

SPECIFICATIONS AND CONTRACT DOCUMENTS

FOR

Hyrum City

South Cache Pond Canal Trail

February 2025

BID SET

J-U-B Project Number: 57-23-005-007



J-U-B ENGINEERS, INC.



**THE
LANGDON
GROUP**



**GATEWAY
MAPPING
INC.**

OTHER J-U-B COMPANIES

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**HYRUM, UTAH
South Cache Pond Canal Trail**

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TECHNICAL SPECIFICATIONS

STANDARD SPECIFICATIONS

Hyrum City Construction Standards (not attached).

Manual of Standard Specifications, 2017 Edition, Utah Chapter of American Public Works Association
(Not attached)

SUPPLEMENTAL SPECIFICATIONS

32 84 23Irrigation – Traditional Wire
32 91 19Landscape Grading
32 94 23Planting

DRAWINGS

STANDARD DRAWINGS

Hyrum City Construction Standards (not attached).

Manual of Standard Plans, 2017 Edition, Utah Chapter of American Public Works Association (Not attached).

CONSTRUCTION PLANS

South Cache Pond Canal Trail prepared by J-U-B Engineers, Inc.

SECTION 00 11 16
ADVERTISEMENT FOR BIDS

Hyrum UT, Utah
South Cache Pond Canal Trail

Hyrum City (Owner) is requesting Bids for the construction of the following Project:

South Cache Pond Canal Trail

Bids for the construction of the Project will be received at the **Hyrum City Offices** located at **60 West Main, Hyrum UT**, until **Wednesday, March 5th 2025 at 2:00 pm** local time. At that time the Bids received will be publicly opened and read. Mailed bids need to be mailed to Hyrum City, 60 West Main, Hyrum UT, 84319.

The Project includes the following Work:

Importing topsoil and planting of a variety of trees, shrubs, and perennials. Installation of weed fabric and rock mulch. Grading of berms with installation of landscaping boulders. Installation of new irrigation system, with primarily drip lines.

The Project is expected to be substantially complete by **May 30, 2025**.

Bids will be received for a single prime contract. Bids shall be on a lump sum and unit price as indicated in the Bid Form.

The Issuing Office for the Contract Documents is: Hyrum City. Prospective Bidders may obtain copies of the Contract Documents from Hyrum City by contacting Todd Perkins: todd.perkins@hyrumcity.gov

The contract documents will be available **February 14, 2025**.

This Advertisement is issued by:

Owner: **Hyrum City**

SECTION 00 00 30
INSTRUCTIONS TO BIDDERS FOR CONSTRUCTION CONTRACT
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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, and which registers plan holders.

ARTICLE 2—BIDDING DOCUMENTS

- 2.01 Bidder shall obtain a complete set of Bidding Requirements and proposed Contract Documents (together, the Bidding Documents). See the Agreement for a list of the Contract Documents. It is Bidder's responsibility to determine that it is using a complete set of documents in the preparation of a Bid. Bidder assumes sole responsibility for errors or misinterpretations resulting from the use of incomplete documents, by Bidder itself or by its prospective Subcontractors and Suppliers.
- 2.02 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization to download documents, or other distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.
- 2.03 *Electronic Documents*
- A. When the Bidding Requirements indicate that electronic (digital) copies of the Bidding Documents are available, such documents will be made available to the Bidders as Electronic Documents in the manner specified.
1. Bidding Documents will be provided in Adobe PDF (Portable Document Format) (.pdf) that is readable by Adobe Acrobat Reader. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.
- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.06.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

ARTICLE 3—QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder’s qualifications to perform the Work, after submitting its Bid and within 5 days of Owner’s request, Bidder must submit the following information:
- A. Written evidence establishing its qualifications such as financial data, previous experience, and present commitments.
 - B. Other required information regarding qualifications.
- 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.

ARTICLE 4—PRE-BID CONFERENCE

- 4.01 No pre-bid conference shall be held.

ARTICLE 5—SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER’S SAFETY PROGRAM; OTHER WORK AT THE SITE

5.01 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.

5.02 Existing Site Conditions

A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
 - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
 - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
 - c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the

Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.

B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

5.03 *Other Site-related Documents*

A. No other Site-related documents are available.

5.04 *Site Visit and Testing by Bidders*

A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.

B. Bidders visiting the Site are required to arrange their own transportation to the Site.

C. Bidder is not required to conduct any subsurface testing, or exhaustive investigations of Site conditions.

D. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general 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. Bidder is responsible for establishing access needed to reach specific selected test sites.

E. Bidder must 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.

F. Bidder must fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

5.05 *Owner's Safety Program*

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

5.06 *Other Work at the Site*

A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for

such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 6—BIDDER’S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Express Representations and Certifications in Bid Form, Agreement*

- A. The Bid Form that each Bidder will submit contains express representations regarding the Bidder’s examination of Project documentation, Site visit, and preparation of the Bid, and certifications regarding lack of collusion or fraud in connection with the Bid. Bidder should review these representations and certifications, and assure that Bidder can make the representations and certifications in good faith, before executing and submitting its Bid.
- B. If Bidder is awarded the Contract, Bidder (as Contractor) will make similar express representations and certifications when it executes the Agreement.

ARTICLE 7—INTERPRETATIONS AND ADDENDA

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
 - A. **Andrew Noorlander, 801-718-9818, anoorlander@jub.com**
 - B. **Questions must be submitted on or before Friday, March 28th, 2025 at 5:00 pm.**
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

ARTICLE 8—BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of **five** percent of Bidder’s maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 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, 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 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, in whole in the case of a penal sum bid bond, and to the extent of Owner’s

damages in the case of a damages-form bond. Such forfeiture will 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 7 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 7 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 (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.
- 9.02 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 10—SUBSTITUTE AND “OR EQUAL” ITEMS

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute or materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer within 10 days of the issuance of the Advertisement for Bids or invitation to Bidders. Each such request must comply with the requirements of Paragraphs 7.05 and 7.06 of the General Conditions, and the review of the request will be governed by the principles in those paragraphs. The burden of proof of the merit of the proposed item is upon Bidder. Engineer's decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all registered Bidders. Bidders cannot rely upon approvals made in any other manner.
- 10.02 All prices that Bidder sets forth in its Bid will 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 11—SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 11.1 If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, individuals, or entities to be submitted to Owner in advance of a specified date prior to the effective Date of the Agreement, the apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of all such Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work for which such identification is required.

- 11.2 If requested by the Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity.
- 11.3 If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, in which case apparent Successful Bidder shall submit an acceptable substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 11.4 Contractor shall not be required to employ any subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.

ARTICLE 12—PREPARATION OF BID

- 12.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form must be completed in ink and the Bid Form signed in ink. Erasures or alterations must be initialed in ink by the person signing the Bid Form. A Bid price must 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."
- 12.02 If Bidder has obtained the Bidding Documents as Electronic Documents, then Bidder shall prepare its Bid on a paper copy of the Bid Form printed from the Electronic Documents version of the Bidding Documents. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- 12.03 A Bid by a corporation must 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 must be shown.
- 12.04 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.05 A Bid by a limited liability company must 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 official address of the firm must be shown.
- 12.06 A Bid by an individual must show the Bidder's name and official address.
- 12.07 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.08 All names must be printed in ink below the signatures.

- 12.09 The Bid must contain an acknowledgment of receipt of all Addenda, the numbers of which must be filled in on the Bid Form.
- 12.10 Postal and e-mail addresses and telephone number for communications regarding the Bid must be shown.
- 12.11 The Bid must contain evidence of Bidder's authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.12 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

ARTICLE 13—BASIS OF BID

13.01 *Unit Price*

- A. Bidders must submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity", which Owner or its representative has set forth in the Bid Form, for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

13.02 *Allowances*

- A. For cash allowances the Bid price must include such amounts as the Bidder deems proper for Contractor's overhead, costs, profit, and other expenses on account of cash allowances, if any, named in the Contract Documents, in accordance with Paragraph 13.02.B of the General Conditions.

ARTICLE 14—SUBMITTAL OF BID

- 14.01 The Bidding Documents include 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 2 of the Bid Form.
- 14.02 A Bid must be received no later than the date and time prescribed and at the place indicated in the Advertisement or invitation to bid and must 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 must be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope

containing the Bid must be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid must be addressed to the location designated in the Advertisement.

- 14.03 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 15—MODIFICATION AND WITHDRAWAL OF BID

- 15.01 An unopened 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.
- 15.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 15.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 15.03 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, the Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, the Bidder will be disqualified from further bidding on the Work.

ARTICLE 16—OPENING OF BIDS

- 16.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.
- 16.02 Bids will be opened privately.

ARTICLE 17—BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 17.01 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 18—EVALUATION OF BIDS AND AWARD OF CONTRACT

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 18.02 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.03 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, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.

18.04 If Owner awards the contract for the Work, such award will be to the responsible Bidder submitting the lowest responsive Bid.

18.05 *Evaluation of Bids*

A. In evaluating Bids, Owner will consider whether 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. 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.

18.06 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.

18.07 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 19—BONDS AND INSURANCE

19.01 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, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.

19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

ARTICLE 20—SIGNING OF AGREEMENT

20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 30 days thereafter, Successful Bidder must 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 10 days thereafter, Owner will 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 21—SALES AND USE TAXES

21.01 Owner is **not** exempt from sales and use taxes on materials and equipment to be incorporated in the Work. Said taxes must be included in the Bid.

SECTION 00 41 43
BID FORM FOR CONSTRUCTION CONTACT

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 1—OWNER AND BIDDER

1.01 This Bid is submitted to:

In person:

Hyrum City
60 West Main
Hyrum, Utah 84319

By mail:

Hyrum City
Attn: Todd Perkins
60 West Main
Hyrum, Utah 84319

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—ATTACHMENTS TO THIS BID

2.01 The following documents are submitted with and made a condition of this Bid:

- A. Required Bid security;
- B. Contractor’s License No.: _____ or Evidence of Bidder’s ability to obtain a State Contractor’s License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;

ARTICLE 3—BASIS OF BID—UNIT PRICES

3.01 *Unit Price Bids*

- A. The unit prices for each item shall include full compensation for all materials and labor and any necessary work required to complete the construction as shown and specified. The terms "construct, furnish, install, erect, perform, place, prepare, remove or replace" shall mean that the bid item is complete, in place, ready for use and recommended for payment by the Engineer.
- B. Should the need arise to add or delete items during construction, the unit cost must be valid for either adding or deleting.
- C. This unit price schedule must be attached as part of the bid.

Item No.	Description	Unit	Unit Bid Price
SITE WORK			
1.	Mobilization	LS	

2.	SWPP	LS	
3.	Clearing and Grubbing	SF	
4.	Import Fill (general fill for berms)	CY	
5.	Fine Grading	SF	
SITE FURNISHINGS			
6.	Access Control Bollard – non-collapsible	EA	
7.	Access Control Bollard – collapsible	EA	
8.	Bench – Smith Steelworks, Classic Arc	EA	
9.	Trash Receptacle – Smith Steelworks, Classic Dome	EA	
10.	Litter and Recycling Receptacle -owner provided contractor installed	EA	
11.	Dog Waste Station – Sentry JJB006-BLK	EA	
12.	Installation / placement of city provided logs	EA	
LANDSCAPE PLANTING			
13.	Import Topsoil	CY	
14.	Hydroseed Cabin Seed Mix	SF	
15.	Metal Edging – Permaloc Cleanline XL - 8” x 3/16” with 24” stakes	LF	
16.	4-6” Cobble Rock – 6” deep	SF	
17.	Crushed Rock on slopes – 3” deep	SF	
18.	Rock Mulch in plant beds – 3” deep	SF	
19.	Weed Barrier Fabric	SF	
20.	Tree Staking	EA	
21.	Deciduous Trees (2” CAL)	EA	
22.	Deciduous Trees (1.5” CAL)	EA	
23.	5-Gallon Shrubs	EA	
24.	1-Gallon Shrubs / Perennials / Grasses	EA	
25.	Ground Cover (4” pot)	EA	
26.	Landscape Boulders	EA	
LANDSCAPE IRRIGATION			
27.	Irrigation Controller	EA	
28.	Irrigation Control Wire	LF	
29.	Backflow Prevention Device Assembly and enclosure	EA	
30.	Stop and Waste Valve Assembly	EA	
31.	Shut off Valve Assembly	EA	
32.	Manual Drain Valve Assembly	EA	
33.	Drip Control Valve Assembly (Hunter ICZ-101-25-LF)	EA	
34.	Quick Coupling Valve Assembly (Hunter HQ-44LRC, 1”)	EA	
35.	1-inch Schedule 40 Pipe	LF	
36.	3/4-inch Schedule 40 Pipe	LF	
37.	4-Inch Class 200 Irrigation Sleeves	LF	
38.	Area to receive drip emitters (Hunter HE-B) – includes emitters, drip tubing, fittings, and associate equipment	SF	
39.	Drip Flush Valve	EA	

Total Lump Sum Cost of Project:	\$
---------------------------------	----

D. Bidder acknowledges that:

1. Each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and
2. Estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all Unit Price Work will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 4—TIME OF COMPLETION

- 4.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 4.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 5—BIDDER'S ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA

5.01 *Bid Acceptance Period*

- A. 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.

5.02 *Instructions to Bidders*

- A. Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security.

5.03 *Receipt of Addenda*

- A. Bidder hereby acknowledges receipt of the following Addenda:

Addendum Number	Addendum Date

ARTICLE 6—BIDDER'S REPRESENTATIONS AND CERTIFICATIONS

6.01 *Bidder's Representations*

- A. In submitting this Bid, Bidder represents the following:
1. Bidder has examined and carefully studied the Bidding Documents, including Addenda.
 2. Bidder has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 3. Bidder is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
 4. Bidder has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing

surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.

5. Bidder has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. 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 the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, if selected as Contractor; and (c) Bidder's (Contractor's) safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Bidder agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. 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.
9. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. The submission of this Bid constitutes an incontrovertible representation by Bidder that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

6.02 *Bidder's Certifications*

A. The Bidder certifies the following:

1. 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.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
 - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.

- b. 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.
- c. 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.
- d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

BIDDER hereby submits this Bid as set forth above:

Bidder:

(typed or printed name of organization)

By:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

If Bidder is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.

Attest:

(individual's signature)

Name:

(typed or printed)

Title:

(typed or printed)

Date:

(typed or printed)

Address for giving notices:

Bidder's Contact:

Name:

(typed or printed)

Title:

(typed or printed)

Phone:

Email:

Address:

Bidder's Contractor License No.: (if applicable) _____

**SECTION 00 43 13
 BID BOND (PENAL SUM FORM)**

Bidder Name: Address <i>(principal place of business)</i> :	Surety Name: Address <i>(principal place of business)</i> :
Owner Name: Hyrum City Address <i>(principal place of business)</i> : 60 West Main, Hyrum, UT 84319	Bid Project <i>(name and location)</i> : South Cache Pond Canal Trail Hyrum City, Utah Bid Due Date:
Bond Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
<i>(Full formal name of Bidder)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature) (Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs 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 will 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 does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will 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 will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must 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 Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will 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 will 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 governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

SECTION 00 52 00
AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)

This Agreement is by and between **Hyrum City** (“Owner”) and
_____ (“Contractor”).

Terms used in this Agreement have the meanings stated in the General Conditions and the Supplementary Conditions.

Owner and Contractor hereby agree as follows:

ARTICLE 1—WORK

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

Importing topsoil and planting of a variety of trees, shrubs, and perennials. Installation of weed fabric and rock mulch. Grading of berms with installation of landscaping boulders. Installation of new irrigation system, with primarily drip lines.

ARTICLE 2—THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows:

South Cache Pond Canal Trail

ARTICLE 3—ENGINEER

3.01 The Owner has retained **J-U-B Engineers, Inc.** (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by **J-U-B Engineers, Inc.**

ARTICLE 4—CONTRACT TIMES

4.01 *Time is of the Essence*

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

4.02 *Contract Times: Dates*

A. The Work will be substantially complete on or before **May 30th, 2025**, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before **June 13, 2025**.

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the Contract Times, as duly modified. The parties also

recognize the delays, expense, and difficulties involved in proving, in a legal or arbitration proceeding, the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. *Substantial Completion*: Contractor shall pay Owner \$1000 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
 2. *Completion of Remaining Work*: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1000 for each day that expires after such time until the Work is completed and ready for final payment.
 4. Liquidated damages for failing to timely attain Milestones, Substantial Completion, and final completion are not additive, and will not be imposed concurrently.
- B. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

4.04 *Special Damages*

- A. Contractor shall reimburse Owner (1) for any fines or penalties imposed on Owner as a direct result of the Contractor's failure to attain Substantial Completion according to the Contract Times, and (2) for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Substantial Completion (as duly adjusted pursuant to the Contract), until the Work is substantially complete.
- B. After Contractor achieves Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times, Contractor shall reimburse Owner for the actual costs reasonably incurred by Owner for engineering, construction observation, inspection, and administrative services needed after the time specified in Paragraph 4.02 for Work to be completed and ready for final payment (as duly adjusted pursuant to the Contract), until the Work is completed and ready for final payment.
- C. The special damages imposed in this paragraph are supplemental to any liquidated damages for delayed completion established in this Agreement.

ARTICLE 5—CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents, the amounts that follow, subject to adjustment under the Contract:
- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6—PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on the basis of Contractor's Applications for Payment on or about the **25th** day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
 - 1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract.
 - a. **95 percent** of the value of the Work completed (with the balance being retainage).
 - 1) If 50 percent or more of the Work has been completed, as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
 - b. **95 percent** of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
 - B. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to **100 percent** of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less **200 percent** of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work, Owner shall pay the remainder of the Contract Price in accordance with Paragraph 15.06 of the General Conditions.

6.04 *Consent of Surety*

- A. Owner will not make final payment, or return or release retainage at Substantial Completion or any other time, unless Contractor submits written consent of the surety to such payment, return, or release.

6.05 *Interest*

- A. All amounts not paid when due will bear interest at the rate of **4 percent** per annum.

ARTICLE 7—CONTRACT DOCUMENTS

7.01 *Contents*

- A. The Contract Documents consist of all of the following:
1. This Agreement.
 2. Bonds:
 - a. Performance bond (together with power of attorney).
 - b. Payment bond (together with power of attorney).
 3. General Conditions.
 4. Supplementary Conditions.
 5. Specifications as listed in the table of contents of the project manual (copy of list attached).
 6. Drawings (not attached but incorporated by reference) with each sheet bearing the following general title: **South Cache Pond Canal Trail**
 8. Addenda (numbers _____ to _____, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (Pages ___ to ___ inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (Pages _____ to _____ inclusive).
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed.
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

ARTICLE 8—REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS

8.01 *Contractor's Representations*

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
1. Contractor has examined and carefully studied the Contract Documents, including Addenda.

2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

8.02 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:

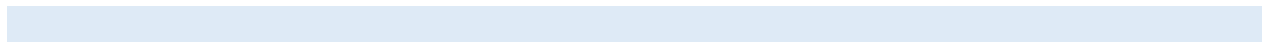
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract 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. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

8.03 *Standard General Conditions*

- A. Owner stipulates that if the General Conditions, Section 00 72 00, that are made a part of this Contract are EJCDC® C-700, Standard General Conditions for the Construction Contract (2018), published by the Engineers Joint Contract Documents Committee, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process such as highlighting or "track changes" (redline/strikeout), or in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

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



Owner:

Contractor:

(typed or printed name of organization)

(typed or printed name of organization)

By: _____
(individual's signature)

By: _____
(individual's signature)

Date: _____
(date signed)

Date: _____
(date signed)

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

(If [Type of Entity] is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
(individual's signature)

Attest: _____
(individual's signature)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address for giving notices:

Address for giving notices:

Designated Representative:

Designated Representative:

Name: _____
(typed or printed)

Name: _____
(typed or printed)

Title: _____
(typed or printed)

Title: _____
(typed or printed)

Address:

Address:

Phone: _____

Phone: _____

Email: _____

Email: _____

(If [Type of Entity] is a corporation, attach evidence of authority to sign. If [Type of Entity] is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

License No.: _____
(where applicable)

State: _____

**SECTION 00 00 30
NOTICE TO PROCEED**

Owner: Hyrum City Owner's Project No.: _____
Engineer: J-U-B Engineers, Inc Engineer's Project No.: 57-23-005-007
Contractor: _____ Contractor's Project No.: _____
Project: South Cache Pond Canal Trail
Contract Name: South Cache Pond Canal Trail

Effective Date of Contract: _____

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on _____ pursuant to Paragraph 4.01 of the General Conditions.

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date.

In accordance with the Agreement:

The date by which Substantial Completion must be achieved is **May 30th, 2025**, and the date by which readiness for final payment must be achieved is **June 13th, 2025**.

Before starting any Work at the Site, Contractor must comply with the following:

Owner: _____
By (signature): _____
Name (printed): _____
Title: _____
Date Issued: _____

Copy: Engineer

**SECTION 00 61 13.13
PERFORMANCE BOND**

<p>Contractor Name: [Full formal name of Contractor] Address <i>(principal place of business)</i>: [Address of Contractor's principal place of business]</p>	<p>Surety Name: [Full formal name of Surety] Address <i>(principal place of business)</i>: [Address of Surety's principal place of business]</p>
<p>Owner Name: Hyrum City Mailing address <i>(principal place of business)</i>: 60 West Main Hyrum, UT 84319</p>	<p>Contract Description <i>(name and location)</i>: South Cache Pond Canal Trail, Hyrum City Contract Price: [Amount from Contract] Effective Date of Contract: [Date from Contract]</p>
<p>Bond Bond Amount: [Amount] Date of Bond: [Date] <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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 will 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 may 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 will 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 does 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 does 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 will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will 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 will not be reduced or set off on account of any such unrelated obligations. No right of action will 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 must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must 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 will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must 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 will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will 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 will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
16. Modifications to this Bond are as follows:

**SECTION 00 61 13.16
PAYMENT BOND**

<p>Contractor Name: [Full formal name of Contractor] Address (<i>principal place of business</i>): [Address of Contractor's principal place of business]</p>	<p>Surety Name: [Full formal name of Surety] Address (<i>principal place of business</i>): [Address of Surety's principal place of business]</p>
<p>Owner Name: Hyrum City Mailing address (<i>principal place of business</i>): 60 West Main Hyrum, UT 84319</p>	<p>Contract Description (<i>name and location</i>): South Cache Pond Canal Trail, Hyrum City Contract Price: [Amount, from Contract] Effective Date of Contract: [Date, from Contract]</p>
<p>Bond Bond Amount: [Amount] Date of Bond: [Date] <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
<i>(Full formal name of Contractor)</i>	<i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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 will 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 will 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 will 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 will 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 will 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 will 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 satisfying 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 will 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 will be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will 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 will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will 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:
 - 16.1.1. The name of the Claimant;
 - 16.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
 - 16.1.3. 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;
 - 16.1.4. A brief description of the labor, materials, or equipment furnished;

- 16.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
 - 16.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
 - 16.1.7. The total amount of previous payments received by the Claimant; and
 - 16.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 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 is 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.
17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
18. Modifications to this Bond are as follows: **[Describe modification or enter “None”]**

**SECTION 00 63 36
FIELD ORDER**

FIELD ORDER NO.: [Number of Field Order]

Owner:	Hyrum City	Owner's Project No.:	
Engineer:	J-U-B Engineers, Inc.	Engineer's Project No.:	57-23-005
Contractor:		Contractor's Project No.:	
Project:	South Cache Pond Canal Trail		
Contract Name:	South Cache Pond Canal Trail		
Date Issued:		Effective Date of Field Order:	

Contractor is hereby directed to promptly perform the Work described in this Field Order, issued in accordance with Paragraph 11.04 of the General Conditions, for minor changes in the Work without changes in Contract Price or Contract Times. If Contractor considers that a change in Contract Price or Contract Times is required, submit a Change Proposal before proceeding with this Work.

Reference:

Specification Section(s):

Drawing(s) / Details (s):

Description:

[Description of the change to the Work]

Attachments:

[List documents supporting change]

Issued by Engineer

By: _____

Title: _____

Date: _____

**SECTION 00 63 49
WORK CHANGE DIRECTIVE**

WORK CHANGE DIRECTIVE NO.: [Number of Work Change Directive]

Owner:	Hyrum City	Owner's Project No.:	
Engineer:	J-U-B Engineers, Inc.	Engineer's Project No.:	57-23-005
Contractor:		Contractor's Project No.:	
Project:	South Cache Pond Canal Trail		
Contract Name:	South Cache Pond Canal Trail		
Date Issued:		Effective Date of Work Change Directive:	

Contractor is directed to proceed promptly with the following change(s):

Description:

[Description of the change to the Work]

Attachments:

[List documents related to the change to the Work]

Purpose for the Work Change Directive:

[Describe the purpose for the change to the Work]

Directive to proceed promptly with the Work described herein, prior to agreeing to change in Contract Price and Contract Time, is issued due to:

Notes to User—Check one or both of the following

Non-agreement on pricing of proposed change. Necessity to proceed for schedule or other reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price: \$ _____ **[increase] [decrease] [not yet estimated].**

Contract Time: _____ days **[increase] [decrease] [not yet estimated].**

Basis of estimated change in Contract Price:

Lump Sum Unit Price Cost of the Work Other

Recommended by Engineer

Authorized by Owner

By: _____

Title: _____

Date: _____

**SECTION 00 63 63
CHANGE ORDER**

CHANGE ORDER NO.: [Number of Change Order]

Owner:	Hyrum City	Owner's Project No.:	
Engineer:	J-U-B Engineers, Inc.	Engineer's Project No.:	57-23-005
Contractor:		Contractor's Project No.:	
Project:	South Cache Pond Canal Trail		
Contract Name:	South Cache Pond Canal Trail		
Date Issued:		Effective Date of Change Order:	

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

Description:

[Description of the change]

Attachments:

[List documents related to the change]

Change in Contract Price	Change in Contract Times [State Contract Times as either a specific date or a number of days]
Original Contract Price: \$ _____	Original Contract Times: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] from previously approved Change Orders No. 1 to No. [Number of previous Change Order] : \$ _____	[Increase] [Decrease] from previously approved Change Orders No.1 to No. [Number of previous Change Order] : Substantial Completion: _____ Ready for final payment: _____
Contract Price prior to this Change Order: \$ _____	Contract Times prior to this Change Order: Substantial Completion: _____ Ready for final payment: _____
[Increase] [Decrease] this Change Order: \$ _____	[Increase] [Decrease] this Change Order: Substantial Completion: _____ Ready for final payment: _____
Contract Price incorporating this Change Order: \$ _____	Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for final payment: _____

Recommended by Engineer (if required)

Authorized by Owner

By: _____

Title: _____

Date: _____

Authorized by Owner

Approved by Funding Agency (if applicable)

By: _____

Title: _____

Date: _____

SECTION 00 65 16
CERTIFICATE OF SUBSTANTIAL COMPLETION

Owner:	Hyrum City	Owner's Project No.:	
Engineer:	J-U-B Engineers, Inc.	Engineer's Project No.:	57-23-005
Contractor:		Contractor's Project No.:	
Project:	South Cache Pond Canal Trail		
Contract Name:	South Cache Pond Canal Trail		

This Preliminary Final Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

South Cache Pond Canal Trail

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 Documents.

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.

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 must be as provided in the Contract, except as amended as follows:

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:

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

Engineer

By (*signature*): _____

Name (*printed*): _____

Title: _____

SECTION 00 72 00
STANDARD GENERAL CONDITIONS
OF THE CONSTRUCTION CONTRACT

Prepared By



Endorsed By



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SECTION 00 00 30
STANDARD GENERAL CONDITIONS OF THE
CONSTRUCTION CONTRACT

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STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

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 document prepared by Contractor, in a form acceptable to Engineer, to request 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; 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; 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.
- 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.
 - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
 - d. 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), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations 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 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. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
 21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

recipient; (d) the storage and archiving of the Electronic Document by sender and recipient; and (e) the use by recipient of the Electronic Document for purposes permitted by this Contract. Electronic Means does not include the use of text messaging, or of Facebook, Twitter, Instagram, or similar social media services for transmission of Electronic Documents.

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *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.
24. *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.
 - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
 - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
 - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *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.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *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.
30. *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.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *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.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *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.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *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.
37. *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.
38. *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 or areas furnished by Owner which are designated for the use of Contractor.
39. *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.
40. *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.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *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 of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, 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.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
 - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
 - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *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.
50. *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 Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* 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:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
 2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 3. 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 Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means 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, means 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, means 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. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. 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 Performance and Payment Bonds; Evidence of Insurance*

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), 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 signed 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 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 *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 the schedules submitted in accordance with Paragraph 2.03.A. No progress payment will 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.
 - 4. If a schedule is not acceptable, Contractor will have an additional 10 days to revise and resubmit the schedule.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents 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 Electronic Documents.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document 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 versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will 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.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
 - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
 - 2. 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.

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, means 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, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer 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 or Engineer 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 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 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 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 in writing 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.

- 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 notify Owner and Contractor in writing 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 versions, 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 precludes 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 30th 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 60th day after the day of Bid opening or the 30th 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 may 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 must 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 will 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 Contract Price or 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. Such an adjustment will 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 third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
 - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
 2. Contractor shall not be entitled to an adjustment in Contract Price 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. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
 3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
 2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
 3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
 4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
 5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. 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, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses 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.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing 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, or to improvements, structures, utilities, or similar facilities located at such adjacent lands 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 7.13, 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 in a court of competent jurisdiction; 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 will 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 of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

- B. *Underground Facilities:* Underground Facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05, and not in the drawings referred to in Paragraph 5.03.A. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

- C. *Reliance by Contractor on Technical Data:* 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 Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* 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;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. 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:
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;
 2. is of such a nature as to require a change in the Drawings or Specifications;
 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 whether it is necessary for Owner to obtain 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; 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, 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 subject to the provisions of Paragraphs 4.05.D and 4.05.E.
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;
 - 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 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, then any such adjustment will 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, 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.
- F. *Underground Facilities; Hazardous Environmental Conditions:* Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* Unless it is otherwise expressly provided in the Supplementary Conditions, the cost of all of the following are included in the Contract Price, and Contractor shall have full responsibility for:
1. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 2. complying with applicable state and local utility damage prevention Laws and Regulations;

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
 4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 5. 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 on the Drawings, or was not shown or indicated on the Drawings 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), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
 2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
 3. obtain any pertinent cost or schedule information from Contractor; 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
 4. 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. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, 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. 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;
 - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
 - c. 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, then any such adjustment will 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, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
 4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; 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 on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. 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;
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, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, 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. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- 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, 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 obligates 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 obligates 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 Contractor's obligations under the Contract. These bonds must 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 terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, 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 must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. 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.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

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. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

- Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.
- E. Owner shall deliver to Contractor, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Owner has obtained and is maintaining the policies and coverages 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, documentation of applicable self-insured retentions (if allowed) and deductibles, and full disclosure of all relevant exclusions. In any documentation furnished under this provision, Owner may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those relevant to this Contract.
 - F. 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, will not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
 - G. In addition to the liability insurance required to be provided by Contractor, the Owner, at Owner's option, may purchase and maintain Owner's own liability insurance. 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.
 - H. Contractor shall require:
 - 1. Subcontractors to purchase and maintain worker's compensation, commercial general liability, and other insurance that is appropriate for their participation in the Project, and to name as additional insureds Owner and Engineer (and any other individuals or entities identified in the Supplementary Conditions as additional insureds on Contractor's liability policies) on each Subcontractor's commercial general liability insurance policy; and
 - 2. Suppliers to purchase and maintain insurance that is appropriate for their participation in the Project.
 - I. If either party does not purchase or maintain 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.
 - J. If Contractor has failed to obtain and maintain required insurance, Contractor's entitlement to enter or remain at the Site will end immediately, and Owner may impose an appropriate set-off against payment for any associated costs (including but not limited to the cost of purchasing necessary insurance coverage), and exercise Owner's termination rights under Article 16.
 - K. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect (but is in no way obligated) 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 will be adjusted accordingly.

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, 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 and Engineer.

6.03 *Contractor's Insurance*

- A. *Required Insurance:* Contractor shall purchase and maintain Worker's Compensation, Commercial General Liability, and other insurance pursuant to the specific requirements of the Supplementary Conditions.
- B. *General Provisions:* The policies of insurance required by this Paragraph 6.03 as supplemented must:
 - 1. include at least the specific coverages required;
 - 2. be written for not less than the limits provided, or those required by Laws or Regulations, whichever is greater;
 - 3. remain in effect at least until the Work is complete (as set forth in Paragraph 15.06.D), and longer if expressly required elsewhere in this Contract, 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;
 - 4. apply with respect to the performance of the Work, whether such performance is 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; and
 - 5. include all necessary endorsements to support the stated requirements.
- C. *Additional Insureds:* The Contractor's commercial general liability, automobile liability, employer's liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies, if required by this Contract, must:
 - 1. include and list as additional insureds Owner and Engineer, and any individuals or entities identified as additional insureds in the Supplementary Conditions;
 - 2. include coverage for the respective officers, directors, members, partners, employees, and consultants of all such additional insureds;
 - 3. afford primary coverage to these additional insureds for all claims covered thereby (including as applicable those arising from both ongoing and completed operations);

4. not seek contribution from insurance maintained by the additional insured; and
5. as to commercial general liability insurance, apply to additional insureds with respect to liability caused in whole or in part by Contractor's acts or omissions, or the acts and omissions of those working on Contractor's behalf, in the performance of Contractor's operations.

6.04 *Builder's Risk and Other 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 Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- 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 advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. 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 6.04, it may do so at Contractor's expense.

6.05 *Property Losses; Subrogation*

- A. The builder's risk insurance policy purchased and maintained in accordance with Paragraph 6.04 (or an installation floater policy if authorized by the Supplementary Conditions), will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against

Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors.

1. 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, risks, 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 individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater 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.
 2. None of the above waivers extends 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. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, 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, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. 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 all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights 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 insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract 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 fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 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 6.04 shall maintain such proceeds in a segregated account, and 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, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.01 *Contractor's Means and Methods of Construction*

- A. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. If the Contract Documents note, or Contractor determines, that professional engineering or other design services are needed to carry out Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures, or for Site safety, then Contractor shall cause such services to be provided by a properly licensed design professional, at Contractor's expense. Such services are not Owner-delegated professional design services under this Contract, and neither Owner nor Engineer has any responsibility with respect to (1) Contractor's determination of the need for such services, (2) the qualifications or licensing of the design professionals retained or employed by Contractor, (3) the performance of such services, or (4) any errors, omissions, or defects in such services.

7.02 *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.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who will not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.03 *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 maintain good discipline and order at the Site.

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. 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 will 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.

7.04 *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 must be new and of good quality, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications will 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 must 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.

7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, 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 equipment or material, or items from other proposed Suppliers, under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
 - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) 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) has a proven record of performance and availability of responsive service; and
 - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) the item 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 will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

7.06 *Substitutes*

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material 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 equipment or material under the circumstances described below. To the extent possible such requests must 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 equipment or material from anyone other than Contractor.
 2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.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 equipment or material that Contractor seeks to furnish or use. The application:
 - a. will 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 the item specified; and
 - 3) be suited to the same use as the item 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 the item specified; and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. will 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 will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers 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 or Supplier 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 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. 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 or Suppliers 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 or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, 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 or Supplier, whether initially or as a replacement, will 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 solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *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 an 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 will be disclosed 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.

7.09 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits, licenses, and certificates of occupancy. 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.

7.10 *Taxes*

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

7.11 *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. 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 is not Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this does not relieve Contractor of its obligations under Paragraph 3.03.
- C. Owner or Contractor may give written 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 written notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.12 *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.

7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. 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.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. 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.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.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).
- E. 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.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that 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.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. 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.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will 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.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of safety data sheets (formerly known as 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 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 by an emergency, or are required as a result of Contractor's response to an emergency. If Engineer determines that a change in the Contract Documents is required because of an emergency or Contractor's response, a Work Change Directive or Change Order will be issued.

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
 - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determine and verify:
 - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
 - 2) 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
 - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
 - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must 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 Shop Drawing or Sample, Contractor shall give Engineer specific written notice of any variations that the Submittal may have from the requirements of the Contract Documents. This notice must be set forth in a written communication separate from the Submittal; and, in addition, in the case of a Shop Drawing by a specific notation made on the Shop Drawing itself.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall label and submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals.
1. *Shop Drawings*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings must 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.C.
 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.C.
 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. *Engineer's Review of Shop Drawings and Samples*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the accepted Schedule of Submittals. 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, comply with the requirements of 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 will 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 or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 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, will 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 or Sample will 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.C.4.

D. Resubmittal Procedures for Shop Drawings and Samples

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 Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

E. Submittals Other than Shop Drawings, Samples, and Owner-Delegated Designs

1. The following provisions apply to all Submittals other than Shop Drawings, Samples, and Owner-delegated designs:
 - a. Contractor shall submit all such Submittals to the Engineer in accordance with the Schedule of Submittals and pursuant to the applicable terms of the Contract Documents.
 - b. Engineer will provide timely review of all such Submittals in accordance with the Schedule of Submittals and return such Submittals with a notation of either Accepted or Not Accepted. Any such Submittal that is not returned within the time established in the Schedule of Submittals will be deemed accepted.
 - c. Engineer's review will be only to determine if the Submittal is acceptable under the requirements of the Contract Documents as to general form and content of the Submittal.

- d. If any such Submittal is not accepted, Contractor shall confer with Engineer regarding the reason for the non-acceptance, and resubmit an acceptable document.
 2. Procedures for the submittal and acceptance of the Progress Schedule, the Schedule of Submittals, and the Schedule of Values are set forth in Paragraphs 2.03, 2.04, and 2.05.
- F. Owner-delegated Designs: Submittals pursuant to Owner-delegated designs are governed by the provisions of Paragraph 7.19.

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 is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
 2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, 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.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
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. The end of the correction period established in Paragraph 15.08;
 8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. 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 will 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 losses, damages, costs, and judgments (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 from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage 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 will 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.

7.19 *Delegation of Professional Design Services*

- A. Owner may require Contractor to provide professional design services for a portion of the Work by express delegation in the Contract Documents. Such delegation will specify the performance and design criteria that such services must satisfy, and the Submittals that Contractor must furnish to Engineer with respect to the Owner-delegated design.
- B. Contractor shall cause such Owner-delegated professional design services to be provided pursuant to the professional standard of care by a properly licensed design professional, whose signature and seal must appear on all drawings, calculations, specifications, certifications, and Submittals prepared by such design professional. Such design professional must issue all certifications of design required by Laws and Regulations.
- C. If a Shop Drawing or other Submittal related to the Owner-delegated design is prepared by Contractor, a Subcontractor, or others for submittal to Engineer, then such Shop Drawing or other Submittal must bear the written approval of Contractor's design professional when submitted by Contractor to Engineer.

- D. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, and approvals performed or provided by the design professionals retained or employed by Contractor under an Owner-delegated design, subject to the professional standard of care and the performance and design criteria stated in the Contract Documents.
- E. Pursuant to this Paragraph 7.19, Engineer's review, approval, and other determinations regarding design drawings, calculations, specifications, certifications, and other Submittals furnished by Contractor pursuant to an Owner-delegated design will be only for the following limited purposes:
 - 1. Checking for conformance with the requirements of this Paragraph 7.19;
 - 2. Confirming that Contractor (through its design professionals) has used the performance and design criteria specified in the Contract Documents; and
 - 3. Establishing that the design furnished by Contractor is consistent with the design concept expressed in the Contract Documents.
- F. Contractor shall not be responsible for the adequacy of performance or design criteria specified by Owner or Engineer.
- G. Contractor is not required to provide professional services in violation of applicable Laws and Regulations.

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 third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. 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.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, 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.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

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 for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, 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. 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 will 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, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will 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 or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- 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.
 - 1. 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 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 8.03.B.
 - 2. 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 Contractor.
- C. 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 will 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 (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 10.07. 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 *Resident 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 the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

10.04 *Engineer's Authority*

- A. Engineer has the authority to reject Work in accordance with Article 14.
- B. Engineer's authority as to Submittals is set forth in Paragraph 7.16.
- C. Engineer's authority as to design drawings, calculations, specifications, certifications and other Submittals from Contractor in response to Owner's delegation (if any) to Contractor of professional design services, is set forth in Paragraph 7.19.
- D. Engineer's authority as to changes in the Work is set forth in Article 11.

E. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.05 *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.

10.06 *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.

10.07 *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, will 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 Contractor under 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 10.07 also apply to the Resident Project Representative, if any.

10.08 *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 of which Engineer has been informed.

ARTICLE 11—CHANGES TO THE CONTRACT

11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that 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, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
 - 1. Changes in 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 11.05, (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 that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

11.03 *Work Change Directives*

- A. 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 11.07 regarding change of Contract Price.

- B. If Owner has issued a Work Change Directive and:
 - 1. Contractor believes that an adjustment in Contract Times or Contract Price is necessary, then Contractor shall submit any Change Proposal seeking such an adjustment no later than 30 days after the completion of the Work set out in the Work Change Directive.
 - 2. Owner believes that an adjustment in Contract Times or Contract Price is necessary, then Owner shall submit any Claim seeking such an adjustment no later than 60 days after issuance of the Work Change Directive.

11.04 *Field Orders*

- A. 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.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.05 *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. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work 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 must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates 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.

11.06 *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.C.2.

11.07 *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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must 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);
 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 11.07.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 11.07.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit will 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 will be 15 percent;
 - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 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 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.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 5 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 will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
 - d. No fee will 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 of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
 - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

11.08 *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 must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

11.09 *Change Proposals*

- A. *Purpose and Content:* Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; contest an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; challenge a set-off against payment due; or seek other relief under the Contract. The Change Proposal will specify any proposed change in Contract Times or Contract Price, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents. Each Change Proposal will address only one issue, or a set of closely related issues.

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* 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.
 - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
 - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must 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.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must 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.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *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 in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

11.10 *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 are subject 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;
 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; and
 4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- 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 rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, 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 will 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 will 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 will 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 will 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 will 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 will 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 will be incorporated in a Change Order or other written document 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. When needed 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 will be in amounts no higher than those commonly incurred in the locality of the Project, will not include any of the costs itemized in Paragraph 13.01.C, and will 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 in advance of the subject Work. Such employees include, without limitation, superintendents, foremen, safety managers, safety representatives, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work will be apportioned on the basis of their time spent on the Work. Payroll costs include, but are not limited to, salaries and wages plus the cost of fringe benefits, which include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, 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, will 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 accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts will accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment will 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, which 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 will 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 or retained for services specifically related to the Work.
 5. Other costs consisting of 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, 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.

- 1) In establishing included costs for materials such as scaffolding, plating, or sheeting, consideration will be given to the actual or the estimated life of the material for use on other projects; or rental rates may be established on the basis of purchase or salvage value of such items, whichever is less. Contractor will not be eligible for compensation for such items in an amount that exceeds the purchase cost of such item.

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on 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 cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed 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 builder's risk or other property insurance established in accordance with Paragraph 6.04), 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 include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will 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 does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general 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. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. 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.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. 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*

- 1. When the Work as a whole is performed on the basis of cost-plus-a-fee, then:
 - a. Contractor's fee for the Work set forth in the Contract Documents as of the Effective Date of the Contract will be determined as set forth in the Agreement.
 - b. for any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work, Contractor's fee will be determined as follows:
 - 1) When the fee for the Work as a whole is a percentage of the Cost of the Work, the fee will automatically adjust as the Cost of the Work changes.
 - 2) When the fee for the Work as a whole is a fixed fee, the fee for any additions or deletions will be determined in accordance with Paragraph 11.07.C.2.
- 2. When the Work as a whole is performed on the basis of a stipulated sum, or any other basis other than cost-plus-a-fee, then Contractor's fee for any Work covered by a Change

Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price on the basis of Cost of the Work will be determined in accordance with Paragraph 11.07.C.2.

- E. *Documentation and Audit*: Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor and pertinent Subcontractors will establish and maintain records of the costs in accordance with generally accepted accounting practices. Subject to prior written notice, Owner will be afforded reasonable access, during normal business hours, to all Contractor's accounts, records, books, correspondence, instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner. Pertinent Subcontractors will afford such access to Owner, and preserve such documents, to the same extent required of Contractor.

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 for any of the foregoing will be valid.
- C. *Owner's Contingency Allowance*: Contractor agrees that an Owner's 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 for Work covered by allowances, and the Contract Price will 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, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the quantity of the item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor's unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

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 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 with such procedures and programs 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 will 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 will 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 will 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 written 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 will 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, 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 will 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 defective Work as required by Engineer, then Owner may, after 7 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 for 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.
 - 2. 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 must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) 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.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. 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;
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; 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 based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from 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 has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
 - j. Liquidated or other 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; or
 - l. Other items entitle 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 will 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 will be treated as an amount due as determined by Paragraph 15.01.D.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 7 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 will 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 7 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 15.03.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 6.04 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 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must 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 duly pending Change Proposals and Claims; 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 Final Application and Recommendation of Payment:* 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 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will 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. 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. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *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 and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

15.07 *Waiver of Claims*

- A. By making final payment, Owner waives its claim or right to liquidated damages or other damages for late completion by Contractor, except as set forth in an outstanding Claim,

appeal under the provisions of Article 17, set-off, or express reservation of rights by Owner. Owner reserves all other claims or rights after final payment.

- 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 as a Claim, 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 Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect 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 adjacent areas;
 - 2. correct such defective Work;
 - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, 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 from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, 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 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). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. 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.
- E. 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.

- F. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph are not to 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 directly attributable to any such suspension. Any Change Proposal seeking such adjustments must 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) 10 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) written 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 7 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 will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate for Convenience*

- A. Upon 7 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 for any loss of anticipated profits or revenue, post-termination overhead costs, 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 7 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, 7 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, pursuant to Article 12; and
 2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise 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;
 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 requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
 2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
 3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

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 will not constitute a waiver of that provision, nor will 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 of the Contract or 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 *Assignment of Contract*

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party to this Contract of any rights under or interests in the Contract will be binding on the other party without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no assignment will release or discharge the assignor from any duty or responsibility under the Contract.

18.09 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

18.10 *Headings*

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

SECTION 00 73 00
SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

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SECTION 00 73 00

SUPPLEMENTARY CONDITIONS OF THE CONSTRUCTION CONTRACT

These Supplementary Conditions amend or supplement EJCDC® C-700 (Section 00 72 00), Standard General Conditions of the Construction Contract (2018). The General Conditions remain in full force and effect except as amended.

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—for example, "Paragraph SC-4.05."

ARTICLE 1—DEFINITIONS AND TERMINOLOGY

No Supplementary Conditions in this Article.

ARTICLE 2—PRELIMINARY MATTERS

2.01 *Delivery of Performance and Payment Bonds; Evidence of Insurance*

SC 2.01 Delete Paragraph 2.01 B and C. in their entirety and insert the following in its place:

- B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.

2.02 *Copies of Documents*

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

2.06 *Electronic Transmittals*

SC-2.06 Delete Paragraphs 2.06.B and 2.06.C in their entirety and insert the following in their place:

B. *Electronic Documents Protocol*: The parties shall conform to the following provisions in Paragraphs 2.06.B and 2.06.C, together referred to as the Electronic Documents Protocol (“EDP” or “Protocol”) for exchange of electronic transmittals.

1. *Basic Requirements*

- a. To the fullest extent practical, the parties agree to and will transmit and accept Electronic Documents in an electronic or digital format using the procedures described in this Protocol. Use of the Electronic Documents and any information contained therein is subject to the requirements of this Protocol and other provisions of the Contract.
- b. The contents of the information in any Electronic Document will be the responsibility of the transmitting party.
- c. Electronic Documents as exchanged by this Protocol may be used in the same manner as the printed versions of the same documents that are exchanged using non-electronic format and methods, subject to the same governing requirements, limitations, and restrictions, set forth in the Contract Documents.
- d. Except as otherwise explicitly stated herein, the terms of this Protocol will be incorporated into any other agreement or subcontract between a party and any third party for any portion of the Work on the Project, or any Project-related services, where that third party is, either directly or indirectly, required to exchange Electronic Documents with a party or with Engineer. Nothing herein will modify the requirements of the Contract regarding communications between and among the parties and their subcontractors and consultants.
- e. When transmitting Electronic Documents, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the receiving party’s use of software application packages, operating systems, or computer hardware differing from those established in this Protocol.
- f. Nothing herein negates any obligation 1) in the Contract to create, provide, or maintain an original printed record version of Drawings and Specifications, signed and sealed according to applicable Laws and Regulations; 2) to comply with any applicable Law or Regulation governing the signing and sealing of design documents or the signing and electronic transmission of any other documents; or 3) to comply with the notice requirements of Paragraph 18.01 of the General Conditions.

2. *System Infrastructure for Electronic Document Exchange*

- a. Each party will provide hardware, operating system(s) software, internet, e-mail, and large file transfer functions (“System Infrastructure”) at its own cost and sufficient for complying with the EDP requirements. With the exception of minimum standards set forth in this EDP, and any explicit system requirements specified by attachment to this EDP, it is the obligation of each party to determine, for itself, its own System Infrastructure.

- 1) The maximum size of an email attachment for exchange of Electronic Documents under this EDP is **10 MB**. Attachments larger than that may be exchanged using large file transfer functions or physical media.
 - 2) Each Party assumes full and complete responsibility for any and all of its own costs, delays, deficiencies, and errors associated with converting, translating, updating, verifying, licensing, or otherwise enabling its System Infrastructure, including operating systems and software, for use with respect to this EDP.
- b. Each party is responsible for its own system operations, security, back-up, archiving, audits, printing resources, and other Information Technology (“IT”) for maintaining operations of its System Infrastructure during the Project, including coordination with the party’s individual(s) or entity responsible for managing its System Infrastructure and capable of addressing routine communications and other IT issues affecting the exchange of Electronic Documents.
 - c. Each party will operate and maintain industry-standard, industry-accepted, ISO-standard, commercial-grade security software and systems that are intended to protect the other party from: software viruses and other malicious software like worms, trojans, adware; data breaches; loss of confidentiality; and other threats in the transmission to or storage of information from the other parties, including transmission of Electronic Documents by physical media such as CD/DVD/flash drive/hard drive. To the extent that a party maintains and operates such security software and systems, it shall not be liable to the other party for any breach of system security.
 - d. In the case of disputes, conflicts, or modifications to the EDP required to address issues affecting System Infrastructure, the parties shall cooperatively resolve the issues; but, failing resolution, the Owner is authorized to make and require reasonable and necessary changes to the EDP to effectuate its original intent. If the changes cause additional cost or time to Contractor, not reasonably anticipated under the original EDP, Contractor may seek an adjustment in price or time under the appropriate process in the Contract.
 - e. Each party is responsible for its own back-up and archive of documents sent and received during the term of the contract under this EDP, unless this EDP establishes a Project document archive, either as part of a mandatory Project website or other communications protocol, upon which the parties may rely for document archiving during the specified term of operation of such Project document archive. Further, each party remains solely responsible for its own post-Project back-up and archive of Project documents after the term of the Contract, or after termination of the Project document archive, if one is established, for as long as required by the Contract and as each party deems necessary for its own purposes.
 - f. If a receiving party receives an obviously corrupted, damaged, or unreadable Electronic Document, the receiving party will advise the sending party of the incomplete transmission.
 - g. The parties will bring any non-conforming Electronic Documents into compliance with the EDP. The parties will attempt to complete a successful transmission of the Electronic Document or use an alternative delivery method to complete the communication.

- h. The Owner will operate a Project information management system (also referred to in this EDP as “Project Website”) for use of Owner, Engineer and Contractor during the Project for exchange and storage of Project-related communications and information. Except as otherwise provided in this EDP or the General Conditions, use of the Project Website by the parties as described in this Paragraph will be mandatory for exchange of Project documents, communications, submittals, and other Project-related information. The following conditions and standards will govern use of the Project Website:
 - 1) Describe the period of time during which the Project Website will be operated and be available for reliance by the parties;
 - 2) Provide any minimum system infrastructure, software licensing and security standards for access to and use of the Project Website;
 - 3) Describe the types and extent of services to be provided at the Project Website (such as large file transfer, email, communication and document archives, etc.); and
 - 4) Include any other Project Website attributes that may be pertinent to Contractor’s use of the facility and pricing of such use.

C. *Software Requirements for Electronic Document Exchange; Limitations*

- 1. Each party will acquire the software and software licenses necessary to create and transmit Electronic Documents and to read and to use any Electronic Documents received from the other party (and if relevant from third parties), using the software formats required in this section of the EDP.
 - a. Prior to using any updated version of the software required in this section for sending Electronic Documents to the other party, the originating party will first notify and receive concurrence from the other party for use of the updated version or adjust its transmission to comply with this EDP.
- 2. The parties agree not to intentionally edit, reverse engineer, decrypt, remove security or encryption features, or convert to another format for modification purposes any Electronic Document or information contained therein that was transmitted in a software data format, including Portable Document Format (PDF), intended by sender not to be modified, unless the receiving party obtains the permission of the sending party or is citing or quoting excerpts of the Electronic Document for Project purposes.
- 3. Software and data formats for exchange of Electronic Documents will conform to the requirements set forth in Exhibit A to this EDP, including software versions, if listed.

SC-2.06 Supplement Paragraph 2.06 of the General Conditions by adding the following paragraph:

D. *Requests by Contractor for Electronic Documents in Other Formats*

- 1. Release of any Electronic Document versions of the Project documents in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be at the sole discretion of the Owner.
- 2. To extent determined by Owner, in its sole discretion, to be prudent and necessary, release of Electronic Documents versions of Project documents and other Project information requested by Contractor (“Request”) in formats other than those identified in the Electronic Documents Protocol (if any) or elsewhere in the Contract will be subject

to the provisions of the Owner's response to the Request, and to the following conditions to which Contractor agrees:

- a. The content included in the Electronic Documents created by Engineer and covered by the Request was prepared by Engineer as an internal working document for Engineer's purposes solely, and is being provided to Contractor on an "AS IS" basis without any warranties of any kind, including, but not limited to any implied warranties of fitness for any purpose. As such, Contractor is advised and acknowledges that the content may not be suitable for Contractor's application, or may require substantial modification and independent verification by Contractor. The content may include limited resolution of models, not-to-scale schematic representations and symbols, use of notes to convey design concepts in lieu of accurate graphics, approximations, graphical simplifications, undocumented intermediate revisions, and other devices that may affect subsequent reuse.
 - b. Electronic Documents containing text, graphics, metadata, or other types of data that are provided by Engineer to Contractor under the request are only for convenience of Contractor. Any conclusion or information obtained or derived from such data will be at the Contractor's sole risk and the Contractor waives any claims against Engineer or Owner arising from use of data in Electronic Documents covered by the Request.
 - c. Contractor shall indemnify and hold harmless Owner and Engineer and their subconsultants from all claims, damages, losses, and expenses, including attorneys' fees and defense costs arising out of or resulting from Contractor's use, adaptation, or distribution of any Electronic Documents provided under the Request.
 - d. Contractor agrees not to sell, copy, transfer, forward, give away or otherwise distribute this information (in source or modified file format) to any third party without the direct written authorization of Engineer, unless such distribution is specifically identified in the Request and is limited to Contractor's subcontractors. Contractor warrants that subsequent use by Contractor's subcontractors complies with all terms of the Contract Documents and Owner's response to Request.
3. In the event that Owner elects to provide or directs the Engineer to provide to Contractor any Contractor-requested Electronic Document versions of Project information that is not explicitly identified in the Contract Documents as being available to Contractor, the Owner shall be reimbursed by Contractor on an hourly basis (at **\$115** per hour) for any engineering costs necessary to create or otherwise prepare the data in a manner deemed appropriate by Engineer.

ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.1 *Reporting and Resolving Discrepancies*

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

2. The governing ranking in case of a discrepancy is:

<u>Dimensions</u>	<u>Information</u>
1. Plan	1. Supplemental Specifications
2. Calculated	2. Plans
3. Scaled	3. Measurement and Payment
	4. Hyrum City Construction Standards
	5. Utah APWA Standard Specifications, 2017 Edition
	6. Utah APWA Standard Drawings, 2017 Edition

ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK

4.05 *Delays in Contractor’s Progress*

SC-4.05 Amend Paragraph 4.05.C.2 by adding the following subparagraphs:

- a. If “abnormal weather conditions” as set forth in Paragraph 4.05.C.2 of the General Conditions are the basis for a request for an equitable adjustment in the Contract Times, such request must be documented by data substantiating each of the following: 1) that weather conditions were abnormal for the period of time in which the delay occurred, 2) that such weather conditions could not have been reasonably anticipated, and 3) that such weather conditions had an adverse effect on the Work as scheduled.

ARTICLE 5—SITE; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.02 *Use of Site and Other Areas*

SC-5.02 Add the following new paragraphs immediately after Paragraph 5.02.D:

- E. The Contractor shall obtain a release, as required by the Engineer, from property owners of all easements stating that repairs have been made to the satisfaction of the property owner. A copy of said release shall be delivered to the Engineer prior to acceptance of the work.

5.03 *Subsurface and Physical Conditions*

SC-5.03 Add the following new paragraphs immediately after Paragraph 5.03.D:

- E. The following table lists the reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data, and specifically identifies the Technical Data in the report upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None		

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to

the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None		

- G. If no reports are listed in Tables 5.03.E or 5.03.F, then no reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.

5.06 *Hazardous Environmental Conditions*

SC-5.06 Add the following new paragraphs immediately after Paragraph 5.06.A.3:

4. The following table lists the reports known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and the Technical Data (if any) upon which Contractor may rely:

Report Title	Date of Report	Technical Data
None		

5. The following table lists the drawings known to Owner relating to Hazardous Environmental Conditions at or adjacent to the Site, and Technical Data (if any) contained in such Drawings upon which Contractor may rely:

Drawings Title	Date of Drawings	Technical Data
None		

6. If no reports are listed in Tables 5.06.E.4 or 5.03.E.5, then no reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.

ARTICLE 6—BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

SC-6.01 Add the following paragraphs immediately after Paragraph 6.01.A:

1. *Required Performance Bond Form:* The performance bond that Contractor furnishes will be in the form of EJCDC® C-610, Performance Bond (2010, 2013, or 2018 edition).
2. *Required Payment Bond Form:* The payment bond that Contractor furnishes will be in the form of EJCDC® C-615, Payment Bond (2010, 2013, or 2018 edition).

6.03 *Contractor’s Insurance*

SC-6.03 Supplement Paragraph 6.03 with the following provisions after Paragraph 6.03.C:

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following:

Hyrum City and J-U-B Engineers, Inc.

- E. *Workers’ Compensation and Employer’s Liability:* Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap

employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

Workers’ Compensation and Related Policies	Policy limits of not less than:
Workers’ Compensation	
State	Statutory
Applicable Federal (e.g., Longshoreman’s)	Statutory

- F. *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 claims for:
1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees,
 2. damages insured by reasonably available personal injury liability coverage, and
 3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor’s commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial general liability form (occurrence form) and include the following coverages and endorsements:
1. Products and completed operations coverage.
 - a. Such insurance must 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, including but not limited to coverage of Contractor’s contractual indemnity obligations in Paragraph 7.18.
 3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
 4. Underground, explosion, and collapse coverage.
 5. Personal injury coverage.
 6. 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). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
 7. 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.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:

1. Any modification of the standard definition of “insured contract” (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
2. Any exclusion for water intrusion or water damage.
3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
4. Any exclusion of coverage relating to earth subsidence or movement.
5. Any exclusion for the insured’s vicarious liability, strict liability, or statutory liability (other than worker’s compensation).
6. Any limitation or exclusion based on the nature of Contractor’s work.
7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

Commercial General Liability	Policy limits of not less than:
General Aggregate	\$2,000,000
Products—Completed Operations Aggregate	\$2,000,000
Personal and Advertising Injury	\$1,000,000
Bodily Injury and Property Damage—Each Occurrence	\$1,000,000

- J. *Automobile Liability:* Contractor shall purchase and maintain automobile liability insurance 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 must be written on an occurrence basis.

Automobile Liability	Policy limits of not less than:
Bodily Injury	
Each Person	\$1,000,000
Each Accident	\$2,000,000
Property Damage	
Each Accident	\$2,000,000

- K. *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. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

Excess or Umbrella Liability	Policy limits of not less than:
Each Occurrence	\$2,000,000
General Aggregate	\$2,000,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements:* Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of **\$3,000,000** after accounting for partial attribution of its limits to underlying policies, as allowed above.
- M. *Contractor’s Pollution Liability Insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

Contractor’s Pollution Liability	Policy limits of not less than:
Each Occurrence/Claim	\$1,000,000
General Aggregate	\$1,000,000

- M. *Unmanned Aerial Vehicle Liability Insurance:* If Contractor uses unmanned aerial vehicles (UAV—commonly referred to as drones) at the Site or in support of any aspect of the Work, Contractor shall obtain UAV liability insurance in the amounts stated; name Owner, Engineer, and all individuals and entities identified in the Supplementary Conditions as additional insureds; and provide a certificate to Owner confirming Contractor’s compliance with this requirement. Such insurance will provide coverage for property damage, bodily injury or death, and invasion of privacy.

Unmanned Aerial Vehicle Liability Insurance	Policy limits of not less than:
Each Claim	\$500,000
General Aggregate	\$500,000

- N. *Other Required Insurance:* **None**

6.04 *Builder’s Risk and Other Property Insurance*

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provisions:

- F. *Builder’s Risk Requirements:* The builder’s risk insurance must:
1. be written on a builder’s risk “all risk” policy form that at a minimum includes insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment stored and in transit, and must not exclude the coverage of the following risks: fire; windstorm; hail; flood; earthquake, volcanic activity, and other earth movement; lightning; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; and water damage (other than that caused by flood).

- a. Such policy will include an exception that results in coverage for ensuing losses from physical damage or loss with respect to any defective workmanship, methods, design, or materials exclusions.
 - b. 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 will be provided through other insurance policies acceptable to Owner and Contractor.
2. 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.
 3. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of contractors, engineers, and architects).
 4. 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).
 5. extend to cover damage or loss to insured property while in transit.
 6. allow for the waiver of the insurer's subrogation rights, as set forth in this Contract.
 7. allow for partial occupancy or use by Owner by endorsement, and without cancellation or lapse of coverage.
 8. include performance/hot testing and start-up, if applicable.
 9. be maintained in effect until the Work is complete, as set forth in Paragraph 15.06.D of the General Conditions, or until written confirmation of Owner's procurement of property insurance following Substantial Completion, whichever occurs first.
 10. include as named insureds the Owner, Contractor, Subcontractors (of every tier), and any other individuals or entities required by this Contract to be insured under such builder's risk policy. For purposes of Paragraphs 6.04, 6.05, and 6.06 of the General Conditions, and this and all other corresponding Supplementary Conditions, the parties required to be insured will be referred to collectively as "insureds." In addition to Owner, Contractor, and Subcontractors of every tier, include as insureds the following:
 - a. **Not Used**
 11. include, in addition to the Contract Price amount, the value of the following equipment and materials to be installed by the Contractor but furnished by the Owner or third parties:
 - a. **Not Used**

SC-6.04 Supplement Paragraph 6.04 of the General Conditions with the following provision:

- G. *Coverage for Completion Delays:* The builder's risk policy will include, for the benefit of Owner, loss of revenue and soft cost coverage for losses arising from delays in completion that result from covered physical losses or damage. Such coverage will include, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, compensation for loss of net revenues, rental costs, and attorneys' fees and engineering or other consultants' fees, if not otherwise covered.

ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES

7.3 *Labor; Working Hours*

SC-7.02 Add the following new subparagraphs immediately after Paragraph 7.02.C:

1. Regular working hours will be Monday through Friday, 7 a.m. to 10 p.m.
2. Owner's legal holidays are New Year's Day, Martin Luther King, Jr. Day, Presidents' Day, Memorial Day, Juneteenth, Independence Day, Pioneer Day, Labor Day, Columbus Day, Veterans' Day, Thanksgiving Day, day after Thanksgiving Day, and Christmas Day.

7.07 *Concerning Subcontractors, Suppliers, and Others*

SC-7.07 Add the following new paragraph immediately after Paragraph 7.07.M. of the General Conditions:

- N. The Contractor shall not award work valued at more than fifty (50%) percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner. Said percentage shall be computed by dividing the summation of total cost for all subcontracted work by the Contractor's price or the summation of all total man hours required for all subcontracted work by the summation of all total man hours required for Contractor's work, whichever is less.
- O. The Contractor shall not be permitted, without the express written authorization of Owner, to subcontract more than forty percent (40%) of the Contractor's work to any one subcontractor. Said percentage shall be computed by dividing the subcontractor's total cost by the Contractor's total price or by dividing the subcontractor's total man hours by the total man hours required for Contractor's work, whichever is less.
- P. 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 a particular Subcontractor or Supplier.

7.09 *Permits*

SC-7.09 Add the following new paragraphs immediately after Paragraph 7.09.A. of the General Conditions:

- C. The CONTRACTOR shall be required to obtain an Encroachment Permit from the Utah Department of Transportation to work in the State's rights-of-way, if applicable.

7.12 *Record Documents*

SC-7.12 Add the following new paragraph immediately after Paragraph 7.12.A. of the General Conditions:

- B. Progress payments may be withheld if the requirements of 7.12.A. are not followed.

7.13 *Safety and Protection*

SC-7.13 Add the following new paragraph immediately after Paragraph 7.13.J. of the General Conditions:

- K. The Contractor shall, at all times, so conduct his work as to insure the least possible obstruction to traffic patterns and inconvenience to the general public, and to insure the safety of persons and property. No road or street shall be closed to the public except with the permission of the proper authorities. Fire hydrants on or adjacent to the Work shall be kept accessible to fire fighting equipment at all times. Temporary provisions shall be made by the Contractor to insure the use of sidewalks, access roads, gutters, sewer inlets, drainage ditches, and irrigation ditches.

ARTICLE 8—OTHER WORK AT THE SITE

No Supplementary Conditions in this Article.

ARTICLE 9—OWNER’S RESPONSIBILITIES

No Supplementary Conditions in this Article.

ARTICLE 10—ENGINEER’S STATUS DURING CONSTRUCTION

10.03 *Resident Project Representative*

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

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
 1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor’s safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
 2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR’s own personal safety while at the Site.
 3. *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 Contractor’s proper execution of the Work.
 4. *Review of Work; Defective Work*

- a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Observe whether any Work in place appears to be defective.
 - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
5. *Inspections and Tests*
- a. Observe Contractor-arranged inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
 - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
6. *Payment Requests: Review Applications for Payment with Contractor.*
7. *Completion*
- a. Participate in Engineer's visits regarding Substantial Completion.
 - b. Assist in the preparation of a punch list of items to be completed or corrected.
 - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
 - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will 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 construction.
 - 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. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11—CHANGES TO THE CONTRACT

No Supplementary Conditions in this Article.

ARTICLE 12—CLAIMS

No Supplementary Conditions in this Article.

ARTICLE 13—COST OF WORK; ALLOWANCES, UNIT PRICE WORK

13.01 *Cost of the Work*

SC-13.01 Supplement Paragraph 13.01.B.5.c.(2) by adding the following sentence:

The equipment rental rate book that governs the included costs for the rental of machinery and equipment owned by Contractor (or a related entity) under the Cost of the Work provisions of this Contract is the most current edition of **Rental Rate Blue Book for Construction Equipment**.

SC-13.01 Supplement Paragraph 13.01.C.2 by adding the following definition of small tools and hand tools:

- a. For purposes of this paragraph, “small tools and hand tools” means any tool or equipment whose current price if it were purchased new at retail would be less than \$500.

13.03 *Unit Price Work*

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

E. *Adjustments in Unit Price*

1. Contractor or Owner shall be entitled to an adjustment in the unit price with respect to an item of Unit Price Work if:
 - a. the extended price of a particular item of Unit Price Work amounts to **ten percent (10%)** or more of the Contract Price (based on estimated quantities at the time of Contract formation) and the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than **twenty-five percent (25%)** from the estimated quantity of such item indicated in the Agreement; and
 - b. Contractor’s unit costs to perform the item of Unit Price Work have changed materially and significantly as a result of the quantity change.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor’s costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

SC-13.03 Add the following new paragraph immediately after Paragraph 10.03.E

- F. The estimates of quantities are only approximate. The OWNER reserves the right to increase or decrease individual items in such amount as may be in his sole judgment, to his best interests

depending upon conditions encountered or observed during the Project. It shall be the CONTRACTOR'S responsibility to satisfy himself as to the accuracy of the estimates.

ARTICLE 14—TESTS AND INSPECTIONS; CORRECTION, REMOVAL, OR ACCEPTANCE OF DEFECTIVE WORK

No Supplementary Conditions in this Article.

ARTICLE 15—PAYMENTS TO CONTRACTOR, SET OFFS; COMPLETIONS; CORRECTION PERIOD

15.01 Progress Payments

SC-15.01 Add the following new Paragraph 15.01.F:

- F. For contracts in which the Contract Price is based on the Cost of Work, if Owner determines that progress payments made to date substantially exceed the actual progress of the Work (as measured by reference to the Schedule of Values), or present a potential conflict with the Guaranteed Maximum Price, then Owner may require that Contractor prepare and submit a plan for the remaining anticipated Applications for Payment that will bring payments and progress into closer alignment and take into account the Guaranteed Maximum Price (if any), through reductions in billings, increases in retainage, or other equitable measures. Owner will review the plan, discuss any necessary modifications, and implement the plan as modified for all remaining Applications for Payment.

SC-15.01 Delete Paragraph 15.01.D.1. in its entirety and insert the following in its place:

1. Within ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the Owner will submit the amount recommended (subject to any Owner set-offs) to the funding agencies for payment.
2. Payments to the Contractor will (subject to the provisions of paragraph 15.01.E.) become due within 20 working days after receipt by the Owner of payment from the funding agencies and will be paid by Owner to Contractor.

15.03 Substantial Completion

SC-15.03 Add the following new subparagraph to Paragraph 15.03.B:

1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

15.06 Final Payment

SC-15.06 Delete Paragraph 15.06.E. in its entirety and insert the following in its place:

- E. Final Payment Becomes Due:
 1. Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to

set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments.

ARTICLE 16—SUSPENSION OF WORK AND TERMINATION

No Supplementary Conditions in this Article.

ARTICLE 17—FINAL RESOLUTIONS OF DISPUTES

17.01 Methods and Procedures

SC-17.01 Add the following new paragraph immediately after Paragraph 17.01.B

- C. For any matter subject to final resolution under this Article, the prevailing party shall be entitled to an award of its attorneys' fees incurred in the final resolution proceedings, in an equitable amount to be determined in the discretion of the court, arbitrator, arbitration panel, or other arbiter of the matter subject to final resolution, taking into account the parties' initial demand or defense positions in comparison with the final result.

Add the following section immediately following section 17.01

17.02 Arbitration

- A. All matters subject to final resolution under this Article will be settled by arbitration administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules (subject to the conditions and limitations of this Paragraph SC-17.02). Any controversy or claim in the amount of \$100,000 or less will be settled in accordance with the American Arbitration Association's supplemental rules for Fixed Time and Cost Construction Arbitration. This agreement to arbitrate will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitration administrator, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the specific time required in Article 17, or if no specified time is applicable within a reasonable time after the matter in question has arisen, and in no event will any such demand be made after the date when institution of legal or equitable proceedings based on such matter in question would be barred by the applicable statute of limitations.
- C. The arbitrator(s) must be licensed engineers, contractors, attorneys, or construction managers. Hearings will take place pursuant to the standard procedures of the Construction Arbitration Rules that contemplate in-person hearings. The arbitrators will have no authority to award punitive or other damages not measured by the prevailing party's actual damages, except as may be required by statute or the Contract. Any award in an arbitration initiated under this clause will be limited to monetary damages and include no injunction or direction to any party other than the direction to pay a monetary amount.
- D. The Arbitrators will have the authority to allocate the costs of the arbitration process among the parties, but will only have the authority to allocate attorneys' fees if a specific Law or Regulation or this Contract permits them to do so.
- E. The award of the arbitrators must be accompanied by a reasoned written opinion and a concise breakdown of the award. The written opinion will cite the Contract provisions deemed applicable and relied on in making the award.

- F. The parties agree that failure or refusal of a party to pay its required share of the deposits for arbitrator compensation or administrative charges will constitute a waiver by that party to present evidence or cross-examine witness. In such event, the other party shall be required to present evidence and legal argument as the arbitrator(s) may require for the making of an award. Such waiver will not allow for a default judgment against the non-paying party in the absence of evidence presented as provided for above.
- G. No arbitration arising out of or relating to the Contract will include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
 - 1. the inclusion of such other individual or entity will allow complete relief to be afforded among those who are already parties to the arbitration;
 - 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration, and which will arise in such proceedings;
 - 3. such other individual or entity is subject to arbitration under a contract with either Owner or Contractor, or consents to being joined in the arbitration; and
 - 4. the consolidation or joinder is in compliance with the arbitration administrator's procedural rules.
- H. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Laws and Regulations relating to vacating or modifying an arbitral award.
- I. Except as may be required by Laws or Regulations, neither party nor an arbitrator may disclose the existence, content, or results of any arbitration hereunder without the prior written consent of both parties, with the exception of any disclosure required by Laws and Regulations or the Contract. To the extent any disclosure is allowed pursuant to the exception, the disclosure must be strictly and narrowly limited to maintain confidentiality to the extent possible.

ARTICLE 18—MISCELLANEOUS

No Supplementary Conditions in this Article.

EXHIBIT A—SOFTWARE REQUIREMENTS FOR ELECTRONIC DOCUMENT EXCHANGE

Item	Electronic Documents	Transmittal Means	Data Format	Note (1)
a.1	General communications, transmittal covers, meeting notices and responses to general information requests for which there is no specific prescribed form.	Email	Email	
a.2	Meeting agendas, meeting minutes, RFI's and responses to RFI's, and Contract forms.	Email w/ Attachment	PDF	(2)
a.3	Contactors Submittals (Shop Drawings, "or equal" requests, substitution requests, documentation accompanying Sample submittals and other submittals) to Owner and Engineer, and Owner's and Engineer's responses to Contractor's Submittals, Shop Drawings, correspondence, and Applications for Payment.	Email w/ Attachment	PDF	
a.4	Correspondence; milestone and final version Submittals of reports, layouts, Drawings, maps, calculations and spreadsheets, Specifications, Drawings and other Submittals from Contractor to Owner or Engineer and for responses from Engineer and Owner to Contractor regarding Submittals.	Email w/ Attachment or LFE	PDF	
a.5	Layouts and drawings to be submitted to Owner for future use and modification.	Email w/ Attachment or LFE	DWG or DGN	
a.6	Correspondence, reports and Specifications to be submitted to Owner for future word processing use and modification.	Email w/ Attachment or LFE	DOC	
a.7	Spreadsheets and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	EXC	
a.8	Database files and data to be submitted to Owner for future data processing use and modification.	Email w/ Attachment or LFE	DB	
Notes				
(1)	All exchanges and uses of transmitted data are subject to the appropriate provisions of Contract Documents.			
(2)	Transmittal of written notices is governed by Paragraph 18.01 of the General Conditions.			
Key				
Email	Standard Email formats (.htm, .rtf, or .txt). Do not use stationery formatting or other features that impair legibility of content on screen or in printed copies			
LFE	Agreed upon Large File Exchange method (FTP, CD, DVD, hard drive)			
PDF	Portable Document Format readable by Adobe® Acrobat Reader Version 12 or later			
DGN	Bentley® MicroStation® Connect Edition			
DWG	Autodesk® AutoCAD .dwg format Version 2021			
DOC	Microsoft® Word .docx format Version 1902			
EXC	Microsoft® Excel .xls or .xml format Version 1902			
DB	Microsoft® Access .mdb format Version 1902			

SECTION 32 84 23

UNDERGROUND IRRIGATION SYSTEMS

This section replaces section 32 84 23 in the 2017 edition of the Utah Chapter of American Public Works Association Manual of Standard Specifications (APWA).

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Underground irrigation systems complete with heads, valves, controls, and accessories.
- B. Related sections:
 - 1. Section 32 94 23 Planting

1.02 REFERENCE STANDARDS

- A. NFPA 70: National Electric Code.
- B. ASTM: American Society for Testing and Materials
- C. IA: The Irrigation Association: Main BMP Document, Landscape Irrigation Scheduling and Water Management Document.
- D. ASIC: American Society of Irrigation Consultants: ASIC Grounding Guideline
- E. City Codes/Ordinances relating to Landscape and Irrigation

1.03 DEFINITIONS

- A. Water Supply: Culinary and/or secondary pumping, piping, and components provided and installed by others to provide irrigation water to this project. Includes but is not limited to: storage ponds, pump stations, saddles, nipples, spools, shut-off valves, corporation stop valves, water meters, pressure regulation valves, and piping or components upstream of (or prior to) the Point-of-Connection.
- B. Point-of-Connection: Location where the Contractor shall tie into the water supply for landscape irrigation needs and use. Tie to existing piping.
- C. Main Line Piping: Pressurized piping downstream of the point-of-connection to provide water to remote control valves and quick coupling valves. Normally piping is under constant pressure.
- D. Lateral Line Piping: Circuit piping downstream of the remote-control valves to provide water to sprinkler heads, drip system, or bubblers. Normally piping is under pressure only when control valve is in operation.

1.04 PERFORMANCE REQUIREMENTS

- A. The work to be performed under this Section shall consist of furnishing all labor and materials necessary to construct a complete working and tested underground sprinkler irrigation system per all drawings and specifications, providing one hundred (100) percent head-to-head coverage on all lawn and planting areas on the site without overspray onto hardscape, buildings, or other site features. Included also will be system maintenance and warranties.

- B. The efficiency of the completed irrigation system shall meet the following minimum standards:
 - 1. Circuits using spray sprinklers shall perform at a minimum 60% efficiency.
 - 2. Circuits using rotor sprinklers shall perform at a minimum 70% efficiency.
 - 3. Efficiency shall be determined by an independent water audit performed by a certified irrigation auditor selected by the Owner. The Contractor shall include in his bid price the cost of this audit. The audit shall be conducted after substantial completion and before final acceptance of the irrigation system.
- C. The Contractor shall perform, but not be limited to, all of the following functions: paying all connection fees, deposits, and all other charges related to the connection to the water source; obtain all permits; complete all excavation and backfill; provide backflow device, tapping saddle, yoke, stop and waste, corp. cock, concrete vaults and miscellaneous pipe fittings; make necessary road repairs; provide safety barrier; make connection to water source; install all electric valves, valve control devices, isolation gate valves, quick coupling valves, drain valves, meter base, conduit, junction boxes, controller, backflow prevention devices and enclosures, filters and enclosures, and all necessary wiring. All work shall comply with applicable codes and requirements of the utility companies involved.
- D. If any or all of the above-mentioned fees or charges are not listed on the bidding schedule or on the plan, they shall be included in the bid lump sum price of the irrigation sprinkling system item.
- E. Contractor shall verify with the appropriate water district the location of the water service main line and water pressure and complete all requirements necessary to bring water service to the site. Total cost to be included in the irrigation sprinkling system bid item.
- F. The above specification statement supersedes the graphic representation location of the contract limit line. This pertains to the water line location on either side of the street adjacent to the project site.
- G. All work shall be done in accordance with the drawings and specifications, as well as all applicable water and electrical codes.
- H. The Contractor shall operate, maintain until acceptance, and guarantee the new system as specified herein until all lawn and plants installed on this project have become established and have been accepted by the Owner.

1.05 SUBMITTALS

- A. Product Data: Complete set of manufacturer's technical data and installation instructions for all equipment to be installed on the project. Submittal shall be made prior to commencement of any irrigation work.
- B. Main line and lateral line pressure test results: Submitted at the time of occurrence.
- C. Operation and Maintenance (O&M) Manual:
 - 1. O&M manual shall contain the following information:
 - a. Manufacturer cut sheets and current printed specifications for each element or component of the irrigation system.
 - b. Parts list for each operating element of the system.
 - c. Manufacturer's printed literature on operation and maintenance of operating elements of the system.

- d. Section listing instructions for overall system operation and maintenance. Include directions for spring start-up and winterization.
- 2. Manual shall be submitted at least thirty (30) days prior to final inspection and acceptance of the project.
- D. Complete As-Built Drawings:
 - 1. Drawings shall conform to the following criteria:
 - a. One (1) 22" x 34" and one (1) 11" x 17" drawing shall be submitted.
 - b. All submitted drawings shall be made on Mylar or Tyvek original.
 - c. Show detail and dimension changes made during installation.
 - d. Include field dimension locations of sleeving, points of connection, main line piping, wiring runs not contained in main line pipe trenches, valves and valve boxes, quick coupling valves.
 - e. Dimensions shall be taken from permanent constructed surfaces, features, or finished edges located at or above finished grade.
 - 2. A complete set of as-built drawings shall also be submitted in electronic digital format (.pdf).
 - 3. As-Built drawings shall be submitted prior to final inspection and acceptance.
- E. Controller Map: Each controller shall be equipped with a color-coded copy of the area that the controller services. Include valve zone number, type of plant material irrigated, and zone location on the project. Laminate map with heat shrink clear plastic and mount inside controller.

1.06 **QUALITY ASSURANCE**

- A. Acceptance: Do not install work of this section prior to acceptance of the area by the Owner as being properly prepared to receive said work (i.e. at proper grade, properly compacted, permanent fixtures in place, etc.).
- B. Adequate Water Supply: Contractor shall verify that proper connection is available to supply lines and is of adequate size and volume. Perform static water pressure test prior to commencement of work. Notify Owner of problems encountered prior to proceeding.
- C. Workmanship: It is the intent of this specification that all materials herein specified with the best standards of practice relating to the trade.
- D. The Contractor shall provide to the City a document or resume which includes the following information:
 - 1. The Contractor has been installing sprinkler systems on commercial projects for at least ten (10) previous consecutive years.
 - 2. The Contractor is currently licensed to perform landscape construction in the State of Utah.
 - 3. The Contractor is bondable and insurable for the work to be performed.
 - 4. References of at least five (5) projects of similar size and scope completed within the last five (5) years. Three (3) of the projects listed must be located in the general region of the project site.
 - 5. List of suppliers from whom materials will be obtained for use on this project.

1.07 **PROJECT CONDITIONS**

- A. Any discrepancies between existing site conditions and those indicated on the plans

shall be called to the attention of the Landscape Architect or Owner's Representative prior to continuance of the project.

- B. The Contractor shall use only the equipment and products specified in the construction drawings. No substitution of materials will be allowed on the irrigation system without prior authorization from the Landscape Architect and the Owner's Representative.
- C. During delivery, installation, and storage of materials for the project, all materials shall be protected from contamination, damage, vandalism, and prolonged exposure to sunlight. All material stored at the project site shall be neatly organized in a compact arrangement and storage shall not disrupt the project Owner or other trades on the project site. All material to be installed shall be handled by the Contractor with care to avoid breakage or damage. Materials damaged by the Contractor shall not be used but shall be replaced with new materials at the Contractor's expense.
- D. The Contractor shall familiarize himself and his workmen with all hazards and existing utilities prior to commencing work. This shall require local Blue Staking to be completed before any construction activity can begin.

PART 2 PRODUCTS

2.01 GENERAL

- A. The Contractor shall provide all materials to be used on this project. The Contractor shall not remove any material purchased for this project from the project site, nor mix these project materials with other contractor-owned materials. The Owner retains the right to purchase and provide project materials.
- B. Handling and unloading of all equipment, pipe, and fittings shall be in such a manner as to insure delivery to the job site in a sound, undamaged condition. Any installed equipment or pipe found to be damaged or defective in workmanship or materials shall be rejected and removed and replaced at Contractor's expense.

2.02 PIPE

- A. All PVC pipe used on this project for the irrigation system shall conform to the requirements of ASTM -1685. It shall be free of cracks, holes, foreign material, blisters, inside bubbles, wrinkles, and dents.
- B. All main line pipe, three (3) inches inside diameter and smaller shall be Schedule 40 PVC solvent weld bell end unless otherwise specified.
- C. All main line pipe, four (4) inches inside diameter and larger, shall be PVC Class 200 gasketed bell end (except as required for conversion to metal fittings).
- D. All lateral line pipe shall be Schedule 40 PVC solvent weld.
- E. Maximum flows allowed through main line and lateral line pipe shall be determined by water speed in the pipe. The maximum water speed allowed in both main lines and lateral lines is five (5) feet per second. The resulting maximum gallons per minute (gpm) allowed to flow through PVC pipes are as follows:

<u>PIPE SIZE</u>	<u>GPM</u>
3/4"	8
1"	12
1 1/4"	22

1 ½"	30
2"	50
2 ½"	75
3"	110
4"	190
6"	425

For sizes larger than 6", consult manufacturer's recommendations.

- F. No bends in pipe shall be permitted. The Contractor shall use elbow fittings of ninety (90), forty-five (45), twenty-two and one half (22-1/2), and eleven and one quarter (11-1/4) degrees as individual situations demand.
- G. All pipe used from the main line to the control valves shall be solvent weld Sch. 80 PVC pipe unless otherwise noted or shown on the construction drawings.

2.03 FITTINGS

- A. All PVC fittings used on this project for the irrigation system shall conform to the requirements of ASTM D-2466.
- B. Main Line Fittings:
 - 1. All main line fittings four (4) inches inside diameter and larger shall be either M.J. or deep bell push-on, gasketed, ductile iron.
 - 2. All main line fittings three (3) inches and smaller inside diameter shall be solvent weld Schedule 80 PVC, shall be thrust blocked per details.
 - 3. All main line fittings four (4) inches and larger, whether ductile iron or solvent weld, shall be thrust blocked per details.
 - 4. All main lines three (3) inches and larger having a horizontal change of direction shall have proper concrete thrust blocks installed. Vertical changes in direction shall require the use of M.J or ductile iron fittings with thrust restraining devices (Mega Lug, Harco Knuckle Joint Restraints, or approved equal) in addition to appropriate concrete thrust blocking. The size and type of thrust block depends on pressure, pipe size, type of soil, and type of fitting. As a general rule, one (1) cubic foot minimum of class AA (AE) Type II concrete is required for each thrust block. Follow thrust blocking details for calculating thrust block size.
 - 5. M.J. tees, Schedule 80 tees with SxT Schedule 80 bushings, or Harco ductile iron service tees are approved on PVC main lines for automatic control valve installation. M.J. fittings shall be greased and wrapped.
- C. Lateral Line Fittings:
 - 1. All lateral line fittings shall be solvent weld Schedule 40 PVC.
 - 2. All risers and exposed fittings shall be solvent weld Schedule 80 PVC, including conversions to metal pipe and fixtures, unless otherwise noted on the plans.
- D. PVC Cement: Solvent weld or glued joints shall use the following materials:
 - 1. Primer: IPS Weld-On P-70 Primer (purple), ASTM F-656.
 - 2. Cement: IPS Weld-On 711 Heavy Bodied PVC Cement (gray), ASTM D-2564.

2.04 VALVES

- A. Master Valve: All master valves shall be as specified in the Irrigation Equipment

Schedule. Master valve assembly shall be installed according to detail in drawings.

B. Isolation Gate Valve:

1. Isolation gate valves shall only be used on the main line.
2. Isolation gate valves shall be as specified in the Irrigation Equipment Schedule. Valves shall be hydrostatically pressure tested for 400 P.S.I. and shall be designated for a working pressure of 200 P.S.I. Each valve shall contain a resilient wedge urethane rubber seat. Unless otherwise shown or specified, valves three (3) inches and larger shall have flanged end connections.
3. Buried valves shall have two (2) inch square operating nuts. No handles or wheels will be permitted. Valves inside structures (vaults or valve boxes) may have wheel handles if the valve is two (2) inches or less in size.
4. Action unions shall be installed on each side of all valves except flanged valves.
5. The Contractor shall provide adequate material for the connection of valves to the system, i.e., adapters, flanges, nuts, bolts, gaskets, etc.
6. All buried main line isolation valves with a (2) inch square operating nut shall be fitted with a four (4) inch minimum diameter pipe sleeve placed over the top of the valve vertically and extended to grade. Cover with a ten (10) inch round plastic valve box with bolt down lid and set at finished grade.
7. Contractor shall provide appropriate valve key to operate isolation gate valve.

C. Remote Control Valve Assembly:

1. Remote control valves shall be as specified in the Irrigation Equipment Schedule.
2. Remote control valves shall be globe configuration, electrically activated, normally closed, forward flow design.
3. All pipe on the control valve assembly shall be Schedule 80 PVC pipe. See detailed drawings.
4. Action unions shall be installed on each side of the control valve assembly, allowing valve to be removed from the box for maintenance without cutting pipe.
5. Each control valve shall have a brass gate or ball valve installed immediately upstream of the valve and located within the same valve box.
6. Flows through each remote control valve shall not exceed the following limits:

<u>VALVE SIZE</u>	<u>GPM RANGE</u>
1"	1 - 30
1 1/2"	31 - 75
2"	76 - 150

7. Each drip remote control valve assembly shall contain the following components:
 - a. PVC ball valve.
 - b. Inline disc or screen filter with 100 micron/150 mesh filter element.
 - c. Remote control valve capable of operating at very low flow levels.
 - d. Inline pressure regulator.

All components shall be installed according to manufacturer's recommendations, and located within a single valve box, one valve per box (no multi-valve assemblies permitted).

- D. Quick Coupling Valve Assembly:
 - 1. Quick coupling valves shall be as specified in the Irrigation Equipment Schedule.
 - 2. Quick coupling valves shall be heavy duty brass, two-piece, single lug locking cap.
 - 3. The Contractor shall provide to the Owner at least 1 cap lock key and 1 quick coupling key with a swivel hose bib attached. These keys shall be delivered prior to final acceptance of the project.
- E. Manual Drain Valve Assembly:
 - 1. All manual drains shall be three quarter (3/4) inch heavy duty brass ball valve.
 - 2. Manual drain valves shall be required at all low points in the main lines. See plans, notes, and details.
 - 3. The location of each manual drain shall be shown on the "as built" drawing with dimensions from the nearest permanent fixture, such as a building corner, etc.
 - 4. Each manual drain valve will be accessed by a vertical two (2) inch PVC Schedule 40 pipe sleeve, capped by a locking valve cap with a key, enclosed within a ten (10) inch round green valve box with bolt down lid. The top of the drain sleeve shall be three to six (3 - 6) inches below the lid of the valve box.
 - 5. Each manual drain shall empty into a gravel sump, a minimum of twenty-four (24) inches by twenty-four (24) inches by eighteen (18) inches deep, (or six (6) cubic feet total capacity). The gravel shall be washed three quarter (3/4) inch rock.
 - 6. Contractor shall provide appropriate valve key to operate manual drain valve.
- F. Automatic Drain Valves: Automatic drain valves shall not be used.

2.05 VALVE BOXES

- A. All valve boxes shall be HDPE plastic with locking lid or approved equal.
- B. **Valve Boxes and lids shall be TAN or GRAY in color to match the rock mulch.**
- C. Valve box size shall be listed in the installation details for each irrigation system component.

2.06 BACKFLOW PREVENTION ASSEMBLY

- A. Backflow prevention devices shall be a reduced pressure principle backflow preventer consisting of a pressure differential relief valve located between two independently operated spring-loaded "Y" type center guided check valves. Assembly shall also have two full port resilient seated ball valves for shut-off and four resilient seated ball valve test cocks and bronze body construction. Larger sizes (2 1/2" and up) may have two non-rising stem resilient wedge gate valves in lieu of ball valves.
- B. Backflow preventer shall be as specified in the Irrigation Equipment Schedule.

2.07 SWING-LINE PHYSICAL DISCONNECT (NOT REQUIRED)

- A. Where culinary and secondary water may be used interchangeably for irrigation purposes,

a physical disconnect mechanism is required. A swing-line setup is preferred by the City and must meet the following design requirements:

1. Only one water supply source can be used at any given time.
 2. Two (2) supply lines enter a swing-line box, one from secondary water source and one from culinary water source.
 3. Each supply line must have a shut off valve immediately upstream from the swing-line.
 4. One sprinkler feed line exits the swing-line box.
 5. A flexible line is permanently fastened to the sprinkler feed line and a quick disconnect is attached to the end of each supply line.
 6. The supply line that is not connected to the swing-line must have a secure plug when not in use. Tape is not acceptable.
- B. The swing-line shall be made of reinforced flexible pipe material.
- C. The quick disconnects shall be plastic camlock style.
- D. The swing-line assembly shall be placed in a large polycrystalline concrete vault. Vault shall be large enough to accommodate clearance around all valves and camlock fittings and swing of hose from one supply to the other.

2.08 FILTER AND ENCLOSURE (NOT REQUIRED ON THIS PROJECT)

- A. Filters and their enclosures shall be required on all systems using secondary water. Systems using reclaimed water (from a wastewater treatment plant) may not require a filter.
- B. Filters shall be as specified in the Irrigation Equipment Schedule. Filters may be either plastic or steel construction, with screen (perforated or weavewire stainless steel) or plastic disc filter elements.
- C. Filter enclosures shall be either commercially or custom fabricated. They shall be constructed of solid sheet marine grade aluminum, with one hundred (100) percent stainless steel hardware and locking mechanism. They shall exhibit vandal- and weather-resistance and offer easy access.
- D. Enclosures shall be mounted on either a pre-manufactured mounting pad with support base or minimum four (4) inch concrete pads. See detail.

2.09 AUTOMATIC CONTROL SYSTEM

- A. Furnish a low voltage automatic control system manufactured expressly for the operation of automatic control valves used in an underground irrigation system.
- B. Automatic controller devices shall be as specified in the Irrigation Equipment Schedule. No substitutions shall be allowed. Unless specified otherwise, install as follows:
1. Install in stainless steel enclosure, model as specified in the Irrigation Equipment Schedule.
 2. Whenever a single site has 2 or more controllers, the 2nd and subsequent controllers shall also be mounted in a separate stainless-steel enclosure as specified in the Irrigation Equipment Schedule.
 3. Metered enclosures, if required, shall be mounted on a 4" thick concrete pad. Regular enclosures may use a pre-manufactured mounting system as specified in the Irrigation Equipment Schedule.

- C. Provide adequate capacity to accommodate each valve on the system separately. Do not double valves to circuits.
- D. The Contractor shall coordinate with the City for the 120-volt electrical service to the controller. Where required, install meter inside meter socket of the enclosure. Coordinate this work with the Owner and other trades involved in the project.
- E. Every controller shall be installed to control a single point of connection (P.O.C.). That point of connection shall be exclusively associated with that controller. Each P.O.C. assembly shall consist of the main line tap, reverse pressure backflow prevention device (if potable water source), filter (if required), master control valve (if specified), flow sensing device (if specified), manual drain valve, and quick coupling valve. No controller shall be wired to control valves which are connected to another P.O.C.

2.10 **CONTROL VALVE WIRE**

- A. All irrigation control wire shall bear approval as U.L. listed type of underground feeder (direct burial) and each conductor shall be of electrical conductivity grade solid copper in accordance with ASTM 30.
- B. No aluminum wire shall be used on this project.
- C. Wire size shall be #14 gauge minimum.
- D. Two spare wires shall be run from each controller to the farthest valve under its control in all directions and any valve which is on a dead-end line.
- E. All wire crossing water, attached to bridges, going under paving, or where conditions require protection, shall be housed in conduit or sleeves. All out-of-ground conduits shall be rigid metal. All buried conduit may be PVC.
- F. All splices shall be water-tight. All connections made inside the box to connect wires to the valve shall be made using a 3M DBR/Y dry-splice connector or pre-approved equal. Each connector shall be completely sealed and water-proofed.
- G. All other splices in control wire shall be housed in a separate valve box.
- H. The pigment or color of the wires shall be integrated into the covering, rather than painted on. All common or ground wires shall be white in color. Where more than one controller is required, a different colored hot wire shall be used for each controller. A separate color shall be used for all spare wires.

2.11 **SPRINKLER HEADS**

- A. General:
 1. All heads used on this project shall be as specified in the Irrigation Equipment Schedule shown on the plans.
 2. All sprinkler heads and nozzles shall be as specified in the Irrigation Equipment Schedule.
- B. Spray/Rotary Sprinklers:
 1. Spray/Rotary sprinklers shall have either four (4), six (6), or twelve (12) inch pop-up height and built-in check valve. In areas where water pressures are high or fluctuating, pressure regulating series sprinklers shall be used.
 2. Spray/Rotary sprinkler nozzles shall be plastic matching precipitation rate nozzles. Variable arc nozzles may be used to meet irregular-shaped areas.
 3. Attachment options shall be as specified in the installation details.

- C. Rotor Sprinklers:
 1. Rotor sprinklers shall be equipped with stainless steel rotor sleeve and check valve.
 2. Rotor sprinkler nozzles shall be as manufactured for each individual model.
 3. Small rotor sprinklers (1/2" bottom inlet) may be installed using swing pipe per installation details. Medium (3/4" bottom inlet) and large (1" or greater bottom inlet) rotor sprinklers shall be installed using swing joints as shown in the installation details. Swing joint size shall match sprinkler inlet size.
- D. Bubblers, Tree Well, and Root Watering Systems: Installed per manufacturer's recommendations. Use only where and when specified.

2.12 DRIP IRRIGATION

- A. Drip irrigation materials shall be as specified in the Irrigation Equipment Schedule.
- B. Emitters shall be of the individual, self-cleaning, pressure-compensating type.
- C. Dripline tubing shall be constructed of high quality linear, low density, UV-resistant, polyethylene resin materials with internal, integral emitters at specified intervals.
- D. All insert barbed fittings shall be constructed of molded, UV-resistant plastic. Each fitting shall have a minimum of two (2) ridges or barbs per outlet. All fittings shall be from the same manufacturer and shall be available in one of the following end configurations:
 1. Barbed insert fittings.
 2. Male pipe threads (MPT) with barbed insert fittings
 3. Female pipe threads (FPT) with barbed insert fittings.
- E. Each drip remote control valve assembly shall contain the following components (in required sequence):
 1. PVC ball valve.
 2. Inline disc or screen filter with 100 micron/150 mesh filter element.
 3. Remote control valve.
 4. Inline pressure regulator.
- F. Provide the following equipment to each drip valve circuit, located and installed per manufacturer's recommendations:
 1. Line flushing valve(s) - minimum of one (1) on each exhaust header, and one (1) on each supply header.
 2. Air/Vacuum relief valve(s) at all high points in the system if required by the manufacturer.

2.13 FLOW SENSING EQUIPMENT (NOT REQUIRED ON THIS PROJECT)

- A. Where specified, each controller shall be installed with its own corresponding flow sensor on a single point of connection to the water source.
- B. The flow sensor shall be compatible with the specified controller.
- C. Size the flow sensor so that it is able to read the high and low flows of the valves used on that particular controller. Install per manufacturer's specifications.

PART 3 EXECUTION

3.01 GENERAL

- A. The irrigation plan is diagrammatic in nature, and some drafting liberties have been taken to maintain the graphic clarity of the drawings. All irrigation equipment shall be located in planting areas only, unless noted otherwise. The Contractor shall install piping to minimize changes in direction, avoid placement under trees or large shrubs, and avoid placement under hardscape features. Refer to the irrigation legend, details, and specifications for equipment and proper installation.
- B. Site Visit: The Contractor shall visit and inspect the project site. He shall take into consideration known and reasonably inferable conditions affecting the proposed work. Failure to visit the site shall not relieve the Contractor of furnishing materials and performing the work required. Any discrepancies between existing site conditions and those indicated on the plans shall be called to the attention of the Owner, by the Contractor, prior to continuance of the project.
- C. The Contractor shall keep the premises clean and free of excess equipment, materials, and rubbish incidental to work of this project. Work areas shall be swept clean and trash and debris picked up daily. Open trenches or hazards shall be protected with yellow caution tape. The Contractor is responsible for removal and legal disposal (off site) of trash and debris generated by his work on this project.
- D. Existing Landscapes:
 - 1. Where existing landscape areas are a part of the project, the Contractor shall repair or replace work damaged by his irrigation system installation at his own expense. If the damaged work is new, the Contractor or the original installer of that work shall perform repairs at the Contractor's expense. The existing irrigation system and landscape shall remain in place, protected, undisturbed, and functional.
 - 2. The Contractor shall protect in place and work around all existing plant materials designated to remain.
 - 3. Coordination of trench and valve locations shall be laid out prior to any excavation work. Plant material deemed by the Landscape Architect or Owner's Representative to be damaged by the Contractor shall be replaced with new plant material at the Contractor's expense. The Contractor shall not cut existing tree roots larger than two (2) inches in diameter. Route pipe, wire, and irrigation components around tree canopy drip lines where possible to minimize damage to tree roots.
 - 4. The Contractor shall leave no part of the existing landscape without water for more than forty-eight (48) hours at a time.
- E. Pre-Construction Meeting: A pre-construction meeting shall be held prior to beginning any work on a project. The Owner and/or Owner's Representative, the project designer, and the Contractor and his Sub Contractors shall all be in attendance.
 - 1. The purpose of this meeting is to review project goals and expectations, the project schedule, and all procedures relative to inspections, permits, and changes that may arise.
 - 2. In the pre-construction meeting, it shall be made clear that the construction documents (plans, details, specifications, and contract) shall be binding upon the

Contractor and upon all of his work. Any work not in accordance with the plans and specifications shall be rejected, and the Contractor shall bring the project into compliance at his own expense.

3.02 CONSTRUCTION STAKING

- A. The Contractor shall provide the necessary staking to obtain the layout shown on the plans. The points of reference shall be as indicated in the drawings and shall include such features as the walks, buildings, curbs, etc. Any changes in the system which appear necessary due to field conditions must be called to the attention of the Owner/Owner's Representative and Landscape Architect and approved by the Owner at the time they are discovered and prior to making any changes.

3.03 EXCAVATION AND BACKFILLING

- A. Excavation:
1. Excavation work shall only be as deep and as wide as will be required to safely perform the work, such as making mainline connections or forming vaults.
 2. Trenches shall be deep and wide enough to provide working space for placing two (2) inches of bedding underneath all new mainline pipe and fittings where the soil is rocky or gravelly. Place twenty (20) to thirty (30) inches of cover over the top of all pipe and fittings on main lines. All trench bottoms shall be sloped so the pipes will gravity-drain back to the main connection point or the nearest manual drain. If the existing main line is deeper than thirty (30) inches, the Contractor shall install a riser to a depth of eighteen (18) to thirty (30) inches and then install the new line at the required depth. At no time will the mainline be installed with less than eighteen (18) inches or greater than thirty (30) inches of cover unless prior approval is given by the Landscape Architect or Owner's Representative.
 3. Trenches shall be deep enough to maintain twelve (12) to fourteen (14) inches of cover over the top of all lateral line pipe and fittings. They shall be deep enough to guarantee that all swing joints drain back to the lateral lines. Trenches shall be a minimum of twelve (12) inches away from any walks and/or curbs, buildings, or other hardscape improvements. They shall be of sufficient width to accommodate tees and other fittings that come out sideways (horizontally) from the lateral lines. Lateral lines may be pulled by a mechanical puller provided all other applicable specifications are met.
 4. Any rocks or other debris over one (1) inch in diameter uncovered during excavation or trenching shall be removed from the area.
 5. If more than one (1) pipeline is required in a single trench, that trench shall be deep and wide enough to allow for at least six (6) inches of horizontal separation (if both are lateral lines), or six (6) inches of both horizontal and vertical separation (if one line is a main line) between pipes.
 6. Any existing utility lines damaged during excavating or trenching shall be reported immediately to the Landscape Architect, the utility Owner, and the project Owner. After proper notification to the Landscape Architect, the utility Owner, and project Owner, repairs to the damaged utility shall be made immediately. Repair materials and methods shall meet industry standards and

the utility Owner's satisfaction. Should utility lines be encountered which are not indicated on the plans, the Owner shall be notified. The repair of any damage shall be done as soon as possible by the Contractor or the utility Owner, and proper compensation to the Contractor shall be negotiated with the Owner. Such utility locations shall subsequently be noted on the "As-Built" drawings required before final payment of the irrigation system contract.

7. Where trenching is done in established lawn, care shall be taken to keep the trenches only as wide as is necessary to accomplish the work. The trenches shall be backfilled as specified and then four (4) inches of approved topsoil placed to bring the trench up to existing grade so that sod can be laid. Only new sod shall be used as trench cover. It shall be established new sod, of standard width, and shall be laid along the trenches so as to match the existing sod. No small pieces of sod shall be used, and only standard lengths shall be accepted. No sod from the construction site shall be used unless otherwise specified. In the event of any backfill settlement prior to the end of the guarantee period, the Contractor shall perform the required repairs at his own expense.

B. Backfilling:

1. No backfilling of trenches shall be done until the system has been inspected and approved by the Landscape Architect or Owner's Representative for proper trench depths, installation of equipment, control wire, and location of heads.
2. Before trenches are backfilled, the Contractor must show the Landscape Architect or Owner's Representative the redlined "As-Built" drawing he has been keeping on the site, indicating that changes and corresponding dimensions have been recorded where such changes have been made.
3. Prior to backfilling, the system shall be tested under pressure for leaks and general operation of the equipment. The main line shall be tested for a period of four (4) hours at a pressure of 120 PSI. Any failures detected during the testing period shall be repaired by the Contractor and the testing shall be repeated. The Landscape Architect shall certify the testing to ensure that it has been completed and that the system has met all testing requirements. All defects discovered by the pressurization and operation test shall be corrected by the Contractor at his own expense before proceeding with further work.
4. Trench bedding and backfill material shall be existing site soil free of rocks larger than one (1) inch in diameter and any other debris. Wasted pipe and other excess project materials or rubbish (tape, wire, trash, wrappers, boxes, bottles, etc.) shall not be backfilled into the trenches. All trenches shall be backfilled, and then watered sufficiently to insure no settling of the surface. In the event of any backfill settlement prior to the end of the guarantee period, the Contractor shall perform all required repairs at his own expense.
5. Backfill under and around the lines to the center line of the pipe shall be placed in maximum layers of six (6) inches and thoroughly compacted. Compaction shall be ninety-five (95) percent relative density (modified proctor) under walks and roads, and eighty-five (85) percent in planting areas.
6. Special care shall be taken to assure complete compaction under the haunches of the pipe. Backfill compaction under the haunches of the pipe shall be compacted to the original density. Compaction requirements above the pipe

shall be the same as for surrounding areas.

3.04 POINT-OF-CONNECTION

- A. The Contractor shall verify the location of the irrigation point-of-connection (P.O.C.) and the static water pressure at that location prior to beginning any irrigation work. Verify water pressure during the time of day that the irrigation system is intended to operate.
- B. If the P.O.C. location or water pressure is different than that expressed by the irrigation designer, or if the pressure appears to be unusually high or low, the Contractor shall notify the Landscape Architect or Owner's Representative immediately prior to beginning any irrigation work.

3.05 ELECTRICAL POWER SUPPLY AND AUTOMATIC CONTROLLER

- A. If 120 volt ac electrical service is not already in place, the Contractor shall be required to make all necessary arrangements with the appropriate power company and provide all necessary materials and labor to provide said power, including but not limited to: paying fees, making power connections, providing poles, weatherhead and meter, etc., as specified on the plans or as required by the power company and the Owner. The automatic controller shall be of the type and manufacturer specified and located as shown on the drawings.

3.06 PIPE AND FITTINGS

- A. Install pipe to allow for expansion and contraction as recommended by pipe manufacturer. Where the main line sits uncovered for any length of time in the trench prior to testing, the main line shall be shaded with a thin covering of backfill soil to minimize weather-related expansion or contraction of the pipe. Do not cover up valves or other installed equipment prior to inspection and acceptance.
- B. The ends of all pipe shall be cut squarely and remain free of all inside scale or burrs. Spigot ends of pipes three (3) inches and larger shall be beveled. Threads shall be cut clean and sharp, and to a length equal to one and one eighth (1-1/8) times the length of the female thread receiving the pipe. The threaded pipe shall be screwed into a full length of the female thread.
- C. All threaded pipe joints shall be properly sealed using Teflon tape that is properly applied to the areas to be joined.
- D. Solvent weld joints shall not be glued unless ambient temperatures are at least forty (40) degrees F. Pipe shall not be glued in rainy conditions unless properly tented. Use only the brand and type of primer and glue specified. Glued main line pipe shall cure a minimum of four (4) hours prior to being energized. Lateral lines shall cure a minimum of two (2) hours prior to being energized and shall not remain under constant pressure unless cured for twenty-four (24) hours.
- E. Every care shall be taken during installation to prevent dirt and debris (especially rocks and pipe shavings) from getting into the pipes.
- F. All tees coming out of main lines for valves and other fixtures shall be vertical and constructed with Sch. 80 PVC pipe.
- G. All tees coming out of the lateral lines for heads and other fixtures shall be horizontal so that no direct weight or pressure may be exerted through the head to

the top or bottom of the lateral line pipe. Tees on lateral lines shall also be SxSxT to the head swing joints.

3.07 **THRUST BLOCKS**

- A. Thrust blocks are needed wherever the main pipeline:
 - 1. Changes any direction at tees, angles, and crosses vertical and horizontal.
 - 2. Changes size at reducers.
 - 3. Stops at a dead-end.
 - 4. Valves at which thrust develops when closed.The size and type of thrust block depends on pressure, pipe size, type of soil, and type of fitting. As a general rule, one cubic foot (minimum) of class AA (AE) Type II concrete (2,000 psi minimum) is required for each thrust block. Follow thrust blocking details for calculating thrust block size.
- B. Thrust blocks shall rest against undisturbed original earth in the direction of thrust.
- C. Where a fitting is used to make a vertical bend, use a three-eighths (3/8) inch bar to anchor the fitting to a thrust block braced against undisturbed soil. The thrust block should have enough resistance to withstand upward and outward thrusts at the fitting.
- D. Where concrete thrust blocking shall come in contact with PVC pipe, wrap the PVC pipe with a layer of plastic to protect the pipe from any caustic effects that may be caused by the concrete mix.
- E. Thrust restraining devices may be used in lieu of thrust blocking, but they must be installed strictly according to manufacturer's recommendations. Use of these devices in lieu of thrust blocking shall be approved by the Owner or Owner's Authorized Representative prior to use.

3.08 **PIPE SLEEVES**

- A. Pipe sleeves shall be required for all piping under all new concrete or other new paving. The size of the sleeve shall be at least twice the size of the pipe or wires to be sleeved. Wires shall be sleeved separately within their own sleeve. All pipe sleeves four (4) inches and smaller in diameter shall be PVC Schedule 40 pipe; sleeves greater than four (4) inches in diameter shall be Class 200 PVC, unless otherwise specified on the drawings.

3.09 **VALVES**

- A. General:
 - 1. Isolation valves, remote control valves, and quick coupling valves shall be installed according to manufacturer's recommendations and these drawings and specifications.
 - 2. Valve boxes shall be set over valves so that all parts of the respective valve assembly can be reached for service. Valve box and lid shall be set to be flush with the proposed finished grade.
 - 3. No valve box shall rest directly upon the valve or any fixture associated with it, including main line and lateral lines. Each valve box shall be centered on the valve assembly it covers. Each valve box shall have four (4) inches of three quarter (3/4) inch gravel placed in the bottom underneath the valve and lines to

reduce the potential of mud and standing water therein.

- B. Remote-Control Valve:
 - 1. Each control valve shall have its own gate or ball valve (as specified), and only one (1) control valve and gate/ball valve per valve box. No valve manifolds shall be allowed.
 - 2. The bottom of the remote-control valve shall be a minimum of four (4) inches above the gravel.
 - 3. All control valves shall be located within shrub areas where possible and installed per the details on the plans. No large grouping of valves (greater than 3) in any one spot shall be allowed, unless approved by the Landscape Architect or Owner's Representative.
 - 4. Control valve assemblies shall be installed no closer to one another than two (2) feet.
 - 5. No control valve shall be installed more than twelve (12) inches below finished grade.
 - 6. Tag each control valve with a permanent and non-smearing label indicating its proper controller and valve number as shown on the irrigation plans.
- C. Quick Coupling Valve:
 - 1. Quick coupling valves shall be installed within a ten (10) inch round green plastic valve box, with the top of the valve box at finished grade.

3.10 **VALVE BOX**

- A. Where indicated in the installation details, valve boxes shall rest on concrete pavers only, thus eliminating any weight or pressure from being exerted on the main line or valve inside the valve box. There shall be a minimum of three (3) inches of clear space between the bottom of the valve box lid and the topmost part of the valve (including solenoid).
- B. Valve box extensions shall be used where necessary to prevent soil around the valve from collapsing into the space inside the valve box.

3.11 **BACKFLOW PREVENTION ASSEMBLY**

- A. The Contractor shall install backflow prevention equipment behind (downstream from) the point-of-connection to the supplying main and lateral lines. Installation shall comply with local, state, and national codes and regulations, and per manufacturer's recommendations (whichever is most restrictive). See plans and details for more information. Install a quick coupling valve just downstream of the backflow prevention assembly for system blowout purposes.
- B. The Contractor shall have the backflow prevention assemblies operation tested within ten (10) days of the time of installation by a certified backflow preventer assembly tester. Testing shall be conducted per state requirements to insure proper and safe operation. Subsequent annual testing at spring start-up shall be the responsibility of the Owner.

3.12 **SWING-LINE PHYSICAL DISCONNECT ASSEMBLY (where allowed)**

- A. Install swing-line disconnect assembly as shown in the City's detail.
- B. Ensure that only one supply line can be operated at any given time.

- C. Unused supply shall be plugged with appropriate camlock plug (not dust cover).
- D. Culinary water supply line must have a reduced pressure backflow prevention device installed upstream from swing-line.
- E. Shut off valves of the type specified in detail must be on each supply line. Shut off valve is not required on irrigation feed line.
- F. City must approve vault prior to installation.

3.13 FILTER & ENCLOSURE

- A. The Contractor shall install the filter and its enclosure just downstream from the point-of-connection and upstream from the backflow prevention assembly (if present).
- B. The filter shall be equipped with a ten (10) foot length of hose that can be attached to the exhaust port of the filter to direct water and debris away from the enclosure during flushing operations. Auto-flush filter models shall be provided with a permanent method of capturing and directing exhaust water away from the filter assembly without creating puddles, ponding, or any other nuisance drainage problems.

3.14 WIRE & CABLES

- A. Multiple wires in the same trenches shall be banded together at ten (10) foot intervals for protection. Where wires pass under paved areas, they shall be installed in Schedule 40 PVC sleeves, separate from lateral or main lines. These sleeves shall be installed prior to installation of the paving, if possible, and prior to installation of the wires. Sleeves for fourteen (14) gauge wires shall be sized as follows:

<u>NUMBER OF WIRES</u>	<u>SLEEVE SIZE</u>
1 - 10	1"
11 - 18	1 1/4"
19 - 25	1 1/2"
26 - 40	2"
41 - 56	2 1/2"
57 - 88	3"
89 - 150	4"

- B. All control wires shall be bundled and taped together every ten (10) feet and installed in the pipe trench directly adjacent to the pipe. Control wires not placed in the trenches adjacent to the pipes shall be placed in PVC electrical conduit and buried eighteen (18) inches or deeper and marked on the "as built" drawings.
- C. Two (2) spare wires shall be run from each controller to the farthest valve under its control in all directions and to any valve which is on a dead-end line. The spare wires shall be a different color from the regular wires and shall be labeled at both ends. Each spare wire shall be brought up to the surface in each valve box it passes through and coiled with twenty-four (24) inches for use in future connections. Each spare wire shall be tested for continuity prior to final acceptance of the project and guaranteed by the Contractor to be functional. Should the maintenance personnel discover a defect within one (1) year afterwards, the Contractor shall locate the problem and cause it to be repaired at his own cost. Install extra wires as needed for moisture sensors (if used).

- D. Run a single 14-gauge wire along the top of the main line to be used for tracking the location of the main line. The color of the tracing wire shall be different than any other wire color used.
- E. All wires shall be installed with twenty-four (24) inches of excess wire (coiled) at the end of each wire run, wire splice, and at each controller.
- F. Isolation valves, quick coupling valves, manual drain valves, and wire splices not specifically associated with the control valve shall be located in separate valve boxes.

3.15 **SPRINKLERS**

A. General:

1. All sprinkler heads shall be installed above grade so as to minimize washing of the topsoil and seed during the landscaping establishment period, except those which border paving or flat work of any kind. These heads shall be installed at the finished grade of the adjacent paving or flat work. Prior to final acceptance of the project, all heads shall be raised or lowered to final lawn or planting grade.
2. All sprinkler heads shall be installed using the bottom inlet. No side outlets shall be used. Tape or plug all open ends while installing to prevent debris contamination.
3. Rotor heads located on hillsides shall be adjusted to the downhill side to avoid cutting into the hill by the stream of water and causing erosion.
4. Heads installed in existing sod shall be set at the grade of the soil.
5. All rotor pop-up heads shall be installed at final grade using Lasco unitized swing joint or Spears swing joint riser assemblies. All swing joints must drain by gravity back to the supply lines.
6. All pop-up, shrub spray/rotary, turf spray/rotary, bubbler and strip spray/rotary heads shall be installed as shown in the details.
7. All pipes, lines, and risers shall be flushed thoroughly with water before installation of any heads. All debris and rocks found at that time shall be removed from the area as soon as possible.
8. All spray sprinklers shall be flushed thoroughly with clean water a second time before installation of nozzles.
9. The Contractor shall adjust all heads to provide a uniform coverage and to keep spray off buildings, walkways, walls, parking areas, and drives.
10. Check valves shall be used where indicated and where necessary to prevent water flow from lower elevation heads when system is turned off. Install per manufacturer's recommendations.

B. Drip Irrigation

1. Point Source Drip System
 - a. Place two (2) drip emitters on opposing sides of each shrub, perennial, and ornamental grass. Place three (3) drip emitters equally spaced around trees. Emitters shall be staked near the edge of the newly planted root ball and inside the watering well.
2. Inline Drip System
 - a. Inline drip tubing shall be spaced approximately equal to the inline emitter

spacing. Inline drip tubing spacing may be adjusted to be slightly less than the emitter spacing in order to achieve uniform spacing. For slope applications, place drip tubing laterals parallel to the slope contour. When slopes exceed thirty (30) percent, increase the recommended lateral spacing by twenty-five (25) percent on the lower one third (1/3) of the slope.

3. Inline dripper tubing shall be installed at finished grade with soil staples and covered with three (3) inches of specified mulch. Supply and exhaust headers shall be installed at normal lateral line depths.
4. All drip tubing shall be held in place by soil staples and shall conform to the following:
 - a. Sandy Soil - One staple per every three (3) feet and two (2) staples on each change of direction (tee, elbow, or cross)
 - b. Loam Soil - One staple every four (4) feet and two (2) staples on each change of direction (tee, elbow, or cross)
 - c. Clay Soil - One staple every five (5) feet and two (2) staples on each change of direction (tee, elbow, or cross)
5. Installation of inline drip circuits shall generally conform to the following steps:
 - a. Assemble and install ball valve, filter, remote control valve and pressure regulating valve assembly in accordance with installation details.
 - b. Assemble and install supply header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
 - c. Install lateral drip lines in accordance with details and relevant specifications and manufacturer's recommendations. Tape or plug all open ends while installing to prevent debris contamination.
 - d. Assemble and install exhaust header(s) in accordance with installation details. Tape or plug all open connections to prevent debris contamination.
 - e. Install air/vacuum relief valve(s) at the zone's highest point(s) in accordance with installation details.
 - f. Thoroughly flush supply header(s) and connect drip lateral lines while flushing.
 - g. Thoroughly flush drip lateral lines and connect to exhaust header(s) and any interconnecting lateral lines while flushing.
 - h. Thoroughly flush exhaust header(s) and install line flushing valves in accordance with details.

3.16 AS-BUILT DOCUMENTS

- A. The Contractor shall keep a current and accurate record of exact dimensioned locations, grades, elevations, and size of all exterior and interior underground piping, valves, and drains. Dimensions shall indicate distances from columns, buildings, curbs, and similar permanent features on the site. This information shall be recorded on a print as the work progresses but shall be permanently recorded on a reproducible PDF or CAD file, which shall be given to the Owner before the project is accepted.
- B. Final payment for the contract will not be processed until "As-Built" drawings or plans are received by the Owner.

3.17 OPERATIONAL TEST AND MAJOR INSPECTIONS

A. Substantial Completion:

1. At substantial completion of the irrigation system, the Contractor shall call for an operational and coverage test. Substantial completion shall be defined as the complete installation of all irrigation equipment and completion of all backfilling and grading operations in their entirety. Substantial completion shall not be given for designated portions of the project.
2. Notice by the Contractor shall be given, in writing, at least three (3) days in advance to the Owner so that proper scheduling can be made for those who are to attend.
3. At the appointed time, an inspection of all irrigation equipment, including control valve assemblies, controllers, isolation valves, quick coupling valves, drain valves, and sprinklers shall be made. The entire system will be tested for operation, coverage, and head adjustment. Please note that the pressure testing of the main lines shall already have been completed prior to this time.
4. A list of uncompleted items or repairs (punch list) shall be generated by the Owner and distributed to the Contractor and other involved parties within three (3) days of the operational testing. Each item on the punch list shall be corrected before the system will be approved and accepted by the Owner. The Contractor will be back charged for time spent by the Owner and any consultants who have been brought to the site for a final inspection when the project is not ready for said inspection.

B. Maintenance/Establishment Period:

1. The duration of the irrigation maintenance period shall be equal to the plant maintenance/establishment period. It shall begin one (1) day after the substantial completion inspection. The Contractor shall complete all punch list items during the maintenance period, as well as maintain and operate the entire irrigation system.
2. The irrigation Contractor (if different than the landscaping Contractor) shall coordinate with the landscaping Contractor during the entire plant and lawn establishment period on the use, scheduling, and maintenance of the sprinkler system.
3. The maintenance period shall not end until Final Acceptance of the project.

C. Final Acceptance:

1. A second inspection shall be held at the end of the maintenance period to ensure that all punch list items have been completed and the entire system is ready for acceptance by the Owner.
2. Upon satisfaction that the Contractor has completed all punch list items, the irrigation system is fully and completely functional, and the required As-Built drawings and maintenance manuals have been submitted, the Owner shall accept the project.
3. An official letter of final acceptance shall be prepared and issued by the Owner to the Contractor and Landscape Architect. Upon acceptance of the system by the Owner, the Owner shall assume full responsibility for the system, and the guarantee period shall begin.

3.18 **GUARANTEE AND MAINTENANCE**

A. Guarantee:

1. Upon final acceptance of the irrigation system as being operational and properly installed, the Contractor shall guarantee the workmanship, materials, fixtures, and equipment to be free from defects for a period of one (1) year after that date.
2. The Contractor shall insure and guarantee complete drainage of the system. In working with or connecting to an existing system, the Contractor shall guarantee compatibility in operation and drainage between the two systems.

B. Maintenance Required During Guarantee Period:

1. In the fall of the year during the installation and guarantee period, the CONTRACTOR shall meet with the Owner's maintenance personnel on the site. The Contractor shall winterize the system by draining all of the water and doing everything necessary to insure protection of the system until spring. Blowing out the lines by compressor shall be permitted during the one (1) year guarantee. Maximum compressor pressure shall be 30 psi on spray circuits, 50 psi on rotor circuits, and 20 psi on all drip circuits. The individuals involved from both parties shall exchange all information necessary for the eventual take-over of the system by the Owner.
2. The Contractor, with the Owner's maintenance personnel and Owner in attendance, shall energize the sprinkler irrigation system again the following spring and shall repair all defects found as a result of winter damage, improper installation, improper maintenance, defective materials or inadequate sprinkler drainage.
3. At the end of the guarantee period, when the lawn and landscaping have been accepted, the Contractor shall call for a final inspection of the sprinkler irrigation system. There shall be at least five (5) days prior notice given in writing to the Owner so the appropriate people have opportunity to attend.
4. Prior to that time, the Owner shall adjust all heads to their proper pattern, radii, and height. The system shall have been flushed out, checked for operation, and any defects covered by the guarantee shall be repaired. The entire system shall be inspected and checked to determine if everything is in working order. A final list of warranty items found in need of correction (if any) shall be made and the Contractor shall correct them. The Contractor shall notify the Owner when he has verified that every item is corrected.
5. After all warranty items have been corrected, the Owner shall, in writing, officially release the Contractor from all warranty claims pertaining to the irrigation system and assume full and complete responsibility for said system.

END OF SECTION

SECTION 32 91 19

LANDSCAPE GRADING

This specification replaces in its entirety Section 32 91 19 - Landscape Grading currently found in the Utah Chapter APWA Manual of Standard Specifications - 2017 Edition.

PART 1 – GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Final grade topsoil for finish landscaping.
- B. Related Sections:
 - 1. Section 31 05 05 - Earthwork.
 - 2. Section 32 94 23 - Planting.

1.2 SUBMITTALS

- A. Submit maximum laboratory dry density and optimum laboratory moisture content for:
 - 1. Subgrade material
 - 2. Each type of fill material to be used.

1.3 QUALITY ASSURANCE

- A. Do not change material sources or aggregate without Engineer's knowledge.
- B. Reject backfill material that does not comply with requirements specified in this section.
- C. Landscape grading is aesthetic by nature and subject to continual monitoring and modification during the backfilling process. Work closely with the Engineer, particularly when grading and constructing berms, channels, or other aesthetic considerations.

1.4 STORAGE

- A. Safely stockpile backfill materials.
- B. Separate differing materials, prevent mixing, and maintain optimum moisture content of back fill materials.
- C. Avoid displacement of and injury to Work while compacting or operating equipment.
- D. Movement of construction machinery over Work at any stage of construction is solely at the Contractor's own risk.

1.5 SITE CONDITIONS

- A. Do not place, spread, or roll any backfill material over material that is damaged by water. Remove and replace damaged material at no additional cost to the Owner.
- B. Control traffic and erosion. Keep area free of trash and debris. Repair settled, eroded, and rutted areas.
- C. Reshape and compact damaged structural section to required density.

1.6 WARRANTY

- A. Any settlement noted in the landscaped surfaces will be considered to be caused by improper compaction methods and shall be corrected at no cost to the Owner.
- B. Restore incidentals damaged by settlement at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 TOPSOIL

- A. All planting areas shall receive either a minimum of four (4) inches of stockpiled or imported topsoil in turf areas and twelve (12) inches in planting beds.
- B. All topsoil used on this project (stockpiled or import) shall meet the following criteria:
 - 1. pH:..... 5.5 - 8.0
 - 2. EC (electrical conductivity):..... <2.0 mmhos per centimeter
 - 3. SAR (sodium absorption ratio):..... <3.0
 - 4. % OM (percent organic matter):..... ≥2%
 - 5. Texture (particle size per USDA classification):
 - a. Sand: <70%
 - b. Clay: <30%
 - c. Silt: Balance
 - 6. Stone Fragments (gravels or any soil particle greater than two (2) mm in size): <5% (by volume)
 - 7. Rocks Present > 1.5" None
- C. In addition, the topsoil shall be fertile, friable, natural loam and shall be capable of sustaining vigorous plant growth. It shall be free of stones, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. The topsoil shall contain neither noxious weeds nor their seeds. It shall not be used for planting operations while in a frozen or muddy condition.

2.2 BACKFILL MATERIALS

- A. Earthwork, Section 31 05 05.

2.3 ACCESSORIES

- A. Water. Make arrangements for sources of water during construction and plan for delivery of water to the site. Comply with local Laws and Regulations at no additional cost to the Owner when securing water from water utility company.

PART 3 – EXECUTION

3.1 EXAMINATION

- A. Administrative Requirements: Verification of existing conditions before starting work.
- B. Verify trench backfilling has been inspected.

3.2 PREPARATION

- A. Identify required line, levels, contours, and datum.
- B. Stake and flag locations of underground utilities.
- C. Upon discovery of unknown utility or concealed conditions, notify the Engineer.

- D. Verify stockpiled fill meets gradation requirements, areas to be backfilled are free of debris, snow, ice or water, and ground surface is not frozen.
- E. If subgrade is not readily compactable, secure written authorization for extra excavation and backfill. Refer to Section 31 23 16.

3.3 SUBSTRATE PREPARATION

- A. Eliminate uneven areas and low spots.
- B. Remove debris, roots, branches, and large stones. Remove contaminated subsoil.

3.4 PROTECTION

- A. Protect existing trees, shrubs, lawns, existing structures, fences, roads, sidewalks, paving, curb and gutter, and other features.
- B. Protect above or below grade utilities. Contact utility companies to repair damaged top utilities. Pay all costs of repairs.
- C. Protect subgrade from desiccation, flooding, and freezing.
- D. Do not fill adjacent to structures until excavation is checked by the Engineer.
- E. Do not use compaction equipment adjacent to walls or retaining walls that may cause wall to become over-stressed or moved from alignment.
- F. Do not disturb or damage foundation perimeter drainage, foundation, damp-proofing, foundation waterproofing and protective cover, or utilities in trenches.
- G. Restore any damaged structures to its original strength and condition.
- H. Prohibit construction traffic over topsoil.

3.5 LAYOUT

- A. Maintain all benchmarks, control monuments and stakes, whether newly established by surveyor or previously existing. Protect from damage and dislocation.
- B. If discrepancy is found between Contract Documents and the site, the Engineer shall make such minor adjustments in the Work as necessary to accomplish the intent of the Contract Documents without increasing the cost of the Work to the Contractor or the Owner.

3.6. GRADING

- A. Grading Intent: Spot elevations and contours indicated are based on the best available data. The intent is to maintain constant slopes between spot elevations. If a spot elevation is determined to be in error, or the difference in elevation between points change, then the minimum percentage of slope as a result of field adjustment of specific spot elevations is as follows:
 - 1. Pavement Areas:..... 1 percent.
 - 2. Concrete or Brick Areas:..... 0.30 percent
 - 3. Lawn or Planted Areas:..... 0.75 percent.
- B. Conduct the Work in an orderly manner. Do not create a nuisance. Do not permit soil accumulation on streets or sidewalks. Do not allow soil to be washed into sewers and/or storm drains.

- C. Grade slopes to provide adequate drainage after compaction. Do not create water pockets or ridges. Use all means necessary to prevent erosion of freshly graded areas during construction until surfaces have been constructed and landscaping areas have taken hold.
- D. Remove surface stones greater than 1 inch from finished grading.
- E. In planting areas, provide a finished grade that conforms to Section 32 94 23 Planting.

3.7 PLACING TOPSOIL

- A. Place topsoil in areas where seeding is required to nominal depth of 4 inches. Place topsoil during dry weather.
- B. Fine grade topsoil to eliminate rough or low areas. Maintain profiles and contour of subgrade.
- C. Remove roots, weeds, rocks, and foreign material while spreading.
- D. Manually spread topsoil close to trees and buildings to prevent damage.
- E. Lightly compact placed topsoil.
- F. Remove surplus subsoil and topsoil from site.

3.8 TOLERANCES

- A. Top of Topsoil: $\pm 1/2$ inch.

3.9 SCHEDULE

- A. Compacted topsoil thickness: 4 inches under turf areas, 12 inches in planter bed areas (unless specifically otherwise stated).

3.10 SURFACE RESTROATION

- A. Restore paved surfaces, Section 33 05 05.
- B. Finished landscaped surfaces with grass, or with other groundcover shall comply with the following:
 - 1. Backfill areas to contours and elevations indicated. Do not use frozen materials.
 - 2. Make smooth changes in grade. Blend slopes into level areas.
 - 3. Remove surplus backfill materials from site and dispose of legally.
 - 4. Leave stockpile areas completely free of excess fill materials.
 - 5. Slope grade away from buildings at a minimum of 3 inches in 10 feet unless specified otherwise.

3.11 CLEANING

- A. Remove stockpiles from the site. Grade site surface to prevent free standing surface water.
- B. Leave borrow areas clean and neat.

END OF SECTION 32 91 19

SECTION 32 94 23

PLANTING

This section replaces section 32 92 00, 32 93 13, 32 93 43 and 32 98 00 in the 2017 edition of the Utah Chapter of American Public Works Association Manual of Standard Specifications (APWA).

PART 1 GENERAL

1.01 SUMMARY

- A. Section includes:
 - 1. Trees, shrubs, perennials, vines, and groundcover requirements.
 - 2. Bedding, topsoil, and temporary support.
- B. The work to be performed under this section shall consist of furnishing all materials, labor, and plants necessary for the proper planting of all trees, shrubs, perennials, vines, and groundcovers of the kind and sizes specified at the prescribed locations, and otherwise in accordance with the drawings and specifications or as directed by the Landscape Architect or Owner's Representative or Owner's Representative.
- C. Related sections:
 - 1. Section 32 84 23 Underground Irrigation Systems

1.02 REFERENCES

- A. AAN: American Associations of Nurserymen, Inc.
- B. ANSI Z60.1-2004: American Standard for Nursery Stock.
- C. FS O-F-241: Fertilizers, Mixed Commercial.
- D. ICN: International Code of Nomenclature for algae, fungi, and plants.
- E. City Standards/Ordinances relating to irrigation and planting.

1.03 QUALITY ASSURANCE

- A. Perform work in conformity with applicable requirements of AAN.
- B. Upon receiving Notice to Proceed, the Contractor shall provide written proof that the specified plant material is available and has been secured or reserved specifically for this project. Obtain nursery stock and other plant materials from reliable and stable sources prior to order and delivery.
- C. Provide plants that are declared free of disease and insect pests.

1.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Exercise care in digging, transporting, handling, and packing of all plants.
- B. Handle plants so roots are protected at all times. If delivery is in open vehicles, cover entire load without causing over heating.
- C. Deliver plant material immediately prior to placement. Keep plant material moist.
- D. Protect root balls from sun and wind by covering with soil or other suitable material if not planted immediately on delivery.
- E. Store fertilizer in a weatherproof location such that its effectiveness will not be impaired.

1.05 ACCEPTANCE

- A. Plants shall not be accepted if the ball of earth surrounding roots (rootball) has been cracked or broken.
- B. Plants shall be accepted if burlap, staves, and ropes required in connection with transplanting are installed and still intact upon delivery.
- C. Heeled in stock from cold storage shall not be accepted.

1.06 SAMPLES

- A. Samples of the topsoil, bark mulch, fertilizer, and tree ties listed below shall be submitted to the Landscape Architect or Owner's Representative for inspection and approval prior to the beginning of work under this contract.

- B. Delivery of materials may begin only after samples have been approved. All materials furnished for the work shall conform in every respect to the approved samples. Any non-conforming materials will be rejected.

PART 2 PRODUCTS

2.01 GENERAL

- A. The planting plan is diagrammatic, and all plant locations are approximate. Plant symbols take precedence over plant quantities shown on the plans and in the plant material schedule. The Contractor shall verify all plant quantities and notify the Landscape Architect or Owner's Representative of any discrepancies between the quantities and the symbols shown.
- B. Provide plants of normal growth and uniform height, according to species, with straight canes and well developed leaders, roots, and tops.
- C. Provide plants of sizes indicated. The size stated in each case shall be interpreted to mean dimensions of plant as it stands in its mature position in the nursery without straightening of any branches or leaders.
- D. Provide legible labels attached to all plants, specimens, bundles, boxes, bales, or other containers indicating botanical genus, species, and size of each.
- E. Plants cut back from larger sizes to meet specifications shall be rejected.
- F. Balled and burlapped deciduous shrubs may be acceptable in lieu of container growth deciduous shrubs only if there is a demonstrated significant shortage of container grown stock.

2.02 PLANTS

- A. All plants shall comply with federal and state laws requiring inspection for plant disease and infestations.
- B. Any inspection certificates required by law shall accompany each delivery of plants and such certificate shall be given to the Landscape Architect or Owner's Representative. All plants shall be subject to inspection and approval at the place of growth or upon delivery to the site for their quality, size, species, and variety. Such approval shall not impair the right of inspection and rejection at the site or during progress of work for size and condition of the plants, latent defects, or injuries. Any and all rejected plants shall be removed immediately from the premises by the Contractor. The Contractor shall make all replacements at his expense should he fail to comply in full with any of the specifications. Necessary replacements will be made as soon as weather conditions permit, and all such plants replaced shall conform to all specifications herein.
- C. Names and Grades:
 - 1. Plant names shall conform to the nomenclature of "Standardized Plant Names," "International Code of Nomenclature for algae, fungi, and plants (ICN)," or "International Code of Nomenclature for Cultivated Plants (ICNCP), 9th edition." When a name is not found in any of these references, consult the accepted name used in the nursery trade. All plants shall be tagged by the nursery with the proper identification labels to insure the correct varieties of plants.
 - 2. Size and grading standards shall conform to those of the American Association of Nurserymen, Inc., as published in "American Standard for Nursery Stock", 2014 Edition, with all current revisions unless otherwise specified.
 - 3. The caliper of trees shall be measured six (6) inches above the surface of the ground.
 - 4. Measurements on all trees and shrubs shall be taken with the branches in a normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch or root tip to tip. No trees which have had their leaders cut, or are so damaged that cutting is necessary, will be accepted.
- D. No substitution of size, grade, variety or any species shall be permitted except by written permission of the Landscape Architect or Owner's Representative.

- E. Plant Size:
 - 1. All plants shall conform to the size, age, and condition as specified in the plant list shown on the drawings. Undersized plant material shall not be approved.
 - 2. No additional compensation shall be due the Contractor if larger than specified plant material is provided.
 - 3. Only balled and burlapped or container stock shall be accepted. No bare root stock shall be accepted.
 - 4. Plants cut back from larger sizes to meet specifications shall be rejected.
- F. Plant List:
 - 1. Plants lists indicate minimum size requirements only. Plant materials shall be equal to or greater in size than those specified.
 - 2. Any discrepancies between plant lists and plans shall be immediately brought to the attention of the Landscape Architect or Owner's Representative.
 - 3. In all cases the Contractor shall be held responsible for all plant materials indicated on the plans unless otherwise directed in writing by the Landscape Architect or Owner's Representative.
 - 4. Each bidder shall investigate sources of supply and satisfy himself that he can supply all of the plants mentioned in the planting lists in size, variety, and quantity noted and specified before submitted his bid. Failure to take this precaution will not relieve the successful bidder from his responsibility as Contractor to furnish and install all plant material in strict accordance with the contract requirements without additional expense to the owner.
 - 5. If a shortage of the specified plant material truly exists and can be verified by the Contractor, the Contractor shall notify the Landscape Architect immediately and discuss what varieties and sizes are available as a suitable substitution. Last minute substitutions are not acceptable.
- G. All plants shall be fresh and vigorous, of normal habit and growth, and free of disease, insects and insect eggs and insect larvae, weeds and weed seed. No heeled-in plants from cold storage shall be accepted except on approval by the Landscape Architect or Owner's Representative prior to installation.

2.03 SEED

- A. All seed shall be accurately labeled and tested for purity and germination, using the procedure sanctioned by the Association of Official Seed Analysts.
- B. The seed tag shall indicate the date of testing, along with the testing results showing purity (percentage of the labeled species by weight), the percentages of other crop, weed, inert material, dormant or hard seed, and also the percentage of seed that will germinate.
- C. Seed labels or tags shall list the following:
 - 1. Manufacturer's name and address.
 - 2. Date and location of packaging.
 - 3. Name of the species of seed or seeds being sold.
 - 4. Variety of seed or seeds being sold.
 - 5. Percent purity of the seed. (Purity is defined as the percent weight of the entire sample of each seed species or variety that is present in excess of 5% of the total.)
 - 6. Percent other seed crop. (Other seed crop is defined as the percent weight of the entire sample of seed found in the sample that are less than 5% of the total seed weight and are generally recognized by the Association of Official Seed Analysts as seeds or plants grown as crops. If more than one crop species or cultivar is found in the sample, their weights are combined and reported.)
 - 7. Percent weed seed. (Weed seeds are all other seed species that the Association of Official Seed Analysts does not classify as crop seeds.)
 - 8. Percent inert matter. (Inert matter is defined as the percent weight of the sample that is not viable seed. It can include plant parts, broken seeds or other materials that are not viable seeds.)
 - 9. Percent germination.

10. Percent hard and/or dormant seed. (Hard seed is the percent of the number of seeds that remain hard at the end of the testing period because they have not absorbed water because of an impermeable seed coat. Dormant seed is defined as the percent of the number of seeds, other than hard seed, that fail to germinate, but are determined to be viable by subjecting them to other seed testing techniques. Both of these seed types are generally considered to be seed that will germinate at a later date than seed reported in the percent germination calculation.)
11. Percent Total Viability.
12. Noxious weed seeds of the continental USA found in the seed mix.
13. Last date the seed was tested for germination.
14. Bulk pound quantity of seed contained in the bag.
15. Pure Live Seed (PLS) pound quantity contained in the bag.

2.04 SOD (NOT USED ON THIS PROJECT)

- A. Sod shall be obtained only from approved sources. The sod shall have been mowed regularly and carefully maintained from planting to harvest.
- B. The sod shall be free of grassy and broad-leaf weeds, contain no bare or burned spots, and be clean and strongly rooted. It shall be of the varieties noted on the plans and notes.
- C. The sod shall be cut using approved methods and equipment. It shall be cut in pieces not exceeding one (1) square yard, with a minimum of three quarter (3/4) inch and maximum one and one half (1 ½) inch thickness. All sod for a particular contiguous area must have the same thickness.
- D. For very large turf areas and all athletic fields, large roles of sod shall be used. All sod roles shall be of uniform and consistent thickness within the range described above.

2.05 TREE STAKES & TIES

- A. Tree stakes shall be two by two (2x2) inch square or two (2) inch diameter round wood stakes ten (10) feet in length as indicated on the plans. Steel stakes may not be used.
- B. Tree stake ties shall be manufactured of virgin flexible vinyl meeting ASTM-D-412 standards for tensile and elongation strength. The material shall be black in color for ultraviolet resistance. Hose and wire shall not be used.

2.06 TOPSOIL

- A. All planting areas shall receive either a minimum of four (4) inches of stockpiled or imported topsoil in turf areas and twelve (12) inches in planting beds.
- B. All topsoil used on this project (stockpiled or import) shall meet the following criteria:
 1. pH:..... 5.5 - 8.0
 2. EC (electrical conductivity):..... <2.0 mmhos per centimeter
 3. SAR (sodium absorption ratio):..... <3.0
 4. % OM (percent organic matter):..... ≥2%
 5. Nitrogen (NO₃N)..... 48 ppm min.
 6. Phosphorous (P) 11 ppm min.
 7. Potash (K) 130 ppm min.
 8. Iron (Fe) 5.0 ppm min.
 9. Texture (particle size per USDA classification):
 - a. Sand: <70%
 - b. Clay: <30%
 - c. Silt: Balance
 10. Stone Fragments (gravels or any soil particle greater than two (2) mm in size): <5% (by volume)
 11. Rocks Present > 1.5" None
- C. In addition, the topsoil shall be fertile, friable, natural loam and shall be capable of sustaining vigorous plant growth. It shall be free of stones, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. The topsoil shall contain neither noxious weeds nor their seeds. It shall not be used for planting operations while

in a frozen or muddy condition.

2.07 WEED BARRIER FABRIC

- A. If specified, a weed barrier fabric shall be placed in all planting beds to prevent the growth and spread of unwanted vegetation. The fabric shall be Typar #3301B or approved equal.

2.08 MULCH

- A. Mulch shall be used as a top dressing for all planting beds unless specified otherwise. See plant material schedule for mulch types to be used.
- B. Shredded bark mulch shall conform to the following criteria:
 - 1. Bark pieces shall not exceed two (2) inches when passed through a screen of that size.
 - 2. Large chunks of bark or wood shall not be mixed in with the mulch.
 - 3. The bark mulch shall be primarily from coniferous trees.
- C. Where used, mulch shall be placed to a depth of three (3) inches on top of the topsoil.
- D. Other mulches may be used only as specified on the drawings or in the planting notes and details.

2.09 FERTILIZER

- A. Commercial fertilizer shall be uniform in composition, dry, and free-flowing. Deliver fertilizer mixed as specified in bulk or bag, showing weight analysis, formula, and manufacturer's name.
- B. A 16-16-16 balanced fertilizer shall be used. Any exceptions to this formula shall be based on horticultural recommendations resulting from a site-specific soil test and must be approved prior to application by the Landscape Architect or Owner's Representative.

2.10 MOWSTRIP (NOT USED ON THIS PROJECT)

- A. Where turf areas are separated from planting beds, a concrete mowstrip shall be used. No other edging materials may be used unless specifically noted on the plans and approved by the Landscape Architect or Owner's Representative.
- B. The mowstrip shall be constructed using concrete having a compressive strength rating of two thousand five hundred pounds per square inch (2,500 psi) or greater, and a maximum slump of four (4) inches.
- C. A three eighth (3/8) inch diameter rebar (#3) shall be used to provide support and help prevent differential settling of the mowstrip after cracking.
- D. Include a concrete mowstrip at the base of all fences. Said mowstrip shall be six (6) inches deep and eighteen (18) inches wide, with the fence posts located in the center of the mowstrip.

2.11 METAL EDGING

- A. Where specified on the plans, metal edging shall be of the product or material specified on the plans (or approved equal).

PART 3 EXECUTION

3.01 GENERAL

- A. Site Visit: The Contractor shall visit and inspect the site and take into consideration known and reasonably inferable conditions affecting work. Failure to visit the site will not relieve the Contractor of furnishing materials and performing the work required.
- B. Prior to any planting operations, the irrigation system shall be fully operational and all planting areas shall be thoroughly moistened.
- C. Where weeds or other undesirable vegetation are present in planting areas, the Contractor shall apply a contact herbicide a minimum of ten (10) days prior to commencement of any planting or irrigation work. Apply herbicide per manufacturer's

recommendations. The poisoned vegetation shall be allowed to completely die back, including the roots, before proceeding with the work. Dead vegetation shall then be removed from the site and disposed of in a legal manner.

- D. The Contractor shall conform to the following requirements with regard to existing vegetation:
1. The Contractor shall be fully responsible for any damage to existing trees or shrubs. He shall use all reasonable means to protect and preserve plants on the project not designated for demolition.
 2. No pruning, thinning, or cutting of existing vegetation shall be allowed unless written permission is given by the Landscape Architect or Owner's Representative.
 3. The Contractor shall replace any trees or existing shrubs damaged by him or his sub-contractors with like kind and size.

3.02 PLANTING SEASONS

- A. All new plant installation shall be completed between April 15 and October 15. If planting must be done after October 15 or before April 15, the Contractor shall obtain specific approval to do so from the Landscape Architect or Owner's Representative prior to beginning any planting operations.
- B. No planting shall be done in frozen soil or during unfavorable weather conditions, subject to the approval of the Landscape Architect or Owner's Representative.

3.03 TOPSOIL

- A. The Contractor shall obtain a soil analysis from any authorized soil testing agency of any existing stockpiled or imported topsoil to be used on the project to verify that it conforms to the topsoil specifications. Test results shall include horticultural recommendations. The soil samples shall be obtained per the testing agency directions. Allow ten (10) working days to obtain test results. The costs for such testing shall be the responsibility of the Contractor.
- B. Prior to delivery of the imported topsoil to the site, the Contractor shall provide to the Landscape Architect or Owner's Representative the name and location of the topsoil source, along with the certified soil analysis of the topsoil to be used. The analysis shall verify that the proposed topsoil meets the topsoil specifications and is capable of supporting healthy plant growth.
- C. After imported topsoil has been delivered to the site, a second soil test may be required to verify that it is indeed the same soil as previously tested and designated for use in this project. No substitution of topsoil shall be allowed without prior written authorization from the Landscape Architect.
- D. The following procedure shall be followed in placing all topsoil:
1. All cut areas to receive topsoil which have a slope of less than ten (10) percent shall be cross-rippled to a depth of two (2) to four (4) inches.
 2. The subgrade material shall be rough graded to plus or minus one tenth (± 0.1) foot of the final rough grade, which will allow the Contractor to achieve final finished grade through the placement of the topsoil.
 3. The surface of the subgrade shall be scarified to a depth of two (2) inches to provide a transition zone between the subgrade and the topsoil. Place the topsoil on the subgrade and fine grade to the final finished grade and topsoil depths as indicated on the drawings and in these specifications.
 4. Any required soil amendments (i.e. mulch, organic matter, etc.) shall be placed directly on the topsoil at the required rates and spread evenly over the planting area. The amendments shall then be thoroughly blended into the topsoil to a depth of four (4) inches. Where only a dry, granular fertilizer is to be added, it may be applied to the surface and raked in during the fine grading procedures.
- E. The Contractor shall maintain a minimum of two (2) percent drainage away from all buildings, structures, and walls. Finished grades shall be smoothed to eliminate puddling or standing water.
- F. All finished grades shall be approved in writing by the Owner prior to installation of any

plant materials.

3.04 PLANT CONDITION

- A. All precautions customary in commercial landscape installation practice shall be taken in preparing plants for planting. Workmanship that fails to meet these minimum standards shall be rejected. All balled and burlapped plants shall have firm and natural balls of earth around their roots. No plant shall be planted if the rootball is cracked or broken, either before or during the process of planting. Loose, broken or manufactured root balls shall be rejected.
- B. All plants materials in five (5) gallon containers or larger shall have been established in that container for a period of not less than six (6) months and not more than two (2) years. Plant material shall not be root bound. They shall exhibit sound, healthy, and vigorous growth and be free from diseases and pests.
- C. The Contractor shall have the Landscape Architect or Owner's Representative approve plant material size and quality prior to installation. Any plants which are not true to form, appear stressed or unhealthy, are infested with pests, infected with disease, or are undersized for their containers shall be rejected.
- D. All plant material shall be planted as soon upon arrival on the premises as possible. If planting cannot be done immediately, the roots shall be protected from the sun and kept in a moist condition until the time of planting. Such protection may be provided by laying the plants on the north side of the building and covering the roots with wet straw.
- E. If it is anticipated that planting will not be done for more than twenty-four (24) hours after the arrival of plants upon the premises, the balled and burlapped stock shall be heeled-in on the north side of a building and all roots completely covered with dirt which shall be wetted down frequently. Care will be taken in the handling of all ball and burlap materials so that the earth around the roots is disturbed as little as possible.

3.05 PLACEMENT OF PLANTS

- A. Plants shall be generally located as indicated by the drawing. The Contractor shall stake out the location of all plants and planting areas with identified plant stakes, and no excavation shall commence until such locations have been approved by the Landscape Architect or Owner's Representative or Owner's Representative.
- B. In the event that underground construction work or obstructions are encountered during excavation of the plant holes, alternate locations will be assigned and approved by the Landscape Architect or Owner's Representative or Owner's Representative.
- C. Except for turf and groundcovers, plants shall not be placed within twenty-four (24) inches of sprinkler heads.
- D. The Contractor must locate and stake any sprinkling head or valve box within the dripline of a proposed or existing tree location and must establish the direction of the lateral or main irrigation line that serves the staked sprinkler head or valve box. This procedure will help eliminate damage to existing or future tree roots.

3.06 PLANT INSTALLATION

- A. All concrete work, sprinkling systems, and finished grading shall be completed and approved by the Landscape Architect or Owner's Representative before any planting of the specified plant materials is begun.
- B. No tree planting shall be initiated until sprinkling system is complete and tested. However, tree planting shall precede lawn planting.
- C. Each plant will be placed in an individual plant pit. The sharing of pits shall not be allowed.
- D. All trees and shrubs shall be planted in pits as detailed in the planting details contained herein or as noted on the drawings. Tree and shrub pits shall be circular in outline, with a diameter at least two (2) times the diameter of the rootball of each plant to be installed. They shall be one to two and one half (1 - 2 ½) inches shallower than the rootball depth. When the plant is properly placed in the plant pit, the root collar shall be approximately one (1) inch above finished grade of the topsoil. For perennial plants (which have no root

- collar), the top of the rootball shall be even with the finished grade or the topsoil. The sides of the plant pit shall be roughened, and not smooth or sculpted.
- E. Plant backfill mix shall be as indicated on the plans.
 - F. For container grown plants, remove the container and place the plant vertically in the plant pit, directly on undisturbed soil. The root crown or collar shall be at or just above the finished grade. Perennial and ornamental grass plants shall be planted with the root collar at finished grade.
 - G. For balled and burlapped plants, place the plant vertically in the center of the pit, with the rootball resting on undisturbed soil. Cut and remove the wire basket and burlap or other wrapping material from the rootball. This may be done with the rootball in the pit. Any burlap or wire pieces underneath the rootball may be left in place if they cannot be removed. Do not fold the burlap over but cut away as much as possible without disturbing the rootball. No burlap shall be pulled from under the rootball. Backfill the bottom one third (1/3) of the pit as the wire and burlap are removed. In all cases, maintain the integrity of the rootball.
 - H. Specified backfill material shall be carefully and firmly worked and tamped under and around the rootball to fill all voids. When backfilled and compacted to two thirds (2/3) the depth of the pit, thoroughly water with a hose to completely soak the roots and remove any air pockets.
 - I. The plant pit shall then be completely backfilled with the specified backfill mix and tamped well. A shallow watering basin or rain cup shall be formed around each plant. This basin will be equal in diameter to that of the original planting pit.
 - J. Monitor all plants to ensure that no settling occurs. Pits which settle shall be immediately filled with additional soil mixture at no additional expense to the Owner.
 - K. After planting, the following operations shall be performed:
 - 1. Stake and mulch all trees per installation details.
 - 2. Remove all nursery stakes ties, and tags from all plants. Prune and remove any dead, damaged, or broken branches. Maintain side growth on all trees.

3.07 STAKING

- A. All trees, including evergreen trees, shall be staked.
- B. Staking shall be performed as follows:
 - 1. Two (2) 2"x 2" square or 2" diameter round wood stakes, ten (10) feet in length, shall be used to support each tree planted under this contract unless otherwise indicated.
 - 2. Tree ties shall conform to the staking detail shown on the planting detail sheet.
 - 3. Each stake will be located adjacent to the rootball, on opposing sides, to provide maximum support to the trunk. Do not penetrate the rootball with the stake.
 - 4. The stakes will be driven into the pit bottom after the tree has been placed in the pit, but before backfilling begins so as to avoid damage to the roots.
- C. Stakes and ties shall be removed after one (1) full growing season from the time the tree was installed.

3.08 WATERING

- A. All plants shall be thoroughly watered immediately after planting. This shall mean full and thorough saturation of all backfill in the pits and beds during the same day of planting. Water shall be applied only by open end hose at very low pressure to avoid creating air pockets, causing injury to the plant, or washing away of backfill. When installed, watered, and fully settled, the plants shall be vertical with the root collar at the appropriate level.
- B. Subsequent watering shall be provided by the site's irrigation system. The Contractor shall insure that all plants, especially trees, receive sufficient water to maintain healthy growth and vigor. Overwatering shall be avoided, and prolonged saturation of the soil around the trees shall be eliminated by appropriately controlling the irrigation circuit which provides water to that area.

3.09 WEED BARRIER FABRIC (if specified)

- A. Prepare final grade prior to placing fabric. Placement of fabric shall comply with the following:
 - 1. Place pre-emergent herbicide prior to installing fabric.
 - 2. Install fabric directly on topsoil. With drip tubing, install tubing on top of fabric.
 - 3. Overlap and secure per manufacturer's recommendations.
 - 4. Cut an "X" where plant will be located. Peel back corners to allow plant installation. Fold corners back in to place after plant is installed.

3.10 MULCHING

- A. Shredded bark mulch shall be placed to a depth of three (3) inches on top of the topsoil in all planting beds and over tree planting pits.
- B. The finished grade of the bark mulch shall be as follows:
 - 1. Two (2) inches below the surface or finished grade of any paving, mowstrips, or walks adjacent to the planting area.
 - 2. At adjacent finished grade of the turf surrounding tree planting pits.
- C. In tree pits, the bark shall be kept six (6) inches away from the base of the tree.
- D. Just prior to placement of the mulch, the Contractor shall treat the mulched areas with a pre-emergent herbicide according to the manufacturer's recommendations.

3.11 MOWSTRIP

- A. Form the concrete mowstrip using typical concrete forming methods. Ensure concrete depth as specified in the plans and details. Concrete forms shall be uniform in width and follow the curves and tangents as shown in the plans. Locate border line edging with string or other means to assure border straightness and curves as designed.
- B. Finish concrete with a medium broom finish and tool the edges for a neat, rounded edge to prevent chipping and spalling.
- C. Place the rebar continuously in the center of the mowstrip. Overlap joints a minimum of twelve (12) inches.

3.12 METAL EDGING

- A. Pre-manufactured metal edging:
 - 1. Preparation: Ensure all underground utility lines are located and will not interfere with the proposed edging installation before beginning work. Locate border line edging with string or other means to assure border straightness and curves as designed. Dig trench one inch (1") deeper than the set of edging bottom.
 - 2. Set edging into trench with top at the correct height above the topsoil with the mulch depths calculated into the total depth. When placed metal edging should be one-half inch ($\frac{1}{2}$ ") above the finished grade of the surrounding material. Drive stakes through edging loops until locked into place (or other means dictated by manufacturer). Place stakes at spacing specified by manufacturer. Ensure stakes are installed with freeze thaw cycles in mind and place stakes into compacted (not loose) soil.
 - 3. Where edging sections turn at corners follow manufacturer's recommendations for bending, cutting, or ordering preformed corners as provided by manufacturer.
 - 4. Backfilling and Cleanup: Backfill both sides of edging, confirm and adjust if necessary that sections are securely held together, and compact backfill material along edging to provide top of edging at one-half inch ($\frac{1}{2}$ ") above finished grade. Cleanup and remove excess material from the site.
- B. Custom weld metal edging (NOT USED ON THIS PROJECT):
 - 1. Preparation: Ensure all underground utility lines are located and will not interfere with the proposed edging installation before beginning work. Locate border line edging with string or other means to assure border straightness and curves as designed. Dig trench one inch (1") deeper than the set of edging bottom.
 - 2. Set metal edging into trench with the top at the correct height above the topsoil with the mulch depths calculated into the total depth. When placed metal edging should be one-half inch ($\frac{1}{2}$ ") above the finished grade of the surrounding material. Weld

edging using butt joint welding methods. Weld and stake each joint. Stakes shall be welded to the edging using seam weld methods. Additional stakes shall be placed at every change in direction, every joint, and a minimum of every six feet (6') O.C.

3. Grind and paint all welds to prevent rust and corrosion over time.
4. All edging should be installed plumb to the finished grade such that the angle between the edging and ground plane form ninety-degree angles (90°).
5. Backfilling and Cleanup: Backfill both sides of edging, confirm and adjust if necessary that sections are securely welded together and at the correct elevation and angle, and compact backfill material along edging to provide top of edging at one-half inch (1/2") above finished grade. Cleanup and remove excess material from the site.

3.13 SOD INSTALLATION (NOT USED ON THIS PROJECT)

- A. The Contractor shall notify the Landscape Architect or Owner's Representative of the source of the sod prior to placement.
- B. The sod shall be free of grassy and broad-leaf weeds, contain no bare or burned spots, and be clean and strongly rooted. It shall be of the varieties noted on the plans and plant materials schedule.
- C. The sod shall be cut using approved methods and equipment. It shall be cut in pieces not exceeding one (1) square yard, with a uniform thickness on all pieces. Sod thickness may vary between a minimum of one (1) inch and maximum one and one half (1 1/2) inches but must be consistent throughout this project. For very large turf areas and all athletic fields, large rolls of sod shall be used. Sod shall be placed using equipment specifically designed to lay large sod rolls.
- D. The Contractor shall notify the Landscape Architect of the source of the sod prior to placement. The sod shall be stripped and delivered to the site not more than twenty-four (24) hours prior to laying. The sod shall be maintained in a moist and healthy condition to encourage immediate growth.
- E. The following procedure shall be followed when installing the sod:
 1. Lay the sod on smooth, moist topsoil, working off planks if required.
 2. Rake the topsoil to loosen and level prior to placing each course of sod.
 3. Lay strips perpendicular to the direction of the slope. Strips shall be parallel to each other, with their end seams staggered. The sod shall be neither stretched nor overlapped, and all joints shall be butted tightly together.
 4. Roll the sod immediately after placing and thoroughly water with a fine spray to a depth sufficient that the underside of the new sod and the soil immediately below the sod are thoroughly wet.
 5. On slopes two (2) horizontal to one (1) vertical or steeper, lay the sod perpendicular to the slope and secure every row with wooden pegs at two (2) feet maximum on center. Drive the pegs flush with the soil portion of the sod.
 6. Sod pieces shall be laid tightly together. Sod areas with gaps caused by pieces not being laid tightly enough together or with ridges from overlapping pieces shall not be accepted and the Contractor will be required to re-lay the sod.

3.14 HYDROSEEDING (if used)

- A. General:
 1. Wood fiber mulch shall be virgin wood fiber, free of growth- or germination-inhibiting substances. The mulch shall be air dried with not more than fifteen (15) percent moisture by weight. The total organic weight shall be a minimum of ninety-eight (98) percent. Inorganic ash content shall be 0.7±0.2 percent. Water holding capacity shall be 1000G/100G (oven dried weight). The pH range shall be 4.0 - 6.0. The fiber length shall meet the following:
 - a. Fifty (50) percent shall be at least 0.15 inches in length or longer.
 - b. Fifty (50) percent shall be retained on the twenty-eight (28) mesh screen. It shall be Echofiber or Conwed or approved equal.
 2. The seed mix shall be as specified on the plans. Provide written certification that

the seed conforms to Utah seed law and is in compliance with Utah State Department of Agriculture regulations.

3. The tackifier shall be M-Binder or Plantego or equal.
 4. The fertilizer shall be a chemically prepared, dry, homogenous pellet product with a balanced formula of 16-16-16.
 5. Application rates shall be as follows:
 - a. Wood fiber mulch..... 50 pounds (min.)/1,000 SF
 - b. Seed mix..... See plans (7 pounds/1,000 SF typ.)
 - c. Tackifier 100 pounds/Acre
 - d. Fertilizer 1 pound or actual nitrogen/1,000 SF
 - e. Water 92 gallons/1,000 SF
- B. One-step preparation and application of hydroseed mulch shall be as follows:
1. The wood fiber mulch, seed, tackifier, fertilizer, and water shall be mixed together in a hydroseeding machine having a capacity of at least two thousand (2,000) gallons to allow for a homogeneous slurry which is thoroughly mixed and can be applied easily without clogging. The machine shall be mounted on a traveling unit which is either self-propelled or drawn by a separate unit. Equipment used in the hydroseeding process shall be thoroughly cleaned of all seed and other materials used in any previous hydroseeding process, prior to hydroseeding on this project.
 2. The equipment shall have a built in agitation system and operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing not less than fifty (50) pounds of organic mulching amendment plus chemical additives and solids for each one hundred (100) gallons of water.
 3. The slurry shall be prepared at the site and its components shall be mixed to supply the rates of application as specified. The slurry preparation shall begin by adding water to the tank when the engine is at one half ($\frac{1}{2}$) throttle. The engine throttle shall be open to full speed when the tank is one half ($\frac{1}{2}$) filled with water. All organic amendments, fiber, and chemicals shall then be added by the time the tank is two thirds ($\frac{2}{3}$) to three fourths ($\frac{3}{4}$) full. At this time and not before, the seed mix shall also be added. Spraying shall commence immediately when the tank is full, and the slurry is mixed.
 4. Apply the hydroseed to form even appearing cover over the required areas. The slurry shall be applied in a downward drilling motion via a fan stream nozzle. It is important to ensure that all of the components enter and mix with the soil. Use only qualified and trained personnel to insure uniformity of the hydroseed applications.
 5. The hydroseeding slurry components shall not be left in the hydroseed machine for more than two (2) hours in order to avoid seed deterioration.
- C. A two-step hydroseeding procedure may be used in lieu of the one-step method. The two-step procedure shall consist of first sowing the seed mix by broadcasting, and second, applying the hydromulch. Specifically, this procedure shall conform to the following:
1. The seed shall be broadcast over the planting bed at the rates noted in the plant schedule. The seed shall be sown in two (2) perpendicular directions with a cyclone seeder or other similar mechanical seeder. Lightly rake the seed into the soil.
 2. Apply a fine spray watering immediately after each area has been sown.
 3. Prepare and apply hydromulch slurry (minus the seed mix) according to the procedure outlined in 3.12 B, steps 1 through 5 above.

3.15 DRILL SEEDING

If seeding operations are to be done using a drill seeding method, the following requirements shall apply:

- A. All topsoil shall be placed, and the fine grading completed prior to any seeding operations.
- B. The seed bed shall be prepared by loosening the surface of the soil and mixing the

specified fertilizer into the top two (2) inches of the topsoil. The finished surface shall be smooth and even, with no high or low spots, no rocks, nor other deleterious materials. The use of a Rotodairon or similar piece of equipment to prepare the seed bed is encouraged.

- C. The seed shall be drilled using a Brillion type seeder, specifically designed for drilling grass seed. An agricultural grain drill is not acceptable. A cultipacker, harrow, or similar apparatus shall be a part of the seeder or dragged behind to help ensure that the seed is covered by the soil and the surface is left smooth and even.

3.16 CLEAN UP

- A. Throughout the course of planting, excess and waste materials as well as excavated subsoil shall be continuously and promptly removed. All areas shall be kept clear and all reasonable precautions taken to avoid damage to existing structures, plants, and grass.
- B. When planting has been completed in an area, it shall be thoroughly cleaned of all debris, rubbish, subsoil, and waste materials. These shall be removed from the property and disposed of legally. All planting tools shall also be put away.
- C. The ground surface shall be left in a condition satisfactory to the Landscape Architect or Owner's Representative.

3.17 AS-BUILT DOCUMENTS

- A. The Contractor shall keep a record of all departures from the working drawings that occur during construction. These changes shall be shown on a clean set of prints, and the prints kept on the job site at all times for review.
- B. As a part of his observation work, the Landscape Architect or Owner's Representative shall review the as-built drawings regularly to verify that changes are being recorded. At the conclusion of the work, the Contractor shall present to the Owner fresh, clean drawings of all the changes made and recorded previously and they shall become part of the permanent record of the project.

3.18 MAINTENANCE

- A. Substantial Completion:
 - 1. At Substantial Completion of all planting work outlined in these plans, the Contractor shall contact the City to arrange for a walk through to verify that all aspects of the work have been completed. Work must be fully completed (except for final clean-up) according to all plans, notes, and specifications and exhibit professional workmanship. Substantial completion shall be defined as the complete installation of all plant materials, staking, mulching, and other work on the project in its entirety. Substantial completion shall not be given on designated portions of the project.
 - 2. Notice by the Contractor shall be given, in writing, at least three (3) days in advance to the Landscape Architect or Owner's Representative so that proper scheduling can be made for those who are to attend.
 - 3. At the appointed time, an inspection of all plant materials, including staking and mulching, shall be made.
 - 4. A list of uncompleted items (punch list) shall be generated by the Landscape Architect or Owner's Representative and distributed to the Contractor and other involved parties within three (3) days of the substantial completion inspection. Each item on the punch list shall be corrected before the project will be approved and accepted by the Landscape Architect or Owner's Representative. The Contractor will be back charged for time spent by the Owner and any consultants who have been brought to the site for a final inspection when the project is not ready for said inspection.
- B. Maintenance/Establishment Period:
 - 1. The maintenance/establishment period shall begin one (1) day after the substantial completion inspection. The Contractor shall complete all punch list items during this period, as well as maintain and operate the entire irrigation system.

2. In cases where the maintenance/establishment period runs beyond October 15 of any given year, the balance of the maintenance/establishment period days shall be extended into the spring of the following year. Counting of the balance of days shall begin no sooner than April 15, unless mutually agreed upon by both the Contractor and the City prior to that date. Early counting shall be based on weather conditions at the time.
3. The Contractor shall maintain all plantings until the turf is fully established. The turf shall be considered fully established when grass stands come in uniform and thick, with no bare or thin spots, and roots have begun to spread and knit together. No weeds shall be allowed in the grass. If the turf grass is hydroseeded, the Contractor must complete the hydroseeding by September 1. The maintenance/establishment period shall be a minimum period of sixty (60) days.
4. The maintenance work required shall include but not be limited to the following:
 - a. Appropriate watering of all plant materials.
 - b. Weeding and removal of all weeds from groundcover and planting areas.
 - c. Replacement of any dead, dying, or damaged trees, shrubs, perennials, or groundcover.
 - d. Filling and replanting of any low areas which may cause standing water.
 - e. Adjusting or sprinkler head heights and watering patterns.
 - f. Filling and recompaction of eroded areas, along with any required reseeding and/or replanting.
 - g. The grass shall be mowed when the blades reach three (3) inches tall and maintained to a minimum height of two (2) inches. No more than one third (1/3) of the blade shall be removed per cutting. The cutting frequency shall be once every five (5) to seven (7) days depending upon grass height and growth rate.
 - h. Weekly removal of all trash, litter, clippings, and all foreign debris.
 - i. At thirty (30) days after planting, a balanced fertilizer (16-16-16) shall be applied to the grass areas at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet.
 - j. At intervals of thirty (30) days after the first application of fertilizer to the grass, apply a balanced fertilizer (16-16-16) at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet until the grass is established.
5. The maintenance period shall not end until Final Acceptance of the project.
 - C. Final Acceptance:
 1. A final inspection shall be held prior to the end of the maintenance period to ensure that all punch list items have been completed and the entire project is ready for acceptance by the Owner.
 2. Upon satisfaction that the Contractor has completed all punch list items, the irrigation system is fully and completely functional, and the required As-Built drawings, mylars and maintenance manuals have been submitted, the Owner shall accept the project.
 3. An official letter of final acceptance shall be prepared and issued by the Owner to the Contractor, designer, and the Landscape Architect. Upon final acceptance of the project by the Landscape Architect or Owner's Representative, the Owner shall assume full responsibility for the project, and the guarantee period shall begin.

3.19 GUARANTEE

- A. Upon final acceptance of the project as being properly installed, the Contractor shall guarantee the plant materials as follows:
 1. All shrubs and groundcovers shall be guaranteed by the Contractor as to growth and health for a period of sixty (60) days after completion of the maintenance period and final acceptance.
 2. All trees shall be guaranteed by the contractor to thrive and grow in an acceptable upright position for a period of one (1) year after completion of the maintenance period and final acceptance.

- B. The Contractor shall, within fifteen (15) days after receiving written notification by the Landscape Architect or Owner's Representative, remove and replace all guaranteed plant materials which die or become unhealthy or appear to be in a badly impaired condition at any time during the guarantee period. Any plants that settle below or rise above the desired finished grade shall also be reset to the proper grade.
- C. All replacements shall be plants of the same kind, size, and quality as originally specified in the "plant list" and they shall be furnished, planted, staked, and maintained as specified herein at no additional cost.
- D. The Contractor will not be responsible for plants destroyed or lost due to occupancy of the project, vandalism on the part of others, or improper maintenance or lack thereof.
- E. At the conclusion of the guarantee period and prior to final inspection of the plant materials by the Landscape Architect or Owner's Representative, the Contractor shall remove all tree stakes. This period of time shall be approximately 1 year after initial planting.
 - 1. Stakes shall be removed by first cutting the ties securing the tree to stakes and secondly pulling stakes or guys out of the ground.
 - 2. Stakes shall not be broken off above, at, or below ground levels but removed completely.
- F. At the conclusion of the guarantee period a final inspection of all planting included in this contract shall be made by the Landscape Architect or Owner's Representative. At that time any plant found to be unhealthy, broken, damaged, or otherwise in an impaired condition shall be noted. Plants so noted shall be removed immediately from the site by the Contractor and replaced by him, as specified under this section, with plants of like kind and size in the manner previously specified for the original planting without extra compensation.

END OF SECTION

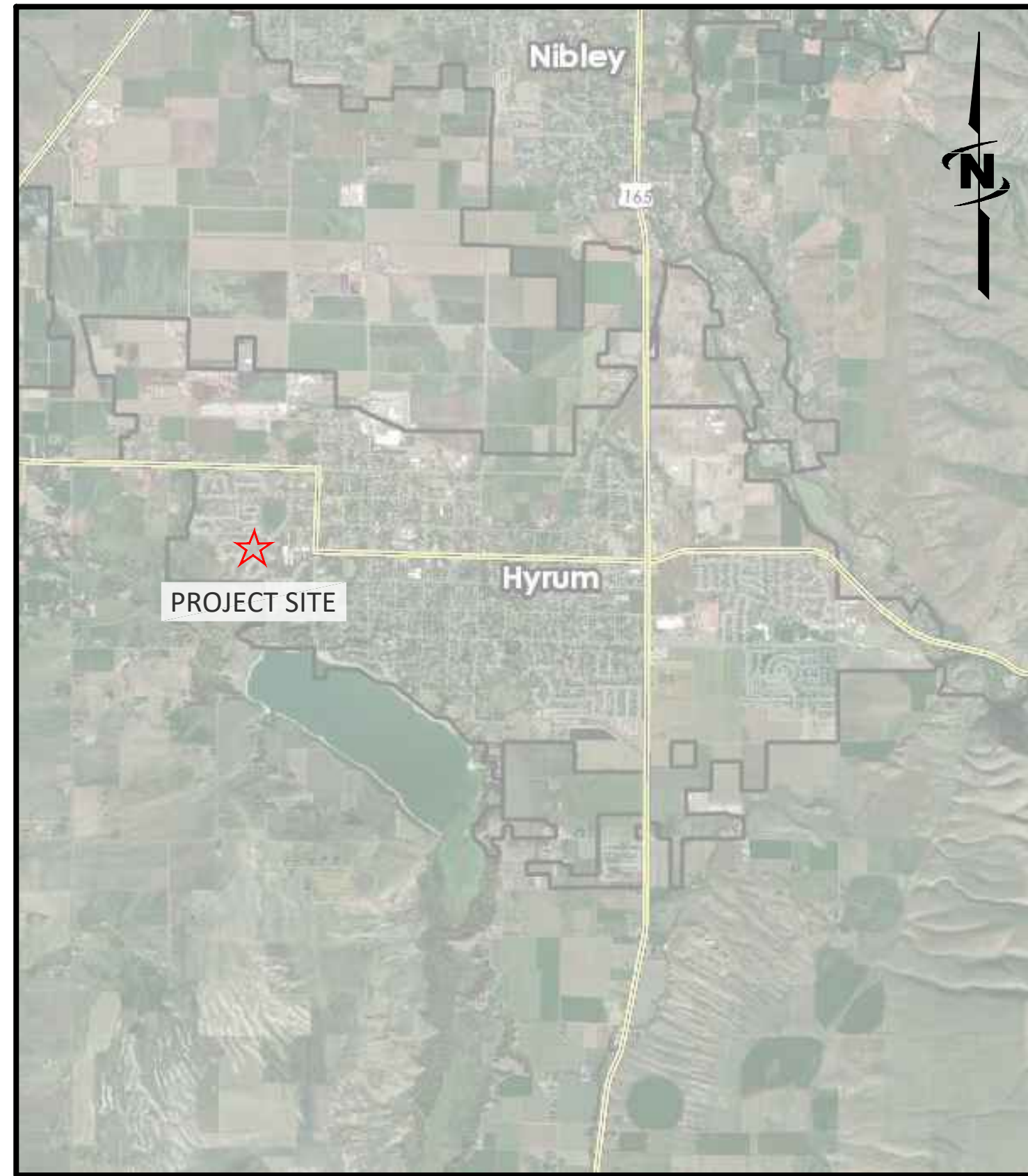
South Cache Pond Canal Trail

Hyrum City

Landscape Improvements

JANUARY 10, 2025

BID SET

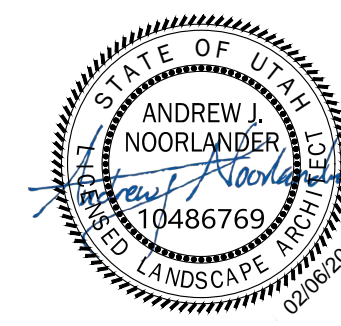


AREA MAP



VICINITY MAP

SHEET INDEX	
SHEET #	SHEET TITLE
G-001	COVER SHEET
LD-101	DEMOLITION PLAN
LP-001	PLANTING NOTES
LP-100	OVERALL PLANTING PLAN
LP-101	PLANTING PLAN
LP-501	PLANTING DETAILS
LI-001	IRRIGATION NOTES
LI-101	IRRIGATION PLAN
LI-501	IRRIGATION DETAILS



PROJECT NO.
57-23-005-007



J-U-B ENGINEERS, INC.

392 E. Winchester St., Suite 300, Salt Lake City, UT 84107
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THE LANGDON GROUP



GATEWAY MAPPING INC.

J-U-B FAMILY OF COMPANIES

REUSE OF DOCUMENTS

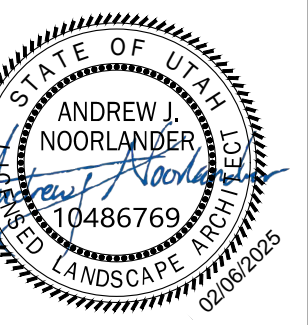
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NO.	REVISION	DESCRIPTION	BY	APPR.	DATE



GENERAL SITE PREP & DEMOLITION NOTES

- LANDSCAPE ARCHITECT SHALL BE CONSULTED BEFORE ANY WORK SHALL COMMENCE.
- CONTRACTOR SHALL VERIFY ALL CONDITIONS IN THE FIELD AND REPORT ANY DISCREPANCIES BETWEEN PLANS AND ACTUAL CONDITIONS TO THE LANDSCAPE ARCHITECT.
- CONTRACTOR SHALL SECURE ALL PERMITS REQUIRED FOR THE WORK FROM ANY CITY DEPARTMENTS, UTILITY COMPANIES OR OTHER JURISDICTIONS AFFECTED BY WORK. CONTRACTOR TO COORDINATE AS REQUIRED FOR COUNTY TO PAY ANY ASSOCIATED PERMIT FEES. CONTRACTOR SHALL COMPLY WITH REQUIREMENTS OF ANY PERMITS OBTAINED BY OWNER (OBTAIN COPIES FROM OWNER PRIOR TO BEGINNING WORK.)
- PRIOR TO COMMENCING ANY EXCAVATION WORK, THE CONTRACTOR SHALL NOTIFY ALL UTILITY COMPANIES IN ACCORDANCE WITH THE NOTIFICATION PROCEDURES PROMOTED BY RESPECTIVE UTILITY COMPANIES. THE "BLUE STAKES" TELEPHONE NUMBER IS 1-900-622-4111 (811).
- EXCAVATION REQUIRED WITHIN PROXIMITY OF EXISTING UTILITY LINES SHALL BE DONE BY HAND. CONTRACTOR SHALL REPAIR ANY DAMAGE TO EXISTING UTILITY LINES OR STRUCTURES INCURRED DURING CONSTRUCTION OPERATIONS AT NO COST TO OWNER.
- CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE OUTSIDE THE LIMIT OF WORK DUE TO HIS CONTRACT OPERATIONS AND SHALL REPAIR DAMAGED AREAS TO PRECONSTRUCTION CONDITIONS AT NO EXPENSE TO THE OWNER.
- ALL REFUSE, DEBRIS AND MISCELLANEOUS ITEMS TO BE REMOVED SHALL BE LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
- ALL ITEMS REQUIRING REMOVAL SHALL BE REMOVED TO FULL DEPTH TO INCLUDE BASE MATERIAL AND FOOTINGS OR FOUNDATIONS AS APPLICABLE AND LEGALLY DISPOSED OF OFF-SITE BY CONTRACTOR.
- ALL EXISTING TREES AND VEGETATION TO REMAIN SHALL BE PROPERLY PROTECTED DURING CONSTRUCTION, AS SPECIFIED AND DIRECTED BY THE LANDSCAPE ARCHITECT. TREE PROTECTION IN ADDITION TO WHAT IS SHOWN ON THE PLAN MAY BE REQUIRED.
- ANY TREE AND SHRUB REMOVAL SHALL INCLUDE THE FILLING, CUTTING, GRUBBING OF ENTIRE ROOTBALLS AND LEGAL OFF-SITE DISPOSAL OF ALL TREES, SHRUBS, STUMPS, VEGETATIVE AND EXTRANEIOUS DEBRIS PRODUCED BY THE REM.OVAL OPERATIONS. ROOTBALL, ONLY REQUIRED IN UNDER PROPOSED HARDSCAPE.
- ALL UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE SITE AND LEGALLY DISPOSED OF BY CONTRACTOR UNLESS OTHERWISE NOTED.
- CONTRACTOR TO STRIP AND STOCKPILE EXISTING TOPSOIL SUFFICIENT FOR TOPSOIL NEEDS OF THE PROJECT. SEE SPECS.

EROSION CONTROL NOTES

- CONTRACTOR TO OBTAIN ANY REQUIRED STORM WATER PERMITS, SWPPP, ETC.
- IF SWPPP IS NOT REQUIRED, CONTRACTOR SHALL FOLLOW BEST MANAGEMENT PRACTICES FOR EROSION AND SEDIMENT CONTROL AND ANY NECESSARY STORM WATER PROTECTION MEASURES.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL PERIMETER EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED.
- SEDIMENT AND EROSION CONTROL MEASURES SHALL BE INSPECTED AT LEAST ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A RAINFALL EXCEEDING 0.5 INCHES DURING A 24-HOUR PERIOD OR MORE FREQUENTLY IF REQUIRED BY GOVERNING NPDES GENERAL PERMIT. ALL MAINTENANCE REQUIRED BY INSPECTION SHALL COMMENCE WITHIN 24 HOURS AND BE COMPLETED WITHIN 48 HOURS OF REPORT.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
- GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- SEDIMENT SHALL BE REMOVED FROM ANY SEDIMENT BASINS BEFORE IT IS 25% FULL AND FROM SILT FENCE BEFORE IT IS 33% FULL.

LEGEND

- AREA TO BE CLEARED AND GRUBBED
- FENCE TO BE PRESERVED AND PROTECTED

KEY NOTES

- A1** PROTECT AND PRESERVE EXISTING VINYL FENCING
- A2** PROTECT AND PRESERVE EXISTING CURB AND GUTTER
- A3** PROTECT AND PRESERVE EXISTING UTILITIES
- A4** BASIN LOW POINT AND CATCH BASIN. PROTECT AND PRESERVE EXISTING BASIN GRADING AND ENTIRE LENGTH.
- B1** CUT / GRIND CURB WALL IN PREPARATION FOR INSTALLATION OF ADA CURB RAMP

NOTE:
 TRAIL HAS ALREADY BEEN INSTALLED. PRESERVED AND PROTECT THE EXISTING TRAIL AND ASSOCIATED GEOTEXTILE FABRIC. ACTUAL TRAIL ALIGNMENT MAY NOT MATCH THIS PLAN SET EXACTLY. ADJUSTMENTS TO THE LAYOUT OF ELEMENTS SHOWN IN THE PLAN SHALL BEE COORDINATED AND CONFIRMED VIA EMAIL OR WRITTEN MEETING MINUTES.

SOUTH CACHE POND CANAL TRAIL
 HYRUM CITY
 DEMOLITION PLAN

FILE : 57-23-005 LD-100
 JUB PROJ. # : 57-23-005
 DRAWN BY: KR
 DESIGN BY: AN
 CHECKED BY: AN

ONE INCH
 AT FULL SIZE, IF NOT ONE
 INCH, SCALE ACCORDINGLY
 LAST UPDATED: 11/13/2025

SHEET NUMBER:

LD-101



PLANTING NOTES

1. The Contractor shall be familiar with the planting and irrigation technical specifications -- failure to do so will not relieve the contractor of his responsibility to fulfill all requirements in said specifications.
2. Prior to any planting operations, the irrigation system shall be fully operational and all planting areas shall be thoroughly moistened.
3. The planting plan is diagrammatic, and all plant locations are approximate. Plant symbols and mulch hatches on the plans take precedence over quantities shown in the Plant Material Schedule. The Contractor shall verify all quantities and notify the Landscape Architect of any discrepancies between the quantities listed and the symbols shown. The Plant Material Schedule is for the Contractor's convenience only.
4. No substitution of size, grade, variety or any species shall be permitted except by written permission of the Landscape Architect. Upon receiving Notice to Proceed, the Contractor shall provide written proof that the specified plant material is available and has been secured or reserved specifically for this project. Obtain nursery stock and other plant materials from reliable and stable sources prior to order and delivery.
5. Final Grade Preparation
 - A. The subgrade Material Shall be rough graded to plus or minus one tenth (+0.1) foot of the final rough grade, which will allow the Contractor to achieve final finished grade through the placement of the topsoil.
 - B. Protect existing trees, shrubs, lawns, existing structures, fences, roads, sidewalks, paving, curb and gutter and other features during Construction.
 - C. Protect above or below grade utilities. Contact utility companies to repair damage to utilities. Contractor shall pay all cost of repairs which he causes.
 - D. Maintain all benchmarks, control monuments and stakes, whether newly established by surveyor or previously existing. Protect from damage and dislocation.
 - E. Grading Intent: Spot elevations and contours indicated are based on the best available data. The intent is to maintain constant slopes between spot elevations.
 - F. Conduct work in an orderly manner. Do not create a nuisance. Do not permit soil accumulation on streets or sidewalks. Do not allow soil to be washed into sewers and storm drains.
 - G. Grade slopes to provide adequate drainage after compaction. Do not create water pockets or ridges. Use all means necessary to prevent erosion of freshly graded areas during construction until surfaces have been constructed and landscaping areas have taken hold.
 - H. Grades shall be smooth, even, and maintain a consistent uniform slope. Grades with undulating surfaces will be rejected and require re-grading.
 - I. The Contractor shall maintain a minimum of two (2) percent drainage away from all buildings, structures, and walls. Finished grades shall be smoothed to eliminate puddling or standing water.
 - J. All finished grades shall be approved by the Landscape Architect prior to installation of any plant materials.
6. All planting areas shall receive a minimum of four (4) inches of imported topsoil in turf areas and twelve (12) inches in planting beds. All topsoil used on this project shall meet the following criteria:

A. pH:	5.5 - 8.0
B. EC (electrical conductivity):	<2.0 mmhos per centimeter
C. SAR (sodium absorption ratio):	<3.0
D. % OM (percent organic matter):	2%
E. Texture (particle size per USDA classification):	
I. Sand:	<70%
II. Silt:	<70%
III. Clay:	<30%
IV. Stone Fragments (gravels or any soil particle Greater than two (2) mm in size):	<5% (by volume)
V. Rocks > 1.5":	None

In addition, the topsoil shall be fertile, friable, natural loam and shall be capable of sustaining vigorous plant growth. It shall be free of stones, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. The topsoil shall contain neither noxious weeds nor their seeds. It shall not be used for planting operations while in a frozen or muddy condition. An appropriate fertilizer and mycorrhizae inoculant may be used to provide needed nutrients for healthy and vigorous plant growth. Follow recommendation of topsoil report.
7. The following procedure shall be followed in placing all topsoil:
 - A. All areas to receive topsoil which have a slope of less than ten (10) percent shall be cross-rippled to a depth of four (4) to six (6) inches.
 - B. The surface of the subgrade shall be scarified to a depth of two (2) inches to provide a transition zone between the subgrade and the topsoil. Place the topsoil on the subgrade and fine grade to the final finished grade and topsoil depths as indicated on the drawings and in these notes.
 - C. Any required soil amendments (i.e. organic matter, fertilizer, gypsum, etc.) shall be thoroughly blended with imported or screened topsoil prior to placement. (Do not place amendments on top of topsoil and then blend.) Where only a dry, granular fertilizer is to be added, it may be applied to the surface and raked in during the fine grading process.
8. The Contractor shall obtain a soil analysis from any authorized soil testing agency of any existing stockpiled or imported topsoil to be used on the project to verify that it conforms to the topsoil specifications. Test results shall include horticultural nutrient recommendations. The soil samples shall be obtained per the testing agency directions. Allow ten (10) working days to obtain test results. The costs for such testing shall be the responsibility of the Contractor. Prior to delivery of the imported topsoil to the site, the Contractor shall provide to the Landscape Architect the name and location of the topsoil source, along with the certified soil analysis of the topsoil to be used. The analysis shall verify that the proposed topsoil meets the topsoil specifications, and is capable of supporting healthy plant growth.
9. After imported top soil has been delivered to the site, a second soils test may be required to verify that it is indeed the same soil as previously tested and designated for use in this project. No substitution of top soil shall be allowed without prior written authorization from the Landscape Architect.
10. All plants used for this project shall conform to the following:
 - A. Any inspection certificates required by law shall accompany each delivery of plants and such certificate shall be filed with the Landscape Architect. All plants shall be subject to inspection and approval at the place of growth or upon delivery to the site for their quality, size, species, and variety. Such approval shall not impair the right of inspection and rejection at the site or during progress of work for size and condition of the plants, latent defects, or injuries. Any and all rejected plants shall be removed immediately from the premises by the Contractor. The Contractor shall make all replacements at his expense should he fail to comply in full with any of the specifications. Necessary replacements will be made as soon as weather conditions permit and all such plants replaced shall conform to all specifications herein.
 - B. Plants shall be fresh and vigorous, of normal habit and growth, and free of disease, insects and insect eggs and insect larvae, weeds and weed seed. No heeled-in plants from cold storage shall be accepted except on approval by the Landscape Architect prior to installation.
11. All plants shall be installed using the following procedures:
 - A. Plants shall be generally located as indicated by the drawing. The Contractor shall stake out the location of all plants and planting areas, and no excavation or installation shall commence until such locations have been

- approved by the Landscape Architect.
- B. All trees and shrubs shall be planted in pits as detailed in the planting details contained herein or as noted on the drawings. Tree and shrub pits shall be circular in outline, with 45° angled sides and the base diameter of the plant pit at least two (2) times the diameter of the rootball of each plant to be installed. They shall be one to two and one half (1 - 2 ½) inches shallower than the rootball depth. When the plant is properly placed in the plant pit, the root collar shall be at or approximately one (1) inch above finished grade. The sides of the plant pit shall be roughened, and not smooth or sculpted.
 - C. All plant and tree pits shall be backfilled with imported topsoil mix and required amendments. See Notes 6 and 7.
 - D. For container grown plants, remove the container and place the plant vertically in the plant pit, directly on undisturbed soil. The root crown or collar shall be at or approximately one (1) inch above the finished grade. Perennial plants and ornamental grasses shall be planted with root collar at finished grade.
 - E. For balled and burlapped plants, place the plant vertically in the center of the pit, with the rootball resting on undisturbed soil. Cut and remove the wire basket and burlap or other wrapping material from the rootball. This may be done with the rootball in the pit. Any burlap or wire pieces underneath the rootball may be left in place if they cannot be removed. Do not fold the burlap over, but cut away as much as possible without disturbing the rootball. No burlap shall be pulled from under the rootball. Backfill the bottom one third (1/3) of the pit as the wire and burlap are removed. In all cases, maintain the integrity of the rootball.
 - F. Specified backfill material shall be carefully and firmly worked and tamped under and around the rootball to fill all voids. When backfilled and compacted to two thirds (2/3) the depth of the pit, thoroughly water with a hose to completely soak the roots and remove any air pockets.
 - G. The plant pit shall then be completely backfilled with the specified backfill mix and tamped well. A shallow watering basin or rain cup shall be formed around each plant. This basin will be equal in diameter to that of the original planting pit.
 - H. After planting, the following operations shall be performed:
 - I. Stake and mulch all trees per installation details.
 - II. Remove all nursery stakes ties, and tags from all plants. Prune and remove any dead, damaged, or broken branches. Maintain side growth on all trees.
12. Staking shall be performed as follows:
- A. Tree staking is only required if necessitated by consistent high winds on site to prevent trees from blowing/tipping over. For bidding purposes, include staking for all trees. During construction the owner, landscape architect, and contractor shall determine if tree staking should be provided. Should staking not be required, contractor shall provide a credit to the owner equal to associated materials and labor costs.
 - B. Two (2) 2"x 2" square or 2" diameter round wood stakes, minimum ten (10) feet in length, shall be used to support each tree planted under this contract unless otherwise indicated. Metal t-posts shall not be used.
 - C. Tree ties shall conform to the staking detail shown on the planting detail sheet. Wire and vinyl hose shall not be used.
 - D. Each stake shall be located adjacent to the rootball, on opposing sides, to provide maximum support to the trunk. Do not penetrate the rootball with the stake.
 - E. The stakes shall be driven into the pit bottom after the tree has been placed in the pit, but before backfilling begins so as to avoid damage to the roots.
 - F. Stakes and ties shall be removed after one (1) full growing season from the time the tree was installed.
13. All plants shall be thoroughly watered immediately after planting. This shall mean full and thorough saturation of all backfill in the pits and beds during the same day of planting. Water shall be applied only by open end hose at very low pressure to avoid air pockets, injury to the plant, or washing away of backfill. When installed, watered, and fully settled, the plants shall be vertical. Subsequent watering shall be provided by the site's irrigation system. The Contractor shall ensure that all plants, especially trees, receive sufficient water to maintain healthy growth and vigor. Over-watering shall be avoided, and prolonged saturation of the soil around the trees shall be eliminated by appropriately controlling the irrigation circuit which provides water to that area.
14. A weed barrier fabric shall be placed in all planting beds to receive stone mulch to prevent the growth and spread of unwanted vegetation. The fabric shall be Typar #3301B or approved equal. Do not install weed barrier fabric under bark mulch.
15. Mulch (see plant materials schedule and specifications for size requirements) shall be placed to a depth of three (3) inches on top of the topsoil in all planting beds and over tree planting pits. The finished grade of the mulch shall be as follows:
- A. Two (2) inches below the surface or finished grade of any paving, mowstrips, or walks adjacent to the planting area.
 - B. One (1) inch below top of metal edging.
 - C. At adjacent finished grade of the turf surrounding tree planting pits.
 - D. In tree pits, the mulch shall be kept six (6) inches away from the base of the tree.
 - E. Just prior to placement of the mulch, the Contractor shall treat the mulched areas with a pre-emergent herbicide according to the manufacturer's recommendations.
16. For projects with turf grass seed, hydroseeding shall conform to the following general standards:
- A. Wood fiber mulch shall be Echofiber or Conwed or equal, that is virgin wood fiber, free of growth--or germination--inhibiting substances. The mulch shall be air dried with not more than fifteen (15) percent moisture by weight. The total organic weight shall be a minimum of ninety eight (98) percent. Inorganic ash content shall be 0.7±0.2 percent. Water holding capacity shall be 1000G/100G (oven dried weight). The pH range shall be 4.0 - 6.0. The fiber length shall meet the following:
 - I. Fifty (50) percent shall be at least 0.15 inches in length or longer.
 - II. Fifty (50) percent shall be retained on the twenty eight (28) mesh screen.
 - B. The seed mix shall be as specified on the plans. Provide written certification that the seed conforms to state seed law and is in compliance with State Department of Agriculture regulations.
 - C. The tackifier shall be M-Binder or Plantego or equal.
 - D. Application rates shall be as follows:

I. Wood fiber mulch.....	50 pounds (min.)/1,000 SF
II. Seed mix (see plans).....	(7 pounds/1,000 SF typ.)
III. Tackifier.....	100 pounds/Acre
IV. Fertilizer.....	7 - 8 pounds/1,000 SF
V. Water.....	92 gallons/1,000 SF
17. One-step preparation and application of hydroseed mulch shall be as follows:
- A. The wood fiber mulch, seed, tackifier, fertilizer, and water shall be mixed together in a hydroseeding machine having a capacity of at least two thousand (2,000) gallons to allow for homogeneous slurry which is thoroughly mixed and can be applied easily without clogging. The machine shall be mounted on a traveling unit which is either self-propelled or drawn by a separate unit. Equipment used in the hydroseeding process shall be thoroughly cleaned of all seed and other materials used in any previous hydroseeding process, prior to hydroseeding on this project.
 - B. The equipment shall have a built in agitation system and operating capacity sufficient to agitate, suspend, and homogeneously mix a slurry containing not less than fifty (50) pounds of organic mulching amendment plus chemical additives and solids for each one hundred (100) gallons of water.
 - C. The slurry shall be prepared at the site and its components shall be mixed to supply the rates of application as specified. The slurry preparation shall begin by adding water to the tank when the engine is at one half (½) throttle. The engine throttle shall be open to full speed when the tank is one half (½) filled with water. All organic amendments, fiber, and chemicals shall then be added by the time the tank is two thirds (2/3) to three fourths (3/4) full. At this time and not before, the seed mix shall also be added. Spraying shall commence immediately when

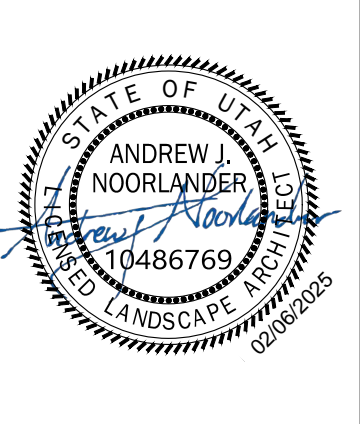
- the tank is full and the slurry is mixed.
- D. Apply the hydroseed to form even appearing cover over the required areas. The slurry shall be applied in a downward drilling motion via a fan stream nozzle. It is important to ensure that all of the components enter and mix with the soil. Use only qualified and trained personnel to ensure uniformity of the hydroseed applications.
 - E. The hydroseeding slurry components shall not be left in the hydroseed machine for more than two (2) hours in order to avoid seed deterioration.
18. Throughout the course of planting, excess and waste materials as well as excavated subsoil shall be continuously and promptly removed. All areas shall be kept clear and all reasonable precautions taken to avoid damage to existing structures, plants, and grass. When planting has been completed in an area, it shall be thoroughly cleaned of all debris, rubbish, subsoil, and waste materials. These shall be removed from the property and disposed of legally. All planting tools shall also be put away.
19. Substantial Completion shall be defined as the complete installation of all plant materials, staking, mulching, and other work on the project in its entirety. Substantial completion shall not be given on designated portions of a project.
- A. At substantial completion of all planting work outlined in these plans, the Contractor shall contact the Landscape Architect to arrange for a walk through to verify that all aspects of the work have been completed. Work must be fully completed (except for final clean-up) according to all plans, notes, and specifications and exhibit professional workmanship.
 - B. Notice by the Contractor shall be given, in writing, at least three (3) days in advance to the Owner's Representative and Landscape Architect so that proper scheduling can be made for those who are to attend.
 - C. At the appointed time, an inspection of all plant materials, including staking and mulching, shall be made.
 - D. A list of uncompleted items (punch list) shall be generated by the Landscape Architect and distributed to the Contractor and other involved parties within three (3) days of the substantial completion inspection. Each item on the punch list shall be corrected before the project will be approved and accepted by the Owner's representative. The Contractor will be back charged for time spent by the Owner and any consultants who have been brought to the site for a final inspection when the project is not ready for said inspection.
22. The maintenance/establishment period shall begin one (1) day after the substantial completion inspection. The Contractor shall complete all punch list items during this period, as well as maintain and operate the entire irrigation system. The Contractor shall maintain all plantings until the turf is fully established. The turf shall be considered fully established when turf grass stands come in uniform and thick, with no bare or thin spots, and roots have begun to spread and knit together. No weeds shall be allowed in the grass areas. The maintenance and establishment shall be a minimum period of sixty (60) days (or greater if so identified in the technical specifications), and shall take place during the growing season defined as April 15th through October 15th. Should the maintenance and establishment period not be fully complete prior to October 15th, the balance of the time shall be carried over and start up again on April 15th. Should mild winter weather allow the continuance of work beyond October 15th, the contractor, owner, and landscape architect may mutually agree if these dates can be adjusted along with specific requirements to do so. The maintenance work required shall include but not be limited to the following:
- A. Appropriate watering of all plant materials.
 - B. Weeding and removal of all weeds from groundcover and planting areas.
 - C. Replacement of any dead, dying, or damaged trees, shrubs, perennials, or groundcover.
 - D. Filling and replanting of any low areas which may cause standing water.
 - E. Adjusting of sprinkler head heights and watering patterns.
 - F. Filling and re-compaction of eroded areas, along with any required re-seeding and/or replanting.
 - G. The turf grass shall be mowed when the blades reach three (3) inches tall and maintained to a minimum height of two (2) inches. No more than one third (1/3) of the blade shall be removed per cutting. The cutting frequency shall be once every five (5) to seven (7) days depending upon turf grass height and growth rate.
 - H. Weekly removal of all trash, litter, clippings, and all foreign debris.
 - I. At thirty (30) days after planting, a balanced fertilizer (16-16-16) shall be applied to the turf grass areas at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet.
 - J. At intervals of thirty (30) days after the first application of fertilizer to the turf grass, apply a balanced fertilizer (16-16-16) at a rate of one half (½) pound of nitrogen per one thousand (1,000) square feet until the turf grass is established.
23. A final inspection shall be held prior to the end of the maintenance period to ensure that all punch list items have been completed and the entire project is ready for acceptance by the Owner. Upon satisfaction that the Contractor has completed all punch list items, the irrigation system is fully and completely functional, and the required AS-Built drawings and maintenance manuals have been submitted, the Owner shall accept the project. An official letter of final acceptance shall be prepared and issued to the Contractor, Landscape Architect, and the Owner's representative. Upon final acceptance of the project by the Owner's representative, the Owner shall assume full responsibility for the project, and the guarantee period shall begin.
24. Upon final acceptance of the project as being properly installed, the Contractor shall guarantee the plant materials as follows:
- A. All shrubs and groundcovers shall be guaranteed by the Contractor as to growth and health for a period of sixty (60) days after completion of the maintenance period and final acceptance.
 - B. All trees shall be guaranteed by the Contractor to live and grow in an acceptable upright position for a period of one (1) year after completion of the maintenance period and final acceptance.
 - C. Any tree with 30% dead or missing canopy, shall be replaced as part of this plant guarantee.
25. The Contractor shall, within fifteen (15) days after receiving written notification by Owner's representative, remove and replace all guaranteed plant materials which die or become unhealthy or appear to be in a badly impaired condition at any time during the guarantee period. Any plants that settle below or rise above the desired finished grade shall also be reset to the proper grade.
- A. All replacements shall be plants of the same kind, size, and quality as originally specified in the "plant list" and they shall be furnished, planted, staked, and maintained as specified herein at no additional cost to the owner.
 - B. The Contractor will not be responsible for plants destroyed or lost due to occupancy of the project, vandalism on the part of others, or improper maintenance or lack thereof.



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SOUTH CACHE POND CANAL TRAIL
HYRUM CITY

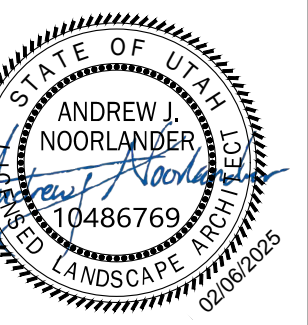
PLANTING NOTES

FILE: 57-23-005 LP-001
JUB PROJ. #: 57-23-005
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DESIGN BY: KR
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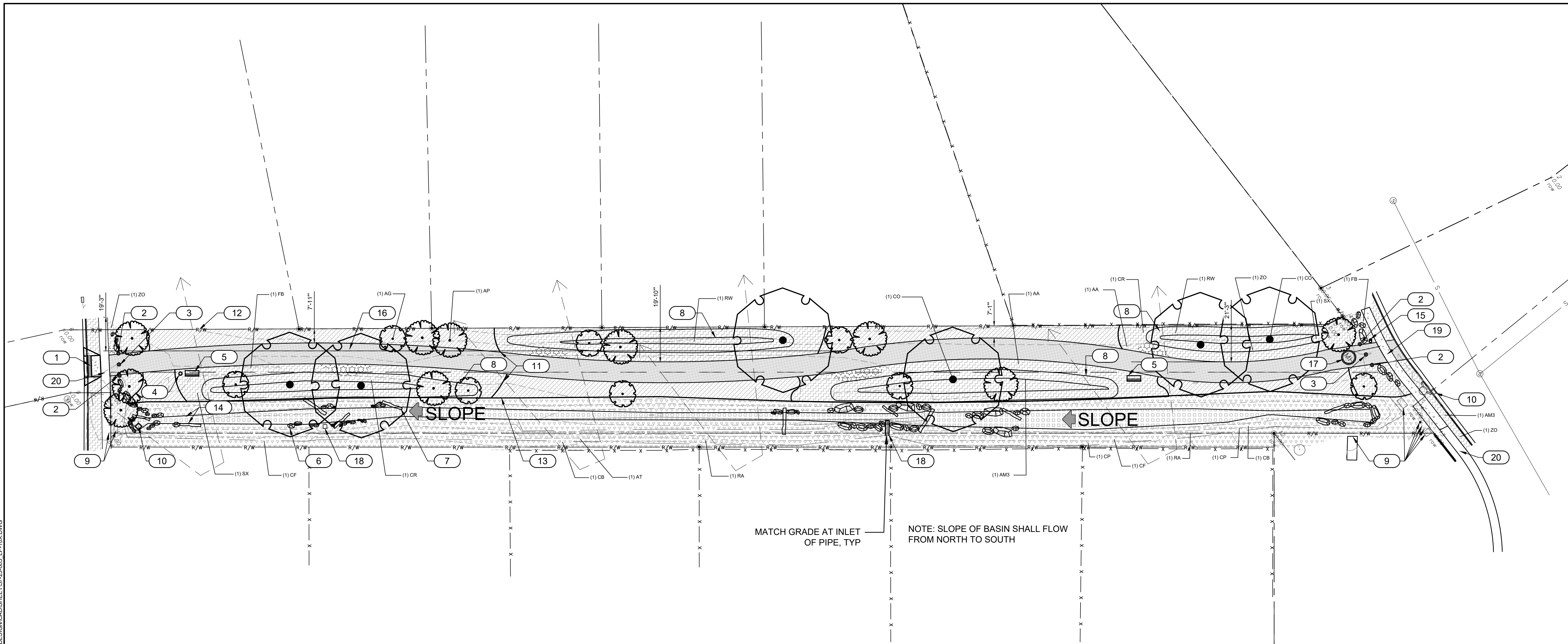
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CABIN SEED MIX

SPECIES	LBS / AC	% BY WT	SEEDS / FT2
Mountain brome (<i>Bromus marginatus</i>)	6.0	28.6	8.8
Slender wheatgrass (<i>Elymus trachycaulus</i> ssp. <i>trachycaulus</i>)	5.0	23.8	18.3
Western wheatgrass (<i>Pascopyrum smithii</i>)	4.0	19.0	10.1
Idaho fescue (<i>Festuca idahoensis</i>)	2.0	9.5	20.7
Sandberg bluegrass (<i>Poa secunda</i> ssp. <i>sandbergii</i>)	1.0	4.8	24.0
Big bluegrass (<i>Poa secunda</i> ssp. <i>ampla</i>)	1.0	4.8	20.2
Beardless bluebunch wheatgrass (<i>Pseudoroegneria spicata</i> ssp. <i>inermis</i>)	1.0	4.8	2.7
Blue flax (<i>Linum perenne</i>)	0.5	2.4	3.4
Rocky Mountain penstemon (<i>Penstemon strictus</i>)	0.4	1.9	5.4
Western yarrow (<i>Archillea millefolium</i> var. <i>occidentalis</i>)	0.1	0.5	6.4
TOTAL	21.0	100.0	120.0

GROUND COVERS

Symbol	Material	Quantity	Notes
SC	Cobble 4-6" Bottom of Bank 4-6" Deep. Submit two different color samples for approval prior to installation.	4,398 sf	5 gal
SC2	Crushed Rock On Slopes Only Submit two different color samples for approval prior to installation.	16,825 sf	5 gal
DJ	Delosperma cooperi 'Jewel of Desert Ruby' Jewel of The Desert Ruby Ice Plant Install soil pep (finely shredded bark mulch) in ground cover area.	529	4"pot
RM	Rock Mulch In Planter Beds Only Submit two different color samples for approval prior to installation.	15,404 sf	5 gal
SM	Seed Mix Top of Bank and at Edge of Trail See cabin grass seed mix, landscape notes, and technical specifications for additional installation requirements. Hydroseed required.	6,671 sf	5 gal

- KEY NOTES**
- ADA RAMP (CITY INSTALLED)
 - ACCESS CONTROL BOLLARD (NON COLLAPSIBLE) MATCH SPEC FOR COLLAPSIBLE BOLLARD
 - ACCESS CONTROL BOLLARD (COLLAPSIBLE) TRAFFIC GUARD LPHDHB, YELLOW WITH REFLECTIVE TAPE. AVAILABLE VIA TRAFFICGUARD.NET OR 877.727.7347 INSTALL PER MANUFACTURER RECOMMENDATIONS.
 - CLASSIC DOME TRASH RECEPTACLE 32 GALLON - AVAILABLE VIA SMITH STEEL WORKS. COORDINATE COLOR & LOGO WITH CITY.
 - BENCH - CLASSIC ARC - AVAILABLE VIA SMITH STEEL WORKS. COORDINATE COLOR & LOGO WITH CITY.
 - BOULDERS TYP- AMERICAN STONE (30% = 3-4" / 60% = 4-5" / 10% = 5" + DIA)
 - LOGS - 18"-24" DIAMETER 10'-15' LONG TYP. (CITY WILL FURNISH LOGS FOR CONTRACTOR TO INSTALL.)
 - LANDSCAPE BERM. MAX 2' TALL. BLEND TO EXISTING GRADE
 - EXISTING UTILITIES PRESERVE AND PROTECT TYP.
 - EXISTING STORM DRAIN PRESERVE AND PROTECT TYP.
 - PERMALOC CLEANLINE XL METAL EDGING - THICKNESS $\frac{3}{16}$ ", HEIGHT 8", MILL FINISH, STAKE LENGTH 24". SEE DETAIL
 - PROPERTY LINE
 - TOP OF SLOPE
 - BOTTOM OF SLOPE
 - THE SENTRY DOG STATION (JJB006-BLK) - AVAILABLE VIA ZEROWASTEUSA.COM. BLACK FINISH. ROLL BAG SYSTEM
 - ASPHALT TRAIL INSTALLED BY CITY
 - MAN HOLE PRESERVE AND PROTECT (CENTER OF PATH)
 - CITY WILL INSTALL FLARED END SECTION WITH ANIMAL RACK AT STORM DRAIN INLET.
 - NEW SECTION OF SIDEWALK TO BE EXTENDED AS INDICATED BY THE HATCH PATTERN. CITY INSTALLED AND MAINTAINED.
 - EXISTING SIDEWALK TO REMAIN

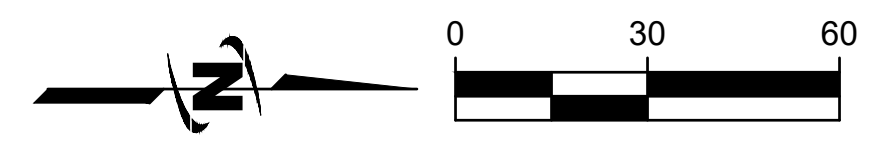
NOTE:
 1. CONTRACTOR SHALL TUCK NEW WEED FABRIC UNDER EXISTING TRAIL FABRIC AND STAPLE TOGETHER. SEE SHEET LP-001 FOR WEED FABRIC TYPE.

**SOUTH CACHE POND CANAL TRAIL
 HYRUM CITY**

OVERALL PLANTING PLAN

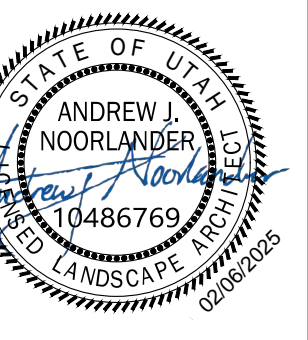
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SHEET NUMBER:
LP-100



Plot Date: 11/13/2025 4:22 PM Plotted By: Mickey Vigil
 Date Created: 09/24/2024 JUBCENTRALCLIENTS\JUBHYRUMCITY\PROJECTS\57-23-005-2023GENERALSERVICES\TASK 007 SOUTH CACHE POND CONCEPT PLANTING\DESIGN\CAD\SHEET\57-23-005_LP-10X.DWG

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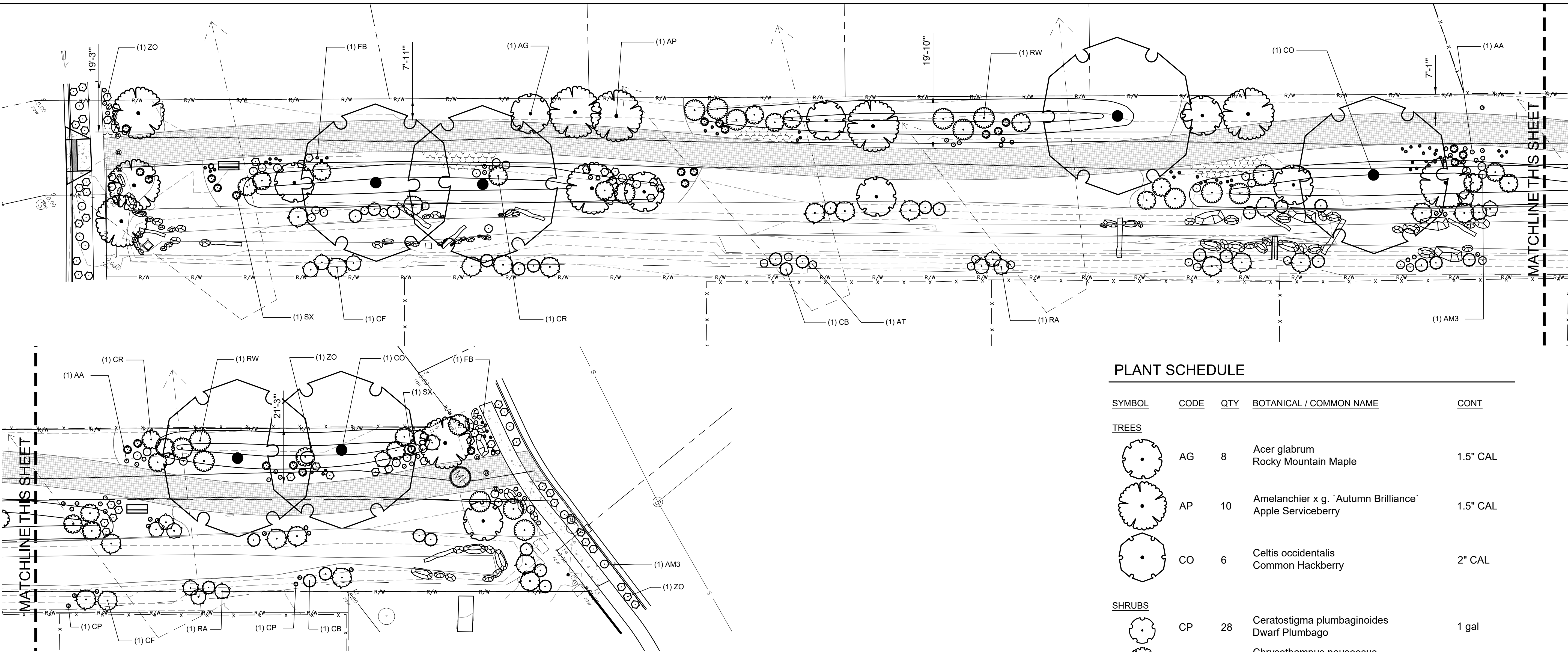
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SOUTH CACHE POND CANAL TRAIL
HYRUM CITY
PLANTING PLAN

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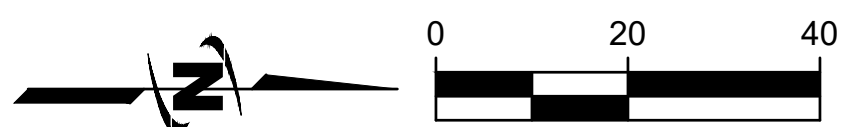
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LP-101



PLANT SCHEDULE

SYMBOL	CODE	QTY	BOTANICAL / COMMON NAME	CONT
TREES				
	AG	8	Acer glabrum Rocky Mountain Maple	1.5" CAL
	AP	10	Amelanchier x g. 'Autumn Brilliance' Apple Serviceberry	1.5" CAL
	CO	6	Celtis occidentalis Common Hackberry	2" CAL
SHRUBS				
	CP	28	Ceratostigma plumbaginoides Dwarf Plumbago	1 gal
	CR	23	Chrysothamnus nauseosus Rubber Rabbitbrush	5 gal
	CB	30	Cornus sericea 'Bailladeline' Firedance™ Red Twig Dogwood	5 gal
	CF	23	Cornus sericea 'Flaviramea' Yellow Twig Dogwood	5 gal
	RA	18	Ribes alpinum Alpine Currant	5 gal
	RW	18	Rosa woodsii Mountain Rose	5 gal
	SX	25	Symphoricarpos x doorenbosii 'Kolmpica' Pinky Promise™ Snowberry	5 gal
PERENNIALS				
	AM3	32	Achillea millefolium Common Yarrow	1 gal
	AA	38	Agastache rupestris 'Apache Sunset' Apache Sunset Threadleaf Hyssop	1 gal
	AT	19	Amsonia tabernaemontana Eastern Bluestar	1 gal
	FB	55	Festuca glauca 'Boulder Blue' Boulder Blue Fescue	1 gal
	ZO	54	Zauschneria garrettii Hummingbird Trumpet	1 gal
	DJ	508 sf	Delosperma cooperi 'Jewel of Desert Ruby' Jewel of The Desert Ruby Ice Plant Spacing 12"	4"pot

Plot Date: 1/13/2025 4:22 PM Plotted By: Mickey Vigil
Date Created: 2/21/2024 JUB\CENTRAL\CLIENTS\HYRUM\CITY\PROJECTS\57-23-005 2023\GENERAL SERVICES\TASK 007 SOUTH CACHE POND CONCEPT PLANTING\DESIGN\DWG\SHEET\57-23-005_LP-10X.DWG

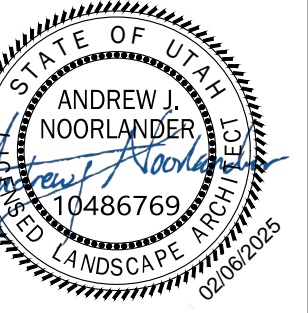




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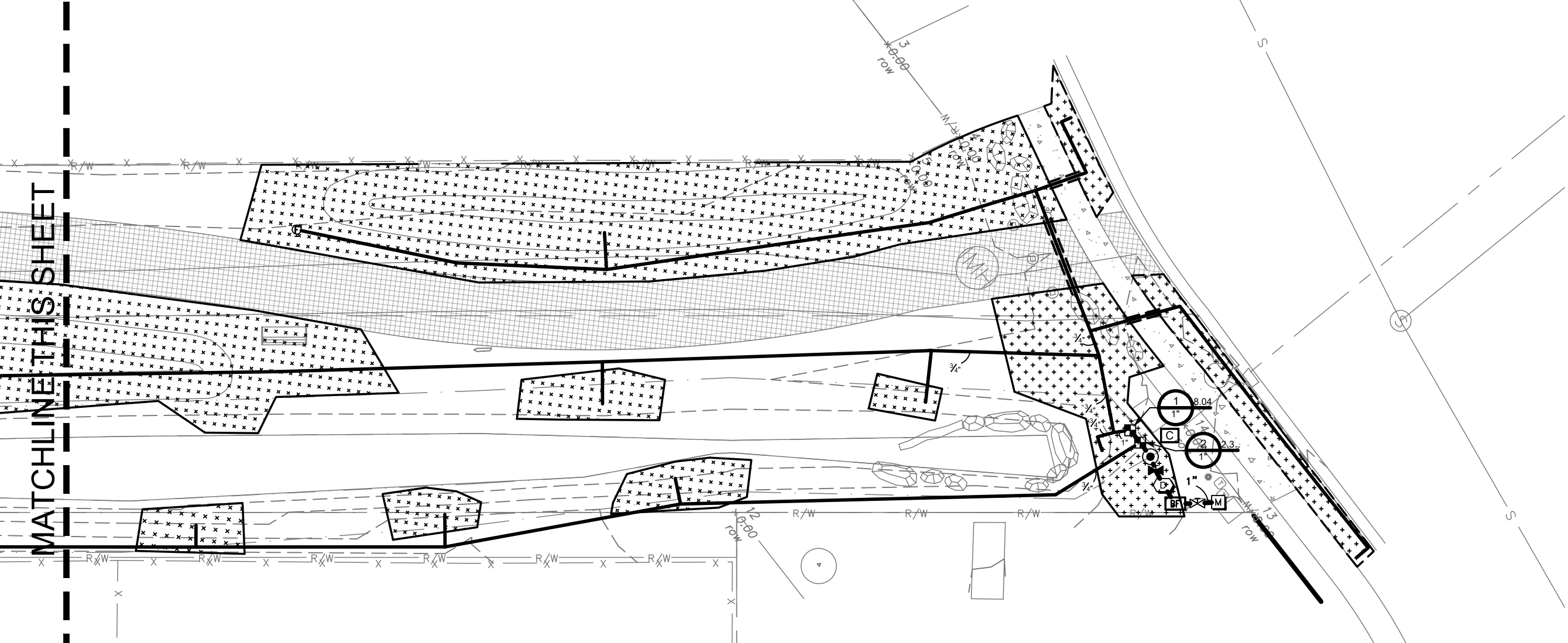
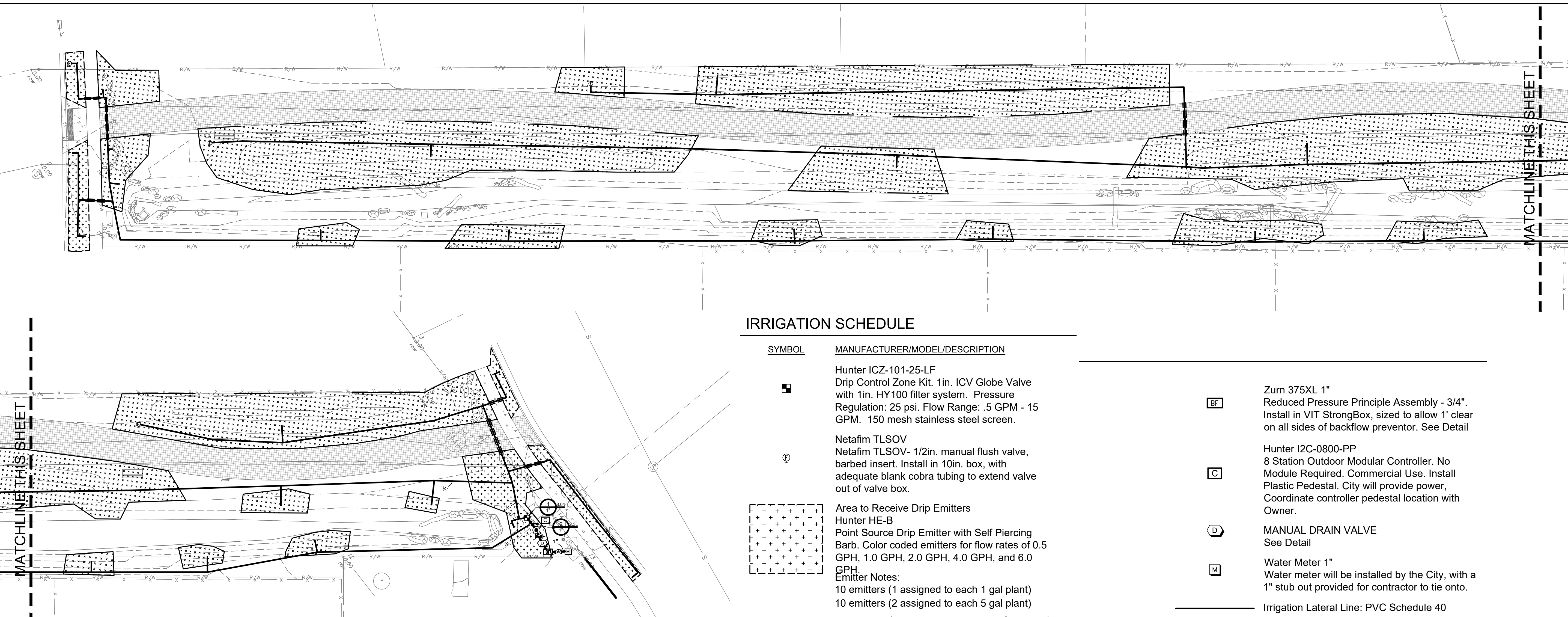
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HYRUM CITY
IRRIGATION PLAN

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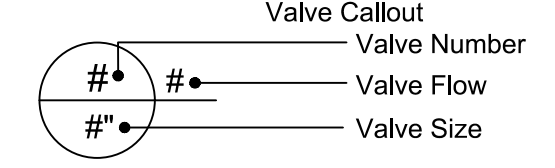
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LI-101

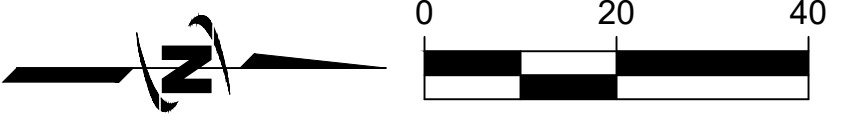


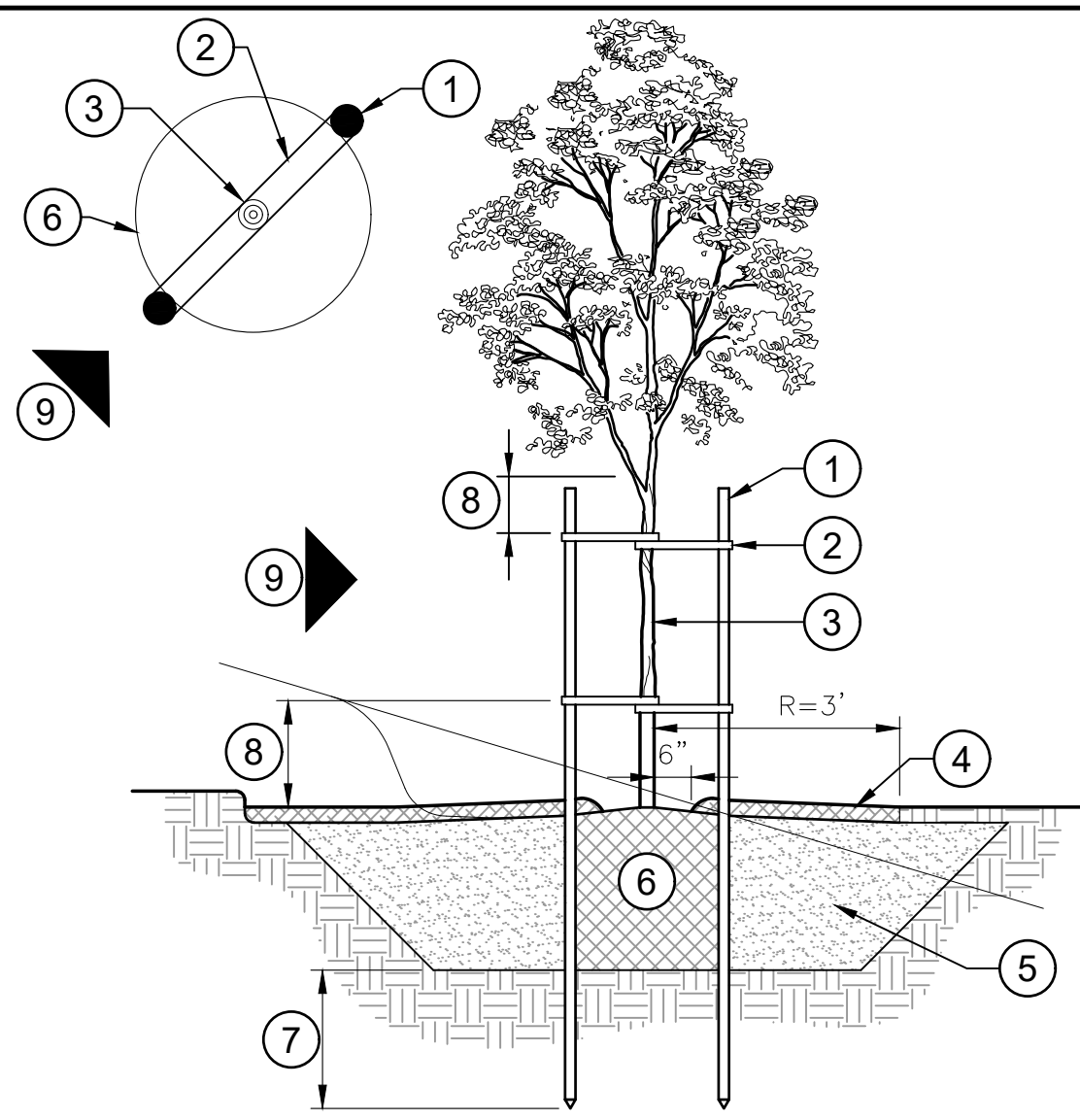
IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION
	Hunter ICZ-101-25-LF Drip Control Zone Kit. 1in. ICV Globe Valve with 1in. HY100 filter system. Pressure Regulation: 25 psi. Flow Range: .5 GPM - 15 GPM. 150 mesh stainless steel screen.
	Netafim TLSOV Netafim TLSOV- 1/2in. manual flush valve, barbed insert. Install in 10in. box, with adequate blank cobra tubing to extend valve out of valve box.
	Area to Receive Drip Emitters Hunter HE-B Point Source Drip Emitter with Self Piercing Barb. Color coded emitters for flow rates of 0.5 GPH, 1.0 GPH, 2.0 GPH, 4.0 GPH, and 6.0 GPH. Emitter Notes: 10 emitters (1 assigned to each 1 gal plant) 10 emitters (2 assigned to each 5 gal plant) 20 emitters (3 assigned to each 1.5" CAL plant) 20 emitters (3 assigned to each 2" CAL plant)
	Hunter HQ-44LRC Quick coupler valve, yellow rubber locking cover, red brass and stainless steel, with 1in. NPT inlet, 2-piece body.
	1" STOP AND WASTE VALVE
	Shut Off Valve 1" See Details
	Zurn 375XL 1" Reduced Pressure Principle Assembly - 3/4". Install in VIT StrongBox, sized to allow 1' clear on all sides of backflow preventor. See Detail
	Hunter I2C-0800-PP 8 Station Outdoor Modular Controller. No Module Required. Commercial Use. Install Plastic Pedestal. City will provide power, Coordinate controller pedestal location with Owner.
	MANUAL DRAIN VALVE See Detail
	Water Meter 1" Water meter will be installed by the City, with a 1" stub out provided for contractor to tie onto.
	Irrigation Lateral Line: PVC Schedule 40
	Irrigation Mainline: PVC Schedule 40
	Pipe Sleeve: PVC Class 200 SDR 21



Plot Date: 11/19/2025 4:25 PM. Plotted By: Mickey Vigil
Date Created: 09/24/2024. JUB: COM/CENTRAL/CIENT/UT/UTRUM/CTV/PROJECT/SIST/23-005_2023GENERALSERVICES/TASK_07 SOUTH CACHE POND CONCEPT PLAN/DESIGN/CD/SHEET/57-23-005 LI-10X.DWG

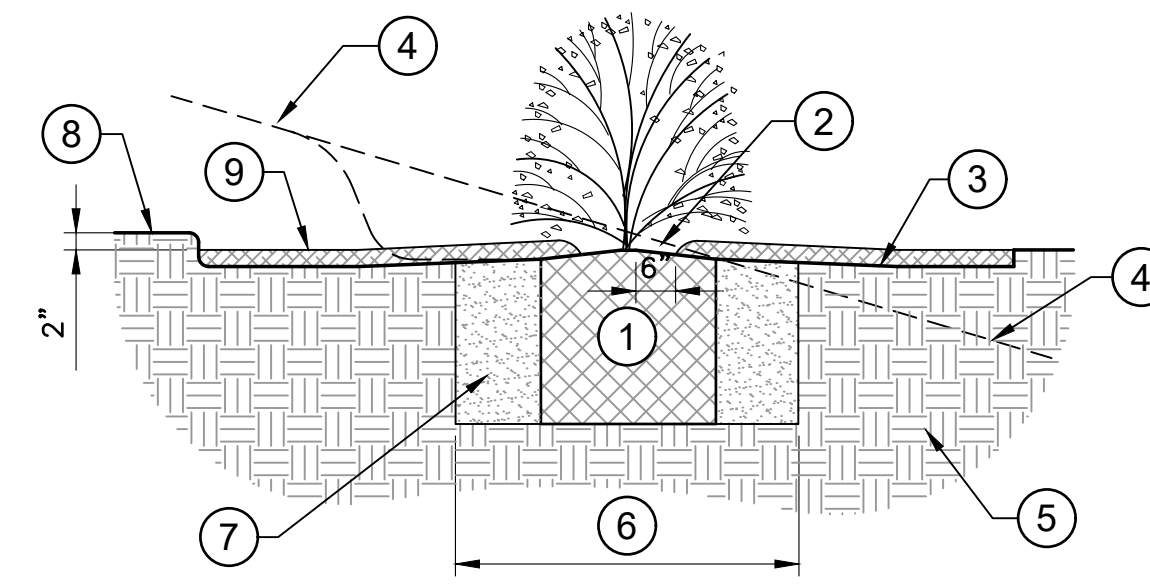




- ① 2" DIA. OR 2" x 2" SQ. x 10' STRAIGHT WOODEN STAKE (2 REQUIRED)
- ② V.I.T. CINCH-TIE VINYL TREE TIE (2 PER STAKE, LENGTH AS REQUIRED). SECURE TO STAKE W/ GALV. NAIL. 1 (PER TIE)
- ③ TREE TRUNK
- ④ 3" RADIUS MULCH AROUND EACH TREE (3' RADIUS CIRCLE WHEN IN TURF)
- ⑤ SEE TREE/SHRUB PLANTING DETAIL
- ⑥ ROOT BALL
- ⑦ 24" MIN.
- ⑧ 6" MAX.
- ⑨ PREVAILING WIND DIRECTION

1 DECIDUOUS TREE STAKING

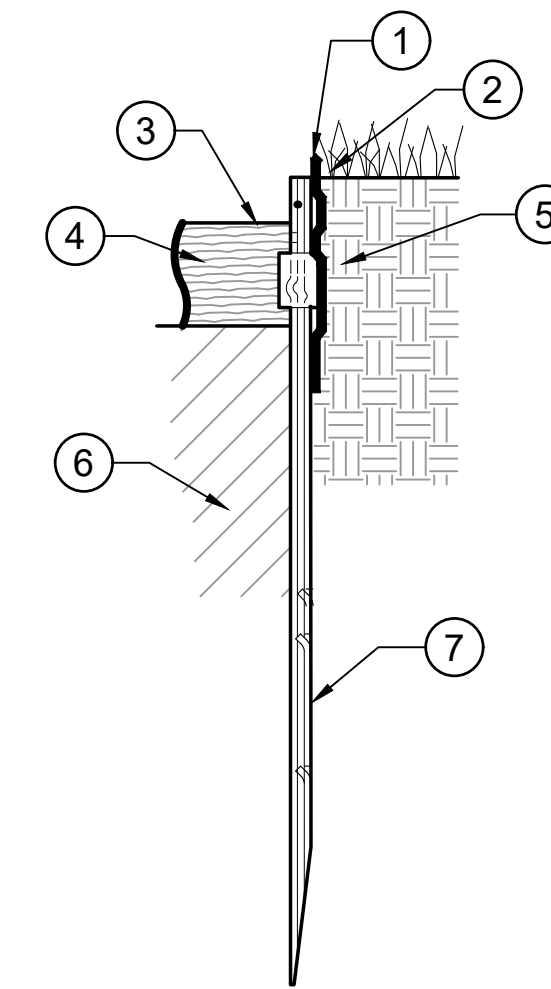
NTS MUN-HY-01



- ① ROOT BALL
- ② CROWN - AT FINISHED GRADE
- ③ FINISHED GRADE
- ④ FINISHED GRADE AT SLOPE (WHERE OCCURS)
- ⑤ UNDISTURBED SOIL
- ⑥ 2X ROOTBALL DIA. MIN.
- ⑦ BACKFILL MIX (SEE PLANTING NOTES)
- ⑧ TOP OF PAVING (WHERE APPLICABLE)
- ⑨ 3" LAYER OF MULCH

2 PERENNIAL PLANTING

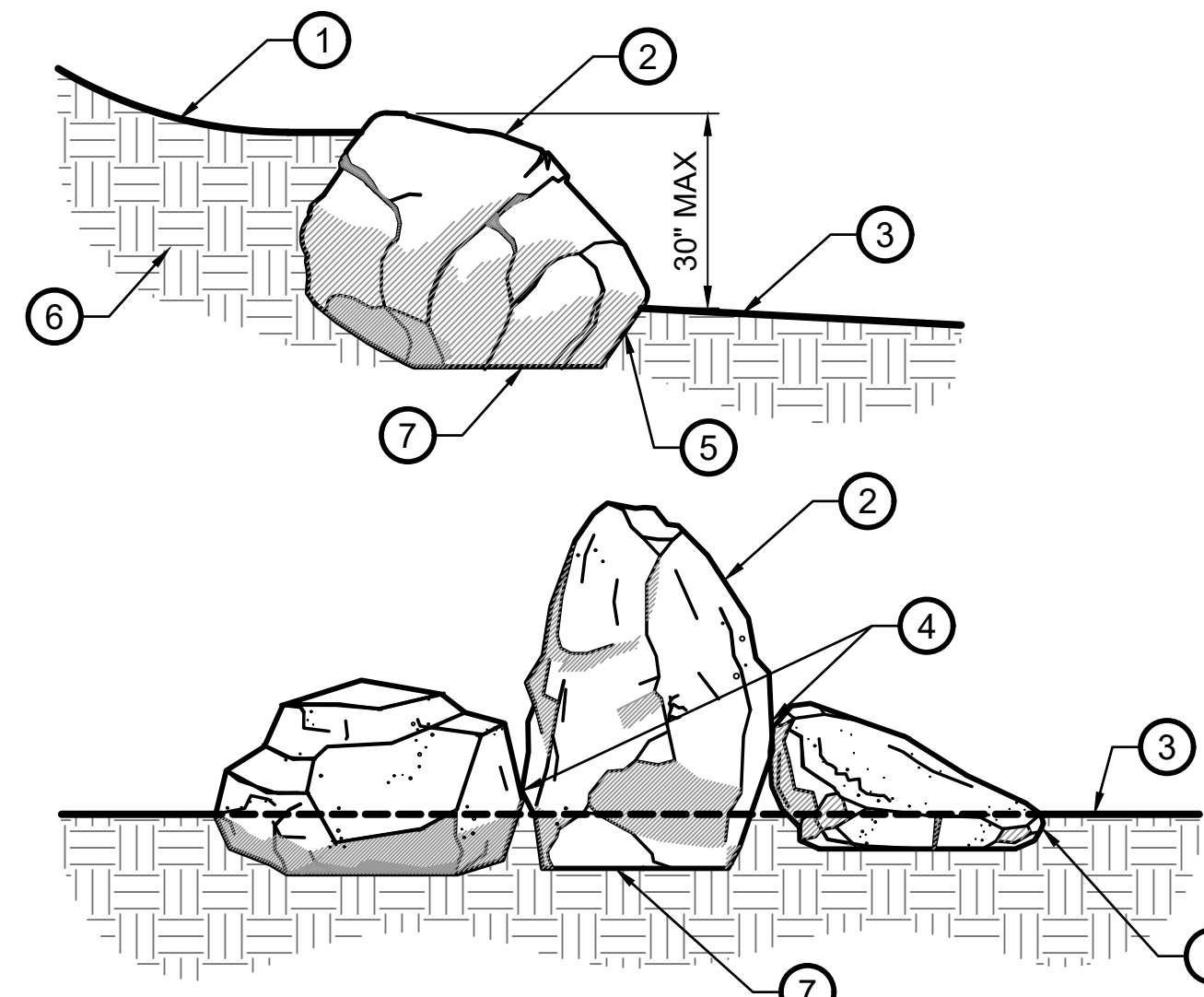
NTS



- ① METAL EDGING
- ② FINISH GRADE FOR LAWN AREAS: 1" BELOW TOP OF EDGING FOR SEED; 1-1/2" FOR SOD
- ③ FINISH GRADE OF MULCH 1/2 - 1" BELOW TOP OF EDGING
- ④ MULCH - SEE PLANT MATERIAL SCHEDULE FOR TYPE AND SIZE
- ⑤ COMPACT GRADES ADJACENT TO EDGING TO MINIMIZE FREEZING THAWING MOVEMENT
- ⑥ TOPSOIL - SEE NOTES AND SPECIFICATIONS FOR TYPE AND DEPTH
- ⑦ STAKE LENGTH PER PLAN

3 LANDSCAPE METAL EDGING

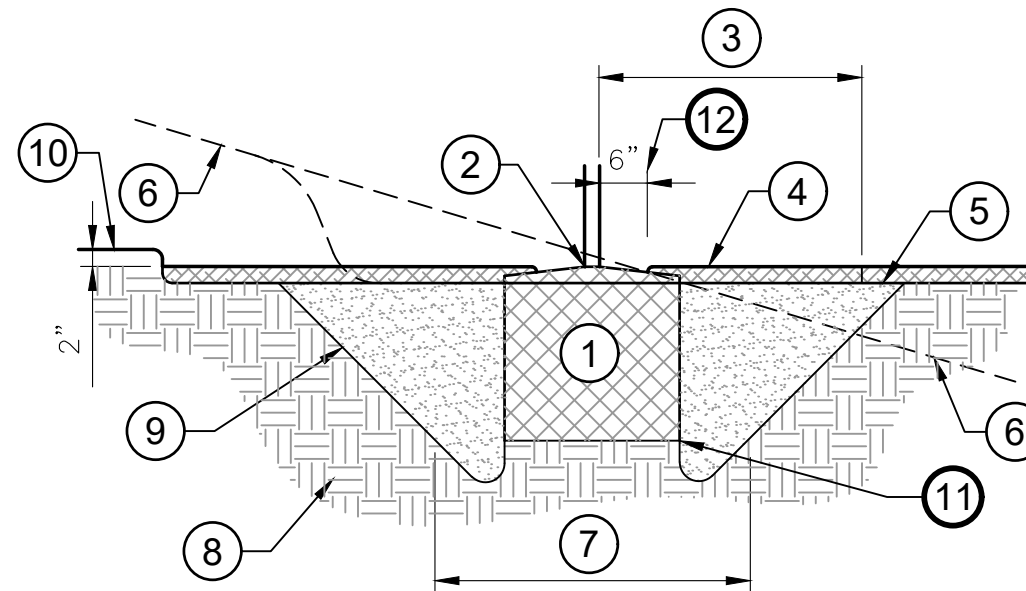
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- ① FINISH GRADE WHERE BOULDER RETAINS GRADE
- ② BOULDER
- ③ FINISH GRADE
- ④ FINISH GRADE BOULDERS SHOWN IN A GROUP ARE TO BE PLACED TOUCHING EACH OTHER IN A NATURAL CONFIGURATION
- ⑤ PLACE ALL BOULDERS SUCH THAT 1/4 OF THE TOTAL MASS OF EACH BOULDER IS BELOW FINISH GRADE, TYP.
- ⑥ TOPSOIL PER SPEC
- ⑦ PLACE BOULDERS ON UNDISTURBED SOIL OR COMPACT FILL SOILS TO 95% DENSITY, TYP.

4 BOULDER PLACEMENT DETAIL

1" = 1'-0" MUN-HY-03

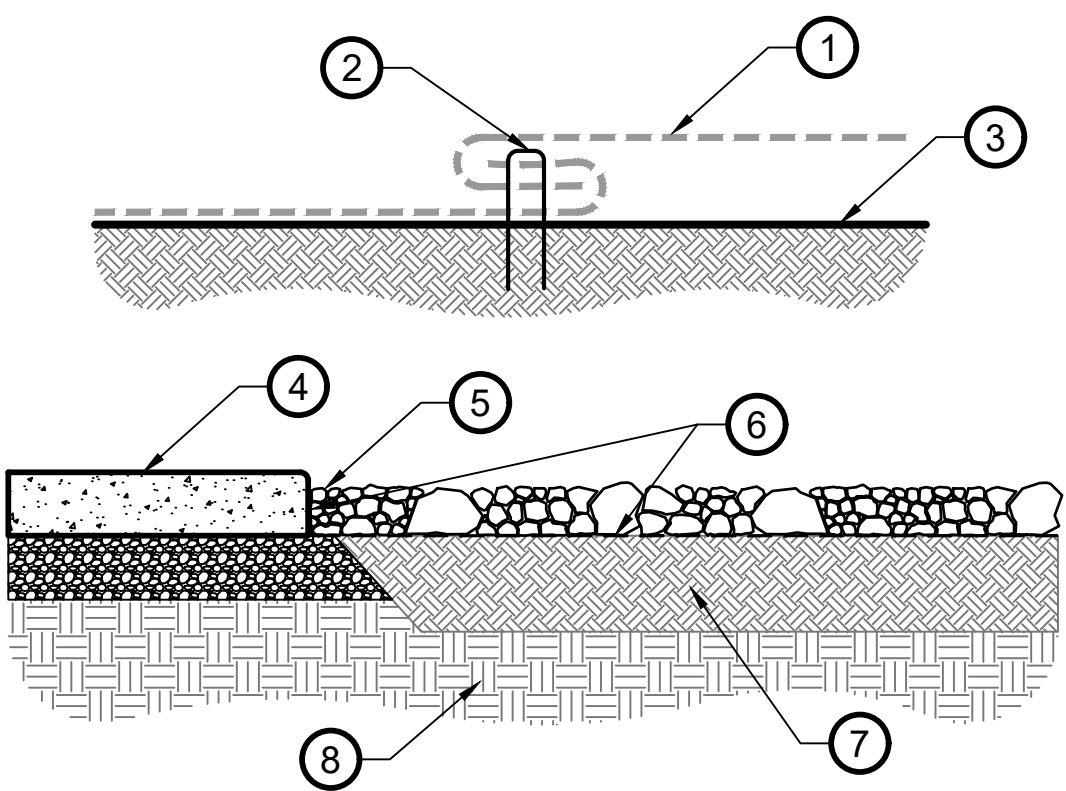


- ① ROOTBALL
- ② CROWN - APPROXIMATELY 2" ABOVE FINISH GRADE
- ③ 3' RADIUS CIRCLE OF SHREDDED BARK MULCH WHEN TREE IS LOCATED IN TURF
- ④ 3" LAYER OF MULCH
- ⑤ FINISHED GRADE
- ⑥ FINISHED GRADE AT SLOPE (WHERE SLOPE OCCURS)
- ⑦ 2X ROOTBALL DIA. MIN. W/ 45 DEGREE SIDES
- ⑧ UNDISTURBED SOIL
- ⑨ BACKFILL MIX (SEE PLANTING NOTES)
- ⑩ TOP OF PAVING (WHERE APPLICABLE)
- ⑪ 3" HIGH CENTRAL PLATEAU OF FRIM SOIL
- ⑫ 6" RADIUS - PULL MULCH AWAY FROM TREE CROWN

5 TREE/SHRUB PLANTING

NTS

WEED FABRIC STAPLE NOTE:
 INSTALL 6" SOIL STAPLE IN WEED BARRIER FABRIC AT 5' O.C. TRIANGULAR SPACING. INSTALL 6" SOIL STAPLES ALONG ALL EDGES 3' O.C. INSTALL 6" SOIL STAPLE AT 12" O.C. ALONG ALL WEED BARRIER FABRIC SEAMS. OVERLAP FABRIC MIN. OF 6" AT ALL SEAMS AS SHOWN.

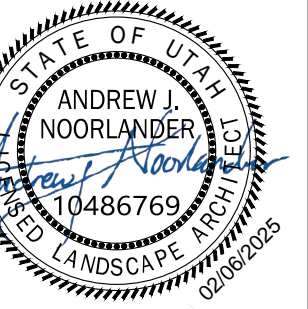


- ① WEED BARRIER FABRIC, FOLD FABRIC OVER AS SHOWN TO HELP KEEP FROM PULLING APART
- ② SOIL STAPLES PLACED 12" O.C. ALONG SEAM
- ③ FINISH GRADE OF SOIL
- ④ FINISHED GRADE OF CURB OR SIDEWALK PER PLAN.
- ⑤ FINISHED GRADE OF ROCK MULCH TO BE 1" LOWER THAN ADJACENT HARDSCAPE SURFACE, TYP. ROCK MULCH TYPE, SIZE AND DEPTH PER PLANS
- ⑥ WEED BARRIER FABRIC TO ROLL UP EDGE OF ADJACENT HARDSCAPE BUT KEPT JUST BELOW TOP OF ROCK
- ⑦ AMENDED TOPSOIL, DESIGN MIX AND DEPTH PER PLANS OR SPEC.
- ⑧ NATIVE SOIL PREPPED PER GEOTECH OR PER PLANS OR SPEC.

6 ROCK MULCH AND FABRIC DETAIL

1" = 1'-0" MUN-HY-25

BID SET



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NO.	REVISION	DESCRIPTION	BY	DATE

**SOUTH CACHE POND CANAL TRAIL
 HYRUM CITY**

PLANTING DETAILS

FILE: 57-23-005 LP-501
 JUB PROJ. #: 57-23-005
 DRAWN BY: KR
 DESIGN BY: KR
 CHECKED BY: AN
 AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
 LAST UPDATED: 11/13/2025

SHEET NUMBER:
LP-501

IRRIGATION NOTES

- The Contractor shall be familiar with the irrigation technical specifications for this project. Failure to do so shall not relieve him of meeting all of the requirements contained therein.
- The irrigation plan is diagrammatic in nature, and some drafting liberties have been taken to maintain the graphic clarity of the drawings. All irrigation equipment shall be located in planting areas only, unless noted otherwise. The Contractor shall install piping to minimize changes in direction, avoid placement under large trees or large shrubs, and avoid placement under hardscape features. Refer to the irrigation equipment schedule, installation details, and specifications for equipment and its proper installation.
- The Contractor shall use only the equipment and products specified in the construction drawings. No substitution of materials will be allowed on the irrigation system without prior authorization from the Landscape Architect and the Owner.
- The Contractor shall visit and inspect the project site. He shall take into consideration known and reasonably inferable conditions affecting the proposed work. Failure to visit the site shall not relieve the Contractor of furnishing materials and performing the work required. Any discrepancies between existing site conditions and those indicated on the plans shall be called to the attention of the Landscape Architect prior to continuance of the project.
- If the water point of connection is located other than as shown on the drawings, or if the water pressure is different than indicated on the plans, or appears to be unusually high or low, the Contractor shall immediately notify the Landscape Architect prior to proceeding with any irrigation work.
- Design spacing for each sprinkler head is listed in the Irrigation Equipment Schedule. Contractor shall lay out the heads as shown in the plans. While doing so, Contractor shall note that the spacing matches both the plans and the intended design spacing as listed. If any discrepancies are discovered, the Contractor shall immediately contact the Landscape Architect to resolve the spacing prior to proceeding with the installation.
- The Contractor shall keep the premises clean and free of excess equipment, materials, and rubbish incidental to work of this project. Work areas shall be swept clean and trash and debris picked up daily. Open trenches or hazards shall be protected with yellow caution tape. The Contractor is responsible for removal and legal disposal (offsite) of trash and debris generated by his work on this project.
- Pipe fittings shall conform to the following standards unless otherwise noted:
 - All main line fittings four (4) inches or larger shall be either M.J. or deep bell push-on, gasketed, and constructed of ductile iron material.
 - All main line fittings three (3) inches and smaller shall be solvent weld Schedule 80 PVC.
 - M.J. tees, Schedule 80 tees with SxT Schedule 80 bushings, or Harco ductile iron service tees are approved on PVC main lines for automatic control valve installation. M.J. fittings shall be greased and wrapped.
 - All lateral line fittings shall be solvent weld Schedule 40 PVC.
 - All risers and exposed fittings shall be solvent weld Schedule 80 PVC, including conversions to metal pipe and fixtures, unless otherwise noted on the plans.
 - All main line fittings four (4) inches and larger, whether ductile iron or solvent weld, shall be thrust blocked.
- Backflow prevention devices shall be a reduced pressure principle backflow preventer. Installation shall comply with local, state, and national codes and regulations, and per manufacturer's recommendations (whichever is most restrictive). Included in the installation shall be the specified enclosure.
- Irrigation wire shall conform to the following:
 - All irrigation control wire shall bear approval as U.L. listed type of underground feeder (direct burial) and each conductor shall be of electrical conductivity grade solid copper in accordance with ASTM 30.
 - No aluminum wire shall be used on this project.
 - Wire size shall be #14 gauge minimum.
 - Two spare wires shall be run from each controller to the farthest valve under its control in all directions and any valve which is on a dead-end line.
 - All wire crossing water, attached to bridges, going under paving, or where conditions require protection, shall be housed in conduit or sleeves. All out-of-ground conduits shall be rigid metal. All buried conduit may be PVC.
 - All splices shall be water-tight. All connections made inside the box to connect wires to the valve shall be made using a 3M DBR/Y dry-splice connector or pre-approved equal. Each connector shall be completely sealed and water-proofed.
 - All other splices in control wire shall be housed in a separate valve box.
 - The pigment or color of the wires shall be integrated into the covering, rather than painted on. All common or ground wires shall be white in color. Where more than one controller is required, a different colored hot wire shall be used for each controller. A separate color shall be used for all spare wires.
- Run a single fourteen (14) gauge wire along the top of the main line to be used for tracking the location of the main line. The color of the tracing wire shall be different than any other wire color used.
- All pressure main lines shall have between twenty-four (24) and thirty (30) inches of cover, while all lateral lines shall have between twelve (12) and fourteen (14) inches of cover. Trench bedding and backfill material shall consist of existing site soil free of rocks larger than one (1) inch in diameter and any other debris. Wasted pipe and other excess project materials or rubbish (tape, wire, trash, wrappers, boxes, plastic or glass bottles, etc.) shall not be backfilled into the trenches. All trenches shall be backfilled, and then watered sufficiently to insure no settling of the surface. In the event of any backfill settlement prior to the end of the guarantee period, the Contractor shall perform all required repairs at his own expense.
- Manual drain valves shall be required at all low points in the main lines. All trenches shall be sloped so the pipes will gravity-drain back to the main connection point or to the nearest manual drain.
- Check valves shall be used where indicated and where necessary to prevent water flow from lower elevation heads when the irrigation system is turned off.
- All control valves shall be located within shrub areas where possible and installed per the details shown on the plans. Each control valve shall have its own separate shut-off valve, and only one (1) control valve and gate valve per valve box. No valve manifolds shall be allowed. The bottom of the remote control valve shall be a minimum of four (4) inches above the gravel. Isolation gate valves on the main line shall be located in separate valve boxes.
- All main lines and lateral lines shall be sleeved where they pass under any paved areas. The size of the sleeve shall be twice the size of the pipe being sleeved, unless otherwise specified on the drawings.
- The automatic controller shall be of the type and manufacturer specified, and located as shown on the plans. The Contractor shall be responsible for providing 120 volt electrical service to the controller. Coordinate this work with other trades on this project.

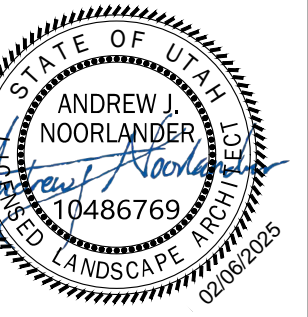
- Prior to backfilling any trenches or irrigation lines:
 - All main lines shall be capped and pressure tested at 120 psi for a period of 4 hours. Any leaks found shall be corrected by removing the leaking pipe or fittings and installing new material in its place. Repeat the pressure test to insure the absence of leaks.
 - The Contractor shall not allow nor cause any of his work to be covered until it has been inspected, tested, and approved by the Landscape Architect.
 - Where a main line has been allowed to sit in the trench uncovered for any length of time prior to testing, the line may be shaded with a thin layer of soil to minimize weather related expansion or contraction of the pipe.
- The Contractor shall adjust all irrigation heads to provide a uniform coverage and to keep spray off of buildings, walkways, and paved surfaces.
- When the sprinkler system has been completed, the Contractor shall, in the presence of the Landscape Architect, conduct a coverage test of the water afforded to the planting areas to insure that it is consistent and uniform. The Contractor shall provide, at his own expense, all materials and labor necessary to correct any deficiencies or inadequacies discovered during the coverage test.
- The Contractor shall keep on site a current and accurate as-built record of his work. It shall include exact dimensioned locations, grades, elevations, and the size of all exterior and interior underground piping, valves, and drains. Dimensions shall indicate distances from columns, buildings, curbs, and similar permanent features on the site. This information shall be recorded on a print as the work progresses, but shall be permanently recorded on a reproducible original, or electronically, which shall be given to the Owner before the project is accepted.
- The irrigation contractor shall maintain the system for the duration of the contract period, including the maintenance period.
- Upon final acceptance of the sprinkler irrigation system as being operational and properly installed, the Contractor shall guarantee the workmanship, materials, fixtures, and equipment to be free from defects for a period of one (1) year after that date.



J-U-B ENGINEERS, INC.

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BID SET



NO.	DESCRIPTION	BY	DATE

REUSE OF DRAWINGS
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SOUTH CACHE POND CANAL TRAIL
 HYRUM CITY

IRRIGATION NOTES

FILE: 57-23-005_LI-001
 JUB PROJ. #: 57-23-005
 DRAWN BY: KR
 DESIGN BY: KR
 CHECKED BY: AN

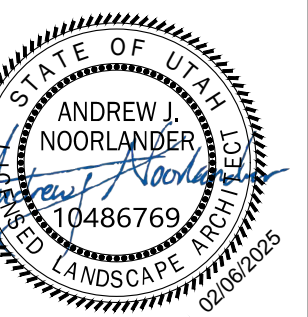
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 LAST UPDATED: 1/13/2025

SHEET NUMBER:

LI-001



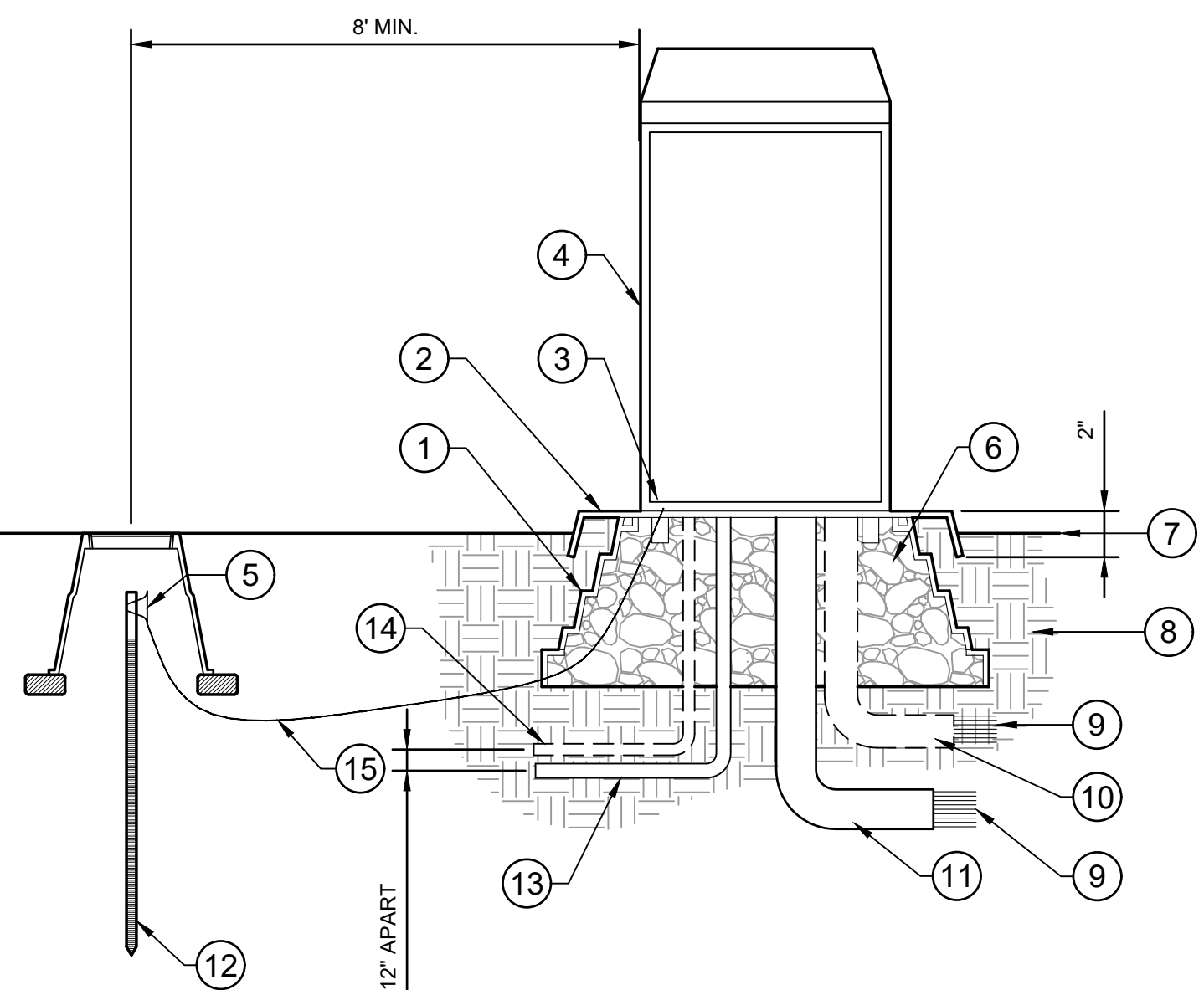
BID SET



NO.	DESCRIPTION	BY	DATE

**SOUTH CACHE POND CANAL TRAIL
HYRUM CITY**

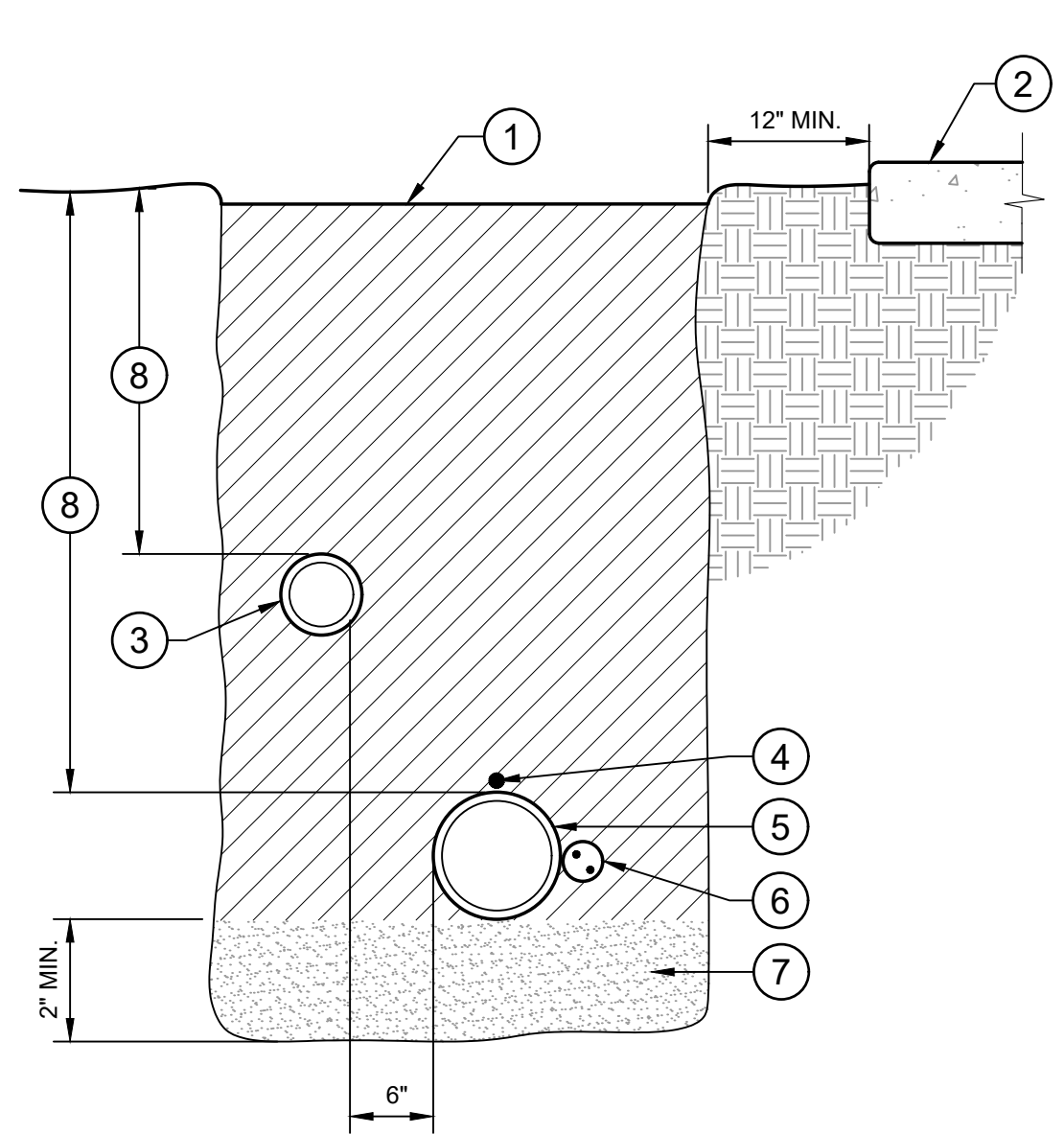
FILE: 57-23-005 LI-501
JUB PROJ. #: 57-23-005
DRAWN BY: KR
DESIGN BY: KR
CHECKED BY: AN
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 11/13/2025



1 PEDESTAL-MOUNT CONTROLLER
NTS

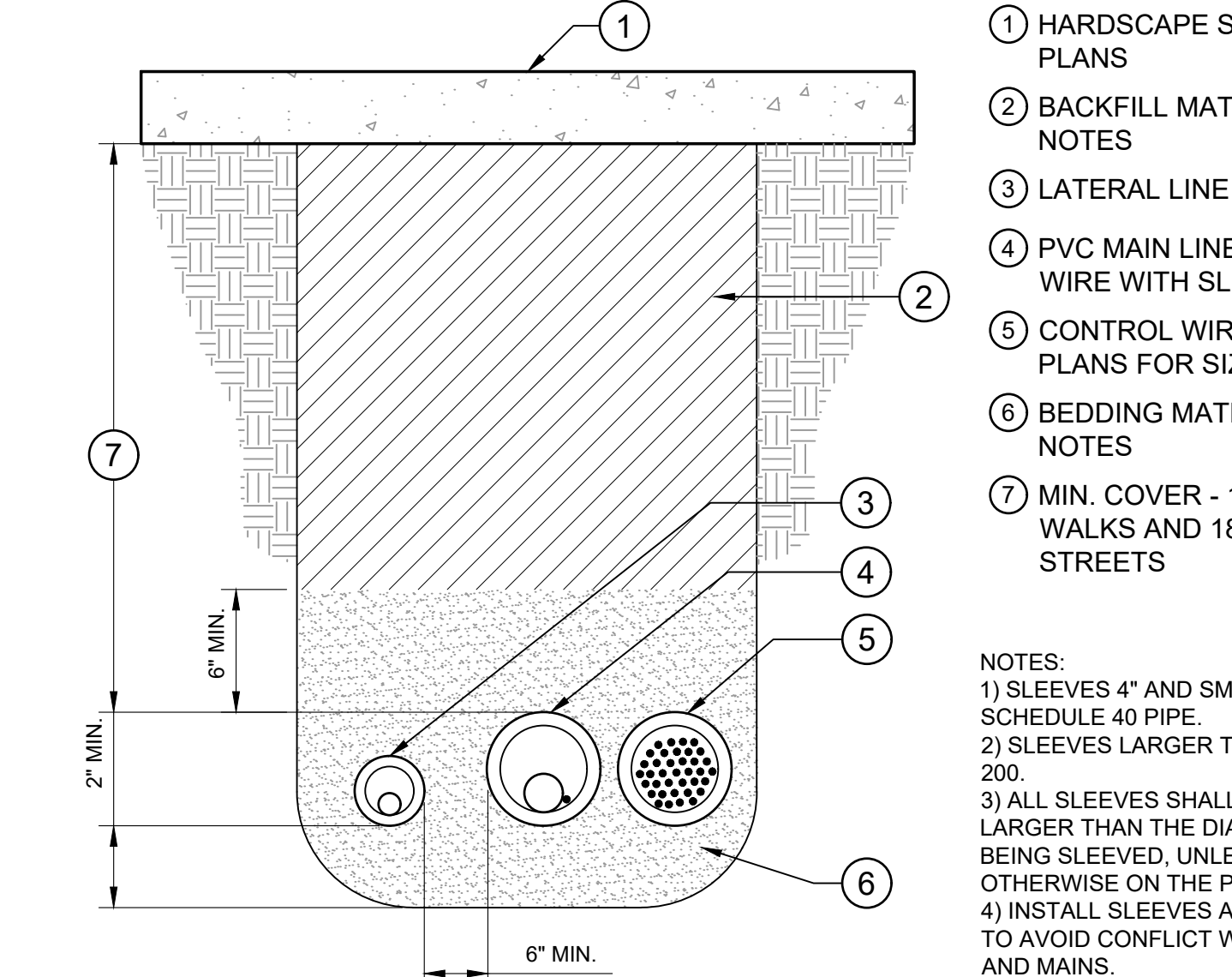
- 1 PRE-FORMED SUPPORT BASE
- 2 QUICKPAD 3/16" MIN. THICKNESS ALUMINUM POWDER COATED PREFORMED PAD
- 3 (2) QUICKPAD FASTENING BRACKET
- 4 CONTROLLER AND CONTROLLER ENCLOSURE - SEE IRRIGATION EQUIPMENT SCHEDULE
- 5 CADWELD CLAMP CONNECTED TO CONTROLLER GROUND WIRE
- 6 FILL INSIDE BASE WITH PEA GRAVEL
- 7 FINISHED GRADE
- 8 SUBGRADE COMPACTED TO 90% MDD
- 9 DIRECT BURIAL CONTROL WIRES TO CONTROL VALVES. IN 2-WIRE SYSTEM, PLACE CABLES IN PVC ELECTRICAL CONDUIT.
- 10 ADDITIONAL PVC CONDUIT W/ SWEEP ELL - AS NEEDED (TRADITIONAL WIRING)
- 11 2" PVC CONDUIT W/ SWEEP ELL - MAX. 40 14 AWG WIRES (TRADITIONAL WIRING)
- 12 5/8" X 8' COPPER CLAD GROUND ROD INSTALL GROUNDING PER MANUFACTURER'S RECOMMENDATIONS.
- 13 110 - VOLT SERVICE IN CONDUIT
- 14 1" COMMUNICATION CABLE CONDUIT (IF APPLICABLE)
- 15 8 AWG SOLID BARE COPPER WIRE

- NOTES:**
1. GROUND ROD OR COPPER GROUND PLATE MIN. 8' AND 12' MAX. AWAY FROM CONTROLLER. REFER TO MANUFACTURER'S RECOMMENDATION FOR GROUNDING EQUIPMENT SIZE AND INSTALLATION. GROUNDING RESISTANCE SHOULD BE MEASURED AT 10 OHMS OR LESS. IF GREATER THAN 10 OHMS, A SECOND GROUNDING ROD OR PLATE MAY BE REQUIRED.
 2. IN TWO-WIRE SYSTEMS BOTH THE COMMON WIRE AND THE CONTROL WIRE ARE COMBINED INTO A SINGLE 2-WIRE CABLE.
 3. QUICKPAD MAY BE REPLACED WITH 6" THICK CONCRETE PAD. CONCRETE PAD DIMENSIONS SHALL BE 6" LARGER ON ALL SIDES THAN THE FOOTPRINT OF CONTROL BOX.

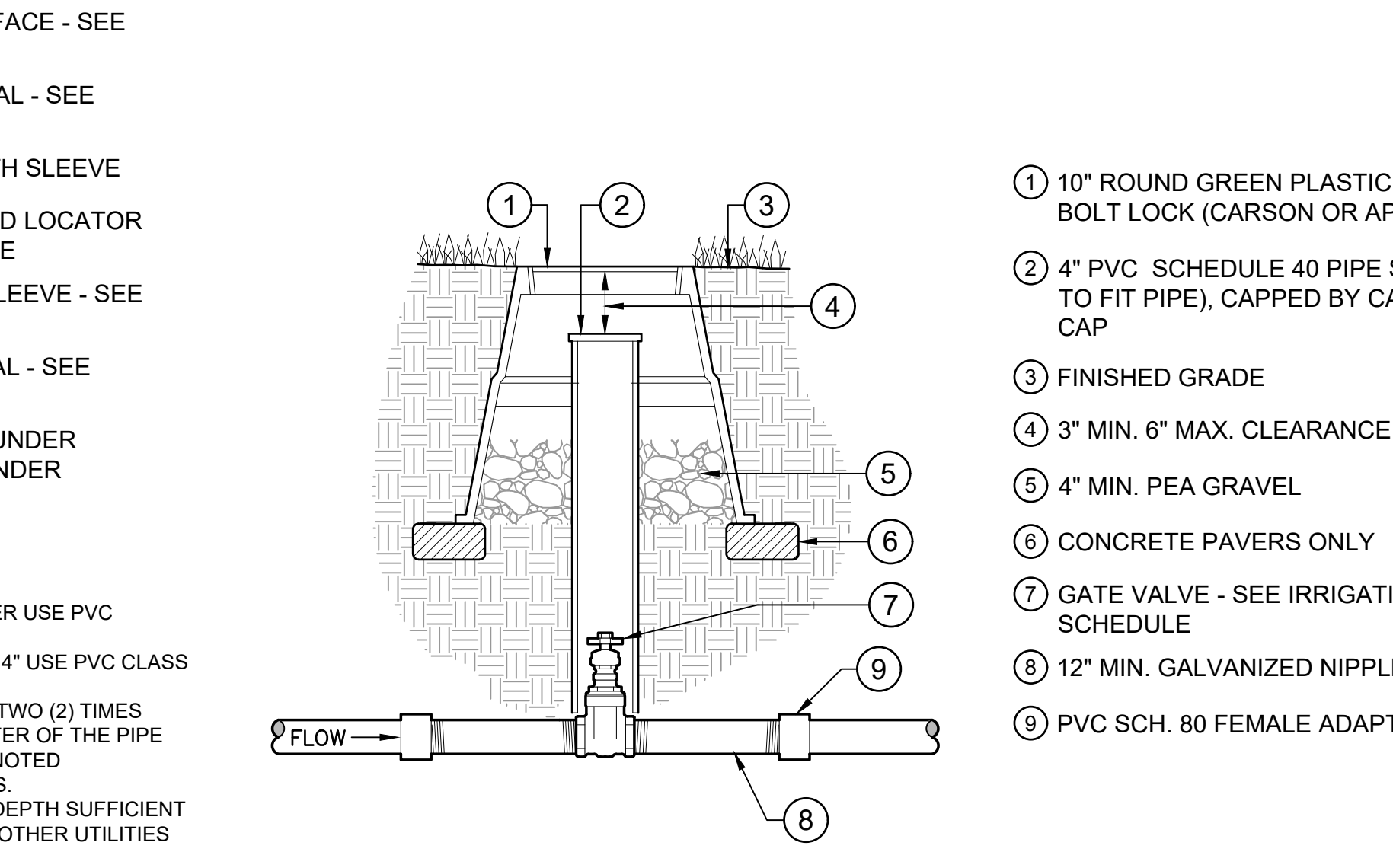


2 TRENCH DETAIL
NTS

- 1 BACKFILL MATERIAL - SEE NOTES, COMPACT TO 90% MDD
 - 2 ADJACENT HARD SURFACE
 - 3 NON-PRESSURE LATERAL LINE
 - 4 MAIN LINE LOCATOR WIRE; BURIED WITH ALL MAIN LINES
 - 5 PVC MAIN LINE
 - 6 DIRECT BURIAL, LOW VOLTAGE CONTROL WIRES; TO BE BURIED AND TAPED AT 10' INCREMENTS. LOCATE DIRECTLY ADJACENT TO MAIN LINE.
 - 7 BEDDING MATERIAL - SEE NOTES
 - 8 PIPE DEPTHS - SEE NOTES
- NOTE:** SEE SLEEVING DETAIL FOR TRENCHING IN PAVED AREAS.

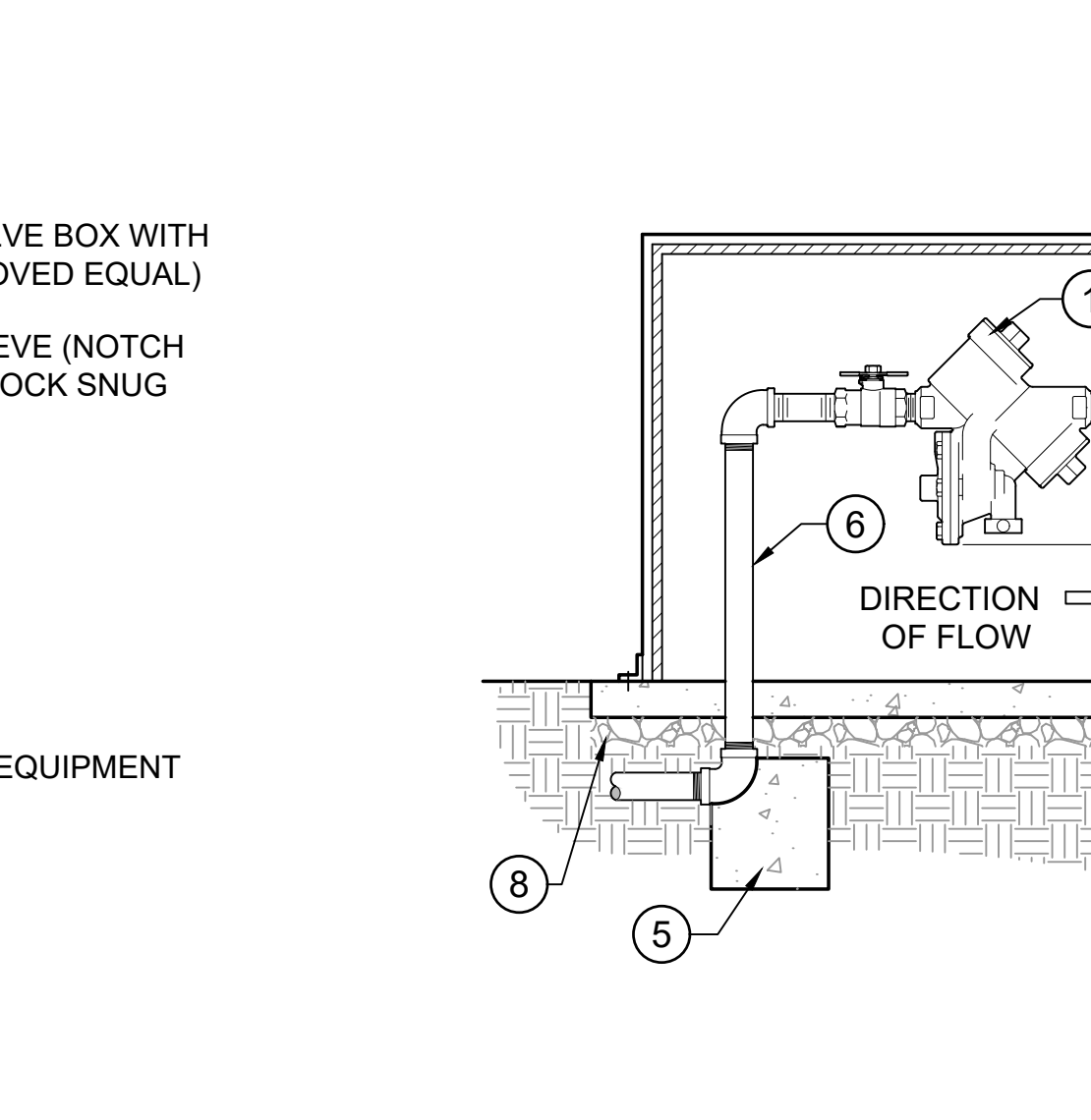


3 SLEEVE DETAIL
NTS



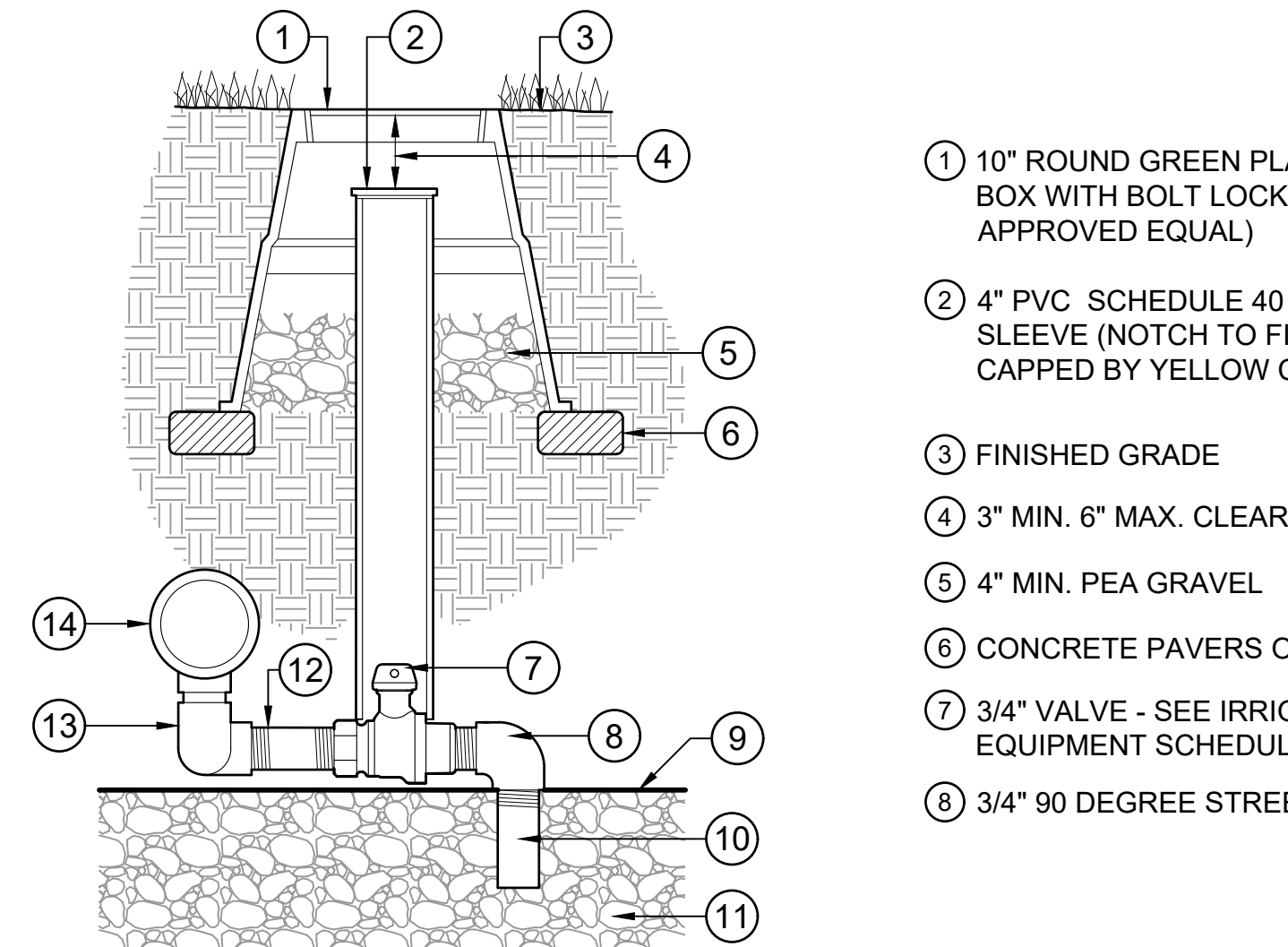
4 ISOLATION GATE VALVE (THREADED; LESS THAN 2")
NTS

- 1 10" ROUND GREEN PLASTIC VALVE BOX WITH BOLT LOCK (CARSON OR APPROVED EQUAL)
- 2 4" PVC SCHEDULE 40 PIPE SLEEVE (NOTCH TO FIT PIPE), CAPPED BY CAM LOCK SNUG CAP
- 3 FINISHED GRADE
- 4 3" MIN. 6" MAX. CLEARANCE
- 5 4" MIN. PEA GRAVEL
- 6 CONCRETE PAVERS ONLY
- 7 GATE VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
- 8 12" MIN. GALVANIZED NIPPLE
- 9 PVC SCH. 80 FEMALE ADAPTOR

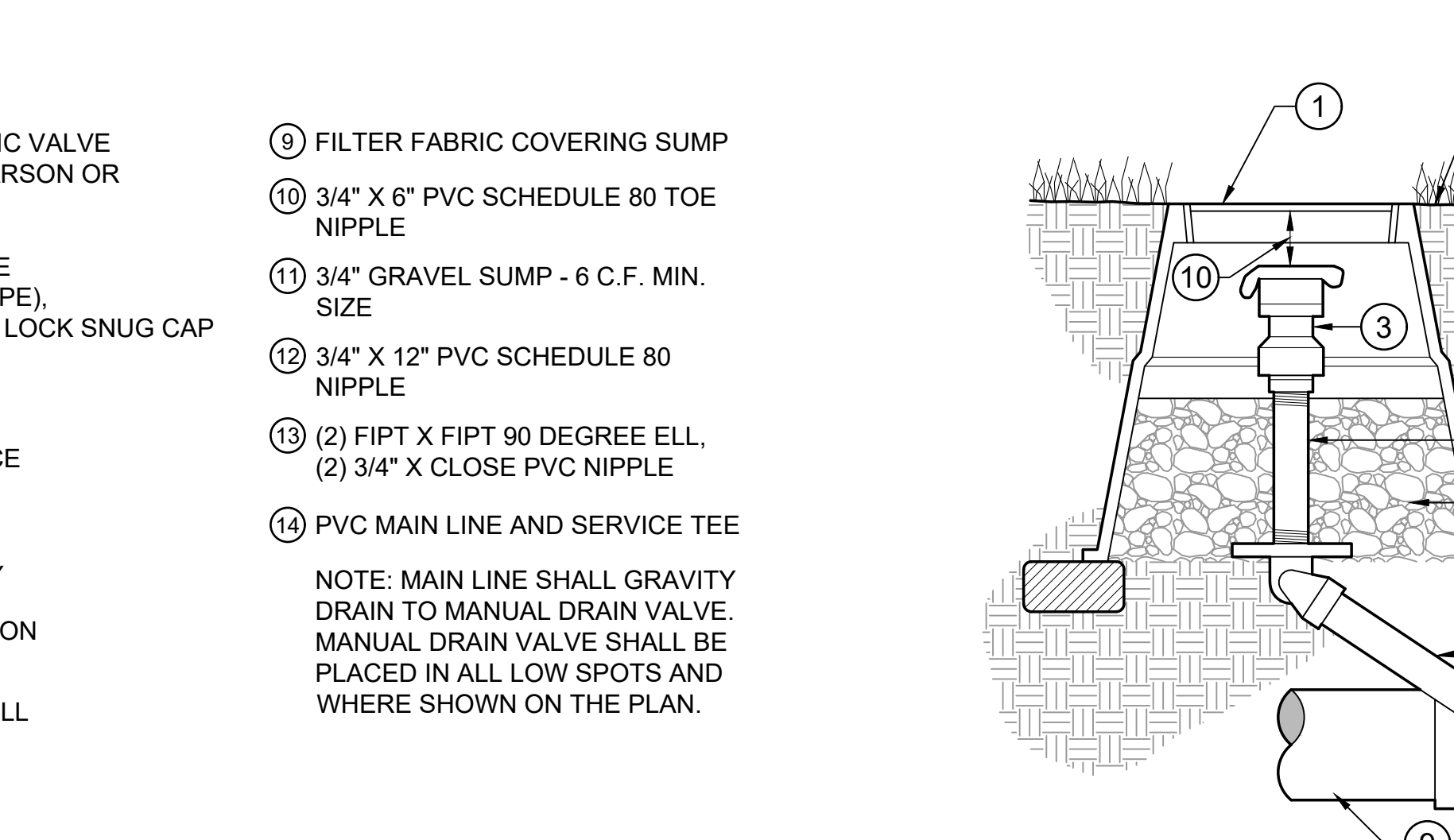


5 REDUCED PRESSURE BACKFLOW ASSEMBLY
NTS

- 1 REDUCED PRESSURE BACKFLOW PREVENTION DEVICE WITH TWO (2) GATE VALVES - SEE IRRIGATION EQUIPMENT SCHEDULE FOR TYPE AND SIZE
- 2 BACKFLOW ENCLOSURE - SEE IRRIGATION EQUIPMENT SCHEDULE (INSTALL PER MANUFACTURER'S SPECIFICATIONS)
- 3 FINISHED GRADE
- 4 4" THICK CONCRETE PAD (SIZE AS REQUIRED, EXTEND 6" BEYOND OUTSIDE DIMENSIONS OF ENCLOSURE)
- 5 CONCRETE THRUST BLOCK
- 6 THREADED GALVANIZED SPOOL (TYP.) - SIZE AND LENGTH AS REQUIRED
- 7 12" MIN. 30" MAX.
- 8 4" MIN. DEPTH ROAD BASE COMPACTED TO 95% MDD



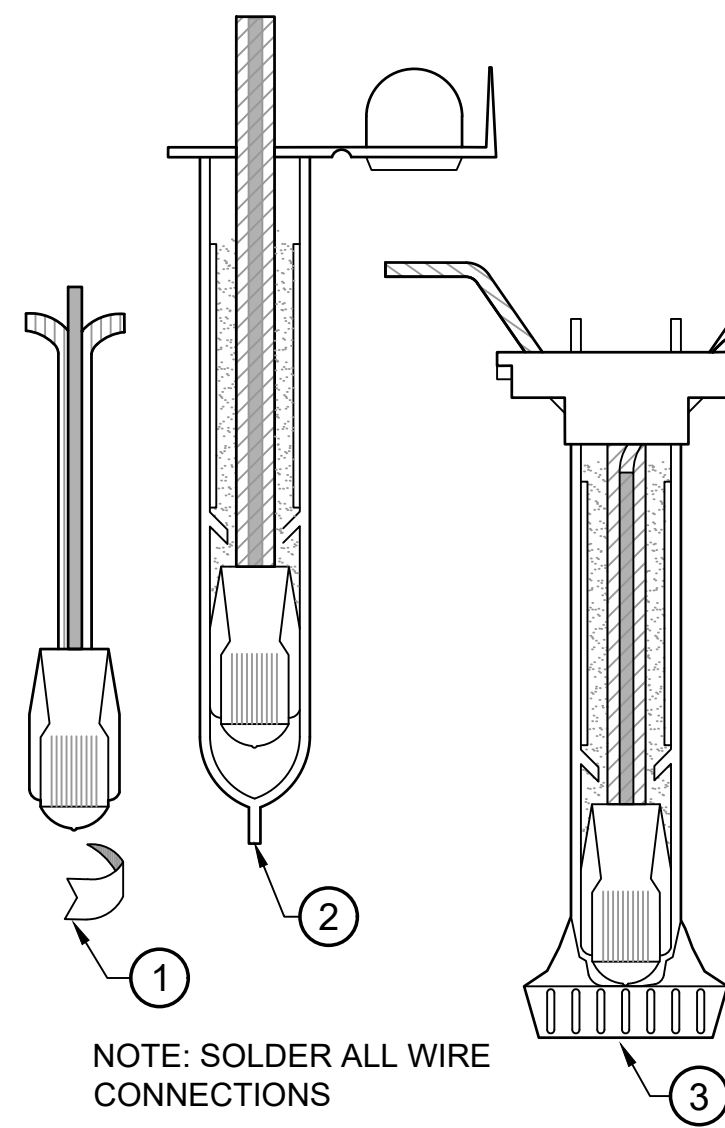
6 MANUAL DRAIN VALVE ASSEMBLY
NTS



7 QUICK COUPLING VALVE ASSEMBLY (2 1/2" AND SMALLER)
NTS

- 9 FILTER FABRIC COVERING SUMP
 - 10 3/4" X 6" PVC SCHEDULE 80 TOE NIPPLE
 - 11 3/4" GRAVEL SUMP - 6 C.F. MIN. SIZE
 - 12 3/4" X 12" PVC SCHEDULE 80 NIPPLE
 - 13 (2) 5FT X 90 DEGREE ELL, (2) 3/4" X CLOSE PVC NIPPLE
 - 14 PVC MAIN LINE AND SERVICE TEE
- NOTE:** MAIN LINE SHALL GRAVITY DRAIN TO MANUAL DRAIN VALVE. MANUAL DRAIN VALVE SHALL BE PLACED IN ALL LOW SPOTS AND WHERE SHOWN ON THE PLAN.

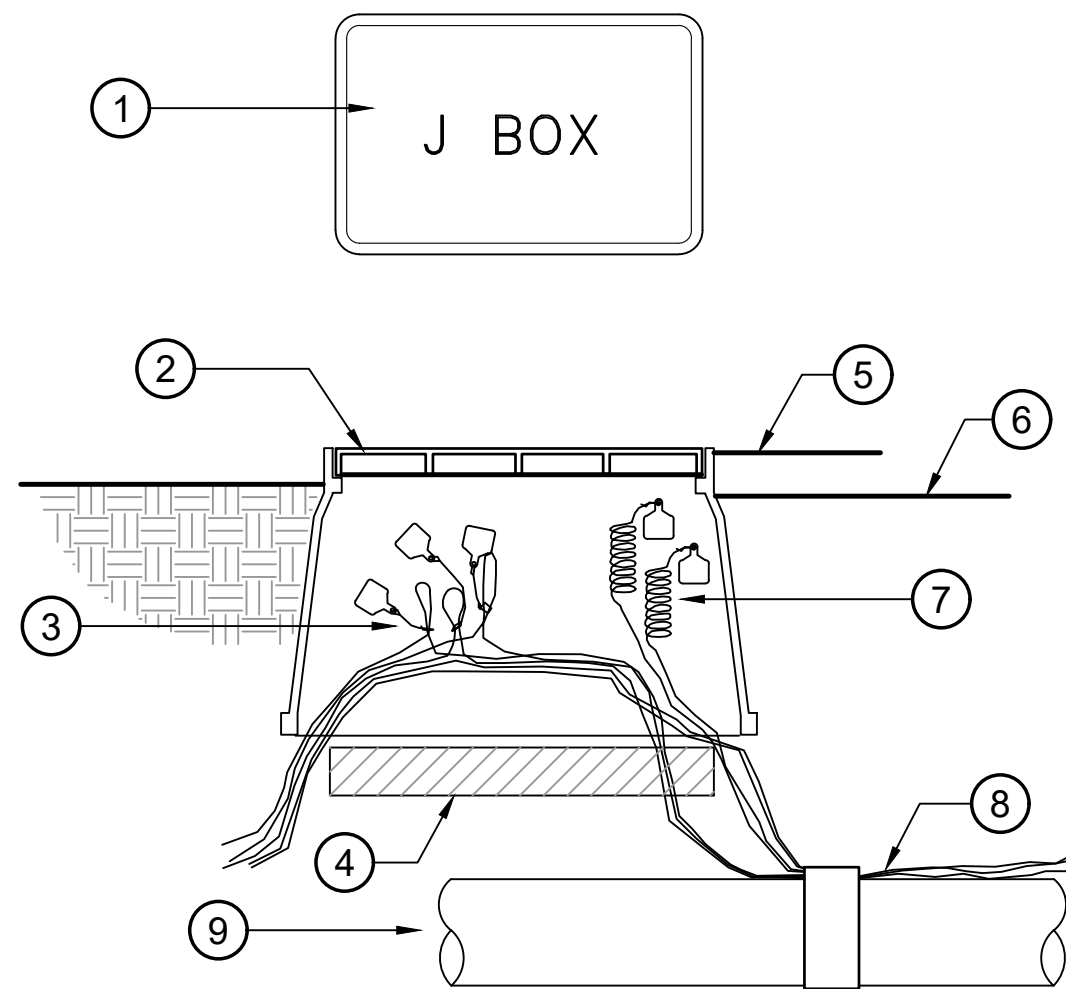
- 1 10" ROUND GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
- 2 FLUSH WITH FINISHED GRADE
- 3 QUICK COUPLING VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
- 4 BRASS NIPPLE - LENGTH AS REQUIRED
- 5 6" MIN. DEPTH CLEAN PEA GRAVEL
- 6 CONCRETE PAVERS ONLY
- 7 12" LASCO UNITIZED SWING JOINT W/ BRASS INSERT STABILIZER ELBOW OR 12" SPEARS SWING JOINT RISER ASSEMBLY W/ BRASS FEMALE THREAD 90 DEGREE ELL OUTLET
- 8 PVC SCHEDULE 80 TEE AND 90 DEGREE (SIDE MOUNTED, SIZE AS REQUIRED)
- 9 PVC MAIN LINE
- 10 3" MIN. 6" MAX CLEARANCE



- 1 STRIP WIRE AND APPLY PERFORMANCE PLUS WIRE CONNECTOR R/Y+ ELECTRICAL CONNECTOR IN A CLOCKWISE DIRECTION.
- 2 INSERT SPLICE TO BOTTOM OF GEL FILLED TUBE. VISUALLY CHECK TO MAKE SURE CONNECTOR HAS BEEN PUSHED PAST THE LOCKING FINGERS AND IS SEATED ON THE BOTTOM OF THE TUBE.
- 3 POSITION WIRES IN WIRE CHANNELS AND CLOSE INSULATOR TUBE COVER.

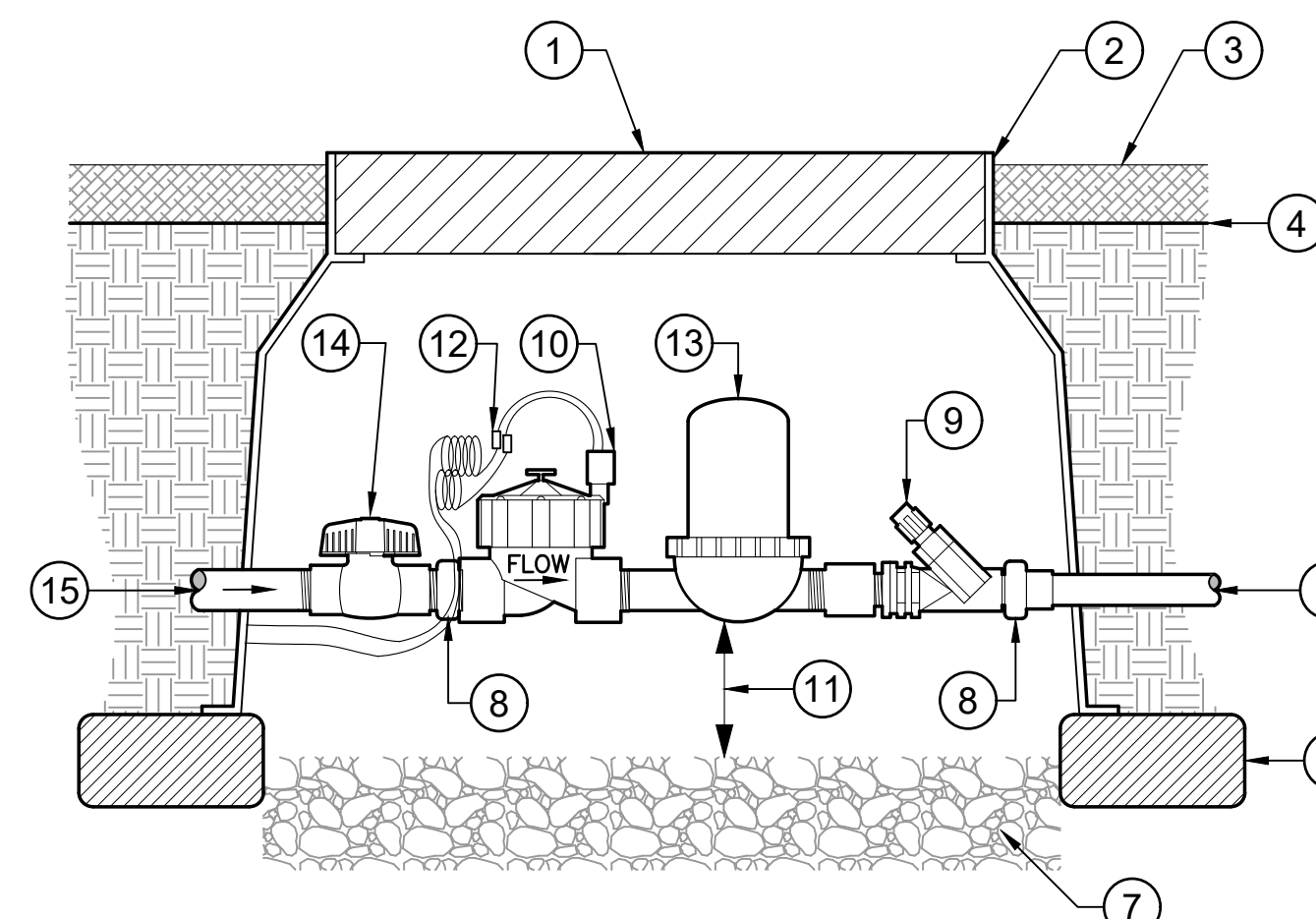
NOTE: SOLDER ALL WIRE CONNECTIONS

1 3M DBR/Y DIRECT BURY SPLICE KIT
NTS



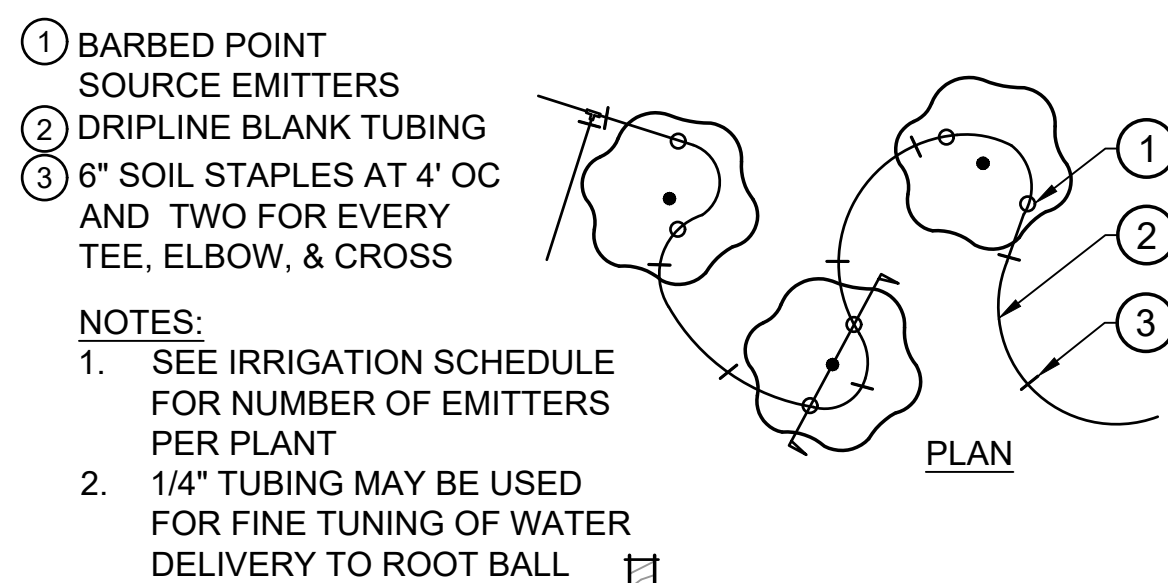
- 1 VALVE BOX LID, BRAND "J BOX" ON LID WITH 2" HIGH LETTERS
- 2 10" X 15" BOX
- 3 LOOP, BUNDLE, AND LABEL SPARE WIRES THAT ARE TO CONTINUE, AS OCCURS. SPLICE ANY WIRES USING 3M-DBR/Y DIRECT BURY SPLICE KIT.
- 4 TWO 6" X 2" X 16" CONCRETE BLOCK CPAS, ONE ON EACH SIDE OF BOX
- 5 SET BOX FLUSH TO GRADE AT LAWN
- 6 SET BOX 2" ABOVE GRADE AT SHRUBS
- 7 SPARE WIRES THAT ARE TO TERMINATE AT THIS BOX. COIL 30" LENGTH AND I.D. TAG
- 8 WIRES TO CONTROLLER (TAPED TO MAINLINE OR INSTALLED IN CONDUIT PER PLANS & SPECIFICATIONS)
- 9 MAINLINE AS OCCURS

2 WIRE BUNDLE JUNCTION BOX
NTS



- 1 18" JUMBO GREEN PLASTIC VALVE BOX W/ BOLT LOCK (CARSON OR APPROVED EQUAL)
- 2 1" MAX. CLEARANCE
- 3 PLANTING BED MULCH - SEE PLANTING NOTES FOR DEPTH
- 4 FINISHED GRADE
- 5 PVC SUPPLY HEADER
- 6 CONCRETE PAVERS ONLY
- 7 4" MIN. PEA GRAVEL
- 8 ACTION UNION - PART 18010-XX, PART 18011-XX, PART 18012
- 9 INLINE PRESSURE REGULATOR
- 10 ELECTRIC CONTROL VALVE - SEE IRRIGATION EQUIPMENT SCHEDULE
- 11 2" MIN. CLEARANCE
- 12 (2) 3M DBR/Y WATER TIGHT WIRE CONNECTORS
- 13 INLINE 1" FILTER
- 14 PLASTIC PVC BALL VALVE (LINE SIZE)
- 15 FLOW FROM PVC MAIN LINE

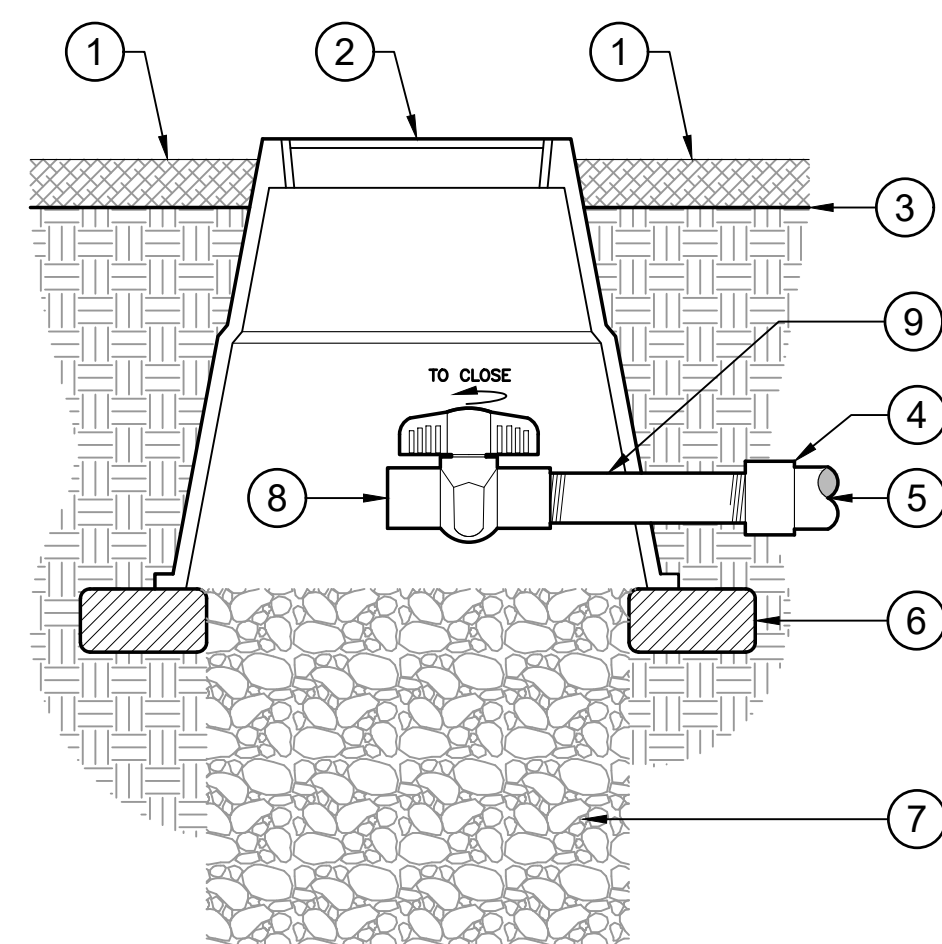
3 DRIP ZONE CONTROL VALVE ASSEMBLY W/ PVC BALL VALVE
NTS



- 1 BARBED POINT SOURCE EMITTERS
- 2 DRILINE BLANK TUBING
- 3 6" SOIL STAPLES AT 4' OC AND TWO FOR EVERY TEE, ELBOW, & CROSS

- NOTES:
1. SEE IRRIGATION SCHEDULE FOR NUMBER OF EMITTERS PER PLANT
 2. 1/4" TUBING MAY BE USED FOR FINE TUNING OF WATER DELIVERY TO ROOT BALL

4 POINT SOURCE DRIP EMITTER
NTS



- 1 PLANTING BED MULCH - SEE PLANTING NOTES FOR DEPTH
- 2 8" ROUND GREEN PLASTIC VALVE BOX (CARSON OR APPROVED EQUAL) FLUSH WITH MULCH GRADE
- 3 FINISHED GRADE
- 4 PVC REDUCER BUSHING (SP X 1/2") FIPT - SIZE AS REQUIRED
- 5 PVC EXHAUST HEADER
- 6 CONCRETE PAVERS ONLY
- 7 1 C.F. WASHED PEA GRAVEL
- 8 1/2" PLASTIC PVC BALL VALVE
- 9 1/2" X 6" (SCH. 80 PVC) NIPPLE TBE

5 DRIP FLUSH VALVE (PLUMBED TO PVC EXHAUST HEADER)
NTS

MUN-HY-15

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BID SET

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LANDSCAPE ARCHITECT
02/07/2025

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NO.	REVISION	DESCRIPTION	BY	DATE

SOUTH CACHE POND CANAL TRAIL
HYRUM CITY

IRRIGATION DETAILS

FILE: 57-23-005 LI-501
JUB PROJ. #: 57-23-005
DRAWN BY: KR
DESIGN BY: KR
CHECKED BY: AN

ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 1/13/2025

SHEET NUMBER:
LI-502