the hydro seeding application.
- H. Hydro mulch slurry less fertilizer and seed shall also be applied to areas that may be susceptible to erosion that were drill seeded.

3.6 ROCKS OR UNDERGROUND OBSTRUCTIONS

- A. In the event that rock or underground obstructions are encountered in the excavation of plant pits, alternative locations shall be selected by the L.A. Moving of trees to alternative locations shall not entail additional costs to the OWNER.

3.7 MISCELLANEOUS ITEMS

- A. Concrete curbing, if applicable, shall be placed so that the top finish of curbing matches adjoining concrete curbs and walks. Curbing shall be straight and uniform both horizontal and vertically.
- B. No weed barrier fabric will be used for the landscape areas.
- C. Native seed to be used in areas with no abutting manicured landscape. Native seed shall not be irrigated.
- D. Areas of disturbance that abut manicured landscaped areas shall be replaced with matching manicured landscape to blend into the surrounding environment. Irrigation shall be adjusted to match existing and provide supplemental irrigation to newly planted material.

3.8 STONE PAVERS

- A. Stone pavers shall be placed at the location shown on the plans to fill in the gap between the existing stones and the new gutter.
- B. Use stone of similar size, shape, and color as adjacent area.
- C. Excavate to match adjacent grade.
- D. Compact the existing ground to prevent settlement.
- E. Use sand as necessary to level and bed the stones. See APWA section 32 14 13 Precast Concrete Unit Paving.
- F. Place stones.

END OF SECTION