

CONTRACT DOCUMENTS

AND

SPECIFICATIONS

FOR

SU078 OBE Weber River Surf Wave Project

IN

OGDEN, UTAH

PREPARED BY

RiverRestoration.org

October 31, 2025



**DOCUMENT 00 00 30
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SU078 OBE Weber River Surf Wave Project

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DOCUMENT 00 00 40

LIST OF DRAWINGS

SU078 OBE Weber River Surf Wave Project

DRAWINGS (Ogden Business Exchange Surf Wave Project)

| <u>Sheet No.</u> | <u>Title</u> | <u>Approval Date</u> |
|------------------|--|----------------------|
| 1. G01 | Cover Sheet | 10/28/25 |
| 2. G02 | Base Map & Horizontal Control Plan | 10/28/25 |
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| 4. CW00-07 | Care of Water | 10/28/25 |
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| 6. R00 | Plan view, profile and index | 10/28/25 |
| 7. R01 | Plan view and profile surf wave | 10/28/25 |
| 8. R02 | Plan view and profile fish passage | 10/28/25 |
| 9. R03 | Plan view and profile riffle grade control | 10/28/25 |
| 10. R04 | Plan view and profile access ramp | 10/28/25 |
| 11. R05 | Profile and sections | 10/28/25 |
| 12. R06 | Bank restoration typical sections | 10/28/25 |
| 13. R07 | Rubber & Steel gates, airline layout plan | 10/28/25 |
| 14. R08 | Rubber & steel gate surf wave plan view | 10/28/25 |
| 15. R09 | Rubber & steel gate engineered rille plan view | 10/28/25 |
| 16. L00-01 | Seeding notes and plan | 10/28/25 |
| 17. L02 | Erosion control blanket installation | 10/28/25 |
| 18. D01-02 | Boulder toe-slabstone bank terracing detail | 10/28/25 |
| 19. D03 | Concrete access ramp detail | 10/28/25 |
| 20. D04-07 | Obermeyer Hydro Inc Detail | 10/28/25 |
| 21. D08 | Ogden City Details – Survey Monument | 10/28/25 |
| 22. D09 | Ogden City Details – Concrete base for pole | 10/28/25 |
| 23. D10-12 | CXT Precast products 10’x20’ control building | 10/28/25 |
| 24. D13 | Air line bedding detail | 10/28/25 |
| 25. S001-901 | Structural Drawings | 10/17/25 |

REFERENCE DRAWINGS

1. 2025 Manual of Standard Plans by the Utah Chapter of the American Public Works Association.
2. Ogden City's 2025 Edition of the Engineering Standards and Amendments for Public Works Projects.
3. Etc.

END OF DRAWING LIST

SU078 OBE Weber River Surf Wave Project

DOCUMENT 00 10 00 INVITATION TO BID

PART 1 GENERAL

1.1 CONSTRUCTION CONTRACT

- A. Bidders are invited to bid on Construction Contract named as:

SU078 OBE Weber River Surf Wave Project

- B. For information about the award of this Construction Contract, contact:
Phil Suiter at (801) 629-8971.

1.2 DESCRIPTION OF WORK

- A. The location of the work is: Weber River: about 1/4 mile downriver of Exchange Rd Bridge.
- B. The estimated cost of the work is \$ 3200000.
- C. The project shall be governed by these contract documents, special conditions, specifics related to the work, and all provisions of the Manual of Standard Specifications and Manual of Standard Plans 2025 Edition published by the Utah Chapter of the American Public Works Association (APWA) and Ogden City's Engineering Standards for Public Improvements 2025 Edition which are applicable to the work are made a part of the Contract Documents by reference.
- D. The work to be performed consists of furnishing and installing the equipment, facilities, services and appurtenances thereto as included in the Contract Documents. The Work generally includes, but is not limited to, the following:

River and River Bank Restoration, care of water, concrete weir removal, tree removal, rock and boulder placement, fish passage channel, steel sheet pile, concrete casting and pouring, OHI hydraulic gate system, concrete access ramp, and all appurtenant work in accordance with the Drawings and Specifications

1.3 BIDDERS' PRE-QUALIFICATION

- A. Bidders shall submit a Statement of Qualifications (SOQ) that describes at least 3 relevant projects of similar scope and experience in river-related work within the last 7 years. Up-to-date project owner references with contact information shall be included. The relevant projects shall demonstrate extensive experience in the installation of in-channel boulder structures, plus the care of natural river flows and Best Management Practices that significantly reduce environmental impacts associated with construction. The SOQ shall identify the key personnel and all subcontractors that will perform work.
- B. GPS machinery is required as stated in Section 01 12 00 Special Provision 2.09 Site Grading

1.4 BASIS OF BIDS

- A. Bids shall be on a unit price basis. Unsealed or segregated Bids will not be accepted.

1.5 CONTRACT TIME

- A. The Work will be Substantially Completed 180 calendar days after the date of the Notice to Proceed, not counting calendar days during the anticipated one-time Suspended Contract Time.

1.6 EXAMINATION AND PROCUREMENT OF DOCUMENTS

- A. Complete sets of Bid Documents will be available by downloading from the Ogden City website at “no cost”. A complete set of Bid Documents must be used in preparing Bids. Bidders are responsible for securing any and all addenda issued. Owner and Engineer assume no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.

1.7 PRE-BID CONFERENCE

- A. **MANDATORY PRE-BID CONFERENCE will be held at 10:30 a.m on 11/12/2025** at 2549 Washington Boulevard, Ogden, Utah in the 7th floor conference room of the City Engineer. All contractors intending to submit a bid are required to send an employee to attend the Mandatory Pre-bid conference to obtain relevant information concerning the project. Contractors may not delegate attendance to an agent representing any other contractor. Bidders are advised that information affecting drawings, specifications, conditions, scope of the Work, etc. may be discussed. Any questions concerning the specification for said project will be discussed at this time, and Bidders will be made aware of special conditions involved in the construction of this project.

1.8 BID SECURITY

- A. Bid security in the amount of five (5) percent of the Bid must accompany each Bid in accordance with the Instructions to Bidders. Bid Security will be returned to each unsuccessful Bidder after tabulation and in accordance with Document 00 20 00, Section 2.3.D.

1.9 BID LOCATION AND OPENING

- A. Sealed bids for furnishing all materials, labor, tools and equipment necessary to complete said work must be submitted on forms prepared by the City Engineer and are to be submitted to the office of the City Purchasing Agent, 2549 Washington Boulevard, 2nd floor information desk, Ogden, Utah, until 3:00 p.m., 11/20/2025, at which time they will be opened and read aloud. **LATE BIDS WILL NOT BE ACCEPTED.**
- B. On the outside of the envelope, the bidder shall indicate the Construction Contract title, the name and address of the Bidder, and the date and time of Bid opening and the Bidder's

return mailing address.

1.10 RIGHT TO REJECT BIDS

- A. The OWNER reserves the right to accept or reject any or all bids or to waive any informality or technicality in any bid that best serves its convenience and/or is found to be in the best interest of the City.

1.11 VALIDITY PERIOD FOR BIDS

- A. Bids shall remain valid for 45 days after the day of Bid opening. The three lowest bidders, per Document 00 20 00, Section 2.3 D, who withdraw their bid after Bid opening, but before expiration of said period, shall forfeit their bid security if Notice of Intent to Award to Bidder is made by OWNER.

1.12 GOVERNING LAWS AND REGULATIONS

- A. This project is not federally funded and does not require the payment of specific wage rates. Payroll submittal will not be required.
- B. As a condition of the contract, contractors are to register and participate in the status verification system, as defined in section 63-99a-103(1)(c) of the Utah Code or its successor provision, to verify the work eligibility status of the contractor's new employees that are employed in the State of Utah.
- C. Contractor is responsible for verifying the employment status of new employees who work under the contractor's supervision or direction. In addition, contractor must maintain and have available for review upon demand by city an affidavit from each contractor or subcontractor who works under or for the contractor certifying that such contractor or subcontractor has verified through the status verification system, as defined in section 63-99a-103(1)(c) of the Utah Code or its successor provision, the employment status of each new employee of the respective contractor or subcontractor that is employed in the State of Utah.
- D. By entering into this contract, contractor verifies that 1) it has registered in the status verification system or that it will register in the status verification system within thirty (30) days of being notified that it has been awarded the contract, and 2) that it participates in the status verification system to verify the work eligibility status of new employees as required by law. If at any time during the period of this contract, contractor fails to remain registered in or to participate in the status verification system or to maintain on file any required affidavit, city may terminate the contract for cause or, in the alternative, city may suspend work under the contract until contractor shows compliance with the requirements of this section. City shall not be responsible for any costs, damages, expenses, losses or other claims resulting from contract termination or contract suspension resulting from contractor's failure to comply with the status verification system requirements or to have on file any required affidavit, nor shall contract time be extended by virtue of such failure to comply with the requirements of this section.
- E. Bidders on this Work will be subject to the applicable provisions of all federal rules, laws and regulations or orders.

- F. Furnishing of W-9. Payment under this Agreement is contingent upon Contractor furnishing City with a signed and completed W-9 IRS tax form. Such form shall be attached hereto and incorporated herein. Contractor shall cooperate with City in furnishing any additional information City may need to comply with rules and regulations of the Internal Revenue Service.
- G. In compliance with Americans with Disabilities Act, (ADA) the following information is provided: FAX Number (801) 629-8735, TDD Number (801) 629-8701, Contact person: Lisa Stout Management Services Director, Ogden City.

Ogden City Purchasing Agent

Published: November 1st and 8th, 2025

END OF DOCUMENT

DOCUMENT 00 20 00

INSTRUCTIONS TO BIDDERS

PART 1 GENERAL

1.1 DEFINED TERMS

- A. Terms used in the Bid Documents which are defined in Article 1.1 of the General Conditions will have the meanings indicated in the General Conditions.
- B. General Conditions: as published in Document 00 72 00 in the 2025 Manual of Standard Specifications by the Utah Chapter of the American Public Works Association and as published in Ogden City's 2025 Edition of the Engineering Standards and Amendments for Public Works Projects.

1.2 COPIES OF BID DOCUMENTS

- A. Complete sets of Bid Documents will be available by downloading from the Ogden City website at “no cost”. A complete set of Bid Documents must be used in preparing Bids. Bidders are responsible for securing any and all addenda issued. Owner and Engineer assume no responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bid Documents.
<https://ogdencity.com/264/Purchasing>
- B. Bid Documents are made available to Bidder only for the purpose of obtaining Bids on the work. No license or grant for any other use is given.
- C. Bidding Document copyrights shall remain with the Owner.
- D. All provisions of the **Manual of Standard Specifications and Manual of Standard Plans 2025 Edition** published by the Utah Chapter of the American Public Works Association (APWA) and **Ogden City’s Engineering Standards for Public Improvements 2025 Edition** which are applicable to the work are made a part of the Contract Documents by reference.

The **Ogden City Engineering Standards and Amendments for Public Works Projects** are also available (Free Download) online at:

<https://ogdencity.com/DocumentCenter/View/13520/2020-Engineering-Standards-for-Public-Improvements?bidId=>

1.3 PRE-BID CONFERENCE

- A. A MANDATORY pre-bid conference will be held at 10:30 a.m on 11/12/2025, at 2549 Washington Boulevard, Ogden, Utah in the 7th floor conference room of the City Engineer. All contractors intending to submit a bid are REQUIRED to send an employee to attend the pre-bid conference to obtain relevant information concerning the project. Contractors may not delegate attendance to an agent representing any other contractor. Representatives of Owner and Engineer will be present to discuss the Project.

1.4 COMPENSATION AND QUANTITIES

- A. In General: The bid price for any lump sum contract includes all labor, materials, and incidental work to fully complete the work in a satisfactory manner under the terms of the Contract Documents. Bidders are responsible to inform themselves of the character of the work to be performed.
- B. Lump Sum Work: The work is to be paid for on a lump sum basis, the lump sum will be the only sum paid.
- C. Unit Price Work: If any portion of the work is to be paid for on a unit price basis, payment will cover only work actually performed and materials actually supplied at the unit prices bid and on the terms set forth in the Contract Documents, irrespective of any quantity approximations in the Bid Documents. Any quantity approximations in the Bid Documents are stated as a basis for determining bids, and they do not fix the amount of work to be done or materials to be furnished. Stated quantities are estimates for the purpose of doing the class of work required. Actual quantities will vary. The Owner may deviate in either direction from any indicated quantities. The Bidder shall have no claim for any variation in quantity, except to the extent permitted in the General Conditions.

1.5 EXAMINATION OF SITE AND CONTRACT DOCUMENTS

- A. In General: Bidders are permitted to converse with Engineer or Engineer's personnel having knowledge of the Project, Plans, Specifications, material sites, or conditions generally prevailing in the area of the project to aid in pre-bid investigations. The Owner is not bound by any statements or representations made by Engineer or Engineer's personnel before the bid opening or award of the Construction Contract, nor for any assumptions or conclusions reached by a prospective Bidder as a result of such communication unless the Engineer issues an Addendum to all prospective Bidders.
- B. Site, Access To: The lands upon which the work is to be performed, rights-of-way and easements for access thereto and other lands designated for use by Bidder in performing the work are identified in the Contract Documents. All additional off site lands and access thereto required for temporary construction facilities or storage of materials and equipment are to be provided by Bidder.
- C. Contract Documents: The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article 1.4; that without exception the Bid is premised upon performing and furnishing the work required by the Contract Documents; and, that the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all terms and conditions for performance and furnishing of the work.
- D. Bidder's Obligations: The submission of a bid constitutes acknowledgement that Bidder has complied with all bidding instructions. It is the responsibility of each Bidder before submitting a Bid, to:
 - 1. Examine the Contract Documents thoroughly;
 - 2. Visit the site to become familiar with local conditions that may affect cost, progress, performance or furnishing of the work;

3. Consider federal, state and local laws and regulations that may affect cost, progress, performance or furnishing of the work;
4. Study and carefully correlate Bidder's observations with the Contract Documents; and
5. Identify and notify Engineer in writing in the manner set forth in article 2.1 below of all specific conflicts, omissions, errors or discrepancies in the Contract Documents, or if Bidder doubts their meanings.
6. Investigate all applicable construction and labor conditions, quantities, and the character of the work as they affect cost, progress, performance, or furnishing of the work;
7. Attend any pre-bid conference, which shall be mandatory if so designated in the Notice to Bidders;
8. Review all available explorations and data concerning surface and subsurface conditions.

The failure or omission of any Bidder to receive or examine any form, instrument, Addendum or other document, visit the site and become acquainted with conditions there existing, or attend the pre-bid conference, shall in no way relieve any Bidder from obligations with respect to Bidder's bid or its obligation to furnish all material, equipment, labor and services necessary to carry out the provisions of the Contract Documents and to complete the contemplated work for the consideration set forth in its Bid. Submission of a Bid shall constitute prima facie evidence of compliance with these instructions.

- E. Deviations from the Terms of the Contract Documents: Owner will not accept any deviations whatsoever from the printed terms of the Agreement (**Document 00 50 00**) and the Contract Documents, except by Addendum or Change Order.

1.6 PHYSICAL CONDITIONS

- A. In General: Before submitting a Bid, each Bidder will be responsible for review of Owner's explorations, tests and data concerning surface conditions, subsurface conditions and underground facilities at or contiguous to the site, or otherwise, which may affect cost, progress, performance or furnishing the work in accordance with the time, price and other terms and conditions of the Contract Documents.
- B. Surface and Subsurface Conditions: Provisions concerning surface and subsurface conditions, if any, are set forth in the Geotechnical Data (**Document 00 32 00**). The document provides the identification of:
1. Those reports of explorations and tests of subsurface conditions at the site which have been utilized by Engineer in preparing the Contract Documents; and
 2. Those drawings of physical conditions in or relating to existing surface and subsurface structures (except underground facilities) which are at or contiguous to the site which have been utilized by Engineer in preparing the Contract Documents.
- C. Underground Facilities: Information and data indicated in the Contract Documents regarding underground facilities at or contiguous to the site is based upon

information and data furnished to Owner and Engineer by owners of such underground facilities. The Owner does not assume responsibility for the accuracy or completeness thereof other than as provided in paragraph 4.3A.2 of the General Conditions or unless expressly provided in the Modifications to General Conditions (Document 00 81 00).

- D. Additional Explorations: On request in advance, and if possible, Owner will provide each Bidder access to the site to conduct any explorations and tests as each Bidder deems necessary for submission of a Bid. Bidder shall obtain permits, fill all holes, clean up and restore the site to its former condition upon completion of such explorations. Bidder agrees to release, indemnify, defend and save the Owner harmless from all costs, damages and liabilities of any kind whatsoever, including reasonable attorneys' fees, that may arise during and after the performance of additional explorations.
- E. Modifications to the Contract Documents: Provisions concerning the adequacy of the data furnished for subsurface structures and underground facilities, and the possibility of changes in the documents due to differing conditions appear in Articles 4.2 and 4.3 of the General Conditions.

1.7 EFFECT OF SUBMITTING A BID

- A. Bidders are responsible to carefully examine the Contract Documents, visit the site, and fully inform themselves so as to include in the Bid a sum to cover the cost of all items. Bidder's failure or omission to receive or examine any form, instrument, addendum or other document, visit the site and become acquainted with existing conditions, or attend any pre-bid conference, shall in no way relieve Bidder from any obligations with respect to Bidder's Bid or the Construction Contract.
- B. By submitting a Bid, Bidder represents that Bidder has complied with all requirements of the Bid Documents; that the Bid is premised on properly performing and furnishing the work required by the Contract Documents within the times specified; that the Bidder is informed of the conditions to be encountered and the character, quality and quantities of the work; and that the Bidder believes the Contract Documents are sufficient in scope and detail to indicate and convey understanding of all term and conditions for performance and furnishing of the work.
- C. Submission of a Bid constitutes a promise that the Bidder will enter the Contract Documents in the form presented in the Contract Documents. Bidders should carefully examine all Contract Documents, including the required Bonds and insurance to be provided by the Bidder.
 - 1. The Performance Bond is a guarantee of faithful performance of the requirements of the Contract Documents, including all applicable warranties. The Payment Bond is a guarantee of payment of all labor, materials, or supplies used directly or indirectly in the prosecution of the work provided in the Construction Documents.
 - 2. The sum of the Performance Bond and the Payment Bond shall be increased or decreased during the course of the work in the event that Contract Modifications, Change Orders or Addenda increase or decrease the total contract price. The sum

of each bond shall be in an amount equal to the completed contract price at the completion of the work.

3. Owner does not provide any release of Performance Bonds or Payment Bonds. The bonds are in effect throughout all periods during which a suit may be brought under the provisions of applicable law.
- D. By submitting a Bid, Bidder represents that the matters stated therein are true and correct.

PART 2 BIDDING PROCEDURES

2.1 INTERPRETATIONS AND ADDENDA

- A. All requests for interpretation of the Contract Documents shall be made in writing and delivered to the Engineer no later than 72 hours prior to opening of Bids. Engineer will publish interpretations on the City Website in the form of a Written Addendum. If a Bidder's request for interpretation is not responded to by Engineer, Bidder shall not rely on any interpretation in the request which is contrary to the intent and terms of the Contract Documents.
- B. No oral interpretations shall be made to any Bidder. Owner will not be responsible for or bound by any statements, explanations, representations, conclusions, assumptions or interpretations made by any party, whether oral or written, except those duly issued in the form of written Addenda.
- C. Addenda may also be issued to modify the Bidding Documents as deemed advisable by Engineer. Each statement made in an Addendum is part of the Contract Documents at the location designated in the Addendum. A statement issued in an Addendum shall have the effect of modifying a portion of the Bid Documents when the statement in the Addendum specifies a particular section, paragraph or text and states that it is to be so modified. Only the specified section, paragraph or text shall be so modified, and all other portions of the Bid Documents shall remain in effect.
- D. Except to postpone the Bid opening, no Addenda shall be issued within 48 hours of the Bid opening.
- E. Any Addenda so issued during the time of bidding shall be deemed to be included in the Bid. All Addenda shall become a part of the Contract Documents.
- F. Bidders shall sign to acknowledge their receipt of all Addenda issued. Bidders shall also acknowledge receipt of all Addenda in the space provided in the Bid.

2.2 EQUIPMENT AND MATERIAL OPTIONS PRIOR TO BID OPENING

- A. If a Bidder or Supplier wishes to use items of equipment or materials other than those identified in the Contract Documents, said Bidder or Supplier shall submit a written request for approval to the Engineer at least 10 calendar days prior to the date set for opening of bids.
- B. The procedure for submission of any such product option shall be as set forth in **Article 6.4 of the General Conditions**. It is the sole responsibility of the Bidder or Supplier to submit complete descriptive and technical information so that Engineer can make a proper appraisal.

- C. Engineer's failure to act upon such a request within three (3) days after receipt shall be deemed a denial thereof.
- D. Any such approval is at the sole discretion of the Engineer and will be in the form of an Addendum and posted on the website for all Bidder's Bid Documents indicating that the additional equipment or materials are approved as equal to those specified for the Project.

2.3 BID SECURITY

- A. Amount of Bid Security: A Bid Security must accompany each Bid. The total amount of the Bid on which Bid security is to be based shall be the sum of all items of the Bid constituting the maximum amount of the possible award to the Bidder. The Bond amount must equal at least five (5) percent of the total amount of the Bid.
- B. Bid Bond: The Bond shall accompany and be attached to the Bid and shall be issued by a surety company authorized to do business in the State of Utah. The Bond shall guarantee that the Bidder, if awarded the work will promptly enter into the Construction Contract to perform the work in the manner required by the Contract Documents.
- C. Cashier's Check: The Bid Security may be in the form of a certified check, cashier's check, or Bid Bond. No other form of Bid Security will be accepted. If a cashier's check is used in lieu of a Bid Bond, the cashier's check must be drawn on a bank doing business in the State of Utah and made payable to Ogden City Corporation. Note that personal or company checks are not acceptable as bid security. If a cashier's check is used in lieu of a Bid Bond or if the Bid Bond does not specifically so provide, a certificate from an approved surety company guaranteeing execution of performance and payment bonds in the full amount of the bid must accompany the bid.
- D. Return of Bid Security: Owner will return Bid security to Contractor within seven (7) days after receipt of the Construction Contract by Ogden City Purchasing Division. Bid Bonds and cashier's checks of the lowest three Bidders will be held until the Construction Contract is awarded and a signed copy received by Ogden City Purchasing Division or all bids have been rejected. All other bid securities shall be returned following the bid opening. The liability of Owner in regards to the checks shall be limited only to the return of the checks.
- E. Default: In the event of failure or refusal of the Bidder to enter into the Construction Contract and the delivery to the Owner a Performance Bond, Payment Bond and any other Bonds or documents required by the Contract Documents after Notice of Intent to Award by the Owner, the Bidder forfeits the sum of the Bid Bond or cashier's check as liquidated damages to the Owner.

2.4 CONTRACT TIME AND PUNCH LIST TIME

- A. Provisions concerning Contract Time and Punch List Time are set forth in the Agreement (**Document 00 50 00**).

2.5 LIQUIDATED DAMAGES

- A. Provisions concerning liquidated damages are set forth in the Agreement (Document 00 50 00).

2.6 BID FORM

- A. The Bid form (Document 00 40 00) identifies all forms comprising the Bid Documents. Additional copies may be obtained from Engineer.
- B. Bids by corporations must be executed in the corporate name by the president, vice-president or other corporate officer authorized to sign and properly attested to as an official act of the corporation. At the Owner's request, authority to sign shall be submitted.
- C. Bids by partnerships or joint ventures must be executed in the partnership or joint venture name and signed by a partner or joint venture, whose title and official partnership address must be shown. If a partnership or joint venture is the low bidder, the partnership or joint venture must also submit evidence to the Owner of the responsibility of the partnership or joint venture as a bidder in the manner directed by the Engineer.
- D. All names must be typed or printed under or near the signature. Signatures shall be in longhand.
- E. The Bid shall contain an acknowledgment of receipt of all Addenda. The Addenda numbers and date issued must be filled in on the Bid form.
- F. The Bidder's address, telephone number and facsimile number for communications regarding the Bid must be shown on the first page of the Bid form.
- G. The Bidder shall make no stipulations or alterations on the Bid forms. The Bidder must use only the Bid form and Bid Schedules as bound in the Contract Documents or as may be modified by Addendum. To bid for the work, Bidder is required to submit the Bid (Document 00 40 00), the Bid Schedule (Document 00 41 10), Contract Time (Document 00 41 50), and Bid security to the Bid location indicated in the Invitation to Bid (Document 00 10 00).
- H. The Bidder must possess at the time of Bid Submittal all appropriate and required licenses and indicate such on the Bid form.
- I. Where the Bidder is wholly owned subsidiary of another company, the Bid must so state, and the owner or parent corporation also must agree to sign and be bound with the Bidder.
- J. The divisions and sections of the specifications, and the identifications of any Drawings, shall not control Bidder in dividing the work among subcontractors or suppliers, or delineating the work to be performed by any specific trade.
- K. The base Bid and alternates shall include all work required to be performed by the Contract Documents.

2.7 BID SCHEDULE

- A. Any work or material which is specified in the Contract Documents or which is necessary because of the nature of the work, but which is not listed separately in the

Bid Schedule (Document 00 41 10) shall not be measured or paid for separately. The cost of such work or material shall be considered as included in the contract price.

- B. All blanks on the Bid Schedule (Document 00 41 10) must be completed in ink or by typewriter. If applicable, furnish both the unit and the total costs for each item. Total Bid numbers shall be stated in both figures and written form, and the signature of all persons signing shall be in longhand. Any corrections, alterations or erasures made by the Bidder on the Bid Schedule shall be initialed in ink by the Bidder.

2.8 BIDDERS' PRE-QUALIFICATION STATEMENT OF QUALIFICATIONS (SOQ)

- A. Bidders shall submit a Statement of Qualifications (SOQ) that describes at least 3 relevant projects of similar scope and experience in river-related work within the last 7 years. Up-to-date project owner references with contact information shall be included. The relevant projects shall demonstrate extensive experience in the installation of in-channel boulder structures, plus the care of natural river flows and Best Management Practices that significantly reduce environmental impacts associated with construction. The SOQ shall identify the key personnel and all subcontractors that will perform work.

2.9 SUBMISSION OF BIDS

- A. Bids shall be submitted at the time and place indicated in the Invitation to Bid (Document 00 10 00) and should be enclosed in a sealed envelope, marked with the project title, the name and address of the Bidder, and the date and the opening time for bids. If the Bid is sent through the mail or other delivery system the sealed envelope should be enclosed in a separate envelope with the notation "**BID ENCLOSED**" on the face of it. It is the sole responsibility of the Bidder to deliver the Bid before the scheduled time.
- B. Alternate bids, other than those called for in the Bid form, will not be considered.
- C. No oral, telegraphic, telephonic, facsimile or modified bids will be considered.
- D. Joint bids must be clearly indicated on the completed proposal forms. Failure to do so may be cause for rejection of the bid.
- E. **Only the following documents need to be submitted with the bid: 00 40 00 (Bid), 00 41 10 (Bid Schedule), 00 41 50 (Contract Time), The Bid Security, and Statement of Qualifications (SOQ).** Bidder will make no recapitulations, stipulations, alterations, alternate submissions, or modifications in any manner to any of the Contract Documents.
- F. Bidder shall submit an acceptable Bid which requires the full completion and submission of all five (5) Documents listed in Section E above.

2.10 MODIFICATION AND WITHDRAWAL OF BIDS

- A. At any time prior to the opening of Bids, Bids may be modified or withdrawn if a written withdrawal is signed by Bidder and delivered to the place where Bids are to be submitted.

- B. Within 24 hours after Bids are opened, any Bidder may file written notice with Owner that there was a substantial mistake made in the preparation of its Bid. Bidder must thereafter promptly demonstrate Bidder's mistake to the reasonable satisfaction of the Owner. If Owner agrees, Bidder may withdraw its Bid and the Bid security will be returned to the Bidder.
- C. When it appears a mistake has been made, or when the Owner desires an assurance of any matter, the Owner may request a Bidder to confirm the Bid in writing.

2.11 OPENING OF BIDS

- A. Bids will be opened and read aloud publicly unless obviously non-responsive. An abstract of the amounts of the base schedule of prices and any alternate schedules will be made available for review after the opening of Bids.
- B. Any Bids received after the date and time specified in the Invitation to Bid (Document 00 10 00) will be returned unopened.

2.12 BIDS SUBJECT TO ACCEPTANCE FOR 45 DAYS

- A. All bids remain subject to acceptance for 45 days after the day of the Bid opening. Owner may, in its sole discretion, release any Bid and return the Bid security prior to that date.

2.13 NONDISCRIMINATION IN EMPLOYMENT

- A. Work under this Bid will obligate the Bidder and Subcontractors not to discriminate in employment practices.
- B. Bidders must, if requested, submit a compliance report concerning employment practices and policies in order to maintain their eligibility to receive the award of the Construction Contract.
- C. Equal opportunity employment shall be reflected in the racial and sexual composition of the Bidder's work force and the Owner urges an affirmative action program to overcome underutilization.
- D. Bidders are advised that the Construction Contract and its performance are subject to the applicable provisions of all laws and regulations. Bidder will be obligated upon written request, to give all applicable assurances of compliance in connection therewith.
- E. If federal nondiscrimination requirements are required, the Bidder shall be fully knowledgeable and comply with such requirements.

PART 3 AWARD OF CONSTRUCTION CONTRACT

3.1 QUALIFICATIONS OF BIDDERS

- A. Within seven (7) calendar days of Engineer's request, a Bidder, whose Bid is under consideration for award shall submit to the Engineer the following information for the Bidder. Engineer may request like information on Bidder's Subcontractors, or Bidder's Suppliers or any other information the Engineer may require.

1. A current financial statement for the work (as provided to bonding company);
 2. A chronological list of "in progress" and "completed" construction work done by Bidder during the last three (3) years; including project name, address, owner, contact name, and current telephone number;
 3. Present construction commitments other than items listed in paragraph two (2) above;
 4. Proposed organizational structure such as firm ownership, project manager, progress scheduler, and superintendent for the work of this project;
 5. Owned and rented equipment which is to be used to do the work;
 6. Investigations, arbitration, litigation or claims which are pending, threatened, settled or otherwise disposed of within the last three (3) years;
 7. Evidence of ability to perform and complete the work in a manner and within the time limit specified. As a minimum, identify specific projects similar to the work in physical size, cost, and commercial nature. If the work experiences of the project manager and superintendent designated to construct this project are different than that of the company, provide resumes of their work history. Include their actual project titles and indicate their actual responsibilities on each given project;
 8. All matters consistent with federal, state and local laws and regulations; and
 9. Such other data as may be called for in the Modifications to Instructions to Bidders (Document 00 22 00) (if any).
- B. If Bidder believes any information should be held confidential for business reasons, Bidder must submit a written claim of business confidentiality for that particular information and include a specific statement of the reasons supporting the claim pursuant to Utah Code Ann. 63-2-308. Owner will hold all requested information confidential and upon request, will return such information to Bidder after acceptance or rejection of Bid.
- C. Untimely response or failure to provide the requested information by Bidder will release Owner of any obligation to further negotiate or consider the Bidder's Bid.

3.2 EVALUATION OF BIDS

- A. Owner reserves the right to reject any and all Bids; to waive minor informalities in the Bid Schedule and elsewhere so long as the informalities do not affect the Contract Documents or render the bid non-compliant with Laws and Regulation pertaining to bidding requirements; to negotiate and agree to contract terms with the successful Bidder; and to disregard non-conforming, non-responsive, unbalanced or conditional Bids; and to withhold the award for any reason deemed in the best interests of the Owner.
- B. Owner reserves the right to reject any Bid if Owner believes that it would not be in the best interest of the Project or the Owner to make an award to that Bidder. Without limitation such rejection may be because the Bid is not responsive, or the Bidder is unqualified or of doubtful ability or the Bid or Bidder fails to meet any

other pertinent standard or criteria established by Owner in the Supplementary Instructions to Bidders (Document 00 22 00).

- C. Owner will consider the qualifications of the Bidder (whether or not the Bid complies with the prescribed requirements) and such alternates, unit prices and other data, as may be requested in the Bid form (Document 00 40 00), Bid Schedule (Document 00 41 10), or written requests issued prior to Owner's Notice of Intent to Award the Construction Contract. If the Owner intends to make an award to a Bidder, a Notice of Intent to award will be issued.
- D. Owner may consider the qualifications and experience of Bidder, Subcontractors, Suppliers, and other persons and organizations proposed (whether or not the Bid otherwise complies with the prescribed requirements) for those portions of the work as provided in the Subcontractors and Supplier Report (Document 00 45 30).
- E. Owner may consider the operating costs, maintenance requirements, performance data and guarantees of ability to provide the required materials and equipment. (When such data is required to be submitted prior to the Notice of Intent to Award the Construction Contract.)
- F. Owner may consider:
 - 1. Such alternates, unit prices and other data, as may be requested in the Bid Form, Bid Schedule, or written requests issued prior to Owner's Notice of Intent to Award the Construction Contract.
 - 2. Corporate organization and capacity for any party.
 - 3. Ability to perform and complete the work in the manner and within the time specified.
 - 4. Pending litigation.
 - 5. The amount of the Bid.
 - 6. Proper licensing to do the work in compliance with licensing laws of the State of Utah for contractors and subcontractors.
 - 7. All other relevant matters, consistent with the Owner's procurement code and administrative rules, Owner's ordinances and program policies.
 - 8. To establish qualifications of Bidder, Owner may request such data indicated in Article 3.1 herein above and conduct such investigations as Owner deems appropriate, and consider any other information (whether obtained from the Bid, the Bidder, or any other source.)
- G. If the Construction Contract is to be awarded, it will be awarded to the most responsive and lowest, qualified, responsible Bidder as determined by the Owner. Alternates may be accepted depending upon availability of Owner funds. Bid alternates may be considered at Owner's option in determining the most responsive, lowest, qualified, and responsible Bidder.
- H. Bid Schedules will be evaluated as follows:
 - 1. Discrepancies in the multiplication of quantities of work items and unit prices will be resolved in favor of the unit prices. Owner may correct Bid Schedule calculation errors accordingly.
 - 2. Prices written out in words shall govern over prices written out in numbers.

3. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
 4. Bids shall not contain any recapitulations of or changes in the work to be done.
- I. The Owner, in the Owner's sole discretion, shall make determinations as to disqualification of Bidders or rejection of Bids. Such matters may include, without limitation, submission of more than one Bid by the Bidder (whether under the same or different names); evidence of collusion among Bidders; other commitments of Bidder which, in the Owner's sole judgment, might hinder the work; previous defaults, Bid irregularities when not waived in the best interests of the Owner, delays or poor performance by Bidder on any project; official action against Bidder; and any other cause which, in the Owner's sole discretion and judgment, is sufficient to justify disqualification of a Bidder or rejection of a Bid.

3.3 SUBCONTRACTORS, SUPPLIERS AND OTHERS

- A. Bidder shall not subcontract more than 49 percent of the dollar value of the total contemplated work (exclusive of the supply of materials and equipment to be incorporated in the work) without Owner's prior written approval.
- B. Conflict of interest pertaining to Subcontractors is described in paragraph 6.5H of the General Conditions.
- C. The following firms, which have been under contract to the Owner in the design phase of the work, shall not be used as subcontractors by the Contractor.
 1. Design Consultant: _____
 2. Geotechnical Consultant: _____
 3. Surveying Consultant: _____
 4. Other: _____
 5. Other: _____

3.4 CONTRACT SECURITY AND OTHER SUBMITTALS

- A. Performance Bond (Document 00 61 00) and Payment Bond (Document 00 62 00): The Owner's requirements as to Performance and Payment Bonds are as set forth in the 00 72 00 General Conditions - PART 5 - BONDS AND INSURANCE, Section 5.1 (as amended by Ogden City). Specific requirements are set forth in the Performance Bond (Document 00 61 00) and the Payment Bond (Document 00 62 00).
1. The form of the Bonds should be carefully examined by the Bidder.
 2. When the successful Bidder delivers the executed Construction Contract to Owner, it must be accompanied by the required Performance and Payment Bonds. Do not complete the Performance Bond, Payment Bond or Agreement at the time of Bid submittal.
- B. Subcontractor and Supplier Report (Document 00 45 30): This report form is required within 24 hours of Engineer's request. The form shall list the name and address, of each Subcontractor who will perform work or labor or render service to the Bidder at the site of the work, or a Subcontractor who, off the job site, will specially fabricate a portion of the work or improvement according to detail Drawings. In each instance, the nature and extent of the work to be sublet in an amount in excess of two (2) percent of the Bid sum shall be described. Bidder must have the written consent of Owner to substitute for any of the Subcontractors or Suppliers designated or to employ any Subcontractor or Supplier which is not listed.
- C. Bidder Status Report (Document 00 45 20): One completed form shall be submitted upon Engineer's request or after Bidder receives Notice of Intent to Award.
- D. Other Information: When a determination has been made to award the Construction Contract, Bidder is required, prior to the award or after the award, or both, to furnish such other information as the Engineer requests.

3.5 ADJUSTMENTS TO THE COST OF THE WORK AFTER OPENING OF BIDS

- A. The contract price identified in the Agreement (Document 00 50 00) represents the cost of the work which is to be paid by the Owner to the Contractor. Adjustments to the contract price which are agreed to between the Owner and the successful Bidder shall be effected by signing an Agreement Supplement (Document 00 50 50).

3.6 SUBSTITUTIONS

- A. The Construction Contract, if awarded, will be on the basis of materials and equipment described in the Drawings, Specifications and any Addenda.
- B. After the effective date of the Construction Contract, the procedure for submitting an application for substitution is set forth in Article 6.4 of the General Conditions.

3.7 SIGNING OF AGREEMENT

- A. Within ten (10) working days after Owner gives Notice of Intent to Award the Construction Contract to the successful Bidder, the Bidder shall pick up, sign and return the required number of copies of the Agreement (Document 00 50 00) and

attached documents to Owner with the required Bonds. A minimum of three (3) originals will be signed. One executed original will be returned to the Bidder. Bidder shall comply with all execution requirements.

- B. Transfers, delegations or assignments of interests in the Contract Documents are prohibited, unless prior written authorization is received from the Owner.
- C. At the time of Bidding, and the signing of the Agreement (**Document 00 50 00**), and at all times during the work, Bidder shall be properly licensed to do the work and shall be in compliance with the license laws of the State of Utah, Ogden City and Weber County. The Bidder shall also require all Subcontractors to do the same.
- D. All of Bidder's executions and submittals must be delivered to the Owner before Owner will execute the Construction Contract. The Construction Contract will not be deemed awarded and shall not be binding on the Owner until it has been approved and executed by the Owner, and a fully executed copy is formally delivered to the Contractor. The Owner reserves the right to rescind its Notice of Intent to Award without liability, except for the return of Bidder's Bid Security, at any time before the Construction Contract has been fully executed by all parties and delivered to the Contractor.
- E. If a Bidder fails to fully and properly execute the Construction Contract and provide all submittals required therewith within ten (10) days after the date of the Notice of Intent to Award, the Owner may elect to rescind the Notice of Intent to Award, and the Owner shall be entitled to the full amount of Bidder's Bid Security, not as a penalty, but in liquidation of and compensation for damages sustained. In the Owner's sole discretion, a Notice of Intent to Award may then be provided to another Bidder whose Bid is most advantageous to the Owner, price and other factors considered.

PART 4 MISCELLANEOUS

4.1 EQUIPMENT AND MATERIAL OPTIONS AFTER BID OPENING

- A. The Construction Contract, if awarded, will be on the basis of materials and equipment described in the Drawings, Specifications and any changes permitted in the Addenda.
- B. After the Effective Date of the Construction Contract, the procedure for submitting an application for substitution is set forth in Article 6.4 of the General Conditions.

END OF DOCUMENT

DOCUMENT 00 40 00
BID

PART 1 GENERAL

1.1 BIDDER

- A. Name: _____
- B. Address: _____
- C. Telephone number: _____
- D. Facsimile number: _____
- E. Tax identification number: _____
- F. E-mail address : _____
- G. Bidder holds license number _____, issued on the ___ day of _____, _____, by the Utah State Department of Commerce, Division of Occupational and Professional Licensing. Bidder is licensed to practice as a _____ Contractor. License renewal date is the ___ day of _____.
- H. Primary License Classification Number: _____
- I. License Classification Title: _____

1.2 NOTICE

- A. Pursuant to Section 58-55-501(8), Utah Code Annotated (UCA), it is unlawful to submit a bid for any work for which a license is required under Chapter 55 of Title 58, UCA, by a person or other business entity not licensed or excepted from licensure as a contractor under Chapter 55 of Title 58, UCA. Pursuant to Section 58-55-503(1), UCA, contracts for the work may not be awarded to any person or other business entity which violates Sections 58-55-501(8) or (13), UCA, in submitting its bid.

1.3 CONSTRUCTION CONTRACT

SU078 OBE Weber River Surf Wave Project

1.4 ADDENDA

- A. Bidder hereby acknowledges receipt of the following Addenda.
 - 1. (Date) _____
 - 2. (Date) _____
 - 3. (Date) _____

1.5 SUBMITTALS

- A. Bidder shall submit an acceptable Bid which requires the full completion and submission of all four (4) Documents listed in Document 00 20 00, Part 2, 2.8 Submission of Bids, paragraph E.
- B. If Bidder receives a notice of intent to award the Contract from the OWNER after bid opening, the Bidder is to submit the following documents.
 - 1. Document 00 45 20: Bidder Status Report.
 - 2. Document 00 45 30: Subcontractor and Supplier Report.
 - 3. Document 00 61 00: Performance Bond.
 - 4. Document 00 62 00: Payment Bond.
 - 5. Insurance Documents as required in the Ogden City's 2025 Edition of the Engineering Standards and Amendments for Public Works Projects
 - 6. Document 00 50 00: Agreement.

1.6 DEFINITIONS

- A. Bid Documents: The Bid Documents consist of the Invitation to Bid, the Instructions to Bidders, any Supplementary Instructions to Bidders, this Bid form, any supplements (or post-bid supplements), the Bid Schedule, any data listed by and limited to the provisions in the Geotechnical Data Document, and the Bid Bond.

PART 2 COVENANTS

2.1 BIDDER TO ENTER INTO AN AGREEMENT

- A. In General: Bidder agrees, if this Bid is accepted, to enter into a Construction Contract with the OWNER to perform and furnish all work specified or indicated in the Contract Documents at the Contract Time and Contract Price identified in the Agreement (Document 00 50 00).
- B. Agreement Supplement: If it becomes necessary to further define the Work, Contract Price, Contract Time or some other portion of the Construction Contract prior to signing the Agreement (Document 00 50 00), ENGINEER shall prepare an Agreement Supplement (Document 00 50 50) describing such change. The necessity for preparing such a contract modification is the OWNER's sole option. If the Agreement Supplement is acceptable to the Bidder, the Bidder agrees to execute Agreement Supplement prior to or concurrent with the execution of the Agreement (Document 00 50 00).

2.2 BIDDER ACCEPTS TERMS AND CONDITIONS

- A. Bidder accepts all of the terms and conditions of the Bid Documents, including without limitation those dealing with the disposition of Bid security.
- B. Bidder will pick up, sign and submit the Agreement (Document 00 50 00) with the Bonds and other documents required by the Agreement within 10 working days after the date of OWNER's Notice of Intent to Award the Construction Contract.

2.3 REPRESENTATION OF BIDDER

- A. In submitting this Bid, Bidder represents, as more fully set forth in the Instructions To Bidders (**Document 00 20 00**), that:
1. Nature of the Work: Bidder has become familiar with the nature and extent of the Contract Documents, Work, site, locality, and all local conditions and Laws and Regulations that in any manner may affect cost, progress, performance or furnishing of the Work.
 2. Surface and Subsurface Conditions: Bidder has studied carefully all reports and drawings of subsurface conditions and drawings of physical conditions which are identified in the Geotechnical Data (**Document 00 32 00**), (if any).
 3. Underground Utilities: Bidder has reviewed and checked all information and data shown or indicated on the Contract Documents with respect to existing Underground Facilities at or contiguous to the site.
 4. Bidder Investigation: Bidder has correlated the results of all observations, examinations, investigations, explorations, tests, reports and studies with the terms and conditions of the Contract Documents.
 5. Discrepancy Resolutions: Bidder has given ENGINEER written notice of all conflicts, errors or discrepancies that Bidder has discovered in the Contract Documents and acknowledges that all written resolutions thereof, issued by ENGINEER prior to Bid opening are acceptable to Bidder.

2.4 OWNER'S RIGHTS AT BID AWARD

- A. Bidder agrees OWNER has the right to reject this Bid, or to award the Work or any part thereof to the undersigned at the prices stipulated. Bidder agrees to make no claim for damages for such rejection or award.
- B. If the Bid is rejected, then the Bid security shall be returned to the Bidder.
- C. If the Bid is accepted the OWNER will notify Bidder of OWNER's intent to award the Construction Contract to the Bidder. The Bidder shall have 10 working days to sign and return the Agreement (**Document 00 50 00**) to the ENGINEER. If Bidder fails to sign the Agreement, the Bid security, at OWNER's option, shall be claimed and cashed and the amount thereof, paid to OWNER as liquidated damages for the failure of the Bidder to comply with the terms of the Bid.
- D. Bidder agrees the Bid may be rejected if the submittals listed in this Document or the "Notice of Intent to Award" are not submitted within the time listed in the Notice of Intent to Award.

2.5 NON-COLLUSION

- A. Bidder agrees the Bid is genuine. The Bid is not made in the interest of or on behalf of any undisclosed person, firm or corporation.
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
- C. Bidder has not solicited or induced any person, firm or corporation to refrain from bidding.

- D. Bidder has not sought by collusion to obtain for itself any other advantage over any separate Bidder or over OWNER.

2.6 BID PRICING

- A. Bidder will complete the Work for the prices listed in the Bid Schedule (Document 00 41 00). Bidder agrees that quantities for Unit Price Work are not guaranteed. (Refer to Article 11.7 of the General Conditions (Document 00 72 00)).

2.7 SUBSTANTIAL COMPLETION, PROJECT COMPLETION AND LIQUIDATED DAMAGES

- A. Bidder agrees that the Work will be Substantially Complete and ready for Final Inspection on or before the expiration of the Contract Time indicated in the Agreement (Document 00 50 00).
- B. Bidder agrees the Work will be complete and ready for final payment in accordance with Article 14.9 of the General Conditions (Document 00 72 00) on or before the expiration of the Punch List Time indicated in the Agreement.
- C. Bidder accepts the provisions of the Agreement (Document 00 50 00) as to liquidated damages in the event of failure to complete the Work on time and in accordance with the Contract Documents.

PART 3 EXECUTION

3.1 EFFECTIVE DATE

- A. Bidder executes this Bid and declares it to be in effect as of the ___ day of _____, 20__.

3.2 BIDDER'S SUBSCRIPTION

- A. In submitting this bid, it is understood that the right is reserved by the Owner to reject any or all bids, or to waive any irregularities or informalities in any bid or bids.
- B. It is agreed that the bid may not be withdrawn by the Bidder for a period of forty-five (45) calendar days after the opening thereof.
- C. The undersigned has not added any qualifying statements to the bid, nor has he/she altered the proposal in any way.
- D. A joint bid by more than one is clearly indicated below.

Respectfully submitted,

FIRM NAME: _____

Seal
(If corporation)

Bidder's Signature: _____

Please print Bidder's name here: _____

Title: _____

Date: _____

END OF DOCUMENT

DOCUMENT 00 41 10

BID SCHEDULE

PART 1 GENERAL

1.1 DOCUMENT INCLUDES

- A. Bid schedules.
- B. Measurement and payment provisions.

1.2 CONSTRUCTION CONTRACT

- A. The Construction Contract is known as:
SU078 OBE Weber River Surf Wave Project

1.3 REFERENCES

- A. APWA 01 29 00: Payment Procedures.
- B. Document 00 50 00: Agreement.

1.4 SCHEDULE TO BE ADDED TO THE AGREEMENT

- A. This document will be added to the Bid and Agreement by reference.

PART 2 BID SCHEDULES

2.1 BASE BID

- A. Bid Schedule No. 1 below describes work basic to the Contract.

The rest of this page left blank intentionally

BID SCHEDULE No. 1
SU078 OBE Weber River Surf Wave Project

| BID ITEM | DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTALS |
|----------|--|----------|------|-------------------|--------|
| | Site Preparation | | | | |
| 1 | Construction Access, Staging, and Repair | 1 | LS | | |
| 2 | Erosion Control and General BMPs | 1 | LS | | |
| 3 | Protect In Place (PIP) | 2 | LS | | |
| 4 | Demo Trees | 6 | EA | | |
| 5 | Care of Water | 1 | LS | | |
| | | | | Sub Total: | |
| | Weir Demolition | | | | |
| 6 | Existing Concrete Demolition and Haul Off and Disposal | 186 | CY | | |
| | | | | Sub Total: | |
| | River Right Bank Restoration | | | | |
| 7 | General Excavation and Stockpiling | 120 | CY | | |
| 8 | Haul and Disposal of Alluvial Material Offsite | 93 | CY | | |
| 9 | Furnish and Install Boulder | 189 | TON | | |
| 10 | Place Alluvial Backfill | 27 | CY | | |
| 11 | 8 oz Non-Woven Filter Fabric | 212 | SY | | |
| 12 | Erosion Control Blanket Type 1 | 137 | SY | | |
| | | | | Sub Total: | |
| | River Left Bank Restoration | | | | |
| 13 | General Excavation and Stockpiling | 1,241 | CY | | |
| 14 | Haul and Disposal of Alluvial Material Offsite | 1,166 | CY | | |
| 15 | Furnish and Install Boulder | 533 | TON | | |
| 16 | Furnish and Install Slabstone | 455 | TON | | |
| 17 | Place Alluvial Backfill | 76 | CY | | |
| 18 | 8 oz Non-Woven Filter Fabric | 637 | SY | | |
| 19 | Furnish and Install Topsoil | 181 | CY | | |
| 20 | Seed Mix | 1,667 | SY | | |
| 21 | Hydromulch | 543 | SY | | |
| 22 | Erosion Control Blanket Type 1 | 771 | SY | | |
| | | | | Sub Total: | |
| | Access Ramp | | | | |
| 23 | General Excavation and Stockpiling | 41 | CY | | |
| 24 | Over Excavation for Boat Ramp | 81 | CY | | |
| 25 | Haul and Disposal of Alluvial Material Offsite | 118 | CY | | |
| 26 | Furnish and Install Clean Sand or Gravel Fill | 66 | CY | | |
| 27 | Furnish and Install Reinforced Concrete Slab (8") | 15 | CY | | |
| 28 | 8-oz non-woven filter fabric | 70 | SY | | |

| BID ITEM | DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTALS |
|----------|--|----------|------|-------------------|--------|
| 29 | Furnish and Install Boulder | 20 | TON | | |
| 30 | Place Alluvial Backfill (ramp Boulder Toe) | 3 | CY | | |
| | | | | Sub Total: | |
| | Downstream Engineered Riffle Grade Control | | | | |
| 31 | General Excavation and Stockpiling | 524 | CY | | |
| 32 | Haul and Disposal of Alluvial Material Offsite | 476 | CY | | |
| 33 | Furnish and Install Boulder | 332 | TON | | |
| 34 | Place Alluvial Backfill | 47 | CY | | |
| 35 | Steel Plate protection at crest | 38 | SF | | |
| 36 | Cast in Place Concrete Including Rebar | 32 | CY | | |
| 37 | Compacted Structural Fill | 69 | CY | | |
| 38 | 8oz Non-Woven Filter Fabric | 376 | SY | | |
| | | | | Sub Total: | |
| | River Bed /Pool Regrading | | | | |
| 39 | General Excavation and Stockpiling | 1,417 | CY | | |
| 40 | Haul and Disposal of Alluvial Material Offsite | 963 | CY | | |
| 41 | Place Alluvial Backfill | 454 | CY | | |
| | | | | Sub Total: | |
| | Concrete Surf Wave and Fish Passage Channel | | | | |
| | <i>Boulder Drops & Fish Passage</i> | | | | |
| 42 | General Excavation and Stockpiling | 232 | CY | | |
| 43 | Haul and Disposal of Alluvial Material Offsite | 166 | CY | | |
| 44 | Furnish & Install Boulder | 466 | TON | | |
| 45 | Place Alluvial Backfill for fabric protection | 66 | CY | | |
| 46 | 8oz Non-Woven Filter Fabric | 283 | SY | | |
| 47 | Steel Plate protection at crest and walls upstream edge | 25 | SF | | |
| | <i>Concrete Surf Wave & Concrete pad for OHI Rubber Rocks on River Right</i> | | | | |
| 48 | General Excavation and Stockpiling | 368 | CY | | |
| 49 | Haul and Disposal of Alluvial Material Offsite | 325 | CY | | |
| 50 | Cast in Place Concrete Including Rebar | 149 | CY | | |
| 51 | CDF or CLSM Fill | 432 | CY | | |
| 52 | 8oz Non-Woven Filter Fabric | 344 | SY | | |
| 53 | Steel Plate protection at crest | 58 | SF | | |
| 54 | Sheet Pile | 2,413 | SF | | |
| 55 | Furnish & Install Boulders | 303 | TON | | |
| 56 | Place Alluvial Backfill for fabric protection | 43 | CY | | |
| 57 | Grout | 17 | CY | | |
| | | | | Sub Total: | |

| BID ITEM | DESCRIPTION | QUANTITY | UNIT | UNIT COST | TOTALS |
|----------|---|----------|------|-------------------|--------|
| 58 | Furnish and Install Pneumatic Gate System - (*) items below included in LS | 1 | LS | | |
| | <i>Upper wave and upstream Control</i> | | | | |
| 59 | Furnish and Install OHI Steel Gate - Surf Wave (*) | 3 | EA | | |
| 60 | Furnish and Install OHI Rubber Rock - Upstream control (4'x12') (*) | 2 | EA | | |
| 61 | Furnish and Install OHI Rubber Rock - Upstream control (4'x9') (*) | 1 | EA | | |
| 62 | Furnish and Install OHI Rubber Rock - Upstream control (3'x3') (*) | 1 | EA | | |
| 63 | Furnish and Install OHI Rubber Rock - Upstream control (4'x7') (*) | 2 | EA | | |
| | <i>Downstream Control Drop</i> | | | | |
| 64 | Furnish and Install OHI Rubber Rock - Downstream control (2'x12.5') (*) | 6 | EA | | |
| | <i>PLC, furniture and installation</i> | | | | |
| 65 | IR R7.5I-115 10HP Rotary Screw Air Compressor with Dryer & Tank (*) | 1 | EA | | |
| 66 | Square D M340 PLC Based Control System (*) | 1 | EA | | |
| 67 | 15 Zone Air Control Panel (*) | 1 | EA | | |
| 68 | Contingency for vacuum assist (*) | 1 | EA | | |
| 69 | Installation supervision (*) | 1 | LS | | |
| 70 | Freight out (*) | 1 | LS | | |
| 71 | Gate Position Sensors for Steel Gates (*) | 3 | LS | | |
| 72 | Abutment Plates - 1/4" stainless steel (*) | 2 | EA | | |
| 73 | Establish Control Building | 1 | LS | | |
| 74 | Precast Concrete Manholes | 6 | EA | | |
| 75 | Furnish and Install Air Lines and Telemetry | 1 | LS | | |
| 76 | Furnish and install Survey Monument Cap and Base | 1 | LS | | |
| 77 | Pour Concrete Base and furnish and Install Web camera poles | 2 | EA | | |
| | | | | Sub Total: | |
| A4 | Traffic Control | 1 | LS | | |
| A12 | Bonding and Insurance | 1 | LS | | |
| A13 | Mobilization and Demobilization | 1 | LS | | |
| A22 | Construction Survey Staking | 1 | LS | | |
| | | | | Sub Total: | |
| | | | | Totals: | |

Total = \$ _____

Schedule Total in Words _____

Signature _____

PART 3 MEASUREMENTS AND PAYMENT

3.1 GENERAL

- A. See measurement and payment procedures in 2025 APWA Section 01 29 00.
- B. ENGINEER will take all measurements and compute all quantities.
- C. CONTRACTOR will verify measurement and quantities.
- D. CONTRACTOR will provide all equipment, workers, and survey crews to assist ENGINEER in making measurements.
- E. Units of measurement are listed above in the bid schedule.

3.2 BID ITEM DESCRIPTIONS

Bid Item No. 1

CONSTRUCTION ACCESS, STAGING AND REPAIR

- A. Measurement is per Lump Sum (LS).
- B. Work includes the installation, maintenance and removal of Staging Area and temporary access roads, temporary haul roads, access ramps and other access points required for access to construction of the project. Work covers furnishing all materials, equipment, labor, and incidentals necessary to complete the work. Restoration of the staging and temporary access areas is considered a part of the work. Payment covers the complete installation and removal of any and all structures required to protect the work, perform the work and protect the Public from the work.

Bid Item No. A4

TRAFFIC CONTROL

- A. Measurement is per Lump Sum (LS).
- B. Meet or Exceed APWA 2025 Standard Specification 01 55 26 and Technical Specifications Section 00 90 00, 2.5. Costs include developing plan, seeking approvals and permits, implementing, maintaining and restoring traffic control and related activities for construction that addresses vehicle, pedestrian and river traffic on the surrounding roads, Weber bike path and pathways and the Weber River.

Bid Item No. A12

BONDING AND INSURANCE

- A. Measurement is per Lump Sum (LS).
- B. Work includes providing all required bonds and insurance and Union Pacific (UP) Permit fee (see section 2.03.04 and Appendix C within Section 01 12 00 Special Provision)
- C. Payment also includes submitting the Union Pacific agreement and following all their requirements coordination with Union Pacific on project timeline, and additional insurance

policy that includes railroad liability coverage on the contractors insurance policy as stated in section 2.03.04 and Appendix C

D. Payment will be made on a percentage basis as follows.

| Percent of Original Contract Amount Earned | Percent of Amount Bid for Mobilization to be Paid |
|---|--|
| 5 | 40 |
| 15 | 20 |
| 40 | 30 |
| 50 | 10 |

Bid Item No. A13

MOBILIZATION AND DEMOBILIZATION

A. Measurement is per Lump Sum (LS).

B. Work includes but is not limited to: mobilization; demobilization; installation of temporary work area facilities; bringing and removing all necessary construction equipment to and from the site; weed control before grubbing: invasive species and noxious weed seeds shall be removed from the staging area, ingress and egress, and all areas disturbed by construction activities prior to mobilization into the site ; obtaining and adhering to permits; establishing Temporary Facilities; and protecting general public; obtaining access permission, contracting, scheduling, inspections, delays and any and all incidentals.

Bid Item No. A22

CONSTRUCTION SURVEY STAKING

A. Measurement is per Lump Sum (LS).

B. Payment will be payment in full for furnishing all material, equipment, labor, and incidentals necessary to stake out the work, control the tolerances of work and provide as-builts of the work. Costs include protecting in place survey control or reestablishing control with permanent monuments tied to local project datums. No separate or additional payment will be made for any temporary protection and direction of traffic measures including flaggers and signing necessary for the performance of the construction survey work and as-built drawings. No separate or additional payment will be made for preparing survey documents including but not limited to office time, preparing and checking survey notes, and all other related preparation work. Costs incurred caused by survey errors will be at no additional cost to the OWNER. Repair any damage to the Work caused by CONTRACTORS's survey errors at no additional cost to the OWNER. The ENGINEER may make an equitable adjustment, which may decrease the Contract Amount, if the required survey work is not performed by CONTRACTOR.

Bid Item No. 2**EROSION CONTROL (EC) & GENERAL BMP'**

- A. Measurement is per Lump Sum (LS).
- B. EC Work covers development of an Erosion and Sediment Control (ESC) Plan to minimize environmental impact and non-point source pollution and submittal of the plan to the OWNER for review acceptance.
- C. EC Work covers the development, implementation, and management of the project ESC program. This works includes all materials, equipment, labor and incidentals associated with implementing the ESC plan, performing regular inspections and documentation of installed ESC BMPs and cleanout, maintenance, or replacement of ESC BMPs as required during project construction including approval delays and any and all incidentals.
- D. EC Work covers development of a Spill Prevention Control and Countermeasures (SPCC) Plan, and Equipment Operating with Certified Biodegradable Hydraulic Fluid, and submittal to the OWNER for review.
- E. EC Work covers the development, implementation, furnish, install and management of the project SPCC program. This works includes all materials, equipment, labor and incidentals associated with finalizing the SPCC plan, installing the SPCC plan, performing regular inspections and documentation of installed SPCC BMPs and cleanout, maintenance, and/or replacement of SPCC BMPs as required during project construction, including delays and any and all incidentals.
- F. General BMP's Payment covers the complete installation and removal of any and all structures required to minimize environmental impact and non-point source pollution. Work includes but is not limited to purchasing and delivery of all materials; delays due to non-conformance; weather delays; installation of temporary work; work stoppage due to inadequate installations; maintaining and replacing work; removal of work and restoration of the site and any and all access to the site; and any and all incidentals including fees or fines levied for negligent damage to the environment or other permit violations.

Bid Item No. 3**PROTECT IN PLACE (PIP)**

- A. Measurement is per Lump Sum (LS) to be protected.
- B. Payment covers the complete cost associated with the protection of existing mature trees, utilities, structures, pavement, fences and other features not specifically identified for removal, modification or construction herein. Work includes but is not limited to: video documentation of preconstruction conditions; labor, pruning, equipment, invasive species control, and materials required for protecting in place or restoration of incidental damage. CONTRACTOR is responsible for locating and protecting in place existing utilities. Any cost associated with temporary outages or repairing utility, as determined by OWNER, shall be wholly the

responsibility of the CONTRACTOR. Any cost associated with temporary outages or repairing utilities, as determined by OWNER, shall be wholly the responsibility of the CONTRACTOR.

Bid Item No. 4

DEMO TREES

- A. Measurement is per Each (EA) to be demolished.

- B. Payment covers complete cost of demolition of trees down to surface level including but not limited to, cutting, felling, handling, disposal, and stabilizing and redistribution onsite of topsoil and upland soils. Rootball excavation is included under general excavation bid items. All debris and vegetation shall be disposed of in an offsite facility. All tree cutting should occur outside of the bird migratory nesting season, delays associated with seasonal restrictions are included in this Bid Item.

Bid Item No. 5

CARE OF WATER

- A. Measurement is per Lump Sum (LS).

- B. Work covers complete cost of development, implementation and management of a COW Plan to control environmental impacts and simultaneously provide construction access, for the duration of the project. Work includes installation of turbidity curtains, coffer dams, temporary bridges (Per table 2 listed in Section 12.02), river diversions, oil booms, pumps and filters, and intermittent excavation operations if exceeding turbidity limits, and all BMPs necessary for open bank excavations and channel work in the wet, and Care of Water and 401/404 permit conditions adherence. Payment covers methods, precautions, delays due to high water, installations, modifications, maintenance, replacement, and materials for water control structures and removal and disposal of structures and incidentals required to complete work including controlling ice frozen ground.

- C. Work covers maintaining necessary de-watering during construction. This may include gravity feed dewatering systems or pumped systems as the CONTRACTOR deems necessary. Work associated with this bid item also includes removal and proper disposal of equipment and materials required for de-watering once no longer required on site. Work covers furnishing all equipment, labor, and incidentals (to include but not limited to permitting and/or fuel/power to operate pumps) necessary to complete the work as specified.

- D. Work covers filtering water to meet local and state environmental requirements prior to discharging into the river. Work covers furnishing all equipment, labor, and incidentals necessary to complete the work as specified.

Bid Item No. 6

EXISTING CONCRETE DEMOLITION AND HAUL OFF AND DISPOSAL

- A. Measurement per Cubic Yard (CY) to be demolished.

- B. Payment covers complete cost of concrete demolition including but not limited to excavation, cutting, capping, stockpiling, handling, sorting, surface preparation, stabilizing, and redistribution of the existing concrete structures up to three feet below proposed grade to allow structural fill and concrete placement. Includes excavation of all necessary concrete, hauling to a qualified disposal area and all incidental work and materials, including disposal fees. Includes BMPs, care of water, disposal fees and other incidentals.

Bid Items No. 7, 13,23,31,39,42,48

GENERAL EXCAVATION AND STOCKPILING

- A. Measurement per Cubic Yard (CY) of excavated material.
- B. Payment covers complete cost of salvage, excavation, stockpiling, handling, sorting, stabilizing or incidental redistribution onsite of existing alluvium, subgrade, topsoil or upland soils, including Rootball excavation down to subgrade level. Includes grading and stabilizing in designated onsite stockpiling areas and all incidental work or materials including removal and disposal of trash and debris. Includes BMPs, care of water, handling of suitable materials for reuse including sorting and stockpiling and any other incidentals.

Bid Item No. 8, 14, 25, 32, 40, 43,49

HAUL AND DISPOSAL OF ALLUVIAL MATERIAL OFFSITE

- A. Measurement is per Cubic Yard (CY) of offsite disposal of alluvial material per limits of excavation defined in plans.
- B. Payment covers complete cost of handling, dewatering materials onsite and disposing of alluvial materials to an offsite location. Ogden City has a specific disposal site property where clean Sand, Gravel and Cobble only will be able to be disposed of, free of charge. Debris, vegetation concrete or other trash or waste must be disposed of at a qualified facility. Work includes but is not limited to: BMPs; supplying equipment; loading; hauling; handling; disposal fees; and any and all incidentals such as disposal fees.

Bid Items No. 9,15,29,33,44,55

FURNISH AND INSTALL BOULDER

- A. Measurement is per Ton (TON) of furnished boulders per certified scale tickets.
- B. Payment covers complete cost of furnishing and placement of imported boulder as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, materials and labor required to purchase boulder, deliver boulder, stockpile boulder, sort boulder and dispose of excess boulder. Payment for this line item will only cover boulder installed at the site per the Drawings and Specifications or the ENGINEER'S direction. Excess, poor quality or rejected boulder delivered to the site will be disposed offsite at the CONTRACTOR's expense. Work includes but is not limited to all equipment, materials, labor and incidentals associated with: BMP's; care of water, vegetation clearing; loading, hauling, handling and stockpiling material; placement of material. Furnishing and installing aggregate bedding/backing as shown in plans and protecting or

replacing the filter fabric in good condition are considered incidental to the work and are included.

Bid Items No. 10,17,30, 34, 41, 45, 56

PLACE ALLUVIAL BACKFILL

- A. Measurement per Cubic Yard (CY) of alluvial cobble / pit-run installed.
- B. Payment covers complete cost of stockpile, sorting and placing of alluvial cobble from site (not imported material) as shown on the plans and described in the technical specifications. Work includes but is not limited to all equipment, materials, labor and incidentals associated with: BMP's; care of water, vegetation clearing; loading, hauling, handling and stockpiling material; placement of material. Cost includes all labor, equipment and materials required to complete the work.

Bid Items No. 11, 18, 28, 38, 46, 52

8 OZ NON-WOVEN FILTER FABRIC

- A. Measurement is per square yard (SY) of installed non-woven filter fabric as installed between the embankment and boulders. Embedded lengths of erosion control fabrics, vertical faces, and overlapped fabric shall not be measured for payment.
- B. Payment covers the complete cost of furnishing and installing non-woven filter fabric. Work includes but is not limited to: BMP's; providing all necessary good quality materials; labor; fasteners; excavation; installation per manufacturers recommendations; and any and all incidentals such as overlap and tucking into bank; storing and protecting fabric from tears or damage replacement throughout construction.

Bid Items No. 12, 22

EROSION CONTROL BLANKET TYPE 1

- A. Measurement is per square yard (SY) of installed erosion control blanket surface. Embedded lengths of erosion control fabrics, vertical faces, and overlapped fabric shall not be measured for payment.
- B. Payment covers the complete cost of furnishing and installing erosion control blankets per manufacturers' recommendations. Work includes but is not limited to: BMP's; providing all necessary good quality materials; labor; excavation; installation; and any and all incidentals such as excavating and backfilling key downs at edges and stakes; differing fabrics and installations for appropriate application. Ship lap with upstream on top.

Bid Item No. 16

FURNISH AND INSTALL SLABSTONE

- A. Measurement is per Ton (TON) of furnished Slab stones per certified scale tickets.

- B. Payment covers complete cost of furnishing and placement of imported slab stones as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, materials and labor required to purchase slab stones, deliver slab stones, stockpile slab stones, sort slab stones and dispose of excess slab stones. Payment for this line item will only cover slab stone installed at the site per the Drawings and Specifications and/or the ENGINEER'S direction. Excess, poor quality or rejected slab stones delivered to the site will be disposed off site at the CONTRACTOR's expense. Work includes but is not limited to all equipment, materials, labor and incidentals associated with: BMP's; care of water, vegetation clearing; loading, hauling, handling and stockpiling material; placement of material. Furnishing and aggregate bedding/backing as shown in plans is considered incidental to the work.

Bid Item No. 19

FURNISH AND INSTALL TOPSOIL

- A. Measurement is per Cubic Yard (CY) per plans.
- B. Payment covers complete cost of furnishing topsoil, stockpiling, installing and grading a 6" lift to final grading. Work includes but is not limited to: BMP's; erosion and sediment control; excavation; loading, hauling, handling and stockpiling material; placement of all materials; and any and all incidentals. Topsoil shall be free from invasive and noxious weeds, cheatgrass, and puncturevine and topsoil shall be approved before importing to the job site. Includes all equipment, labor, materials and incidentals needed to complete the work.

Bid Item No. 20

SEED MIX

- A. Measurement is per Square Yard (SY) of seeded area as measured in place.
- B. Payment covers the complete cost of furnishing and installing Riparian and Upland Seed Mix on river left and river right, as shown in the Project Drawings and described in the technical specifications. Work includes: BMP's; loading, hauling, handling and stockpiling material; supplying equipment; seeding; raking; grading; special guarantees; any and all incidentals such as initial watering. Includes all equipment, labor, materials and incidentals needed to complete the work.

Bid Item No. 21

HYDROMULCH

- A. Measurement is per Square Yard (SY) of sprayed area as measured in place.
- B. Payment covers the complete cost of furnishing and installing hydro mulch as shown in the Project Drawings and described in the technical specifications. Work includes: BMP's; loading, hauling, handling and stockpiling material; supplying equipment; seeding (drilling or raking); special guarantees; any and all incidentals such as initial watering. Includes all equipment, labor, materials and incidentals needed to complete the work.

Bid Item No. 24

OVER EXCAVATION FOR BOAT RAMP

- A. Measurement per Cubic Yard (CY) of excavated material.

- B. Payment covers complete cost of salvage, excavation, stockpiling, handling, sorting, stabilizing or incidental redistribution onsite of existing subgrade, topsoil and upland soils. Includes hauling to and stabilizing in designated onsite stockpiling areas and all incidental work or materials including removal and disposal of trash and debris. Includes BMPs, care of water, handling of suitable materials for reuse including sorting and stockpiling and any other incidentals.

Bid Item No. 26

FURNISH AND INSTALL CLEAN SAND OR GRAVEL FILL

- A. Measurement per Cubic Yard (CY) of imported material.

- B. Payment covers complete cost of furnishing, installing, grading and compacting clean sand or gravel fill over prepared subgrade. Material shall be granular, free draining, unified soils classification GW, GP, GM, or SW, maximum aggregate size of 3” and no more than 7% passing a number 200 sieve. Material shall be placed in lifts no greater than 6” in depth and compacted to 95% (see sheet S-001-foundation section, point E). Includes BMPs, care of water, handling of suitable materials for reuse including sorting and stockpiling and any other incidentals.

Bid Item No. 27

FURNISH AND INSTALL REINFORCED CONCRETE SLAB (8”)

- A. Measurement is per Cubic Yard (CY) of cast in place concrete with structural steel.

- B. Payment covers the complete cost of constructing the reinforced concrete boat ramp as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, material, labor, and incidentals associated with: BMPs, preparing subgrade, creating concrete forms, furnishing and installing steel reinforcement, furnishing and placing concrete; finishing surfaces; epoxies and mastics; site clean-up; and any and all incidentals including stabilizing temperatures during curing, control of ground water and shoring. Cost includes required geotechnical inspections prior to concrete pour and concrete testing per APWA 03 30 05.

Bid Items No. 35, 47, 53

STEEL PLATE PROTECTION AT CREST

- A. Measurement is per Square Feet (SF) of installed structural steel plate protection.

- B. Payment covers the complete cost of furnishing and installing structural steel plate protection at the crest of structures and wave walls as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, material, labor, and incidentals associated with: BMPs, installing steel reinforcement, epoxies and

mastics; site clean-up; and any and all incidentals.

Bid Items No. 36, 50

CAST IN PLACE CONCRETE INCLUDING REBAR

- A. Measurement is per Cubic Yard (CY) of cast in place concrete with structural steel.

- B. Payment covers the complete cost of constructing the reinforced concrete surf wave ramp, walls, and drops crest as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, material, labor, and incidentals associated with: BMPs, preparing subgrade, creating concrete forms, furnishing and installing steel reinforcement, furnishing and placing concrete; finished surface as per technical concrete specifications; epoxies and mastics; site clean-up; and any and all incidentals including control of ground water and shoring. Cost includes required geotechnical inspections prior to concrete pour and concrete testing per APWA 03 30 05.

Bid Item No. 37

COMPACTED STRUCTURAL BACKFILL

- A. Measurement per Cubic Yard (CY) of structural backfill installed.

- B. Payment covers complete cost furnishing, delivering, placing, and compacting structural backfill in 6 inch lifts to 98 percent compaction. Work includes but is not limited to: BMP's; care of water, vegetation clearing; loading, hauling, handling and stockpiling material; supplying equipment; sub-base preparation; base course installation and compaction; tread surface installation and compaction, installing and compacting. Cost includes all labor, equipment and materials required to complete the work including geotechnical testing. Placement of Non-Woven Filter Fabric as shown in plans is considered incidental to the work.

Bid Item No. 51

CDF OR CLSM FILL

- A. Measurement is per Cubic Yard (CY) of CDF or CLSM fill material per certified scale tickets.

- B. Payment covers complete cost of furnishing and stockpiling CDF or CLSM fill material applied over and around existing concrete structure and in area between sheet pile walls to excavation depth as required by demo plan, and the conduit trenches, as shown in the plans and described in the technical specifications and stockpiling onsite. Work includes, but is not limited to all equipment, materials and labor required to purchase, deliver, stockpile and disposal of excess bedding material. Payment for this line item will only cover bedding material installed at the site for the plans and the specifications, including any necessary materials testing. Excess, poor quality or rejected bedding material delivered to the site will be removed at the CONTRACTOR's expense.

Bid Item No. 54

SHEET PILE

- A. Measured is per Square Foot (SF) designed.
- B. Payment covers the complete cost of furnishing, finishing, installing and cutting sheet pile to the lines, grades and limits as shown on the plans and described in the technical specifications. Work includes, but is not limited to all equipment, material, labor and incidentals associated with: BMP's, furnishing and stockpiling material and supplying equipment, installing sheets in coarse subgrade, securing sheets and other miscellaneous tasks required to complete the work such as incidental excavation, moving boulders, realignment, achieving piling depths, or cutting sheets to elevation tolerances. All fasteners and other hardware as well as pre-drilling to facilitate driving sheet pile to the designated elevations are considered incidental to the work.

Bid Item No. 57

GROUT

- A. Measurement per Cubic Yard (CY) of grout properly placed, installed and cured onsite.
- B. Payment covers complete cost of furnish and install grout in the construction of the grouted boulder section as shown on the construction drawings and specifications. Work includes but is not limited to: BMP's; care of water, vegetation clearing; loading, hauling, handling and stockpiling material; supplying equipment and required incidentals. Cost includes all labor, equipment and materials required to complete the work including geotechnical testing. Installation of excess, poor quality, or rejected grout will be at the CONTRACTOR's expense, including removal and disposal.

Bid Item No. 58

FURNISH AND INSTALL PNEUMATIC GATE SYSTEM

- A. Measurement is per Lump Sum (LS) composed of Bid Items # 59 to # 72 .
- B. Payment covers complete cost of furnishing, placement and installation of pneumatic gate system as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, materials and labor required to furnish, install and test the complete pneumatic gates system including but not limited to three (3) steel gates, twelve (12) rubber rocks, mechanical systems, three (3) pressure transducers, three (3) Gate position Sensors and two (2) Abutment Plates for Steel Gates. Payment includes any and all incidentals including but not limited to: shop drawings, submittals, O&M manual, programming, equipment, controls, utility connections, airlines, conduits, concrete modification and sealing.

Bid Item No. 73

ESTABLISH CONTROL BUILDING

- A. Measurement is per Lump Sum (LS) to be installed.
- B. Payment covers complete cost of establishing the Control Building. Control building structure will be furnished and placed by the City of Ogden, shown in the Project Drawings (D10, D11 and D12) and described in technical specifications. Work includes but is not limited to all

equipment, materials and labor required to establish the Control Building such as: submittal of equipment layout; furnish and prepare sub-base foundation (Including compaction testing by third party to confirm 95% compaction); grading for drainage away from building; excavate shared utility trench from Stockman Way to the control building, furnish and install 4" PVC power conduit with 36" radius Fiberglass sweeps, and install 1-1/4" PVC fiber conduit (fiber conduit furnished by others) per detail D12, and backfill utility trench; set power meter; connection knockouts; connecting incoming utilities; testing building systems; providing building operations manual and wiring diagram. Building structure, building placement, meter, power and fiber utility wire furnished and installed from Stockman Way to control building by others. Work includes any and all incidentals including stockpiling materials, repairs, inspections or delays.

Bid Item No. 74

PRECAST CONCRETE MANHOLES

- A. Measurement is per Each (EA) to be furnished and installed.
- B. Payment covers complete cost of furnishing, placement and installation of the 6 feet Diameter Precast concrete Manhole shown in the Project Drawings and described in the technical specifications, including shop drawings. Work includes, but is not limited to all equipment, materials and labor required to furnish and install the precast concrete manholes such as furnishing and installing manhole, base slab to support manhole against buoyant forces included, excavation, dewatering, backfill, preparing sub grade, connection knockouts; risers, grates, and covers; ladder rungs; grouting; rebar dowels; connection to existing and/or new conduits, material compaction and testing and all other items needed to complete the work including cleaning and placing structures in service.

Bid Item No. 75

FURNISH AND INSTALL AIR LINE AND TELEMETRY

- A. Measurement is per Lump Sum (LS).
- B. Payment covers complete cost of furnishing and installing all cables, lines and conduits and connections originating from the control building per the Drawings and Specifications. Work includes trenching, bedding, installation of lines and conduits, installing a secure transition into the control building, installation of cables, and backfill of trenches. Includes any and all incidentals including marking trenches, installing sweeps, making and sealing punchouts, protecting lines, connecting to manholes and pull boxes, labeling lines, capping and terminating lines and connecting lines.

Bid Item No. 76

FURNISH AND INSTALL SURVEY MONUMENT CAP AND BASE

- A. Measurement is per Lump Sum (LS).

- B. Payment covers complete cost of furnishing, placement and installation of the Survey Monument Cap and Base as shown in the Project Drawings and described in the technical specifications. Work includes, but is not limited to all equipment, materials and labor required to furnish and install the Survey Monument Cap furnished by Ogden City.

Bid Item No. 77

POUR CONCRETE BASE AND FURNISH AND INSTALL WEB CAMERA POLES

- A. Measurement is per Each (EA) to be furnished and installed.
- B. Payment covers complete cost of furnishing and installation of concrete base and 15 feet camera poles as shown in the Project Drawings and described in the technical specifications, including junction box, 2" PVC conduit, rebar, copper grounds, and concrete collar. Concrete collar shall be 6" thick and extend 9" out from the outside edge of the pole. Concrete base shall be 4' deep and 18" in diameter per sheet D09. Camera and camera wiring will be furnished and installed by Ogden City. 15ft tall polls to be furnished and installed by the Contractor. Work includes, but is not limited to all equipment, materials and labor required to install concrete base and install the web camera poles and conduits per the Drawings and Specification.

END OF DOCUMENT

DOCUMENT 00 41 50
CONTRACT TIME

PART 1 GENERAL

1.1 DOCUMENT INCLUDES

- A. Contractor's proposal for Contract Time.

1.2 CONSTRUCTION CONTRACT

- A. The Construction Contract is known as SU078 OBE Weber River Surf Wave Project.

1.3 DEFINITIONS

- A. Suspended Contract Time: The Contract Time commences to run upon the day given in the Notice to Proceed. Suspended Contract Time means there is a period within the Contract Time where time is not counted. For purposes of this Construction Contract, the time period not counted may not be broken up into separate periods but shall be considered as only a one time period to be used to allow for work suspension due to just cause.
- B. For this project, Suspended Contract Time is anticipated between the Notice to Proceed date (approximately end of January) and the end of peak Spring runoff flows (mid-late June). Tree removal must occur before the migratory bird nesting season starts in March.

1.4 CONTRACT TIME

- A. Engineer has estimated 180 calendar days are required to substantially complete the work. The total number of days established by the Bidder to substantially complete the work is _____ calendar days.
- B. If Bidder anticipates occurrence of Suspended Contract Time the number of calendar days of Suspended Contract Time anticipated is _____ calendar days providing the Notice to Proceed date is given by the Engineer after .

PART 2 EXECUTION

2.1 EFFECTIVE DATE

- A. Bidder executes this estimate of Contract Time and declares it to be a supplement to the Bid Schedule (Document 00 41 00) and in effect as of _____, 20__.

2.2 BIDDER'S SUBSCRIPTION

- A. Bidder's signature: _____
- B. Please print Bidder's name here: _____
- C. Title: _____

END OF DOCUMENT

DOCUMENT 00 45 20
BIDDER STATUS REPORT

PART 1 GENERAL

1.1 BIDDER

A. Name: _____

B. Address: _____

C. Telephone Number: _____

1.2 CONSTRUCTION CONTRACT

A. The Construction Contract is known as SU078 OBE Weber River Surf Wave Project.

PART 2 REPORT

2.1 BIDDER STATUS REPORT

A. Bidder affirms the following information is true and correct.

1. Number of employees: _____

2. Bidder's firm is: (check the following as applicable)

Independently owned and operated.

An affiliate of*

A subsidiary of*

A division of*

A business with gross revenue in excess of \$ _____

A business with gross revenue below _____ \$ _____

* PARENT COMPANY:

Name: _____

Address: _____

Telephone Number: _____

Facsimile Number: _____

PART 3 EXECUTION

3.1 EFFECTIVE DATE

A. Bidder executes this status report and declares it to be a supplement to the Bid (Document 00 40 00) and in effect as of _____, 20__.

3.2 BIDDER'S SUBSCRIPTION

- A. Bidder's Signature: _____
- B. Please print Bidder's name here: _____
- C. Title: _____

END OF DOCUMENT

DOCUMENT 00 45 30
SUBCONTRACTOR AND SUPPLIER REPORT

PART 1 GENERAL

1.1 BIDDER

- A. Name: _____
- B. Address: _____
- C. Telephone Number: _____

1.2 CONSTRUCTION CONTRACT

- A. The Construction Contract is known as SU078 OBE Weber River Surf Wave Project.

PART 2 REPORT

2.1 SUBCONTRACTOR AND SUPPLIER REPORT

- A. Failure of the Bidder to specify a Subcontractor for any portion of the work constitutes an agreement by the Bidder that the Bidder is fully qualified to perform that portion, and that Bidder shall perform that portion.
- B. Bidder will be fully responsible to Owner for the acts and omissions of Subcontractors and Suppliers and of persons either directly or indirectly employed by them, as Bidder is for the acts and omissions of persons employed by Bidder directly.
- C. Nothing contained in the Contract Documents shall create any contractual relationship between any Subcontractor or Supplier and the Owner. Bidder agrees each subcontract with Bidder's Subcontractor will disclaim any third party or direct relationship between Owner and any Subcontractor or Supplier.
- D. The names and addresses of the Subcontractors and Suppliers who will work under the terms of the Contract Documents and the estimated dollar amount of each subcontract (in excess of two (2) percent of the Bid sum) are set forth as follows.

Table 1 - BASE BID

| SUBCONTRACTORS | | |
|-------------------------|---|---------------|
| Name and Address | Nature and Extent of Work to be Sublet | Amount |
| 1. | | |
| 2. | | |
| 3. | | |

SUPPLIERS

| Name and Address | Nature and Extent of Work to be Sublet | Amount |
|-------------------------|---|---------------|
| 1. | | |
| 2. | | |
| 3. | | |
| 4. | | |

PART 3 EXECUTION

3.1 EFFECTIVE DATE

- A. Bidder executes this Subcontractor and Supplier report and declares it to be a supplement to the Bid (Document 00 40 00) and in effect as of _____, 20__.

3.2 BIDDER'S SUBSCRIPTION

- A. Bidder's Signature: _____
- B. Please print Bidder's name here: _____
- C. Title: _____

END OF DOCUMENT

DOCUMENT 00 50 00 AGREEMENT

PART 1 GENERAL

1.1 CONTRACTOR

- A. Name: _____
- B. Address: _____
- C. Telephone number: _____
- D. Facsimile number: _____
- E. E-Mail address: _____

1.2 OWNER

- A. Ogden City Corporation, a municipal corporation of the State of Utah, 2549 Washington Boulevard, Utah 84401.
- B. Taylor Nielsen is the Owner's representative and agent for this Construction Contract who has the rights, authority and duties assigned to the OWNER in the Contract Documents.
- C. Phil Suiter is the resident project representative furnished by the OWNER.

1.3 CONSTRUCTION CONTRACT

- A. The Construction Contract is known as SU078 OBE Weber River Surf Wave Project.

1.4 ENGINEER

- A. Jason Carey is the ENGINEER for the SU078 OBE Weber River Wave Project who has the rights authority and duties assigned to the ENGINEER in the Contract Documents.

1.5 AGREEMENT PERFORMANCE

- A. The Contractor shall perform everything required to be performed, shall provide and furnish all labor, tools and equipment, and shall furnish and deliver all materials not specifically stated as being furnished by the Owner, to complete all the work necessary to complete the Construction Contract in Ogden City, State of Utah in the best and most workmanlike manner, and in strict conformity with the provisions of this contract, the proposal and the plans and specifications. The plans and specifications and the proposal are hereby made a part of the agreement as fully and to the same effect as if the same had been set forth at length in the body of this agreement. It is agreed that the status of the Contractor under this agreement is that of Independent Contractor rather than that of an employee of the Owner. Accordingly, the Contractor, in performance of his/her obligations hereunder, is independent and free from control of the Owner in all that pertains to the execution of the work and shall perform the work according to the Contractor's own methods without being subject to the rule, control or direction of the

Owner or its representatives, save and except as to the results obtained. The finished work and the materials furnished must, however, conform strictly to this contract, the proposal, and the plans and specifications aforesaid, and are subject to the final approval of the Owner and its authorized representatives, who may exert such direction and control thereof as may be necessary to achieve that conformity. All provisions in the specifications with respect to the direction and control of the work shall be construed so as to make effective this provision.

- B. As a condition of the contract, contractors are to register and participate in the status verification system, as defined in section 63-99a-103(1)(c) of the Utah Code or its successor provision, to verify the work eligibility status of the contractor's new employees that are employed in the State of Utah.

Contractor is responsible for verifying the employment status of new employees who work under the contractor's supervision or direction. In addition, contractor must maintain and have available for review upon demand by city an affidavit from each contractor or subcontractor who works under or for the contractor certifying that such contractor or subcontractor has verified through the status verification system, as defined in section 63-99a-103(1)(c) of the Utah Code or its successor provision, the employment status of each new employee of the respective contractor or subcontractor that is employed in the State of Utah.

By entering into this contract, contractor verifies that 1) it has registered in the status verification system or that it will register in the status verification system within thirty (30) days of being notified that it has been awarded the contract, and 2) that it participates in the status verification system to verify the work eligibility status of new employees as required by law. If at any time during the period of this contract, contractor fails to remain registered in or to participate in the status verification system or to maintain on file any required affidavit, city may terminate the contract for cause or, in the alternative, city may suspend work under the contract until contractor shows compliance with the requirements of this section. City shall not be responsible for any costs, damages, expenses, losses or other claims resulting from contract termination or contract suspension resulting from contractor's failure to comply with the status verification system requirements or to have on file any required affidavit, nor shall contract time be extended by virtue of such failure to comply with the requirements of this section.

- C. Furnishing of W-9. Payment under this Agreement is contingent upon Contractor furnishing City with a signed and completed W-9 IRS tax form. Such form shall be attached hereto and incorporated herein. Contractor shall cooperate with City in furnishing any additional information City may need to comply with rules and regulations of the Internal Revenue Service.

- D. Public Contract Boycotting Restriction. Contractor certifies it is in compliance with the public contract boycotting restrictions set forth in Utah Code Section 63G-27-201 and agrees not to engage in any such restricted boycotting for the duration of this Agreement.

PART 2 TIME AND MONEY CONSIDERATIONS

2.1 CONTRACT PRICE

- A. The contract price includes the cost of the work specified in the Contract Documents, plus the cost of all bonds, insurance, permits, fees, and all charges, expenses or assessments of whatever kind or character. The Owner shall pay the Contractor, as full consideration for the performance of this contract, the contract bid price per item as shown in the proposal, for the quantities of work actually performed and accepted.
- B. The schedules of prices awarded from the Bid Schedule (Document 00 41 10) are as follows:
 - 1. Base Bid is: \$ _____
 - 2. Additive Alternate No. 1 is: \$ _____
 - 3. Total Contract Amount is: \$ _____
- C. An Agreement Supplement (Document 00 50 50) [_____] is, [_____] is not attached to this Agreement.
- D. Based upon the above awarded schedules and the Agreement Supplement (if any), the contract price awarded is: _____ dollars and _____ cents. (\$ _____).

2.2 CONTRACT TIME

- A. Contract Time shall be _____ calendar days after the date of the Notice to Proceed; for this project, Suspended Contract Time is anticipated between the Notice to Proceed date (approximately end of January) and the end of peak Spring runoff flows (mid-late June). Tree removal must occur before the migratory bird nesting season starts in March; or
- B. Terminate at mid-night of the _____ day of _____, _____.
- C. Any time specified in work sequences in the Summary of Work (Section 01 11 00) shall be a part of the Contract Time.

2.3 PUNCH LIST TIME

- A. The work will be complete and ready for final payment within 30 calendar days after the date Contractor receives Engineer's Final Inspection Punch List unless exemptions of specific items are granted by Engineer in writing or an exception has been specified in the Contract Documents.
- B. Permitting the Contractor to continue and finish the work or any part of the work after the time fixed for its completion, or after the date to which the time for completion may have been extended, whether or not a new completion date is established, shall in no way

operate as a waiver on the part of the Owner of any of Owner's rights under this Agreement.

2.4 LIQUIDATED DAMAGES

- A. Late Completion: Time is the essence of the Contract Documents. Contractor agrees that Owner will suffer damage or financial loss if the work is not completed on time or within any time extensions allowed in accordance with Part 12 of the General Conditions (**Document 00 72 00**). Contractor and Owner agree that proof of the exact amount of any such damage or loss is difficult to determine. Accordingly, instead of requiring any such proof of damage or specific financial loss for late completion, Contractor agrees to pay the following sums to the Owner as liquidated damages and not as a penalty.
1. Late Contract Time Completion: Seven Hundred Fifty Dollars and No cents (\$750.00) for each calendar day or part thereof that expires after the Contract Time until the Work is accepted as Substantially Complete as provided in Article 14.5 of the General Conditions (**Document 00 72 00**).
 2. Late Punch List Time Completion: 50% of the amount specified for late contract time completion for each calendar day or part thereof if the work remains incomplete after the Punch List time. The Punch List shall be considered delivered on the date it is transmitted by facsimile, hand delivery or received by the Contractor by certified mail.
- B. Work Sequence Completion: Time is the essence of sequenced work. If a work sequence is specified, then for each day or part thereof that exceeds the specified time and until Engineer determines such work sequence is substantially complete, the Contractor agrees to pay the following sums to the Owner as liquidated damages and not as a penalty.
1. Work Sequence 1: _____ dollars and cents (\$ _____).
 2. Work Sequence 2: _____ dollars and cents (\$ _____).
 3. Work Sequence 3: _____ dollars and cents (\$ _____).
- C. Survey Monuments: No land survey monument shall be disturbed or moved until Engineer has been properly notified and the Engineer's surveyor has referenced the survey monument for resetting. The parties agree that upon such an unauthorized disturbance it is difficult to determine the damages from such a disturbance, and the parties agree that Contractor will pay as liquidated damages the sum of \$1,000.00 to cover such damage and expense.
- D. Interruption of Public Services: No interruption of public services shall be caused by Contractor, its agents or employees, without the Engineer's prior written approval. Owner and Contractor agree that in the event Owner suffers damages from such interruption, the

amount of liquidated damages stipulated above shall not be deemed to be a limitation upon Owner's right to recover the full amount of such damages. Because of the difficulty in determining the Owner's damages resulting from an unapproved interruption, the parties agree payment of the following liquidated damages to Owner on a per calendar day basis does not relieve Contractor from any liability for such a utility interruption to third parties. In the event that any third party successfully makes a claim against Owner for such interruption, Contractor shall be responsible for payment of claims.

1. Water: \$ 750.00
 2. Sewer: \$ 750.00
 3. Storm Drain: \$ 750.00
 4. Street Lighting: \$ 750.00
 5. Communications: \$ 750.00
 6. Electrical: \$ 750.00
 7. Other: \$ 750.00
- E. Deduct Damages from Moneys Owed Contractor: Owner shall be entitled to deduct and retain liquidated damages out of any money which may be due or become due the Contractor. To the extent that the liquidated damages exceed any amounts that would otherwise be due the Contractor, the Contractor shall be liable for such amounts and shall return such excess to the Owner.

2.5 RETAINAGE

- A. Retainage is Owner's Option: Owner may, in its sole discretion, retain 5 percent of the value of all work done and materials or equipment supplied as part security for the fulfillment of the Construction Contract by the Contractor. If, in Engineer's opinion, the work is proceeding in accordance with Contractor's approved progress schedule, and all progress schedule submittals are current and up to date, and all required payrolls, Shop Drawings, and miscellaneous submittals are current and up to date, the Owner may choose not to withhold retainage.
1. Amount to be Retained: If at any time after 50% of the work has been completed, and \$50,000 or more has been retained, Owner may make any of the remaining progress payments in full, if, in the Owner's sole discretion, the work is progressing satisfactorily. Owner may pay monthly to the Contractor while carrying on the Work, the balance not retained as aforesaid, after deducting therefrom all previous payments and all sums to be kept or retained under the provisions of the Construction Contract. No such estimate of payment shall be required to be made when, in the judgment of the Engineer, the work is not proceeding in accordance with the Contract Documents or when in Engineer's judgment the total value of the work done since the last estimate amounts to less than \$300. No such estimate or

payment shall be construed to be an acceptance of any defective or improper work or materials.

2. Reducing the Retainage: As the work nears completion and solely at the Engineer's discretion, the Owner may reduce the retainage to an amount more in line with the Work actually remaining.
 3. Retainage Held Until Final Payment: The Owner reserves the right to retain all amounts previously withheld or due the Contractor, including liquidated damages, until all Punch List items are complete. However, at Engineer's sole option, Engineer may authorize the release of up to all retained amounts except any liquidated damages and double Engineer's best estimate of the Contractor's cost to complete all remaining Punch List items.
- B. Interest: Except when Contractor is required to submit a Waiver of Interest Affidavit (Document 00 45 10), and except for money retained for items not provided or installed in accordance with the Contract Documents, any money retained by the Owner will be placed in an interest bearing account held by the Owner as of the date such money would have otherwise been payable. The interest accrued thereon will be due and payable to the Contractor within 30 days after the retained monies are paid.

2.6 PAYMENT PROCEDURES

- A. Progress Payments: Contractor shall submit applications for payment in accordance with Part 14 of the General Conditions (Document 00 72 00) and Section 01 29 00 (2025 Manual of Standard Specifications by the Utah Chapter of the American Public Works Association). Payment shall not become due or payable for any contract item not provided or installed by Contractor. If required by the Owner, any request or application by the Contractor for a partial payment shall be accompanied and supported by data establishing payment or satisfaction of all Contractor obligations for payroll, bills for materials and equipment, and other indebtedness, with such data establishment to be evidenced by receipts, releases and waivers of lien, arising out of the contract, to the extent and in such form as may be designated as acceptable and satisfactory by the Owner. The Owner may require such data, including but not limited to, and executed, completed lien waiver and release from all subcontractors, lower-tier subcontractors and suppliers. The submission of these items, if requested by the Owner with the Contractor's application or request for a partial payment shall constitute a condition precedent to the Contractor's right to any such partial payment, and any particular application or request for partial payment submitted without these items, if so requested by the Owner, shall be deemed incomplete.
1. Withholding Payment: Owner reserves the right to withhold payment from Contractor for noncompliance with any provision of the Contract Documents.
 2. Price Adjustments: Owner will consider making partial payment to the Contractor

for certain non-conforming work in advance of any negotiated settlement reached between the Contractor and the Owner, provided the Contractor requests in writing that this be done. Contractor agrees that any such payments made by the Owner are "payments in advance" and that any money which becomes due when the final settlement is negotiated will not constitute payments "withheld" or "retained" under State law.

- B. Final Payment: After completion of all work and Punch List items, Owner shall pay the contract price due after deducting there from all previous payments, unit price quantity adjustments, penalties, liquidated damages, and other amounts to be retained. All prior progress payments shall be subject to correction in the final payment. The final payment shall not be due and payable until the expiration of 30 days from approval of the request for final payment of Contractor by the Owner's finance department. Final payment, constituting the entire unpaid balance of the contract sum, shall be paid by the Owner to the Contractor when the work has been completed, the contract fully performed, and a final certificate for payment has been issued by the Engineer. Neither the final payment nor the remaining retainage shall become due until the Contractor submits to the Owner through the Engineer and Purchasing Agent of the Owner, (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner might in any way be responsible, have been paid or otherwise satisfied, (2) consent of surety to final payment, and (3) if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of the contract, to the extent and in such form as may be designated by the Owner. If after substantial completion of the work, final completion thereof is materially delayed through no fault of the Contractor or by the issuance of change orders affecting final completion, and the Engineer so confirms, the Owner shall, upon application by the Contractor and certification by the Engineer and without terminating the contract, make payment of the balance due for that portion of the work fully completed and accepted. If the remaining balance for work not fully completed or corrected is less than the retainage stipulated in the contract documents, and if bonds have been furnished, the written consent of the Surety of the payment of the balance due for that portion of the work fully completed and accepted shall be submitted by the Contractor to the Engineer prior to certification of such payment. Such payment shall be made under the terms and conditions governing payments as heretofore set forth, except that it shall not constitute a waiver of claims. The making of final payment shall constitute a waiver of all claims by the Owner except those arising from: (1) unsettled liens; (2) faulty or defective work; (3) failure of the work to comply with the requirements of the contract documents; or (4) terms of any special warranties required by the contract documents. The acceptance of final payment shall constitute a waiver of all claims by the Contractor except those previously made in writing and identified by the Contractor as unsettled at the time of the final application for payment. All provisions of this agreement, including

without limitation those establishing obligations and procedures, shall remain in full force and effect notwithstanding the making or acceptance of final payment.

1. Submittal: Final payment shall not be made until the Contractor has delivered and Engineer has accepted all submittals specified in Article 14.8 of the General Conditions (Document 00 72 00).
2. Owner Released From Claims: The payment and acceptance of the final Contract Price due and the adjustment and payment for any work done in accordance with any alterations of the same, shall release the Owner from any and all claims of Contractor on account of work performed under the Contract Documents or any modification thereof, except for those claims specifically agreed to as reserved and unresolved by the Owner.

2.7 EXTRA WORK

- A. No money will be paid to the Contractor for any additions, deletions or revisions in the Work as stipulated in Article 10.1 of the General Conditions (Document 00 72 00), unless a contract modification for such has been made in writing and executed by the Owner and Contractor.

PART 3 COVENANTS

3.1 ASSIGNMENT NOT BINDING WITHOUT WRITTEN CONSENT

- A. Owner and Contractor agree no assignment of any right or interest in the Contract Documents will be made without the written consent of the Owner and the Contractor. No assignment will release or discharge the Owner or the Contractor from any duty or responsibility under the Contract Documents unless specifically stated to the contrary in any written consent to an assignment.
- B. Contractor shall make no assignment of money that is due without the Owner's written consent (except to the extent that the effect of this restriction may be limited by law or regulation).

3.2 BINDING TERMS

- A. The Agreement, with all its forms, plans, specifications and stipulations, shall be binding upon the heirs, executors, administrators, successors and assigns of the respective parties.

3.3 INDEMNIFICATION

- A. Provisions concerning indemnification are set forth in Article 6.17 of the General Conditions (Document 00 72 00) and as modified per Ogden City's 2025 Edition of the Engineering Standards and Amendments for Public Works Projects.

3.4 DISPUTE RESOLUTION

A. In General:

1. Unless a decision shall be held by an appropriate court of law to have been procured by fraud or to be arbitrary and capricious or so grossly erroneous as necessarily to imply bad faith, any factual decision made under this Article shall be final and binding in any suit or action arising under this Construction Contract, including any actions by Contractor or others against Owner or any of Owner's agents, consultants, or employees.
2. Compliance with provisions of this Article shall be a condition precedent prior to any legal action by the Contractor or any of Contractor's Subcontractors and Suppliers against Owner or any of Owner's agents, consultants, or employees.
3. The provisions of this Article shall not preclude or limit judicial review of issues of law.
4. Ambiguities in or between Contract Documents shall be construed in favor of the Owner.

B. Disputes Not Related to the Guarantee of the Work: Any dispute arising under the Construction Contract concerning a question of fact, not related to the guarantee of the work (Article 13.1 of the General Conditions (**Document 00 72 00**)), which is not disposed of by contract modification shall be decided pursuant to the following procedure.

1. Any decision by Engineer interpreting the requirements of the Contract Documents may be appealed in writing to the Engineer. The Engineer's decision shall be reduced to writing and a copy shall be mailed or otherwise furnished to the Contractor. The decision of Engineer shall be final and conclusive unless, within 30 days from the date of receipt of such copy, the Contractor mails or otherwise furnishes to Engineer a written appeal to the head of the Owner's department responsible for constructing the project.
2. Within 15 days from the receipt of any such appeal, the department head shall issue a decision in writing and mail or otherwise furnish a copy thereof to the Contractor. The decision of the department head shall be final and conclusive unless, within 15 days from the date of receipt of such decision, the Contractor mails or otherwise furnishes to the department head a written appeal to the Standing Appeals and Dispute Committee.
3. The Standing Appeals and Dispute Committee shall consist of the Owner's Attorney, the Director of Public Services, and the City Engineer or their designees.
4. The department head issuing the decision appealed from shall present the department's case prior to deliberations of the Committee, otherwise the department head shall be disqualified and excluded from the Committee's decision process.
5. The decision of said Committee shall be rendered in writing within 15 days from receipt of the appeal and mailed or otherwise delivered to the Contractor.

6. The decision of said Committee shall be the final binding interpretation of the facts which are the subject of the appeal.
- C. Disputes Related to the Guarantee: Except as otherwise provided by contract Modification, any dispute concerning a question of fact involving or arising out of the guarantee required by the Contract Documents (Article 13.1 of the General Conditions (Document 00 72 00)), which is not disposed of by contract modification shall be decided pursuant to the provisions of Paragraph 3.4B above, except that the initial factual decision shall be issued in writing by the Engineer, together with the department head. Any appeal therefrom shall be made within 15 days directly to the Standing Appeals and Dispute Committee where such disputes shall be governed by Paragraphs 3.4B.3 to 3.4B.6 above.
- D. Work During Appeal: Notwithstanding the pendency of any protest or appeal provided above, Contractor shall, if so ordered by Engineer, proceed with the work under the Contract Documents according to Engineer's direction and according to the decision on any appeal. The existence of a claim or protest shall not excuse Contractor from the requirements of the Contract Documents, including, but not limited to, the Contract Time.
- E. Appeals of Termination or Suspension: Any decision of Owner to terminate or suspend the work shall not be subject to the provisions of this Article.

3.5 ATTORNEYS' FEES

- A. In the event that either party institutes any action or proceeding against the other relating to the breach of any term of this agreement, then the unsuccessful party in such action or proceeding agrees to reimburse the successful party for the reasonable expenses of such action including reasonable attorney fees, incurred therein by the successful party.

PART 4 EXECUTION

4.1 EFFECTIVE DATE

A. Owner and Contractor executed this Agreement and declared it in effect as of the _____ day of _____, 20__.

In Witness Whereof, we have hereunto set our hands and seal at Ogden City, Utah, on the day and year first above written:

OGDEN CITY CORPORATION, Owner

By _____

**Mara Brown
Chief Administrative Officer**

Attest:

Ogden City Recorder, Tracy Hansen

Contractor _____

By _____

Printed Name _____

Title _____

Attest: If Corporation _____

Witness: if individual or partnership

DOCUMENT 00 61 00
PERFORMANCE BOND

Know All Men By These Presents,

That _____
as Contractor, and _____ as Surety,
are held firmly bound unto Ogden City, a Utah Municipal Corporation, hereinafter referred to as
the "Owner" in the sum of _____
dollars, (\$) _____) for the payment of which sum, well and truly to be made, we
bind ourselves and our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

Whereas, said Contractor has been awarded and is about to enter into the annexed Agreement
with the Owner to perform all work required under said Agreement entitled, **SU078 OBE Weber
River Surf Wave Project**.

Now, Therefore, if said Contractor shall perform all the requirements of said contract required to
be performed on his part, at the times and in the manner specified therein, then this obligation
shall be null and void, otherwise it shall remain in full force and effect.

Provided, that any alterations in the work to be done or the materials to be furnished, or changes
in the time or completion, which may be made pursuant to the terms of said Contractor, shall not
in any way release said Contractor or said Surety thereunder, nor shall any extensions of time
granted under the provisions of said contract release either said Contractor or said Surety, and
notice of such alterations or extensions of the contract is hereby waived by said Surety.

Signed and Sealed, this _____ day of _____, 20__.

(Contractor)

(Surety)

By: _____
(Signature)

(Signature)

Note: 1. Signatures must be notarized - See attached page; 2. Attach current Power-of-Attorney

Acknowledgments

Contractor Acknowledgment
(Corporation)

State Of _____)
)ss.
County Of _____)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he is the _____ of _____, a corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution (or bylaws) of its Board of Directors; and said person acknowledged to me that said corporation executed the same.

My Commission Expires: _____ Notary Public, residing in _____

Surety Acknowledgment
(Corporation)

State Of _____)
)ss.
County Of _____)

On the _____ day of _____, 20____, personally appeared before me _____, who being by me duly sworn, did say that he is the _____ of _____, a corporation, and that the foregoing instrument was signed in behalf of said corporation by authority of a resolution (or bylaws) of its Board of Directors; and said person acknowledged to me that said corporation executed the same.

My Commission Expires: _____ Notary Public, residing in _____

Attorney-In-Fact
Affidavit of Qualification

State Of _____)

)ss.

County Of _____)

_____ being first duly sworn on oath deposes and says that he is the Attorney-in-Fact of _____ and that he is duly authorized to execute and deliver the foregoing obligation; that said Company is authorized to execute the same, and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations.

Attorney-in-Fact

Subscribed and sworn to before me this _____ day of _____, 20__.

My Commission Expires:

Notary Public, residing in

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**DOCUMENT 00 62 00
PAYMENT BOND**

Know All Men By These Presents,

That _____
as Contractor, and _____ as Surety,
are held firmly bound unto Ogden City, a Utah Municipal Corporation, hereinafter referred to as
the "Owner" in the sum of _____
dollars, (\$ _____) for the payment of which sum, well and truly to be made,
we bind ourselves and our heirs, executors, administrators, successors, and assigns, jointly and
severally, firmly by these presents.

Whereas, said Contractor has been awarded and is about to enter into the annexed Agreement
with the Owner to perform all work required under those Contract Documents entitled: **SU078
OBE Weber River Surf Wave Project.**

Now, Therefore, if said Contractor, or subcontractor, fails to pay for any materials, equipment, or
other supplies, or for rental of same, used in connection with the performance of work contracted
to be done, or for amounts due under applicable state law for any work or labor thereon, said
Surety will pay for the same in an amount not exceeding the sum specified above, and in the
event suit is brought upon this bond, reasonable attorneys' fees. This Bond shall inure to the
benefit of the Owner and any person, companies, or corporations entitled to file claims under
applicable state law.

Provided, that any alterations in the work to be done or the materials to be furnished, or changes
in the time or completion, which may be made pursuant to the terms of said Contractor, shall not
in any way release said Contractor or said Surety thereunder, nor shall any extensions of time
granted under the provisions of said contract release either said Contractor or said Surety, and
notice of such alterations or extensions of the contract is hereby waived by said Surety.

Signed and Sealed this _____ day of _____, 20__.

(Contractor)

(Surety)

By: _____
(Signature)

(Signature)

Note: 1. Signatures must be notarized - See attached page; 2. Attach current Power-of-Attorney

Attorney-In-Fact
Affidavit of Qualification

State Of _____)

)ss.

County Of _____)

_____ being first duly sworn on oath deposes and says that he is the Attorney-in-Fact of _____ and that he is duly authorized to execute and deliver the foregoing obligation; that said Company is authorized to execute the same, and has complied in all respects with the laws of Utah in reference to becoming sole surety upon bonds, undertakings and obligations.

Attorney-in-Fact

Subscribed and sworn to before me this _____ day of _____, 20__.

My Commission Expires:

Notary Public, residing in

END OF DOCUMENT

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DOCUMENT 00 65 00
CERTIFICATE OF INSURANCE

PART 1 GENERAL

1.1 PROCEDURE

- A. For filing purposes, add Certificates of Insurance to the Contract Documents following this page. (Refer to Ogden City's 2025 Edition of the Engineering Standards and Amendments for Public Works Projects for requirements as reproduced below)

1.2 PART 5 BONDS AND INSURANCE (From General Conditions Section 00 72 00)

- 5.1 PERFORMANCE, PAYMENT, AND OTHER BONDS (Article 5.1 of the General Conditions is hereby repealed and the following is submitted therefore)

- A. Prior to OWNER executing the Agreement, CONTRACTOR shall file with the OWNER a good and sufficient performance Bond and a payment Bond, each in the sum of not less than 100 percent of the Contract Price.
- B. The Bonds shall be executed by the CONTRACTOR and secured by a company duly and regularly authorized to do a general surety business in the State of Utah and named in the current list of Companies holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies as published in current Circular 570 (amended) by the Audit Staff Bureau of Accounts, U.S. Treasury Department, with an underwriting limitation equal to or greater than the Contract Price which the Bond guarantees or with a current "A-" rating or better in A.M. Best Co., Inc.'s, Best Insurance Reports, Property and Casualty Edition.
- C. Said Bonds shall guarantee the faithful performance of the Construction Contract by the CONTRACTOR and payment of labor and materials. They shall inure by their terms to the benefit of the OWNER. Neither this nor any other provision requiring a performance Bond shall be construed to create any rights in any third party Claimant as against the OWNER for performance of the Work under the Construction Contract.
- D. If the surety on any Bond furnished by CONTRACTOR is subject to any proceeding under the Bankruptcy Code (Title 11, United States Code) or becomes insolvent or its right to do business is terminated in the State of Utah or it ceases to meet the requirements of this Article, CONTRACTOR shall, within 15 days thereafter, substitute another Bond and surety, both of which must be acceptable to OWNER.

- 5.2 INSURANCE (Article 5.2 of the General Conditions is hereby repealed and the following is substituted therefore)

- A. **In General:** All policies of insurance provided shall be issued by insurance companies qualified to do business in the State of Utah and listed on the U.S. Treasury Department's current Department of Treasury Fiscal Services List 570, or having a general policy holder's rating of not less than "A-" in the most current available A. M. Best Co., Inc.'s, Best's Insurance Report.
- a. Each insurance policy required by the Agreement, excepting policies for Workers' Compensation and Professional Liability, shall include an

endorsement providing that Ogden City, its elected and appointed officials, employees, agents and volunteers are to be named as additional insured as respect to operations and activities of, or on behalf of, the named insured as performed under Agreement with the City.

- b. Insurance is to be placed with insurers acceptable to and approved by the CITY. CONTRACTOR's insurer must be authorized to do business in Utah at the time the contract is executed and throughout the time period the contract is maintained, unless otherwise agreed to in writing by the CITY. Failure to maintain or renew coverage or to provide evidence of renewal will be treated by CITY as a material breach of contact.
- c. The CITY shall be furnished with original certificated of insurance and endorsements effecting coverage required within, signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received by the CITY before signing the Agreement.
- d. Any deductibles or self-insured retentions must be declared to and approved by the CITY. At the option of the CITY, either: the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the CITY, its elected and appointed officials, employees, agents and volunteers; or CONTRACTOR shall provide a financial guarantee satisfactory to the CITY guaranteeing payment of losses and related investigations, claim administration and defense expenses.
- e. In addition to any other remedies CITY may have if CONTRACTOR fails to provide or maintain any insurance policies or policy endorsements to the extent and within the time limits required, CITY may, at its option:
 - 1. Obtain such insurance, deduct and retain the amount of premiums for such insurance from any sums due under the Agreement,
 - 2. Order CONTRACTOR to stop work under this Agreement and/or withhold any payment(s) which become due to CONTRACTOR until CONTRACTOR demonstrates compliance with requirements,
 - 3. Terminate this Agreement
 - 4. Or other reasonable remedy
- f. CONTRACTOR shall include all subcontractors and insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.
- g. Nothing contained herein shall be construed as limiting in any way the extent to which CONTRACTOR may be held responsible for payments of damages to persons or property resulting from CONTRACTOR's or its subcontractor's performance of the work covered under this Agreement.
- h. If requested, CONTRACTOR shall also furnish copies of the insurance policies secured for the Work. The CITY reserves the right to require complete, certified copies of all required insurance policies at any time. CONTRACTOR shall procure and maintain for the duration of the contact, insurance against claims for injuries to persons or damages to property, which may arise from or

in connection with the performance of the work hereunder by the CONTRACTOR, his agents, representatives, employees or subcontractors. The cost of such insurance shall be included in CONTRACTOR's Bid. The amount of the insurance shall not be less than the following:

1. **Worker's Compensation Insurance:** In addition to other required insurance, the CONTRACTOR shall obtain and maintain during the life of the Construction Contract, worker's compensation insurance as required by Laws and Regulations for all of CONTRACTOR's employees employed at the site of the Work, and in case any Work is subcontracted, the CONTRACTOR shall require the subcontractor similarly to provide worker's compensation insurance for all of the latter's employees, unless such employees are covered by protection as required by Laws and Regulations. Worker's compensation limits as required by the Labor Code of the State of Utah and employers' liability limits are \$1,000,000 per accident.
2. **Business Automobile Liability:** \$1,000,000.00 combined single limit per accident for bodily injury and property damage for owned, non-owned and hired vehicles.
3. **Commercial General Liability Insurance:** CONTRACTOR shall secure and maintain during the life of the Construction Contract and at all times thereafter when CONTRACTOR may be correcting, removing or replacing Defective Work, a comprehensive commercial general liability insurance policy. The policy shall protect the CONTRACTOR, the OWNER, the ENGINEER, and any subcontractor performing work covered by the Construction Contract from claims for damages for personal injury, including accidental death, and from claims for property damage which may arise from CONTRACTOR's operations under this Construction Contract, whether such operations be by itself or by any Subcontractor or by anyone directly or indirectly employed by either of them. **Unless specified otherwise in the Supplementary Conditions, the minimum amounts of such insurance for combined single limit per occurrence shall be \$1,000,000.00 for bodily injury, personal injury and property damage and \$3,000,000 general aggregate.**
 - i. The policies are to contain, or be endorsed to contain, the following provisions:
 - a. The Contractor's insurance coverage shall be primary insurance and any insurance or self-insurance maintained by the City, its officers, official, employees or volunteers shall be excess of the Contractor's insurance and shall not contribute with insurance provided by this policy. Each policy shall be endorsed to state that coverage shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City.
 - b. Policy to include coverage for premises and operations. Contractual liability, personal injury liability, products/completed operations liability, broad-form property damage (if applicable) and independent

- Contractor's liability (if applicable) written on an occurrence form.
- c. Any deductibles or self-insured retention must be declared to and approved by the City. Insurance is to be placed with insurers acceptable to and approved by the City. The City shall be furnished with certificates of insurance and with original endorsements affecting coverage required within, signed by a person authorized by the insurer to bind coverage on its behalf. All certificates and endorsements are to be received and approved by the City before work commences. The City reserves the right to require complete, certified copies of all required insurance policies at any time.
 - d. The CONTRACTOR shall include all subcontractors as insured under its policies or shall furnish separated certificates and endorsements for each subcontractor. All coverage for subcontractors shall be subject to all of the requirements stated herein.
 - e. **Automotive Public Liability Insurance:** Whenever CONTRACTOR or any subcontractor shall use and operate automobiles, trucks or other vehicles on public streets and highways in complying with the terms and conditions of the Construction Contract, CONTRACTOR or each subcontractor shall carry automobile public liability insurance with limits not less than \$1,000,000.00 for any one accident or loss.
 - f. **Insurance Non-cancelable for 30 Days:** Each policy of insurance provided in the Contract Documents shall be absolutely non-cancelable for a period of not less than 30 days after notice and shall contain the following provisions or one substantially the same as the following:
"This policy shall not be subject to cancellation, change, or reduction of coverage by the other party or parties hereto, unless notice, as defined herein is sent to the OWNER, with a copy to the ENGINEER and the OWNER's attorney."
 - g. **Builder's Risk:** CONTRACTOR agrees to and assumes the risk of loss for any damage or loss to the Work and Project by any means or occurrence until Substantial Completion. If this contract includes construction of an above ground structure, CONTRACTOR further agrees to obtain builder's risk or course of construction insurance in the total amount of the Contract Price.
 - h. **Ogden City Corporation Additional Insured:** Each policy of insurance provided in the Contract Documents shall also protect the government of O.C.C. during the life of the Construction Contract and at all times thereafter from public liability and property damage claims indicated in paragraph 5.2D, and automotive public liability damage claims indicated in paragraph 5.2E above.

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DOCUMENT 00 72 00

GENERAL CONDITIONS

PART 1 GENERAL

1.1 DEFINED TERMS

- A. Wherever used in these General Conditions or in the other Contract Documents the following terms have the meanings indicated which are applicable to both the singular and plural thereof. Any additions or changes to these General Conditions which appear in *italics* are taken from The current edition of Ogden City's Standards for Public Improvements. These italicized amendments or additions will supersede any terms, instructions or information printed in the 2025 Manual of Standard Specifications by the Utah Chapter of the American Public Works Association(2017).
- B. .
1. Addenda: Written or graphic instruments issued prior to the opening of Bids which clarify, correct or change the Contract Documents. *The term Addendum shall include bulletins and all other types of written notices issued to potential Bidders prior to opening of Bids.*
 2. Agreement: A written instrument which is part of the Contract Documents, and which when signed by the OWNER and CONTRACTOR, establishes the contract price, the Contract Time, the Punch List time, the identity of the ENGINEER and other matters pertaining to the construction contract.
 3. Agreement Supplement: A written instrument executed by OWNER and Bidder in the time period between the opening of Bids and the signing of the Agreement which clarifies, corrects or changes the Contract Documents.
 4. Application for Payment: The form accepted by ENGINEER which is to be used by CONTRACTOR in requesting progress or final payments and which is to include such supporting documentation required by the Contract Documents.
 5. Asbestos: Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 6. Bid: The offer of the Bidder submitted on the prescribed form setting forth the price for the work to be performed.
 7. Bid Documents: The documents defined in the Bid, together with all Addenda and supplements issued prior to the effective date of the Agreement.
 8. Bid Security: Bid bond or cashier's check in an amount equal to a minimum of 5 percent of the Bid price.
 9. Bidder: Any person, firm, joint venture or corporation submitting a Bid directly to the OWNER, as distinct from a sub-bidder who submits a Bid to a Bidder.
 10. Bonds: Bid, Performance and Payment Bonds, cashiers or certified bank check and other instruments of security.
 11. Change Order: A written instrument prepared by the ENGINEER signed by CONTRACTOR and OWNER on or after the effective date of the construction contract, which authorizes an addition, deletion, or revision in the work, or an adjustment in the contract price, Contract Time or both.

12. Claimant: An individual or entity having a direct contract with the CONTRACTOR or with a subcontractor or supplier of the CONTRACTOR to furnish labor, materials, supplies or equipment for use in the performance of the work. The intent of this definition shall be to include without limitation in the terms “labor, materials, supplies or equipment” that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the work, 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 claim may be asserted where the labor, materials, supplies or equipment were furnished.
13. Construction Contract: The entire and integrated compact between the OWNER and CONTRACTOR, memorialized in the Contract Documents concerning the work to be performed which supersedes prior negotiations, representations of agreements, either written or oral.
14. Contract Documents: The Bid documents, Agreement, Agreement Supplement, General Conditions, supplementary conditions, Specifications, Standard Specifications, Drawings, Standard Plans together with all modifications issued pursuant to Article 3.3 herein after the effective date of the construction contract.
15. Contract Price: The total money payable by OWNER to the CONTRACTOR under the Contract Documents as stated in the Agreement and subject to the provisions of Paragraph 11.7A herein in the case of unit price work.
16. Contract Time: The number of consecutive calendar days or the date specified in the Agreement for substantial completion of the work.
17. CONTRACTOR: The person, firm or corporation named as such in the Agreement. *If the provisions are applicable to work performed by City personnel, under a permit or as a condition of development, the term shall also include the person, firm or corporation responsible for such work.*
18. Cost of the Work: The sum of all costs necessarily incurred and paid by CONTRACTOR in the proper performance of the work. See Article 11.4.
19. Day: Any 24-hour period measured from midnight to the next midnight.
20. Defective: An adjective which when modifying the word “work” refers to work that is unsatisfactory, faulty or deficient, or does not conform to the Contract Documents, or does not meet the requirements of any inspection, reference standard, test or approval referred to in the contract documents, or has been damaged prior to ENGINEER’s final inspection (unless responsibility for the protection thereof has been assumed by OWNER at substantial completion in accordance with Paragraph 14.5A or 14.6B).
21. Drawings: The graphic and pictorial portions of the Contract Documents prepared or approved by ENGINEER, showing the design, location and dimensions of the work, and generally include the plan, elevations, sections, details, schedules and diagrams. Drawings are also known as plans.
22. Effective Date of the Construction Contract: The date indicated in the Agreement on which the construction contract becomes effective. If no such date is indicated, it means the date on which the construction contract is signed and delivered by the last of the two parties to sign and deliver.

23. ENGINEER: The person, firm or corporation designated in the Agreement as the OWNER's representative and agent for the construction contract, acting within the scope of the particular duties entrusted to such a person, firm or corporation. The person may be a licensed architect, licensed landscape architect, licensed ENGINEER, licensed land surveyor or other individual. *For Subdivisions and other projects issued under an engineering permit with Ogden City, which do not have an executed Agreement as noted above, the responsibilities of ENGINEER shall reside with Ogden City's Development ENGINEER.*
 24. Final Inspection: An inspection of the work (or agreed-to-portion), conducted by ENGINEER, after work (or agreed-to-portion) is substantially complete.
 25. General Requirements: Sections of Division 1 of the Standard Specifications and Specifications.
 26. Hazardous Waste: The term hazardous waste shall have the meaning provided in Section 1004 of the Solid Waste Disposal Act (42 USC Section 6903) as amended from time to time.
 27. Inspection: The term "inspection" or its derivatives means a review of the project including, but not limited to, a visual review of the work completed to date. It does not include or imply an exhaustive or detailed review of the work, nor does it create a duty on the part of the ENGINEER or OWNER to detect latent defects.
 28. Laws and Regulations; Laws or Regulations: Any federal, state, county, city or local jurisdiction's laws, rules, regulations, ordinances, codes and orders.
 29. Lien: A charge, security interest or encumbrance upon materials or equipment.
 30. Lump Sum Work: Work to be paid for on the basis of a stipulated price.
 31. Major Unit Price Item of Work: Any item of unit price work which has total value greater than 5 percent of the initial contract price.
 - 31.a. Measurement of Failure: *The act of performing quality assurance through measurement by the City ENGINEER in accordance with the Specifications for Work which meet the definition of Failure as in the Amendments and Clarifications to the APWA or Defective as defined in the Standard Specifications.*
 32. Milestone: A principal event specified in the contract documents relating to an intermediate completion date or time prior to substantial completion of the work.
 33. Modification: Any Addendum, Agreement Supplement, Change Order, or Work Directive Change.
 34. Notice of Intent to Award: The written notice by OWNER to the apparent successful Bidder stating that on compliance by the apparent successful Bidder with the conditions precedent enumerated therein, within the time specified, OWNER will sign and deliver the construction contract.
 35. Notice to Proceed: A written notice given by OWNER to CONTRACTOR fixing the date on which the Contract Time will commence and on which CONTRACTOR shall start to perform CONTRACTOR's obligations under the Contract Documents.
 36. OWNER: The public body or authority, corporation, association or firm with whom CONTRACTOR has entered into the Agreement and for whom the work is to be provided.
- 31.a. OWNER: *Ogden City, a Utah Municipal Corporation.*

37. Partial Utilization: Placing a portion of the work in service for the purpose for which it is intended (or a related purpose) before reaching substantial completion for all the work.
38. PCBs: Polychlorinated biphenyl.
39. Petroleum: Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (to deg. Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-hazardous wastes and crude oils.
40. Plans: Drawings. *Graphic and pictorial productions from the ENGINEER or DEVELOPER, prepared or approved by the City, showing the design, location and dimensions of the Work, and generally include, the plan, elevations, sections, details, schedules and diagrams.*
41. Project: The total construction of which the work to be provided under the Contract Documents may be the whole, or a part.
42. Project Manual: The bound documentary package prepared for bidding and constructing the work.
43. a. Public Works Inspector: *The resident project representative furnished by the ENGINEER and assigned the duties of "inspection".*
43. Punch List: The list of unacceptable, incorrectly accomplished, damaged or unfinished work items compiled by ENGINEER at final inspection.
44. Punch List Time: The number of days specified in the Agreement for the completion of the final inspection Punch List work.
45. Radioactive Material: Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.
46. Regular Working Hours: Computation of regular working hours shall be based upon a 40-hour work week.
47. Resident Project Representative: The representative of ENGINEER assigned to the site or any part thereof.
47. a. Schedule of Values: *The CONTRACTOR's best estimate of costs associated with various portions of the work.*
48. Shop Drawings: All Drawings, diagrams, illustrations, schedule and other data prepared by or for CONTRACTOR to illustrate some portion of the work and all illustrations, brochures, standard schedules, performance charts, instructions, diagrams and other information prepared by suppliers and submitted by CONTRACTOR to illustrate material or equipment for some portion of the work.
49. Specifications: Those portions of the Contract Documents consisting of written requirements for materials, equipment, construction systems, standards and workmanship as applied to the work and certain administrative details applicable thereto. Bidding requirements, contract forms, and conditions of the contract are **not** Specifications.
50. Standard Plans: *The Drawings (both graphical and text) contained in the latest edition of the Manual of Standard Plans published by the Utah Chapter of the American Public Works Association; also in the Amendments to the Manual of Standard Plans entitled "Standard Drawings" amended by Ogden City.*

51. Standard Specifications: The Specifications contained in this manual following these General Conditions.
52. Subcontractor: An individual, supplier, firm or corporation having a contract with CONTRACTOR or with any other subcontractor for the performance of a part of the work.
53. Substantial Completion: A point in time when, in the opinion of the ENGINEER as evidenced by ENGINEER's written notice, the work (or a specified part thereof) has progressed to where it is sufficiently complete, and only occasional construction personnel and equipment are required for correcting unfinished or defective work. The remaining work will not interfere with the work area's intended use or occupancy. The terms "substantially complete" and "substantially completed" as applied to any work refer to substantial completion thereof.
54. Supplementary Conditions: The part of the Contract Documents that amends or supplements these General Conditions.
55. Supplier: A manufacturer, fabricator, distributor, material producer or vendor who provides products to the CONTRACTOR or subcontractors.
56. Underground Facilities: All pipelines, conduits, ducts, cables, wires, access chambers, vaults, tanks, tunnels or other such facilities or attachments, and any encasements containing such facilities which have been installed underground to furnish any of the following services or materials; electricity, gases, steam, liquid petroleum products, telephone or other communication, cable television, sewage and drainage removal, traffic or other control systems or water.
57. Unit Price work: Work to be paid for on the basis of unit prices.
58. Work: The construction and services required to be furnished under the Contract Documents which may be the whole or part of the project. Work is the result of performing services, furnishing labor and furnishing and incorporating materials and equipment into the construction, as required by the Contract Documents.
59. Work Completion: The work and all contractual obligations under the Contract Documents have been fulfilled and when final payment is due in accordance with Paragraph 14.9A.
60. Work Directive Change: A written directive to CONTRACTOR, issued on or after the effective date of the construction contract, prepared by the ENGINEER and signed by the OWNER, ordering an addition, deletion or revision in the work as provided in Article 10.1, or responding to differing or unforeseen physical conditions under which the work is to be performed as provided in Article 4.2 or 4.3 or to emergencies under Article 6.13. A work directive change requires agreement by the OWNER and the ENGINEER and may or may not be agreed to by the CONTRACTOR.

1.2 TERMS

- A. *Unless otherwise stated, the words directed, required, permitted, ordered, instructed, designated, considered necessary, prescribed, approved, acceptable, satisfactory, or words of like meaning, refer to actions, expressions, and prerogatives of the ENGINEER.*

1.3 APPLICABILITY

- A. **Document 00 72 00**, "General Conditions" and Division 1, "General Requirements"

shall apply to all public works projects performed under contract with the city and also projects done under permit with Ogden City Engineering for work done on City property or within the City right-of-way, except as otherwise required by City Ordinance or recommended by the City Attorney. Except for definitions and terms applicable to other provisions of the manual, its provisions shall have no application to other work not performed under contract or permit with the city as indicated above.

PART 2 PRELIMINARY MATTERS

2.1 DELIVERY OF BONDS AND INSURANCE

- A. When CONTRACTOR delivers the executed Agreement to OWNER, CONTRACTOR shall also deliver required bonds and insurance certificates.

2.2 COPIES OF DOCUMENTS

- A. OWNER shall furnish to CONTRACTOR a digital copy of the Contract Documents unless hard copies are provided for in the Specifications. Additional copies will be available in electronic form for distribution from the OWNER at the request of CONTRACTOR.
- B. *OWNER shall not furnish to CONTRACTOR published Contract Documents which include the current editions of the Manual of Standard Plans the Manual of Standard Specifications and the Ogden City Standards. Such documents shall be purchased separately by the CONTRACTOR.*
- C. *Copies of all Contract Documents including the current edition of the Manual of Standard Plans, the Manual of Standard Specifications, and the Ogden City Standards shall be provided on site by the CONTRACTOR.*

2.3 COMMENCEMENT OF CONTRACT TIME – NOTICE TO PROCEED

- A. Contract Time: Time is the essence of the contract. Unless indicated otherwise in the Bid documents, Addendum, or in a Change Order, in no event will the Contract Time commence later than the 74th day after the day of bid opening or the 30th day after the effective date of the construction contract, whichever date is earlier.
- B. Notice to Proceed: A Notice to Proceed may be given at any time, even within 30 days after the effective date of the construction contract.

2.4 STARTING THE WORK

- A. CONTRACTOR shall start to perform work on the date when the time for the Contract Time commences. No work shall be done at the site prior to that date.

2.5 BEFORE STARTING CONSTRUCTION

- A. In General: Before starting each part of the work, CONTRACTOR shall carefully study and compare the Contract Documents and check and verify pertinent figures shown thereon and all applicable field measurements. CONTRACTOR shall promptly report in writing to ENGINEER any conflict, error or discrepancy that CONTRACTOR may discover and shall obtain a written interpretation or clarifications from ENGINEER before proceeding with any work affected thereby.

- B. Submittals: Within 10 days after the effective date of the construction contract, CONTRACTOR shall submit to ENGINEER, in reasonable detail and form acceptable to ENGINEER, copies of the following documents.
1. Preliminary Progress Schedule: The preliminary progress schedule shall show starting and completion dates for each construction sequence and:
 - a. submittal dates and dates required for approved submittals for shop Drawings, product data and samples;
 - b. decision dates for products specified by allowances, selection of finishes and critical material or equipment release orders;
 - c. product procurement and delivery dates;
 - d. holiday cleanup preparations; and
 - e. specific dates for all special Inspections required prior to any utilities “turn-on” including temporary power.
 2. Preliminary Shop Drawing Schedule: A supplemental schedule to the preliminary progress schedule shall show all shop drawing submissions required for the work.
 3. Preliminary Schedule of Values: the preliminary schedule of values (for lump sum work), which includes provisions set forth in quantities and prices of items aggregating the contract price, shall subdivide the work into component parts in sufficient detail to serve as the basis for progress payments during construction. Such prices will include an appropriate amount of overhead and profit applicable to each item of work. Bond expense shall not be prorated, but shall be shown as a separate item.
 4. Mobilization Program: The site mobilization program shall allow for field office and trailer locations, material storage locations, power requirements for trailers, if any, and sanitary facilities.
 5. Permits: The listing of, and photocopies of permits that the CONTRACTOR is required to purchase and maintain in accordance with Article 6.7.
 6. Quality Control Program: The written program for the control of product quality and workmanship.
 7. Safety and Protection Plan: The safety and protection plan shall comply with Article 6.12.
- C. Field Office: *The CONTRACTOR shall establish and maintain a field office in such a location that ENGINEER may always contact the CONTRACTOR for transmittal of plans, instructions and dissemination of project information. CONTRACTOR shall provide and maintain a telephone, computer with e-mail capabilities and facsimile machine in the field office during performance of the work.*

2.6 PRECONSTRUCTION CONFERENCE

- A. Within 20 days after the Contract Time starts to run, but before starting any work, CONTRACTOR shall attend a conference with ENGINEER and others:
1. to discuss the schedules referred to in Paragraph 2.5B;
 2. to discuss procedures for handling shop Drawings and other submittals;
 3. to discuss procedures for processing applications for payment;
 4. to establish a working understanding among the parties as to the work;
 5. to review or discuss other items deemed necessary by ENGINEER or CONTRACTOR; and

6. to designate the name of the individual who shall be CONTRACTOR's resident superintendent at all times while work is in progress. When the CONTRACTOR is comprised of two or more persons, firms, partnerships or corporations functioning on a joint-venture basis, before starting the work, CONTRACTOR shall designate in writing the name of a representative who shall have the authority to represent and act for the joint venture persons, firms, partnerships or corporations at all times while work is in progress.

2.7 FINALIZING SCHEDULES

- A. At least 10 days before submission of the application for payment, CONTRACTOR shall attend a conference with ENGINEER and others as appropriate to finalize the schedules submitted in accordance with Paragraph 2.5B.
 1. Progress Schedule: The finalized progress schedule must be acceptable to ENGINEER as providing an orderly progression of the work to completion within the Contract Time. The critical path must be fully defined. Acceptance will neither impose on ENGINEER responsibility for the progress or scheduling of the work, nor release or relieve the CONTRACTOR from full responsibility therefore.
 2. Schedule of Shop Drawings: The finalized schedule of shop Drawings submissions must be acceptable to ENGINEER as providing a workable arrangement for processing the submissions.
 3. Schedule of Values: The finalized schedule of values shall conform to the requirements of Articles 11.4 and 11.5 and must be acceptable to ENGINEER in form and substance.

2.8 COMMUNICATIONS FACILITATING CONTRACT ADMINISTRATION

- A. Except as otherwise provided in the Contract Documents, or when direct communications have been specially authorized, the OWNER and CONTRACTOR shall communicate through the ENGINEER.
- B. Communication by and with ENGINEER's consultants shall be through the ENGINEER.
- C. Communications by and with subcontractors and suppliers shall be through the CONTRACTOR.
- D. Communications by and with separate CONTRACTORS shall be through the ENGINEER.

PART 3 CONTRACT DOCUMENTS, INTENT, AMENDING, REUSE

3.1 INTENT

- A. In General: It is the intent of the contract documents to describe a functionally complete project to be constructed in accordance with the contract documents.
- B. Contract Documents are Complementary: The Contract Documents are complementary and cooperative and are intended to describe and provide for a complete project; what is required by one document or provisions thereof is binding as if required by all the documents or provisions thereof. *Anything in the Specifications and not on the Plans, or on the Plans and not in the Specifications, shall be as though shown or mentioned in both.*

- C. Incidental Work: Any work, materials or equipment that may reasonably be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the intended result will be supplied by CONTRACTOR at no additional cost to the OWNER whether or not specifically referenced.
- D. Technical or Trade Words: When words which have a well-known technical or trade meaning are used to describe work, materials or equipment, such words shall be interpreted in accordance with that meaning.

3.2 RESOLVING DISCREPANCIES

- A. References: Reference to manuals or codes of any technical society, organization or association, or to the laws or regulations of any governmental authority, whether such reference be specific or by implication, shall mean the latest manual, code or laws or regulations in effect at the time of opening of Bids (or on the effective date of the construction contract if there were no Bids), except as may be otherwise specifically stated.
- B. Duties of CONTRACTOR or ENGINEER Not Changed: No provision of any referenced manual or code (whether or not specifically incorporated by reference in the Contract Documents) shall be effective to change the duties and responsibilities of CONTRACTOR or ENGINEER from those set forth in the contract documents, nor shall it be effective to assign to ENGINEER, or any of ENGINEER's consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C or 9.9D.
- C. Conflict, Error, Discrepancy, Omission in Contract Documents: If, during the performance of the work, or omission in the Contract Documents, CONTRACTOR shall so report to ENGINEER in writing at once. Before proceeding with work affected thereby CONTRACTOR shall obtain a written interpretation or clarification from ENGINEER as provided in Article 9.4.
 - 1. Dimensions on Drawings: In the event of any discrepancy between the measured dimensions on any drawing and the written dimensions shown thereon, the written dimensions shall be taken as correct.
 - 2. Detail Drawings: Detail Drawings, regardless of trade or item of work, shall prevail over general Drawings.
 - 3. Work Shown on the Drawings: Any part of the work which is not mentioned in the Bid documents or specifications, but which is shown on the Drawings, shall be furnished and installed by CONTRACTOR as if fully described in the Bid documents or specifications and at no additional cost to the OWNER.
 - 4. Irreconcilable Conflict: Only in case of irreconcilable conflict between provisions within the Contract Document or between Contract Documents, the intent of the Contract Documents shall be interpreted in accordance within the following priorities.
 - a. A particular modification shall govern over all Contract Documents or modifications issued prior to said particular modification.
 - b. These General Conditions shall govern over all Contract Documents except the Agreement, Agreement Supplement, supplementary conditions, Addenda and modifications.

- c. The Specifications shall govern over Drawings, Standard Specifications, and Standard Plans.
- d. The Drawings shall govern over the Standard Specifications and Standard Plans.
- 5. Notification Still Required: The priority provisions of Paragraph 3.2C4 above shall not relieve CONTRACTOR of notifying OWNER of such an irreconcilable conflict.
- D. Capitalization: Terms capitalized in these General Conditions include those which are (1) titles of OWNER, CONTRACTOR and ENGINEER, (2) the title of numbered Articles, and (3) the title of referenced documents. Capitalization is for emphasis only and shall not affect the meaning, content or effect of the Contract Document. If any terms are capitalized which do not fit within these categories, the capitalization shall be ignored.
- E. Headings: Any headings preceding the text of paragraphs in a Contract Document are inserted solely for convenience of reference and shall not affect its meaning, content or effect or be referred to in any interpretation thereof.

3.3 AMENDING AND SUPPLEMENTING CONTRACT DOCUMENTS

- A. The Contract Documents may be amended on or after the effective date of the construction contract to provide for additions, deletions and revisions in the work or to modify the terms and conditions thereof in one or more of the following ways:
 - 1. a Work Directive Change (Paragraph 10.1B); or
 - 2. a Change Order (Paragraph 10.1C).
- B. As indicated in Articles 11.2 and 1.21, contract price and Contract Time may only be changed by a Change Order.
- C. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the work may be authorized, in one or more of the following ways:
 - 1. ENGINEER's review of a shop drawing or sample (pursuant to Paragraphs 6.14F and 6.14G); or
 - 2. ENGINEER's written interpretation or clarifications (pursuant to Article 9.4).

3.4 REUSE OF DOCUMENTS

- A. Neither CONTRACTOR nor any subcontractor or supplier or other person or organization performing or furnishing any of the work under a direct or indirect contract with OWNER shall 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 for ENGINEER; and they shall not reuse any of them on extensions of the project or any other project without written consent of OWNER.

3.5 INTERPRETATION AND VENUE

- A. The Contract Documents will be construed in accordance with the laws of the State of Utah. Any court action arising from the construction contract shall be brought in an appropriate federal or state court with appropriate jurisdiction in which the OWNER resides.

PART 4 AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; REFERENCE POINTS

4.1 AVAILABILITY OF LANDS

A. OWNER shall furnish the lands upon which the work is to be performed, rights-of-way and easements for access thereto, and such other lands which are designated for the use of CONTRACTOR in the Contract Documents. Easements for permanent structures or permanent changes in existing facilities will be obtained and paid for by OWNER unless otherwise provided in the Contract Documents. In the event of OWNER's delay in furnishing these lands, rights-of-way or easements, if CONTRACTOR believes that any delay entitles CONTRACTOR to an increase in the contract price or an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in Parts 11 and 12 hereof. CONTRACTOR shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

4.2 PHYSICAL CONDITIONS – GENERAL

- A. Explorations and Reports: Reference, when applicable, is made to geotechnical data in the Bid documents for identification of those reports of explorations and tests of subsurface conditions at the site that have been utilized by ENGINEER in preparation of the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such reports at the locations and the indicated depths where the data was obtained, but not upon the other information, interpretations or opinions contained therein or for the completeness thereof, expressed or implied. Except as indicated in the immediately preceding sentence and in Paragraph 4.2C, CONTRACTOR shall have full responsibility with respect to subsurface conditions at the site.
- B. Existing Structures: Reference, when applicable, is made to the supplementary conditions for identifications of those Drawings of physical conditions in or relating to existing surface and subsurface structures (except underground facilities referred to in Article 4.3) which are at or contiguous to the site that have been utilized in preparing the Contract Documents. CONTRACTOR may rely upon the accuracy of the technical data contained in such Drawings, but not upon the completeness thereof for CONTRACTOR's purposes. Except as indicated in the immediately preceding sentence and in Paragraph 4.2C, CONTRACTOR shall have full responsibility with respect to physical conditions in or relating to such structures.
- C. Differing Site Conditions: If CONTRACTOR believes that any technical data on which CONTRACTOR is entitled to rely as provided in Paragraphs 4.2A and 4.2B is inaccurate, or any physical condition uncovered or revealed at the site differs materially from that indicated in the Contract Documents, or unknown physical conditions exist at the site which are of an unusual nature differing materially from those ordinarily encountered and generally recognized as inherent in work of the character provided for in the construction contract, CONTRACTOR shall immediately notify ENGINEER in writing before performing any work in connection therewith. Failure by the CONTRACTOR to give notice about the inaccuracy or difference, and the performance of any work in connection with said differing site conditions (except in an emergency as permitted by Article 6.13), shall bar the

CONTRACTOR from making any claim for additional compensation in connection therewith.

1. ENGINEER's Review: ENGINEER will review the alleged or claimed differing conditions and determine if it is necessary to obtain additional explorations or tests with respect thereto.
 2. Possible Document Change: If the ENGINEER concludes that there is a material error in the Contract Documents, or that a change in the Contract Documents is required, a Change Order will be issued as provided in Part 10 to reflect and document the consequences of the inaccuracy or difference.
 3. Possible Price and Time Adjustments: For such possible document change an increase or decrease in the contract price or an extension or shortening of the Contract Time, or any combination thereof, may be allowable to the extent the ENGINEER determines that they are attributable to any such inaccuracy. If ENGINEER and CONTRACTOR are unable to agree as to the amount or length thereof, a claim may be made therefore as provided in Parts 11 and 12.
- D. Hazardous Substances: Neither OWNER nor ENGINEER are aware of any hazardous substances which may be encountered in performance of the work except as may be specifically disclosed elsewhere in the Contract Documents. Neither OWNER nor ENGINEER have specifically inspected the site to determine any such presence except as disclosed in the Contract Documents.

4.3 PHYSICAL CONDITIONS – UNDERGROUND FACILITIES

- A. Shown or Indicated: The information shown or indicated in the Contract Documents with respect to existing underground facilities at or contiguous to the site is based on information and data furnished to OWNER or ENGINEER by the OWNERS of such underground facilities or by others. OWNER shall not be responsible for the accuracy or completeness of any such information.
1. One-call Center: The CONTRACTOR shall have full responsibility for reviewing and verifying all such information, with the one-call center (Blue Stake location center) or other utility coordination service a minimum of 2 working days prior to any excavation to locate all underground facilities shown or indicated in the Contract Documents. The CONTRACTOR shall have full responsibility for any damages to underground facilities or costs resulting from the damage to such facilities, in those instances where the CONTRACTOR did not dependently locate and verify the location of such facilities.
 2. Tolerances: The information presented is considered accurate to within 3 feet vertical and 4 feet horizontal on each side of the utility location shown on the Drawings. Should a utility so shown not be within said tolerances, said utility shall be handled as outlined in Paragraph 4.3B below.
 3. Coordination: The CONTRACTOR shall coordinate the work with the OWNERS of such underground facilities during construction and shall be responsible for the safety and protection thereof as provided in Article 6.12.
 4. Costs: If work is performed within the above referenced tolerances, the cost of all of the above including repair of any damages therein resulting from performance of the work, will be considered as having been included in the contract price and no additional compensation will be allowed therefore.

- B. Not Shown or Indicated: If an underground facility is uncovered or revealed at or contiguous to the site which was not shown or indicated in the Contract Documents and which CONTRACTOR could not reasonably have been expected to be aware of, CONTRACTOR shall, promptly after becoming aware thereof and before performing any work affected thereby (except in an emergency as permitted by Article 6.13), identify the OWNER of such underground facility and give written notice thereof to that OWNER and to ENGINEER.
1. ENGINEER to Modify Contract Documents: ENGINEER will promptly review the underground facility to determine the extent to which the Contract Documents should be modified to reflect and document the consequences of the existence of the underground facility, and the Contract Documents will be amended or supplemented to the extent necessary.
 2. Safety and Precaution: During such time, CONTRACTOR shall be responsible for the safety and protection of such underground facility as provided in Article 6.12.
 3. Contract Price or Contract Time Adjustment: CONTRACTOR may be allowed an increase in the contract price or an extension of the Contract Time, or both, to the extent that they are attributable to the existence of any underground facility that was not shown or indicated in the Contract Documents, or that was not identified by the CONTRACTOR where such identification could have been made through a reasonably prudent investigation by the CONTRACTOR.
 4. Claims: If the parties are unable to agree as to the contract price or Contract Time adjustments, CONTRACTOR may make a claim therefore as provided in Parts 11 and 12.

4.4 REFERENCE POINTS AND MONUMENTS

- A. OWNER shall provide land 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 shall make no changes or relocations without the prior written permission of OWNER. CONTRACTOR shall report to ENGINEER whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.
- B. CONTRACTOR shall not disturb any survey monuments found on the line of the improvements until ordered by the ENGINEER. No survey monument shall be disturbed or moved until ENGINEER has been notified and ENGINEER has referenced the survey monument for resetting.

4.5 ASBESTOS, PCBs, PETROLEUM, HAZARDOUS WASTE FOR RADIOACTIVE MATERIAL

- A. Neither OWNER nor ENGINEER are aware of any hazardous substances which may be encountered in performance of the work except as may be specifically disclosed elsewhere in the Contract Documents. Neither OWNER nor ENGINEER have specifically inspected the site to determine any such presence except as disclosed in

the Contract Documents. The provisions of Articles 4.2 and 4.3 shall not apply to asbestos, PCBs, petroleum, hazardous waste or radioactive material uncovered or revealed at the site.

PART 5 BONDS AND INSURANCE

5.1 PERFORMANCE, PAYMENT AND OTHER BONDS

- A. Prior to OWNER executing the Agreement, CONTRACTOR shall file with the OWNER a good and sufficient Performance Bond and a Payment Bond, each in the sum of not less than 100 percent of the contract price.*
- B. The bonds shall be executed by the CONTRACTOR and secured by a company duly and regularly authorized to do a general surety business in the State of Utah and named in the current list of companies holding certificates of authority as acceptable sureties on federal bonds and as acceptable reinsuring companies as published in current Circular 570 (amended) by the Audit Staff bureau of Accounts, U.S. Treasury Department, with an underwriting limitation equal to or greater than the contract price which the bond guarantees or with a current "A-" rating or better in A.M. Best Co., Inc.'s Best Insurance Reports, Property and Casualty Edition.*
- C. Said bonds shall guarantee the faithful performance of the construction contract by the CONTRACTOR and payment of labor and materials. They shall inure by their terms to the benefit of the OWNER. Neither this nor any other provision requiring a Performance Bond shall be construed to create any rights in any third party claimant as against the OWNER for performance of the work under the construction contract.*
- D. If the surety on any bond furnished by CONTRACTOR is subject to any proceeding under the Bankruptcy Code (Title 11, United States Code) or becomes insolvent or its right to do business is terminated in the State of Utah or it ceases to meet the requirements of this Article, CONTRACTOR shall, within 15 days thereafter, substitute another bond and surety, both of which must be acceptable to OWNER.*

5.2 INSURANCE

- A. In General: All policies of insurance provided shall be issued by insurance companies qualified to do business in the State of Utah and listed on the U.S. Treasury Department's current Department of Treasury Fiscal Services List 570, or having a general policy holder's rating of not less than "A-" in the most current available A.M. Best Co., Inc.'s Best's Insurance Report.*
- B. Insurance Requirements: CONTRACTOR shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by CONTRACTOR, its agents, representatives, employees or subcontractors. The cost of such insurance shall be included in CONTRACTOR's Bid. The amount of insurance shall not be less than:*
- 1. Commercial General Liability: \$1,000,000 combined single limit per occurrence and \$3,000,000 general aggregate for bodily injury, personal injury and property damage. Policy to include coverage for premises and operations, contractual liability, personal injury liability, products/completed operations liability, broad-*

- form property damage (if applicable) and independent CONTRACTORs' liability (if applicable) written on an occurrence form.*
2. *Business Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury and property damage for owned, non-owned and hired autos.*
 3. *Workers' Compensation and Employers' Liability: Workers' compensation limits as required by the labor code of the State of Utah and employers' liability with limits of \$1,000,000 per accident.*
- C. *Each insurance policy required by this Agreement shall contain the following clauses:*
1. *"This insurance shall not be suspended, voided, canceled, reduced in coverage or in limits except after thirty days prior written notice by certified mail, return receipt requested, has been given to the City."*
 2. *"It is agreed that any insurance or self-insurance maintained by Ogden City, its elected and appointed officials, employees, agents and volunteers shall be excess of CONTRACTOR's insurance and shall not contribute with insurance provided by this policy."*
- D. *Each insurance policy required by this Agreement, excepting policies for Workers' Compensation, shall contain the following clause:*
1. *"Ogden City, its elected and appointed officials, employees, volunteers and agents are to be named as additional insureds as respect to operations and activities of, or on behalf of, the named insured as performed under Agreement with the City."*
- E. *Insurance is to be placed with insurers acceptable to and approved by the City. CONTRACTOR's insurer must be authorized to do business in Utah at the time the contract is executed and throughout the time period the contract is maintained, unless otherwise agreed to in writing by the City. Failure to maintain or renew coverage or to provide evidence of renewal will be treated by City as a material breach of contract.*
- F. *The City shall be furnished with original certificates of insurance and endorsements effecting coverage required within, signed by a person authorized by that insurer to bind coverage on its behalf. All certificates and endorsements are to be received by the City before work commences.*
- G. *The City reserves the right to require complete, certified copies of all required insurance policies at any time.*
- H. *Any deductibles or self-insured retentions must be declared to and approved by the City. At the option of the City, either:*
1. *the insurer shall reduce or eliminate such deductibles or self-insured retentions as respects the City, its elected and appointed officials, employees, agents and volunteers;*
 2. *or CONTRACTOR shall provide a financial guarantee satisfactory to the City guaranteeing payment of losses and related investigations, claim administration and defense expenses.*
- I. *CONTRACTOR shall include all subcontractors and insured under its policies or shall furnish separate certificates and endorsements for each subcontractor. All coverages for subcontractors shall be subject to all of the requirements stated herein.*

- J. *Nothing contained herein shall be construed as limiting in any way the extent to which CONTRACTOR may be held responsible for payments of damages to persons or property resulting from CONTRACTOR's or its subcontractor's performance of the work covered under this Agreement.*
- K. *Builder's Risk: CONTRACTOR agrees to and assumes the risk of loss for any damage or loss to the work and project by any means or occurrence until substantial completion. If this contract includes construction of an above ground structure, CONTRACTOR further agrees to obtain builder's risk or course of construction insurance in the total amount of the contract price.*

PART 6 CONTRACTOR'S RESPONSIBILITIES

6.1 CONTROL OF THE WORK

- A. Means, Methods, Techniques, Sequences, Procedures of Construction:
CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences and procedures of construction. CONTRACTOR shall be responsible to ensure that the completed work complies with the Contract Documents. CONTRACTOR shall supervise, direct and control the work competently and efficiently. CONTRACTOR shall devote such attention thereto and applying such skill and expertise as necessary to perform the work in accordance with the Contract Documents.
- B. Resident Superintendent: CONTRACTOR shall designate in writing and keep on site at all times during the progress of the work a competent resident superintendent. The superintendent shall not be replaced without written notice to ENGINEER except under extraordinary circumstances. The superintendent shall have authority to act on behalf of CONTRACTOR.
- C. Communications: All communications given to the resident superintendent by ENGINEER shall be as binding as if given to CONTRACTOR. If CONTRACTOR's resident superintendent is not present on site or on any part of the work, ENGINEER may give communications to an employee of the CONTRACTOR or to the CONTRACTOR's subcontractor or suppliers who may have charge of the particular portion of the work in reference to which the communications are given. Without being contrary to the provisions of Paragraphs 9.9C or 9.9D, such communications shall be considered given by the ENGINEER to the CONTRACTOR when confirmed in writing and delivered to the CONTRACTOR's resident superintendent.
- D. CONTRACTOR not Agent of OWNER: ENGINEER's right to enforce provisions of the Contract Documents shall not make the CONTRACTOR, nor the CONTRACTOR's agents, employees, subcontractors, or suppliers, agents of the OWNER. The liability of the CONTRACTOR for all damages to persons or to public or private property, arising from CONTRACTOR's execution of the work, shall not be diminished because of ENGINEER's enforcement of the Contract Documents.

6.2 LABOR, MATERIALS AND EQUIPMENT

- A. Personnel and Discipline: CONTRACTOR shall provide competent, qualified personnel to survey and lay out the work and perform construction as required by the Contract Documents. CONTRACTOR shall at all times maintain good discipline and

- order at the site. If any subcontractor or employee or the CONTRACTOR shall appear to ENGINEER to be incompetent or to act in a disorderly or disobedient manner, the person shall be immediately removed from the project upon the request of the ENGINEER, and such person shall not be employed again on the work.
- B. Regular working hours: Except in connection with the safety or protection of persons or the work or property at the site or adjacent thereto, and except as otherwise indicated in the Contract Documents, all work at the site shall be performed during regular working hours.
- C. Overtime: If CONTRACTOR permits overtime work *beyond the standard hours of operation for Ogden City Engineering employees or permits the performance of work on Saturday, Sunday or any legal holiday* CONTRACTOR shall do so at no increase to the contract price and shall give prior written notice to ENGINEER. *CONTRACTOR shall be responsible for all additional costs associated with overtime incurred by OWNER, ENGINEER or their representatives or assistants. Said costs may be considered as deductions from the amounts payable to the CONTRACTOR at the discretion of the ENGINEER.*
- D. Temporary Facilities: Unless otherwise specified in the Contract Document (e.g. OWNER-supplied materials, etc.), CONTRACTOR shall furnish and assume full responsibility for all 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 furnishing, performance, testing, start-up, completion or suspension of the work.
- E. Materials and Equipment: All materials and equipment shall be applied installed, connected, erected, used, cleaned and conditioned in accordance with instructions of the applicable supplier, except as otherwise provided in the Contract Documents; but no provision of any such instructions shall be effective to assign to OWNER, ENGINEER or any of OWNER's representatives, consultants, agents or employees, any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.9C or 9.9D. All warranties and guarantees specifically called for in the specifications shall expressly run to the benefit of the OWNER.
1. Adequate, Safe and Suitable Equipment: The CONTRACTOR shall provide adequate, safe and suitable equipment to meet the work requirements, and when ordered by the ENGINEER, shall remove unsuitable equipment from the work.
 2. Operating Construction Equipment on Site: No construction equipment or machinery shall be operated upon paved streets, sidewalks, landscaped areas or prepared roadway shoulders which may be injurious to said areas.
 3. Quality, New: All materials and equipment to be installed in the work shall be of good quality and new, except as otherwise provided in the Contract Documents. If required by ENGINEER, CONTRACTOR shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment.
 4. Certificate of Compliance: The ENGINEER may permit the use of certain materials or assembly prior to sampling and testing if accompanied with a certificate of compliance stating that materials involved comply in all respects

with the requirements of the Contract Documents subject to the following conditions:

- a. the form of a certificate of compliance and its disposition shall be as directed by the ENGINEER;
- b. the certificate shall be signed by the manufacturer of the materials or the manufacturer of the assembled material;
- c. the certificate must be furnished with each material or assembly of material delivered to the work and the material or assembly of material so certified must be clearly identified in the certificate;
- d. all materials used on the basis of a certificate of compliance may be contested at any time;
- e. the fact that material is used on the basis of a certificate of compliance shall not relieve CONTRACTOR from the responsibility of incorporating material in the work which conforms to requirements of the Contract Documents and any such material not conforming to such compliance, whether or not in place, shall be removed and replaced at no additional cost to the OWNER; and
- f. OWNER reserves the right to refuse to permit the use of material on the basis of a certificate of compliance.

6.3 ADJUSTING PROGRESS SCHEDULE

- A. Changes: CONTRACTOR shall submit to ENGINEER adjustments in the progress schedule which reflect the impact thereon of changes to the work.
 1. Proposed adjustments in the progress schedule that will not change the Contract Time or milestones will conform generally to the progress schedule then in effect and additionally will comply with any provisions of Paragraph 2.5. Such submittal must be accepted by ENGINEER before the adjusted schedule becomes effective.
 2. Proposed adjustments in the progress schedule that will change the Contract Time or milestones shall be submitted in accordance with the requirements of Article 12.1. Such adjustments may only be made by a Change Order in accordance with Article 3.3.
- B. Float Time: Any float time used in the progress schedule shall not be owned solely by OWNER or CONTRACTOR.
 1. Float time shall be allocated and used in the best interests of the work.
 2. CONTRACTOR's schedules shall reflect CONTRACTOR's use of float time and specify the reason for CONTRACTOR's use.
 3. The progress schedule shall reflect OWNER's use of float time.
 4. OWNER shall notify CONTRACTOR or OWNER's claim to use any float time and shall specify the reason for such use.

6.4 SUBSTITUTES OR "OR EQUAL" ITEMS

- A. Proprietary Item or Particular Supplier: Whenever materials or equipment are specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular supplier, such naming is intended to establish the type, function, and quality required. Unless the specification or description contains or is followed by words reading that no substitution is permitted, material and

equipment or other suppliers may be accepted by ENGINEER. Review and acceptance of the “or equal” substitute item may, in ENGINEER’s sole discretion, be accomplished without compliance with some or all of the following requirements for acceptance of proposed substitute items:

1. requests for review of substitute items of material and equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR;
 2. CONTRACTOR shall first make written application to ENGINEER for acceptance of proposed substitute item of material or equipment;
 3. CONTRACTOR shall certify that the proposed substitute will function and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified;
 4. the application shall state that the evaluation and acceptance of the proposed substitute will not prejudice CONTRACTOR’s achievement of substantial completion on time, whether or not acceptance of the substitute for use in the work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work on the project) to adapt the design to the proposed substitute and whether or not incorporation or use of the substitute in connection with the work is subject to payment of any license fee or royalty;
 5. all variations of the proposed substitute from that specified will be identified in the application and the nature and extent of available maintenance, repair and replacement service will be indicated;
 6. the application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from acceptance of such substitute, including costs of redesign and claims of separate CONTRACTORS affected by the resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute;
 7. all data to be provided by CONTRACTOR in support of any substitute item or proposed substitute item will be at CONTRACTOR’s expense; and
 8. ENGINEER may require CONTRACTOR to furnish at CONTRACTOR’s expense additional data which ENGINEER determines to be necessary to evaluate the proposed substitute item.
- B. Substitute Construction Methods or Procedures: If a specific means, method, technique, sequence or procedure of construction is indicated in or required by the Contract Documents, CONTRACTOR may furnish or utilize a substitute means, method, sequence, technique or procedure of construction acceptable to ENGINEER, if CONTRACTOR submits sufficient information to allow ENGINEER, in ENGINEER’s sole discretion, to determine that the substitute proposed is equivalent to that indicated or required by the Contract Documents. The procedure for review by ENGINEER will be similar to that provided in Paragraph 6.4A as applied by ENGINEER and as supplemented in Section 01 25 00 of the General Requirements in the Standard Specifications.
- C. Time Require for Review of Substitute: Proposed substitutes shall be made in ample time to permit review and written approval without delaying the work. ENGINEER will be the sole judge of acceptability, and no substitute will be ordered, installed or

- utilized without ENGINEER's prior written acceptance which will be evidenced by either a Change Order or an approved shop drawing.
- D. Special Performance Guarantee: OWNER may require CONTRACTOR to furnish at CONTRACTOR's expense a special performance guarantee or other surety with respect to any substitute.
 - E. OWNER's Costs: CONTRACTOR shall reimburse OWNER for all charges or expenses incurred by OWNER regarding any request for substitution per this part whether or not such request is approved.
 - F. No Extra Time for Review: CONTRACTOR's request to use substitute materials and equipment or methods per this Article and ENGINEER's review of such request shall not extend the Contract Time.

6.5 SUBCONTRACTORS, SUPPLIERS AND OTHERS

- A. General: CONTRACTOR shall not employ any subcontractor, supplier or other person or organization (including those acceptable to OWNER as indicated in Paragraph 6.5B), whether initially or as a substitute, against whom OWNER may have reasonable objection. CONTRACTOR shall not be required to employ any subcontractor, supplier or other person or organization to furnish or perform any of the work against whom CONTRACTOR has reasonable objection.
- B. Adjustment for Substitution of Subcontractor, Suppliers and Other Person: If any subcontractor, supplier or other person or organization, which was identified by CONTRACTOR prior to the effective date of the construction contract, is to be replaced by the CONTRACTOR, or on request of the OWNER on the basis of reasonable investigation, CONTRACTOR shall propose in writing to the OWNER an acceptable subcontractor, supplier or other person or organization substitute. If OWNER's request is based upon defective work or CONTRACTOR's failure to comply with the Contract Documents, the contract price shall remain unchanged, otherwise, the contract price will be adjusted by the difference in the cost occasioned by such replacement and an appropriate Change Order signed. No acceptance by OWNER of any subcontractor, supplier or other person or organization shall constitute a waiver of any right of OWNER or ENGINEER to reject defective work or any other right under the Contract Documents or under law or regulations.
- C. OWNER – CONTRACTOR – Subcontractor Relationships: CONTRACTOR shall be fully responsible to OWNER for all acts and omissions of subcontractors, suppliers and other persons and organizations performing or furnishing any of the work under a direct or indirect contract with CONTRACTOR just as CONTRACTOR is responsible for acts and omissions of CONTRACTOR's own agent or employee. Nothing in the Contract Documents shall create any contractual relationship between OWNER and any such subcontractor, supplier or other person or organization, nor shall it create any obligation on the part of OWNER to pay or to see to the payment of any moneys due any such subcontractor, supplier or other person or organization except as may otherwise be required by laws and regulations.
- D. Responsibility for Subcontractor Licensing: Proper licensing under state or local law and regulations to perform the work of a subcontract shall be the responsibility of the CONTRACTOR and the subcontractor or subcontractors involved. OWNER does not assume any responsibility for the terms and conditions of the contract between

CONTRACTOR and subcontractor. OWNER's requirement that CONTRACTOR submit a subcontractor and supplier report shall not be construed as an assumption by OWNER of any responsibility for said licensing requirements or terms and conditions of subcontracts.

- E. Contract Documents Do Not Subdivide the Work: The divisions and sections of the specifications and the identifications of any Drawings shall not control CONTRACTOR in dividing the work among subcontractors or suppliers or delineating the work to be performed by any specific trade.
- F. Subcontractor Agreements: All work performed for CONTRACTOR by a subcontractor will be pursuant to an appropriate written agreement between CONTRACTOR and the subcontractor which specifically binds the subcontractor to the applicable terms and conditions of the Contract Documents for the benefit of OWNER. If requested by OWNER, CONTRACTOR shall provide copies of such agreements to OWNER.
- G. Subcontractor or Supplier Default: When any part of the work has been subcontracted and is not being prosecuted in a manner satisfactory to ENGINEER, CONTRACTOR shall cause such failure to be corrected as required by the Construction Contract. In such a case, no additional compensation will be paid to CONTRACTOR for completing the part of the work.
- H. Conflict of Interest, Subcontractors: No agency or company which is or has been under contract to the OWNER to provide design, design reviews, soil testing, material testing, surveying and any other such functions associated with the design phase of the work shall be used as a subcontractor by the CONTRACTOR.

6.6 PATENT FEES AND ROYALTIES

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

6.7 PERMITS

- A. In General: Unless otherwise provided in the supplementary conditions, CONTRACTOR shall obtain and pay for all permits, licenses and inspections. The CONTRACTOR shall, without additional cost to the OWNER, give all notices and pay all necessary fees (including plan check fees) in connection with the performance of the construction contract. CONTRACTOR shall furnish a copy of permits and licenses (except permanent easements) to the ENGINEER prior to CONTRACTOR commencing work thereunder.
- B. Governmental Charges and Inspection Fees: CONTRACTOR shall pay all governmental charges and inspection fees necessary for the prosecution of the work, which are applicable at the time of opening Bids, or if there are no Bids, on the effective date of the construction contract.

- C. Utility Connection Fees and Plant Investment Fees: CONTRACTOR shall pay all charges of utility OWNERS for connections to the work, and OWNER shall pay all charges of such utility OWNERS for capital costs related thereto such as plant investment fees.
- D. Temporary Utilities: CONTRACTOR shall make all arrangements for electricity, sewer, gas and telephone from the appropriate utility companies. All utility lines will be on the surface of the ground, underground or placed on temporary poles and shall conform to the appropriate load requirements. No pole shall be erected without approval of the ENGINEER. Relocation of temporary utilities shall be paid for by the CONTRACTOR at no additional cost to the OWNER.
- E. Uniform Building Code: CONTRACTOR shall arrange for all necessary inspections required by the appropriate governmental authority(ies). Before final payment is issued, CONTRACTOR shall deliver to the ENGINEER copies of all certificates of inspection.
- F. Waterworks Connections: If CONTRACTOR desires to use OWNER's water, it shall first contact ENGINEER and make arrangements therefore. CONTRACTOR shall pay all necessary charges, and usage costs.
- G. Utah Pollutant Discharge Elimination System (UPDES) Permit: An UPDES permit shall be secured by CONTRACTOR at CONTRACTOR's sole expense, if the construction site requires such a permit under Utah Water Quality Act, Title 19, Chapter 5, Utah Code Annotated 1953, as amended. The agency responsible for verifying permit requirement is the State of Utah Department of Environmental Quality, Division of Water Quality.
- H. Ogden City Permits: *In addition to any other permits required for the work, the CONTRACTOR shall obtain permits from Ogden City Corporation for work on the project.*
1. OWNER-Paid Permits: *CONTRACTOR shall be responsible for submitting plans, scheduling inspections and paying all costs incidental to such actions as required for any building, plumbing, mechanical, electrical, water, sewer or drainage permit required by Ogden City Corporation. Except for construction water meter fees, the fees for these permits shall be paid by the OWNER and shall not be included in CONTRACTOR's Bid. The following listed permit is not exclusive and does not relieve CONTRACTOR of the responsibility of obtaining all permits.*
 - a. Permit for Work in the Public Way: *From Ogden City's Engineering division, ENGINEER's One Stop counter, 2549 Washington Boulevard, Suite 240, Ogden City, Utah, 84401. Phone (801) 629-8986.*
 2. CONTRACTOR-Paid Permits: *The fees for permits not paid for by the OWNER shall be included in the CONTRACTOR's Bid. The following list is not exclusive and does not relieve CONTRACTOR of the responsibility of obtaining all permits:*
 - a. Construction Water: *If water for construction is required to be taken from fire hydrants or from a new water service, CONTRACTOR shall be solely responsible for obtaining and paying for necessary permits and water usage to Ogden City. Construction water permits to connect to a new water service can be obtained, along with a description of backflow requirements at Ogden City One Stop Counter, 2549 Washington*

Boulevard, Ogden City, Utah 84401. (801) 629-8985. Construction water obtained from a fire hydrant must be metered from an Ogden City hydrant meter. Meters can be rented with a deposit from Ogden City Utilities 133 W. 29th St. Ogden City, Utah 84401. (801) 629-8321. Connections made without proper backflow prevention or hydrants connected without an Ogden City hydrant meter may be subject to penalties or fines.

- b. *Building, Electrical and Plumbing Permits: From Ogden City Building Inspections office, 2549 Washington Boulevard, Suite 240, Ogden, Utah, 84401. Phone (801) 629-8985.*
- c. *Permit and Fees for Tap of Water Mains: From Ogden City One Stop Counter, 2549 Washington Boulevard, Suite 240, Ogden, Utah 84406. Phone (801) 629-8986. Ogden City Water Utility, 175 West 29th Street, Ogden, Utah. Phone (801) 629-8321.*
- d. *Permit and Fees for Tap of Sewer Mains: From Ogden City One Stop Counter, 2549 Washington Boulevard, Suite 240, Ogden, Utah, 84401 Phone (801) 629-8986.*
- e. *General Permit for Storm Water Discharge:*
 - 1. *Between 5,000 square feet and 0.99 acres:* From Ogden City One Stop Counter, 2549 Washington Boulevard, Suite 240, Ogden, Utah 84401, (801) 629-8986
 - 2. *1 acre or more:* From the State of Utah, Department of Environmental Quality, Division of Water Quality. Fee varies; contact the State for a quote.
- f. *Ogden City Business License: In addition to any other licenses required for the work, the CONTRACTOR shall obtain a business license from Ogden City Corporation for work on the project.*
 - 1. *A general CONTRACTOR who performs labor will be required to show evidence of a current Ogden City Business License, if he/she has a business in Ogden City.*
 - 2. *Only those major subcontractors, i.e. mechanical, electrical, and plumbing that are required to secure permits from the Ogden City Inspection Division will be required to secure an Ogden City Business License, if they have a business in Ogden City.*
- g. *Other Permits: All other permit fees required by Ogden City, the State of Utah, the United States of America, and any of their agencies, or by any private utility companies, shall be paid for and obtained by the CONTRACTOR and included in the CONTRACTOR's Bid. The following list is not exclusive and does not relieve CONTRACTOR of the responsibility of obtaining all permits:*
 - 1. *UDOT Digging Permit: ; State of Utah, District 1. Phone (801)620 1604/1639.*
 - 2. *Private Property OWNER Permit: Written permission to use private water.*
 - 3. *Private Property OWNER Permit: Written permission to store product, equipment, materials and supplies outside of work site boundaries.*

4. General Permit for Storm Water Discharge: From the State of Utah, Department of Environmental Quality, Division of Water Quality. Fee varies. Contact the State for a quote.
5. Flood Control Permit: Weber County, Department of Public Works, Engineering, Ogden City, Utah.

6.8 LAWS AND REGULATIONS

- A. CONTRACTOR shall give all notices and comply with all laws and regulations applicable to furnishing and performance of the work. Except where otherwise expressly required by applicable laws and regulations, OWNER shall not be responsible for monitoring CONTRACTOR's compliance with any laws and regulations nor the compliance of any of CONTRACTOR's agents, employees, subcontractors or suppliers.
- B. If CONTRACTOR observes that the specifications or Drawings are at variance with any laws or regulations, CONTRACTOR shall give ENGINEER prompt written notice thereof, and any necessary changes will be authorized by one of the methods indicated in Paragraph 3.3A. If CONTRACTOR performs any work knowing or having reason to know that it is contrary to such laws or regulations, and without such notice to ENGINEER, CONTRACTOR shall bear all costs arising there from.

6.9 TAXES

- A. Except for OWNER-supplied material, CONTRACTOR shall pay all sales, consumer, use and other similar taxes which are required to be paid during the performance of the work in accordance with applicable laws and regulations.

6.10 USE OF PREMISES

- A. Use of Premises, Damage: CONTRACTOR shall confine construction equipment, the storage of materials and equipment and the operations of workers to the project site and land and areas identified in and permitted by the Contract Documents and other land and areas permitted by laws and regulations, rights-of-way, permits and easements, and shall not unreasonably encumber the premises with construction equipment or other materials or equipment. CONTRACTOR shall assume full responsibility for any damage to any such land or area, or to the OWNER or occupant thereof, or of any such land or areas contiguous thereto, resulting from the performance of the work.
- B. Clean Work Site: During the progress of the work, CONTRACTOR shall keep the premises free from accumulations of waste materials, rubbish and other debris resulting from the work. At the completion of each portion of the work CONTRACTOR shall remove all waste materials, rubbish and debris from and about the premises as well as all tools, appliances, construction equipment and machinery, and surplus materials, and shall leave the site clean and ready for occupancy by OWNER.
- C. Restoration of Property, Clean Neighborhood, Costs: CONTRACTOR shall restore to original condition all property not designated for alteration by the Contract Documents. Failure by CONTRACTOR to repair damage or disturbance or to maintain the job site, adjacent areas and haul routes in a clean and neat condition in

accordance with Contract Documents will result in OWNER, after reasonable notice to CONTRACTOR, providing the equipment and labor necessary to clean up the said areas and charging the costs thereof to CONTRACTOR. "Cleanliness" requires removal of rocks, dirt and spillage.

- D. Load Safety: CONTRACTOR shall not load or permit any part of any structure at the work site to be loaded in any manner that will endanger the structure. CONTRACTOR shall not subject any part of the work or adjacent property to stresses or pressures that will endanger either of them.
- E. CONTRACTOR to Indemnify; Save OWNER Harmless: CONTRACTOR shall assume full responsibility for any damage to:
 - 1. the project site, land and areas identified in and permitted by the Contract Documents and laws and regulations, rights-of-way, permits easements; and
 - 2. other property which may be damaged by CONTRACTOR, subcontractors or suppliers during the performance of the work such as walls, utilities, streets, ways, sidewalks, curbs gutters and property of third part including other governmental agencies).

Should any claims be made against OWNER by any owner or occupant of any land or area damaged by CONTRACTOR, subcontractors or suppliers during performance of the work, CONTRACTOR shall promptly attempt to resolve the claim. CONTRACTOR shall indemnify and save OWNER harmless from and against all claims, damages, losses and expenses (including, but not limited to fees of ENGINEERS, architects, attorneys and other professionals and court costs arising directly, indirectly or consequentially out of an claim brought by any such other party against OWNER arising out of CONTRACTOR's performance of the work.

6.11 RECORD DOCUMENTS

- A. CONTRACTOR shall maintain in a safe place at the work site one record copy of all Contract Documents and written interpretations and clarifications (issued pursuant to Article 9.4) in good order and annotated to show all changes made during construction. These record documents, together with all acceptable samples and a counterpart of all reviewed shop Drawings, shall be available to ENGINEER for reference. Upon completion of the work, these record documents, samples and shop Drawings shall be delivered to ENGINEER for OWNER.
- B. CONTRACTOR shall maintain thorough records of all transactions and shall give the OWNER and other agencies required by law or regulation, access to and the right to examine all records, books, papers, or documents to all operations funded in whole or in part under the Construction Contract for a period of three (3) years following work completion.

6.12 SAFETY AND PROTECTION

- A. In General: CONTRACTOR shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work.
- B. Protection Against Damage, Injury, Loss:
 - 1. CONTRACTOR's Responsibility: CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

- a. all employees on the work and other persons and organizations who may be affected thereby;
 - b. all work and materials and equipment to be incorporated therein, whether in storage on or off the site except as otherwise specifically directed by OWNER, as e.g. OWNER-supplied materials, builder's risk insurance, etc.; and
 - c. other property at the site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, curbs, gutters, structures, utilities and underground facilities not designated for removal, relocation or replacement in the course of construction.
2. Risk: Except as provided above, until substantial completion or as indicated in other Contract Documents, CONTRACTOR shall have the charge and care of the work and materials and shall bear the risk of damage, injury or loss to any part thereof by any acts of God or the elements or from any other cause. Except as provided above, OWNER, its officers, employees and agents and the ENGINEER shall not be answerable nor accountable in any manner for any damage or loss that may occur to the work or any part thereof; for any material or equipment used in performing the work; for property damage, personal injury, or death; or for damage to adjoining property from any cause whatsoever during the progress of the work or at any time before substantial completion.
- C. Repairs by CONTRACTOR: All damage, injury or loss to any property referred to in Paragraph 6.12B.1.b. or 6.12B.1.c. above, caused directly or indirectly, in whole or in part, by CONTRACTOR, any subcontractor, supplier or any other person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR at no additional cost to the OWNER.
- D. Safety, Warnings: CONTRACTOR shall comply with all applicable laws and regulations of any public body having jurisdiction for the safety of persons or property or to protect them from damage, injury or loss. CONTRACTOR shall erect and maintain, as required by existing conditions and performance of the work, reasonable safeguards for safety, and protection, including posting danger signs and other warning against hazards, and promulgating and giving notice of safety regulations.
- E. Notification: CONTRACTOR shall notify OWNERS of adjacent property, underground facilities and separate utilities when prosecution of the work may affect them, and shall cooperate with them in the protection, removal, relocation and replacement of their property.
- F. Temporary Repairs by OWNER: When not performed by CONTRACTOR within the time requested by ENGINEER, OWNER may make or cause to be made such temporary repairs as are necessary to restore to service any damaged facility. The cost of such repairs shall be borne by the CONTRACTOR and, if paid by OWNER, may be deducted from any monies due or to become due the CONTRACTOR.
- G. Safety Representative: CONTRACTOR shall designate a responsible representative at the site whose duty shall be the prevention of accidents. This person shall be CONTRACTOR's resident superintendent unless designated otherwise in writing by CONTRACTOR.

- H. Hazard Communications Standards (Employee Right to Know): During performance of the work, CONTRACTOR shall be subject to federal regulations outlined in 29CFR 1910.1200 entitled Hazard Communication Standard. CONTRACTOR shall be solely responsible for any and all violations of the hazard communication standard resulting from the negligent or intentional acts or omission or commission of officers, employees, representatives, agents, servant, subcontractors, suppliers, successors and assigns of CONTRACTOR. CONTRACTOR and subcontractor personnel required under the terms of the Contract Documents to work with or in close proximity to hazardous materials and hazardous wastes shall have completed and be current with the personal training required by Occupational Health and Safety Administration (OSHA) regulations as outlined in 29CFR 1910.1200. CONTRACTOR and subcontractor personnel required under the terms of the Contract Documents to work with hazardous materials or hazardous wastes, or perform services in an area identified as a hazardous material or hazardous waste remediation site, shall have completed and be current with the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) training program as outlined in 29CFR 1910.120.
- I. Encountering Hazardous Substances: In the event the CONTRACTOR encounters on the site substance reasonably believed to be asbestos or polychlorinated biphenyl (PCB) or any other hazardous waste or substance which may endanger the health of those persons performing the work or being on the site, which has not been rendered harmless, the CONTRACTOR shall immediately stop work in the area affected and immediately report the condition to the ENGINEER and OWNER, and confirm the report immediately in writing. The OWNER shall retain a special consultant qualified to investigate, evaluate and mitigate any potentially hazardous substances. The work in the affected area shall be resumed in the absence of asbestos, polychlorinated biphenyl (PCB) or said hazardous waste or substance, or when it has been rendered harmless according to the federal and state health standards. Except to the extent provided otherwise in the Contract Documents, the CONTRACTOR shall not be required to perform, without consent, any work relating to asbestos, polychlorinated biphenyl (PCB) or any other hazardous waste substance. In the event of OWNER's delay in investigating, evaluating and mitigating any potentially hazardous substances, if CONTRACTOR believes that any delay entitles CONTRACTOR to an increase in the contract price or an extension of the Contract Time, CONTRACTOR may make a claim therefore as provided in Parts 11 and 12 hereof.
- J. Using Hazardous Substances: When use or storage of explosives or other hazardous substances or construction equipment or unusual methods are necessary for execution of the work, the CONTRACTOR shall notify OWNER in writing of where and when such will be used and shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.
- K. Cost to Protect or Repair in Contract Price: The full cost of furnishing all labor, materials, tools equipment and incidentals, and for doing all the work involved in protecting or repairing property and for insuring against risk of loss or damage shall be deemed included in the Contract Price and no additional compensation shall be allowed therefore.

6.13 EMERGENCIES

- A. CONTRACTOR to Act: In emergencies affecting the safety or protection of persons, the work or property at the site or adjacent thereto, CONTRACTOR, without special instruction or authorization from ENGINEER, shall prevent threatened damage, injury or loss.
- B. Written Notice: 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 responding to such an emergency.
- C. Change Order: If ENGINEER determines that a change in the Contract Documents is required because of the action taken in response to an emergency, a Change Order will be issued to document the consequences of such actions.

6.14 SHOP DRAWINGS AND SAMPLES

- A. Not Contract Document: Shop Drawings, product data, samples and similar submittals are not Contract Documents. The purpose of their submittal is to demonstrate, for those portions of the work for which submittals are required, the way the CONTRACTOR proposes to conform to the information given and the design concept expressed by the Contract Documents.
- B. Shop Drawings: CONTRACTOR shall submit shop drawing to ENGINEER for review and acceptance in accordance with the accepted schedule for submissions (see Paragraph 2.7A), or for other appropriate action if so indicated in the supplementary conditions.
 - 1. Before submission, CONTRACTOR shall check and verify all field measurements and comply with applicable procedures specified in the General Requirements.
 - 2. All submissions will be identified as ENGINEER may require, and will bear a stamp or specific written indication that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to CONTRACTOR's review of the submission, including those of CONTRACTOR's subcontractors.
 - 3. The data shown on the shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials and similar data to enable ENGINEER to review the information as required.
- C. Samples: CONTRACTOR shall also submit to ENGINEER for review with such promptness as to cause no delay in work, all samples required by the Contract Documents.
 - 1. All samples, whether supplied by CONTRACTOR, or CONTRACTOR's subcontractors, or CONTRACTOR's suppliers shall be checked by the CONTRACTOR. Such samples shall be accompanied by a specific written annotation indicating that CONTRACTOR has satisfied CONTRACTOR's responsibilities under the Contract Documents with respect to CONTRACTOR's review of the sample.
 - 2. All submissions will be identified clearly as to material and supplier.
 - 3. Pertinent data such as catalog numbers and the use for which intended shall be indicated.

- D. Verifications: Before submission of each shop drawing or sample, CONTRACTOR shall have determined and verified the following:
1. all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers and similar information with respect thereto;
 2. all materials with respect to intended use, fabrication, shipping, handling, storage, assembly and installation pertaining to the performance of the work; and
 3. all information relative to CONTRACTOR's sole responsibilities in respect of means, methods, techniques, sequences and procedures of construction and safety precautions and programs incident thereto.
- E. Notice of Variance: At the time of each submission, CONTRACTOR shall give ENGINEER specific written notice of each variation that the shop Drawings or samples may have from the requirements of the Contract Documents. In addition, CONTRACTOR shall cause a specific notation to be made on each shop drawing submitted to ENGINEER for review and approval of each such variation. CONTRACTOR shall direct specific attention in writing to CONTRACTOR's or other's revisions other than the corrections called for by ENGINEER on previous submittals.
- F. Review by ENGINEER: ENGINEER will review with reasonable promptness shop Drawings and samples. ENGINEER's review will be only for conformance with the design concept of the project and for compliance with the information given in the Contract Documents. ENGINEER's review shall not extend to means, methods, techniques, sequences or procedures or construction (except where a specific means, method, technique, sequence or procedure or construction is indicated in or required by the Contract Documents) or to safety precautions or programs incident thereto. The review of a separate item as such will not indicate approval of the assembly in which the item functions. 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.
- G. Accuracy of Dimensions, Errors and Omissions: ENGINEER's review of shop Drawings or samples shall not relieve CONTRACTOR from responsibility for accuracy of dimensions and details or any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of submission, as required by Paragraph 6.14E, and ENGINEER has reviewed each such variation and given specific written notation thereof incorporated in or accompanying the shop drawing or sample submittal. Such review by ENGINEER will not relieve CONTRACTOR from responsibility for errors or omissions in the shop Drawings or from responsibility for having complied with the provisions of Paragraph 6.14D above.
- H. Distribution of Drawings: The CONTRACTOR shall furnish prints of final shop Drawings, erection Drawings, equipment layouts, and other data to CONTRACTOR's subcontractors and suppliers for the proper coordination of their work. CONTRACTOR shall keep 1 complete set of the approved documents with the record documents on the premises at all times.

- I. Compensation: Full compensation for furnishing all shop Drawings and samples shall be considered as included in the prices paid for the items of work to which such Drawings relate and no additional compensation will be allowed therefore.
- J. Work Performed Before ENGINEER's Review: Where a shop drawing or sample is required by the specifications, any related work performed by CONTRACTOR, prior to ENGINEER's review of the pertinent submission will be at CONTRACTOR's sole risk of non-acceptance. Correction of non-acceptable work shall be at CONTRACTOR's expense.
- K. Rejection: No extra Contract Time shall be given for rejection of shop Drawings or samples.
- L. Certificate of Compliance: The ENGINEER may permit the use of certain materials or assembly prior to sampling and testing if accompanied with a certificate of compliance stating that materials involved comply in all respects with the requirements of the Contract Documents. The certificate shall be signed by the manufacturer of the materials or the manufacturer of the assembled material. The certificate of compliance must be furnished with each line of material delivered to the work and the line so certified must be clearly identified in the certificate. All materials used on the basis of a certificate of compliance may be contested by ENGINEER at any time. The fact that material is used on the basis of a certificate of compliance shall not relieve CONTRACTOR from the responsibility of incorporating material in the work which conforms to requirements of the Contract Documents and any material not conforming, whether or not in place, shall be removed and replaced at the CONTRACTOR's expense. OWNER reserves the right to refuse to permit the use of material on the basis of a certificate of compliance. The form of a certificate of compliance and its disposition shall be as ordered by the ENGINEER.

6.15 CONTINUING THE WORK

- A. During Disputes or Disagreements: CONTRACTOR shall carry on the work and adhere to the progress schedule during all disputes or disagreements with OWNER. No work shall be delayed or postponed pending resolution of any disputes or disagreements, except as CONTRACTOR and OWNER may otherwise agree in writing.
- B. No Damage for Delay:
 1. *In all cases where CONTRACTOR is delayed, hindered, or obstructed in the execution of the work, or any part thereof, for any reason whatsoever, the CONTRACTOR shall not be entitled to claim or recover any damages or additional payment from the OWNER or ENGINEER. It is, however, the intent of this contract that in all cases where the CONTRACTOR is substantially delayed, hindered, or obstructed in the execution of the work through no fault of the CONTRACTOR and because of conditions beyond the CONTRACTOR's control, the Contract Time shall be extended by change order by such amount as conditions, in the judgment of the ENGINEER, justify, and such extension of Contract Time shall be the exclusive remedy of the CONTRACTOR.*
 2. *Claims relating to time shall be made in accordance with the applications provisions of Article 12.1. CONTRACTOR's plea that insufficient time was*

specified is not a valid reason for extension of Contract Time. Contract time shall not be extended for any weather-related delays.

3. *Permitting the CONTRACTOR to continue and finish the work or any part of it after the time fixed for its completion, or after that date to which the time may have been extended, will in no way operate as a waiver on the part of the OWNER of any of its rights under the contract.*

6.16 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE

- A. **Defects or Damage Exclusion:** CONTRACTOR warrants and guarantees to OWNER that all work will be in accordance with the Contract Documents and will not be defective. CONTRACTOR's warranty and guarantee hereunder excludes defects or damage caused by:
 1. Abuse, modification or improper maintenance or operation by persons other than CONTRACTOR, subcontractors or suppliers; or
 2. Normal wear and tear under normal usage.
- B. **CONTRACTOR's Continuing Obligation:** CONTRACTOR's obligation to perform and complete the work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the work in accordance with the Contract Documents:
 1. observations by ENGINEER;
 2. recommendation of any progress or final payment by ENGINEER;
 3. the issuance of a certificate of substantial completion or any payment by OWNER to CONTRACTOR under the Contract Documents;
 4. use or occupancy of the work or any part thereof by OWNER;
 5. any acceptance by OWNER or any failure to do so;
 6. any review and approval of a shop drawing, sample or product data submittal or the issuance of a notice of acceptability by ENGINEER;
 7. any Inspection, test or approval by others; or
 8. any correction of defective work by OWNER.
- C. **Acceptance is Not a Waiver of OWNER's Rights:** OWNER's acceptance of defective work shall not release or relive CONTRACTOR from warranty and guarantee provisions of this article.
- D. **Survival of Obligations:** All representations, indemnifications, warranties and guaranties made in, required by or given in accordance with the Contract Documents, as well as all continuing obligations indicated in the Contract Documents, will survive final payment, completion and acceptance of the work and termination or completion of the Agreement.

6.17 INDEMNIFICATION

- A. **Indemnification of OWNER:** CONTRACTOR shall indemnify, *defend*, and hold harmless OWNER and ENGINEER, *and their elected officials, officers, agents, employees and volunteers* from and against any and all claims, damages, losses and expenses, direct, indirect or consequential (including, but not limited to, fees and charges of ENGINEERS, architects, attorneys and other professionals and court costs) arising out of or resulting from the negligent acts or omissions in performance of the

- work by CONTRACTOR, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, regardless of whether or not the claim, damage, loss, etc. arising from the act or omission is caused in part by a party indemnified hereunder or arises by or is imposed by law and regulations regardless of the negligence of any such party.
- B. Indemnification Not Limited: In any claims against OWNER or ENGINEER or any of their *elected officials, officers, agents, employees or volunteers* by any employees of CONTRACTOR, any subcontractor, any person or organization directly or indirectly employed by any of them to perform or furnish any of the work or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.17.A shall not be limited in any way by any limitation on the amount or type of damages, compensation or benefits payable by or for CONTRACTOR or any such subcontractor or other person or organization under worker's compensation acts, disability benefit acts or other employee benefit acts.
- C. Liability of ENGINEER, etc.: The obligations of CONTRACTOR under Paragraph 6.17A shall not extend to the liability of ENGINEER, OWNER's consultants, agents or employees arising out of the preparation or approval of maps, Drawings, opinions, reports, surveys, Change Orders, designs or specifications.
- D. CONTRACTOR to Save OWNER Harmless: CONTRACTOR shall assume the OWNER's defense, and save OWNER harmless from any claims directly or indirectly arising from CONTRACTOR's use or alleged use of patented or trademarked materials, design, equipment, devices, product or processes on or ultimately successful. In the event of such claims:
1. OWNER shall promptly notify CONTRACTOR and CONTRACTOR shall defend against such claims, in OWNER's name, but at CONTRACTOR's expense;
 2. OWNER shall have the right to be represented by counsel, but such representations shall be at the OWNER's own expense; and
 3. at the request and expense of CONTRACTOR, the OWNER shall actively cooperate and assist CONTRACTOR to the fullest extent in the defense of any such proceedings.

In the event that CONTRACTOR shall fail to defend against any such claims, the OWNER may, in addition to any other legal remedies which the OWNER might have, at OWNER's election, defend such suit and be reimbursed by CONTRACTOR of all reasonable expenses (including attorney's fees) incurred by the OWNER in this connection, and CONTRACTOR shall pay all damages and costs awarded or otherwise suffered by OWNER in any such claim against OWNER.

6.18 HAZARDOUS WASTE GENERATION

- A. In General: The CONTRACTOR shall be responsible for ensuring that all services the CONTRACTOR and its subcontractors are required to provide under the terms of the Contract Documents are performed in accordance with applicable federal, state and local environmental regulations and within generally accepted professional performance standards for the services to be provided.

- B. Hazardous Wastes Generated by CONTRACTOR: The CONTRACTOR shall be responsible for the interim handling, evaluation and disposal of any hazardous materials and hazardous wastes generated by the CONTRACTOR or any of its subcontractors during the performance of any services under the terms of the Contract Documents, and shall ensure that handling, evaluation and final disposal of all hazardous materials and hazardous wastes are performed in accordance with the requirements outlined in 40 CFR Parts 261 and 262 and Utah Administrative Code R-450-5.
1. The CONTRACTOR shall notify the ENGINEER immediately upon discovery that the CONTRACTOR or its subcontractors has generated a hazardous waste material. If the hazardous waste material was generated as the result of a hazardous material spill, the CONTRACTOR shall be responsible for completing spill reporting requirements for all applicable environmental regulatory programs.
 2. The CONTRACTOR shall also provide the ENGINEER with documentation within eight (8) hours of the discovery indicating:
 - a. the date of waste generation;
 - b. specific waste classification or characterization;
 - c. waste quantity;
 - d. waste profile and acceptance identifying the intended disposal facility; and
 - e. copies of all Uniform Hazardous Waste Manifest documenting off-site transportation and disposal activities.
 3. CONTRACTOR shall contain hazardous material and protect workers and the public from exposure.
- C. Hazardous Wastes Generated by OWNER: The CONTRACTOR shall ensure that any services the CONTRACTOR or its subcontractors perform under the terms of the Contract Documents that involve the interim handling, evaluation and disposal of any hazardous materials and hazardous waste generated by, or the responsibility of the OWNER, shall be performed in accordance with the requirements outlined in 40 CFR Parts 261 and 262 and Utah Administrative Code R-450-5.
1. The CONTRACTOR shall also provide the ENGINEER with documentation indicating:
 - a. the date of waste generation;
 - b. specific waste classification or characterization;
 - c. waste quantity;
 - d. waste profile and acceptance identifying the intended disposal facility; and
 - e. copies of all Uniform Hazardous Waste Manifest documenting off-site transportation and disposal activities.
 2. If handling of hazardous wastes generated by OWNER is not indicated in the Contract Documents, such cost of handling shall be determined as indicated in Article 11.3.
- D. Final Disposal of Hazardous Materials and Hazardous Wastes: CONTRACTOR shall be responsible for ensuring that all hazardous materials and hazardous wastes, identified as subject to the provisions of Paragraphs 6.17A, B and C above, regardless of generator, be submitted to a facility or facilities permitted and qualified to recycle, process, or perform final disposal as required for the type of hazardous material or hazardous waste being submitted.

- E. Documentation: CONTRACTOR shall provide OWNER with documentation of appropriate disposal.

PART 7 OTHER WORK

7.1 RELATED WORK AT SITE

- A. Owners of Utilities and Franchises to Enter upon the Premises: The right is reserved to the owners of utilities and franchises to enter upon the premises for the purposes of making repairs or changes of their property that may become necessary by the work.
- B. Separate Work: OWNER may perform other work related to the project at the site by OWNER's own forces, or let other direct contracts therefore which shall contain general conditions similar to these, or have other work performed by utility owners. If the fact that such other work is to be performed was not noted in the Contract Documents, written notice thereof will be given to CONTRACTOR prior to starting any such other work. If CONTRACTOR believes that such performance will involve additional expense to CONTRACTOR or requires additional time and the parties are unable to agree as to the extent thereof, CONTRACTOR may make a claim therefore as provided in Parts 11 and 12.
- C. Access to Site: CONTRACTOR shall coordinate all phases of the work and afford each utility owner and other CONTRACTOR who is a party to such a contract (or OWNER, if OWNER is performing the additional work with OWNER's employees) proper and safe access to the site and a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such work, and shall properly connect and coordinate the work with theirs.
- D. Cutting, Fitting and Patching: CONTRACTOR shall do all cutting, fitting and patching of the work that may be required to make its several parts come together properly and integrate with such other work. CONTRACTOR shall not endanger any work of others by cutting, excavating or otherwise altering their work and will only cut or alter their work with the written consent of ENGINEER and the others whose work will be affected.
- E. Delays Caused by Other Work, Defects or Deficiencies in Other Work: If the proper execution or results of any part of CONTRACTOR's work depends upon work performed by others under this Part 7, CONTRACTOR shall inspect and promptly report to ENGINEER in writing any delays, defects or deficiencies in such work that render it unavailable or unsuitable for such proper execution and results. CONTRACTOR's failure so to report will constitute an acceptance of the other work as fit and proper for integration with CONTRACTOR's work except for latent or non-apparent defects and deficiencies in the other work.

7.2 COORDINATION

- A. Coordinating Agent, Identified in Supplementary Conditions: If OWNER contracts with others for the performance of other work on the project at the site, the person or organization who will have authority and responsibility for coordination of the activities among the various prime CONTRACTORS will be identified in the supplementary conditions. The specific matters to be covered by such authority and responsibility will be itemized, and the extent of such authority and responsibilities

will be provided in the supplementary conditions, OWNER shall have sole authority and responsibility in respect of such coordination.

- B. Ceasing Work Temporarily: If other CONTRACTORS under separate OWNER contracts are unable to join their work in a manner acceptable to all, ENGINEER will decide if CONTRACTOR or other CONTRACTORS shall cease work temporarily. Should CONTRACTOR be adversely affected by the work of other CONTRACTORS, additional compensation or project completion time will be granted provided the delays or interference are not the results of the CONTRACTOR's own actions or inactions. The OWNER also reserves the right to deduct from sums of money due the CONTRACTOR for all costs incurred by the OWNER which are the result of the CONTRACTOR not properly coordinating work.

7.3 UTILITY ARRANGEMENTS

- A. Should CONTRACTOR desire a rearrangement made in any utility facility for CONTRACTOR's convenience in order to facilitate construction operations, which is an addition to or different from the arrangements indicated on the Drawings or in the specifications, CONTRACTOR shall make such arrangements as are necessary with the utility and bear all expenses in connection therewith.

7.4 WORK DONE BEYOND THE SITE

- A. Any work done beyond the limits shown on the Drawings or established in writing by ENGINEER, will be considered as unauthorized and no payment will be made therefore.

PART 8 OWNER'S RESPONSIBILITIES

8.1 OWNER'S RESPONSIBILITIES

- A. Communications: OWNER shall issue all communications to CONTRACTOR through ENGINEER as per Article 2.8.
- B. Tests and Observations: OWNER's responsibility in respect of certain Inspections, tests and observations is set forth in Article 13.3.
- C. Work Suspension: In connection with OWNER's right to stop work or suspend work, see Article 15.1. Article 15.2 deals with OWNER's right to terminate services of CONTRACTOR under certain circumstances.
- D. Furnishing Data: OWNER shall promptly furnish the data required of OWNER under the Contract Documents.
- E. Prompt Payment: OWNER shall promptly make payments to CONTRACTOR after they are due as provided in Paragraphs 14.4 and 14.9.

PART 9 ENGINEER'S STATUS DURING CONSTRUCTION

9.1 OWNER'S REPRESENTATIVE

- A. General: ENGINEER will be OWNER's representative and agent during the Contract Time, until final payment is due and, with the OWNER's concurrence, from time to time during the correction period described in Article 13.7.
- B. Limitations: ENGINEER shall have the authority to act on behalf of the OWNER only to the extent provided in the Contract Documents.

- C. Changing Representative: ENGINEER may be changed by the OWNER upon written notice to the CONTRACTOR.

9.2 PROJECT REPRESENTATIVE

- A. ENGINEER may furnish a resident project representative and such other assistants as ENGINEER deems necessary to observe that the materials to be furnished and the work done strictly conforms to the Contract Documents.

9.3 AUTHORITY AND DUTIES OF RESIDENT PROJECT REPRESENTATIVE

- A. General: The resident project representative:
1. shall be permitted to observe all work done and all material furnished. Such observation may extend to all or any part of the work and to the preparation, fabrication, or manufacture of the materials to be used;
 2. is not authorized to revoke, alter, or waive any requirement of the Contract Documents;
 3. is authorized to call the attention of CONTRACTOR to any failure of the work or materials to conform to the Contract Documents;
 4. shall have authority to reject materials and suspend all or any part of the work until any question at issue can be referred to and decided by the ENGINEER; and
 5. shall in no case act or be considered as CONTRACTOR's foreman or perform duties for CONTRACTOR.
- B. Limitations: Any advice that the resident project representative may give the CONTRACTOR, other than set forth in Paragraph 9.3A above, shall not be binding upon the ENGINEER or OWNER. Nor shall such advice release or relieve CONTRACTOR of compliance with the Contract Documents.
- C. Suspension of Work: If work is to be suspended; the resident project representative shall issue a written order giving the reason for shutting down the work. In the absence of such written order, CONTRACTOR shall not deem the work to be suspended. After placing the order in the hands of the CONTRACTOR's agent in charge at the site, any work done thereafter may not be accepted, at ENGINEER's discretion.

9.4 CLARIFICATIONS AND INTERPRETATIONS

- A. Should it appear that the work or any of the matters relative thereto are not sufficiently detailed or explained in the Contract Documents, the CONTRACTOR shall request the ENGINEER to provide such further explanations as may be necessary for CONTRACTOR. ENGINEER will issue with reasonable promptness such written clarifications or interpretations of the requirements of the Contract Documents (in the form of Drawings or otherwise) as ENGINEER may determine necessary. These shall be consistent with or reasonably inferable from the overall intent of the Contract Documents. CONTRACTOR shall conform to such explanations as part of the work.
- B. Any order or instruction given to the CONTRACTOR by the ENGINEER shall either be given or confirmed in writing. However, the ENGINEER's failure to put such an order or instruction in writing shall not relieve the CONTRACTOR of

CONTRACTOR's responsibility to comply with the terms and conditions of the Contract Documents.

- C. If CONTRACTOR disputes ENGINEER's explanation or interpretation of the requirements of the Contract Documents, CONTRACTOR may request dispute resolution as specified in Part 16.

9.5 AUTHORIZED VARIATIONS IN WORK

- A. ENGINEER may authorize minor variations in the work from the requirements of the Contract Documents which do not involve an adjustment in the contract price or the Contract Time and are consistent with the overall intent of the Contract Documents. These may be accomplished by a work directive change. If CONTRACTOR believes that an increase in the contract price or an extension of the Contract Time is justified, and the OWNER and the CONTRACTOR are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Part 11 or 12.

9.6 REJECTING DEFECTIVE WORK

- A. ENGINEER has the authority to reject work which ENGINEER believes to be defective or that ENGINEER believes will not produce a completed project that conforms to the Contract Documents or that will prejudice the integrity of the design concept of the completed project as a functioning whole as indicated by the Contract Documents. ENGINEER also has the authority to require special Inspection or testing of the work, whether or not the work is fabricated, installed or completed. The failure of the ENGINEER to reject such work shall not release or relieve CONTRACTOR from conformance to the contract document requirements.

9.7 NOTICE OF INTENTION TO APPEAL

- A. ENGINEER will determine the actual quantities and classifications of unit price work performed by CONTRACTOR and will review with CONTRACTOR any preliminary determinations on such matters before rendering a written decision. ENGINEER's written decision will be final and binding upon CONTRACTOR, unless, within 10 days after the receipt of any such decision CONTRACTOR delivers to ENGINEER written notice of intention to appeal such a decision. Such an appeal may be taken in accordance with the provisions of Part 16 of these general conditions and applicable laws and regulations, but during any such appeal, CONTRACTOR shall carry on the work and adhere to the progress schedule as provided in Article 6.15.

9.8 DECISIONS ON DISPUTES

- A. Interpretation of Contract Documents: ENGINEER will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the work thereunder. Claims or disputes concerning a question of fact or other matters relating to the acceptability of the work, the interpretation of the requirements of the Contract Documents pertaining to the performance and furnishing of the work or claims under Parts 11 and 12 in respect of changes in the contract price or Contract Time will be referred initially to ENGINEER in writing with a request for a formal

decision in accordance with this paragraph. ENGINEER will render decision in writing within 3 days of submission of the request for decision. Failure by ENGINEER to respond within said time shall be deemed a denial of CONTRACTOR's request for relief.

- B. Time for Notice of Dispute: CONTRACTOR shall submit written notice of each claim or dispute to ENGINEER promptly after occurrence of the event(s) giving rise thereto, but in no case shall said notice be delivered later than 30 days after said occurrence. Failure to submit said notice within said 30 days shall be deemed a waiver thereof by CONTRACTOR. CONTRACTOR shall also submit all written supporting data to ENGINEER within 60 days after said occurrence unless ENGINEER allows an additional period of time.
- C. Effect of ENGINEER's Decision: ENGINEER's decision concerning such claim or dispute (except any which have been waived by the making or acceptance of final payment as provided in Paragraph 14.9) will be the final expression of OWNER's position on said claim or dispute. Further, said decision shall be a condition precedent to any exercise by OWNER or CONTRACTOR of any rights or remedies as either may have under the Contract Documents or by law in respect of any such claim or dispute. ENGINEER's decision as to any allowable deviations shall be final and binding on CONTRACTOR.

9.9 LIMITATIONS ON ENGINEER'S RESPONSIBILITIES

- A. ENGINEER Not CONTRACTOR's Agent: Neither ENGINEER, ENGINEER's representative or OWNER shall act nor be considered as the CONTRACTOR's, subcontractor's, supplier's or surety's superintendent, foreman or part of their work force in any manner or form not shall they perform work or duties of the CONTRACTOR.
- B. Evaluate the Work for Contract Compliance: Whenever in the Contract Documents the terms "as ordered", "as directed", "as required", "as allowed", "as approved", or terms of like effect or import are used, or the adjectives "reasonable", "suitable", "acceptable", "proper" or "satisfactory", or adjectives of like effect or import are used to describe a requirement, direction, review or judgment of ENGINEER as to the work, it is intended that such requirement, direction, review or judgment will be solely to evaluate the work for compliance with Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective does not assign to ENGINEER or OWNER any duty or authority to supervise or direct the furnishing or performance of the work or any duty or authority to undertake responsibility contrary to the provisions of Paragraphs 9.9C or 9.9D. Neither ENGINEER's taking or failing to take such actions or make any such reviews shall release or relieve the CONTRACTOR from CONTRACTOR's responsibility to comply with the contract document requirements.
- C. Not Responsible for CONTRACTOR's Construction Operations: Neither the ENGINEER nor the OWNER will be responsible for CONTRACTOR's means, methods, techniques, sequences or procedures of construction, or the safety precautions and programs incident thereto. ENGINEER and OWNER will not be responsible for CONTRACTOR's failure to perform or furnish the work in accordance with the Contract Documents. Any advice which ENGINEER may give

- the CONTRACTOR, other than as set forth in Paragraph 9.3A above, shall not be binding in any way upon the ENGINEER or the OWNER. Such instruction or statement shall not release or relieve the CONTRACTOR from compliance with all of the terms and conditions of the Contract Documents.
- D. Not Responsible for CONTRACTOR's Acts or Omissions: ENGINEER and OWNER will not be responsible for the acts or omissions of CONTRACTOR or of any subcontractor, any supplier, or of any other person or organization performing or furnishing any of the work.
 - E. Intimidation of ENGINEER: ENGINEER or ENGINEER's representatives shall at all times be free to perform ENGINEER's duties without any intimidation. At ENGINEER's request, the CONTRACTOR shall remove from the work any employee causing such intimidation. Failure to do so shall be sufficient reason for ENGINEER to recommend to OWNER and for the OWNER's cancellation or termination of the construction contract.

PART 10 CHANGES IN THE WORK

10.1 ADDITIONS, DELETIONS, REVISIONS

- A. Modifications: Without invalidating the construction 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. These will be authorized by a work directive change or a Change Order.
- B. Work Directive Change: Work directive changes shall be issued by the ENGINEER. If the contract price or Contract Time are affected by a work directive change, the work specified in the work directive change shall be incorporated in a subsequently issued Change Order following negotiations by the CONTRACTOR and ENGINEER as to its effect on the contract price and Contract Time. During disputes or disagreements with the OWNER or ENGINEER regarding a work directive change, the CONTRACTOR shall promptly proceed with the work described in the work directive change as indicated in Article 6.15.
- C. Change Order: OWNER and CONTRACTOR shall execute appropriate Change Orders covering changes in the work, contract price or Contract Time which are agreed to by the parties. **Any Change Order request shall be submitted using the form in "Exhibit B"**
- D. Drawings: Drawings accompanying work directive changes and Change Orders shall be deemed a part of such documents.
- E. Payment: It is understood and agreed by the OWNER and CONTRACTOR that no money will be paid to the CONTRACTOR for any new or additional labor, materials or equipment furnished, unless a Change Order for such has been made in writing and executed by the OWNER and CONTRACTOR.

10.2 WORK NOT REQUIRED BY CONTRACT DOCUMENTS

- A. CONTRACTOR shall not be entitled to an increase in the contract price or an extension of the Contract Time with respect to any work performed that is not required by the Contract Documents as amended, modified and supplemented as provided in Article 3.3 except in the case of an emergency as provided in Article 6.13 and except in the case of uncovering work as provided in Paragraph 13.5B.

10.3 NOTICE TO SURETY

- A. If notice of any change affecting the general scope of the work or the provisions of the Contract Documents (including, but not limited to contract price or Contract Time) is required by the provisions of any bond to be given to a surety, the giving of any such notice will be CONTRACTOR's responsibility, and the amount of each applicable bond will be adjusted accordingly.

PART 11 CHANGE OF CONTRACT PRICE

11.1 CONTRACT PRICE

- A. The contract price constitutes the total compensation (subject to authorized adjustments) payable to CONTRACTOR for performing the work. All duties, responsibilities and obligations assigned to or undertaken by CONTRACTOR shall be at CONTRACTOR's expense without change in the contract price.

11.2 CONTRACT PRICE ADJUSTMENT

- A. In General: The contract price may only be changed by Change Order. No claim for an adjustment on the contract price will be considered or paid if not submitted in accordance with the requirements of this Article 11.2.
- B. Written Notice: Any claim for an increase or decrease in the contract price shall be based on written notice. Notice shall be promptly delivered by the party making the claim to the other party (but in no event later than 30 days) after the occurrence of the event giving rise to the claim. The notice shall state the general nature of the claim.
- C. Deadline for Claim Submittal: A complete detailed statement of the amount and nature of the claim, with all necessary supporting data shall be delivered within 60 days after such occurrence. ENGINEER may allow an additional period of time to ascertain more accurate data in support of the claim.
- D. Notice Required: Failure to submit the notice, and detailed statement referenced above shall bar Claimant from pursuing said claim in any other forum, judicial or administrative.
- E. Acknowledgement: The notice shall be accompanied by Claimant's written statement that the amount claimed covers all known cost amounts (direct, indirect and consequential costs, including without limitation, delay costs, third party costs, lost profits and any other costs) to which the Claimant is entitled as a result of the occurrence of said event.
- F. All Claims Determined by ENGINEER: All claims for adjustment in the contract price shall be determined by ENGINEER in accordance with Paragraph 9.8A if OWNER and CONTRACTOR cannot otherwise agree.

11.3 DETERMINING CONTRACT PRICE ADJUSTMENT

- A. The value of any work covered by a Change Order or of any claim for an increase or decrease in the contract price shall be determined by ENGINEER in one of the following ways:

1. Unit Prices: Where the work involved is covered by unit prices contained in the Contract Documents, the contract price change will be recalculated by application of unit prices to the quantities of the items involved (subject to the provisions of Article 11.7).
2. Lump Sum Price:
 - a. Contract Price Increases: the CONTRACTOR and OWNER may mutually accept a stipulated sum (which may include an allowance for overhead and profit not necessarily in accordance with Article 11.5).
 - b. Contract Price Decreases: The amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in the contract price will be the net amount of the decrease plus a deduction in CONTRACTOR's fee. The deduction in the CONTRACTOR's fee shall be 10 percent of the net amount of the decrease.
3. Force Account (Cost of the Work Plus CONTRACTOR's Fee): If the cost of unit price work cannot be calculated or the cost of lump sum work cannot be agreed to, contract price adjustment shall be calculated on the basis of the cost of the work (determined as provided in Article 11.4) plus a CONTRACTOR's fee for overhead and profit (determined as provided in Article 11.5).

11.4 COST OF THE WORK

- A. Cost of the Work Includes: Except as otherwise agreed to in writing with OWNER, the Cost of the Work (1) shall be in amounts no higher than those prevailing in the locality of the project, (2) shall not include any of the costs itemized in Paragraph 11.4B, and (3) shall include only the following items:
 1. Certified Payroll Costs: Certified 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. Payroll costs for employees not employed full time on the work shall be apportioned on the basis of their time spent on the work. Payroll costs shall include salaries and wages plus the cost of fringe benefits which shall include social security contributions, unemployment, excise and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. Such employees shall include superintendents and foremen at the site. These expenses of performing work after regular working hours, on Saturday, Sunday or legal holidays, shall be included in the above only to the extent such work was authorized by OWNER.
 2. Cost of All Materials and Equipment: Cost of all materials and equipment furnished and incorporated in the work, including costs of transportation and storage thereof, and suppliers' field services required in connection therewith. All cash discounts shall accrue to CONTRACTOR unless OWNER deposits funds with CONTRACTOR with which to make payments, in which case the cash discounts shall accrue to OWNER. All trade discounts, rebates and refunds and all returns from sale of surplus materials and equipment shall accrue to OWNER, and CONTRACTOR shall make provisions so that they may be obtained.
 3. Payments Made by CONTRACTOR to Subcontractors: If required by ENGINEER, CONTRACTOR shall obtain competitive Bids from subcontractors

acceptable to CONTRACTOR and shall deliver such Bids to ENGINEER who will then determine, which Bids will be accepted. If a 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 shall be determined in the same manner as CONTRACTOR's cost of the work. All subcontracts shall be subject to the other provisions of the Contract Documents insofar as applicable.

4. Costs of Special Consultants: Costs of special consultants (including, but not limited to, ENGINEERS, architects, testing laboratories, surveyors and accountants) employed for services specifically related to the work.
5. Supplemental costs: Supplemental costs include the following:
 - a. Expenses of Employees: The proportion of necessary transportation, travel and subsistence expenses of CONTRACTOR's employees reasonably incurred in discharge of duties connected with the work, except the following:
 - 1) costs for commute between residence and the work site;
 - 2) meals taken at locations within commuting distance of the work site; and
 - 3) clothing.
 - b. Consumable Products and Equipment: cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office and temporary facilities at the site and hand tools not owned by the workers, which are consumed in the performance of the work, and cost, less the difference in market value, of items used but not consumed which remain the property of CONTRACTOR.
 - c. Depreciation: cost, less the difference in market value, of items used but not consumed which remain the property of CONTRACTOR.
 - d. Rentals: Rentals of all construction equipment and machinery and the parts thereof, whether rented from CONTRACTOR or others, in accordance with rental agreements approved by ENGINEER, and the costs of transportation, loading, unloading, installation, dismantling and removal thereof all in accordance with terms of said rental agreements. The rental of any such equipment, machinery or parts shall cease when the use thereof is no longer necessary for the work.
 - e. Sales, Consumer, Use or Similar Taxes: Sales, consumer, use or similar taxes related to the work, and for which CONTRACTOR is liable, imposed by laws and regulations.
 - f. Royalty Payments, Fees for Permits and Licenses, Deposits: royalty payments, fees for permits and licenses, and 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.
 - g. The Cost of Utilities: The cost of utilities, fuel and sanitary facilities at the site in connection with the work.
 - h. Minor Expenses: Minor expenses such as telegrams, long distance telephone calls, telephone service at the site, express delivery and similar petty cash items in connection with the work.

- A. Allowable Fee: The CONTRACTOR's fee allowed for overhead and profit shall be determined as follows:
1. A mutually acceptable fixed fee; or,
 2. If no acceptable fixed fee can be agreed upon, a fee based on the following percentages of the various portions of the cost of the work:
 - a. For costs incurred under Paragraphs 11.4A.1. and 11.4A.2., the CONTRACTOR's fee shall be 15 percent;
 - b. For costs incurred under Paragraph 11.4A.3., the CONTRACTOR's fee shall be five (5) percent.
 - c. If a subcontract is on the basis of the cost of the work plus a fee, and no fixed fee is agreed upon, the maximum allowable to the subcontractor who actually performs or furnished the work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such subcontractor under Paragraphs 11.4A.1., and 11.4A.2., and that any higher tier subcontractor and CONTRACTOR will each be paid a fee of five (5) percent of the amount paid to the next lower tier subcontractor.
 - d. No fee shall be payable on the basis of costs itemized under Paragraphs 11.4A.4., 11.4A.5., and 11.4B.
- B. Adjustment to CONTRACTOR's Fee: When both additions and credits are involved in any one change, the adjustment in CONTRACTOR's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.5A.2.a. through 11.5A.2.c., inclusive.
- C. Allowable Credit: the amount of credit to be allowed by CONTRACTOR to OWNER for any change which results in a net decrease in cost will be the amount of the actual decrease plus a deduction in CONTRACTOR's fee by an amount equal to the equivalent amount authorized under Paragraph 11.5A above.

11.6 CASH ALLOWANCES

- A. In General: Cash allowances, if indicated in the Contract Documents, are provided for the payment of fees or the purchase and installation of products, the cost of which is to be determined upon performance of the work. It is understood that CONTRACTOR has included in the contract price all allowances so named in the Contract Documents. CONTRACTOR shall cause the work so covered, to be done for such sums within the limit of the allowances as may be acceptable to ENGINEER.
- B. Allowances Include: CONTRACTOR agrees:
1. that the allowances include the cost to CONTRACTOR (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the site, and all applicable taxes; and
 2. CONTRACTOR's costs for unloading and handling on the site, labor, installation costs, overhead, profit and other expenses contemplated for the allowances have been included in the contract price and not in the allowances. No demand for additional payment on account of any thereof will be valid.
- C. Allowances Payment: Prior to final payment, an appropriate Change Order shall be issued to reflect actual amounts due the CONTRACTOR on account of work covered by allowances, and the contract price shall be correspondingly adjusted.

11.7 UNIT PRICE WORK

A. Contract Price:

1. Initial Contract Price: Where the Contract Documents provide that all or part of the work is to be unit price work, the contract price shall initially include, for all unit price work an amount equal to the sum of the established unit prices for each separately identified item of unit price work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of unit price work are not guaranteed. They are solely for the purpose of comparing Bids and determining an initial contract price.
2. Actual Contract Price: The actual contract price shall be established when CONTRACTOR accepts final payment from OWNER. Determinations of the actual quantities and classifications of unit price work performed by CONTRACTOR will be made by ENGINEER in accordance with Article 9.7.

B. Overhead and Profit: 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 and no additional payment for overhead or profit will be claimed or paid.

C. Quantity of Unit Price Work: An increase in the quantity of any unit price work which does not involve any basic change in the nature or conditions of the work will be paid for at the unit prices. Where work alterations increase, diminish or eliminate any of the unit price work, CONTRACTOR shall be paid for the work actually done and materials supplied at the unit prices. Unit prices which have not been set as stated in Paragraph 11.7N above shall be adjusted to comply with said paragraph before payment for such changes is made.

D. Adjusting Contract Price: If a claim is made to the ENGINEER, which states the quantity of an item of unit price work performed by the CONTRACTOR differs materially and significantly from the estimated quantity of such item indicated in the Agreement, and if CONTRACTOR or OWNER believes that an increase or a decrease of expenses as a result thereof has occurred, CONTRACTOR or OWNER may claim for an increase or decrease in the contract price if:

1. there is an enlargement or reduction of the work under the original Contract Documents by more than 25 percent; or
2. there is an increase or decrease or more than 25 percent in the initial contract price; or
3. there is an increase or decrease or more than 25 percent in the quantity of a major unit price item of work.

Notwithstanding the foregoing, the OWNER and the CONTRACTOR shall be entitled to claim a cost increase or decrease only for that portion of the cost of the work which exceeds 25 percent.

E. Adding Unit Price Work to the Contract Documents: If new, additional, or unforeseen work or material is required which, due to the nature or conditions of the work, or locations, does not conform to the quantities and classifications of unit price work provided for in the Contract Documents, then such work or material will be considered as additional work. The work shall be executed by the CONTRACTOR, in the manner and under the quantities and classifications of unit price work set forth

in a Change Order which will be entered into between the OWNER and the CONTRACTOR.

11.8 FORCE ACCOUNT WORK (COST OF THE WORK PLUS CONTRACTOR'S FEE)

- A. In General: When contract price adjustments cannot be agreed upon in advance of additional work requested by ENGINEER, OWNER may require CONTRACTOR to do such work on a force account basis.
- B. Determining Contract Price Adjustment: The value of the force account work shall be determined in accordance with Paragraph 11.3A.3.
- C. OWNER Furnished Materials: OWNER reserves the right to furnish part or all materials or equipment and CONTRACTOR shall have no claim for profit on the cost of such material or equipment so furnished.

PART 12 CHANGE OF CONTRACT TIME

12.1 CONTRACT TIME ADJUSTMENT

- A. In General: The Contract Time or milestones may only be changed by a Change Order. No claim for an adjustment in the Contract Time or milestones will be valid if not submitted in accordance with requirements of this Article 12.1.
- B. Preliminary Written Notice: Except for delays due to weather, any claim for an extension or shortening of the Contract Time shall be based on a preliminary written notice delivered by the party making the claim to the other party promptly (but in no event later than 15 days) after the occurrence of the event giving rise to the claim and stating the general nature of the claim.
- C. Deadline for Submitting Claim Data Notice: Final notice of the extent of the claim with supporting data shall be delivered within 60 days after such occurrence. ENGINEER may allow an additional period of time to ascertain more accurate data in support of the claim.
- D. Acknowledgement: The final notice shall be accompanied by CONTRACTOR's written statement that the amount claimed is the entire adjustment to which the CONTRACTOR has reason to believe the CONTRACTOR is entitled as a result of the occurrence of said event.
- E. No Time for lack of Submittal: No time extensions will be allowed in the progress of the work attributable to CONTRACTOR's failure to make submittals required by Article 2.5.
- F. All Claims Determined by ENGINEER: All claims for adjustment in the Contract Time shall be determined by ENGINEER in accordance with Paragraph 9.8A if OWNER and CONTRACTOR cannot otherwise agree.

12.2 DELAY NOT CAUSED BY CONTRACTOR

- A. Delays caused by war, public enemy or acts of God shall be considered just cause for OWNER to grant time extensions.
- B. CONTRACTOR shall be granted time extensions for which liquidated damages will not be claimed when the delay is determined to be caused by the OWNER, other CONTRACTORS or utility companies working at OWNER's request, except when

such delays are the result of CONTRACTOR's own lack of project coordination or work effort.

12.3 DELAYS RELATED TO WEATHER

- A. Delays related to weather shall only be reviewed or considered by ENGINEER after 90 percent or more of the Contract Time has been expended.
- B. In requesting weather time CONTRACTOR shall:
 - 1. Submit all weather data to ENGINEER, and
 - 2. Provide a written explanation of how weather prevented work on an item on the progress schedule's critical path.
- C. The OWNER shall grant additional time for weather delays if OWNER finds:
 - 1. Both the amount and length of inclement weather were excessive or unexpectedly severe for the time and season the work was scheduled to be performed.
 - 2. The inclement weather prevented work pursuant to a scheduled critical path item of work. If the CONTRACTOR's progress schedule during the inclement weather does not show the anticipated critical path, ENGINEER will judge which activities were critical; and
 - 3. Appropriate measures were taken by the CONTRACTOR to mitigate the effects of inclement weather.
- D. No time will be granted if the work claimed to have been delayed would not have been on the critical path except for earlier delays caused by CONTRACTOR.
- E. No time extensions will be granted for weather delay outside of the Contract Time period or the punch list time period.

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

13.1 NOTICE OF DEFECTS

- A. Prompt notice of all defective work of which OWNER or ENGINEER have actual knowledge will be given to CONTRACTOR. All defective work, whether or not in place, may be rejected, corrected or accepted as provided in this Part 13.

13.2 ACCESS TO WORK

- A. ENGINEER and ENGINEER's representatives, other representatives of OWNER, testing agencies and governmental agencies with jurisdictional interests will have access to the work at reasonable times for their observation, inspecting and testing. CONTRACTOR shall provide proper and safe conditions for such access and advise them of CONTRACTOR's site safety procedures and programs so that they may comply therewith as applicable.

13.3 TESTS AND INSPECTIONS

- A. In General:
 - 1. Determining Contract Compliance and Acceptance: testing, or work for determining contract compliance shall be performed by CONTRACTOR. OWNER anticipates performing tests and Inspections or having tests and Inspections performed as part of its acceptance procedure.

2. CONTRACTOR Furnish Labor: CONTRACTOR shall furnish, at no additional cost to the OWNER, such labor as may be required to enable a thorough Inspection and culling of all materials.
 3. CONTRACTOR Furnish Samples: Upon ENGINEER's request, CONTRACTOR shall furnish to ENGINEER such samples of materials as proposed to be used, in sufficient amounts as required to make proper tests.
 4. Notice, 24 Hours: CONTRACTOR shall give ENGINEER at least 24 hours notice of readiness of the work for all required observations, tests and Inspections.
- B. Inspections, Tests and Retests:
1. If ENGINEER determines that material or equipment fails the contract requirements, ENGINEER may reject such material or equipment, or accept such as defective work in accordance with Article 13.8.
 2. Inspection and testing of materials and equipment made by ENGINEER shall not release or relieve CONTRACTOR from compliance with the Contract Documents.
 3. Any re-Inspection and retesting of work or materials rejected by ENGINEER after the initial testing or Inspection shall be at CONTRACTOR's expense until a retest meets the requirements of the Contract Documents.
- C. Costs of Inspections Assessable to:
1. If laws or regulations of any public body having jurisdiction require any work (or part thereof) to specifically be inspected, tested or approved, CONTRACTOR shall assume full responsibility therefore, pay all costs in connection therewith and furnish ENGINEER the required certificates of Inspection, testing or approval.
 2. CONTRACTOR shall be responsible for and shall pay all costs in connection with any Inspection or testing required in connection with OWNER's or ENGINEER's acceptance of a supplier of materials or equipment proposed to be incorporated in the work, or of materials or equipment submitted for approval prior to CONTRACTOR's purchase thereof for incorporation in the work. Adequate facilities shall be furnished free of charge to make the necessary Inspection. ENGINEER assumes no obligation to observe materials at the source of supply nor does such Inspection assure conformance to the Contract Documents.
 3. The cost of all Inspections, tests and approvals in addition to the above which are required by the Contract Documents shall be paid by OWNER (unless otherwise specified in the supplementary conditions).

13.4 DEFECTIVE WORK

- A. Any work or materials not in accordance with the Contract Documents that may be discovered before work completion shall be corrected at no additional cost to the OWNER upon notification by the ENGINEER. Failure on the part of ENGINEER to discover, condemn or reject materials or work shall not be construed to imply acceptance of the same should their noncompliance become evident before or after work completion. It is expressly understood that nothing in this paragraph waives any of the OWNER's rights under the guarantee provision of this Part 13.

- B. Work may be judged defective by ENGINEER regardless of cause, except when such defect or failures are the result of ENGINEER's design deficiencies, acts of God, misuse by OWNER, or due to vandalism.
- C. CONTRACTOR shall immediately remove all rejected materials and equipment from the premises and to such a point distant therefrom as ENGINEER may require.

13.5 UNCOVERING WORK

- A. If any work is covered contrary to ENGINEER's written request, it must, if requested by ENGINEER, be uncovered for ENGINEER's observation and be recovered at CONTRACTOR's expense.
- B. If ENGINEER considers it necessary or advisable that covered work be observed by ENGINEER or inspected or tested by others, CONTRACTOR, at ENGINEER's request, shall uncover, expose or otherwise make available for observation, Inspection or testing as ENGINEER may require, that portion of the work in question. CONTRACTOR shall furnish all necessary labor, material and equipment.
 - 1. If it is found that such work is defective, CONTRACTOR shall bear all direct, indirect and consequential costs of such uncovering, exposure, observation, Inspection and testing and of satisfactory reconstruction, including, but not limited to, fees and charges of ENGINEERS, architects, and other professionals. If OWNER accepts such defective work, OWNER shall be entitled to an appropriate decrease in the contract price. If the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Part 11 of these general conditions.
 - 2. If such work is not found to be defective, CONTRACTOR shall be allowed an increase in the contract price or an extension of the Contract Time, or both, directly attributable to such uncovering, exposure, observation, Inspection, testing and reconstruction. If the parties are unable to agree as to the amount or extent thereof, CONTRACTOR may make a claim therefore as provided in Parts 11 and 12.

13.6 CORRECTION OR REMOVAL OF DEFECTIVE WORK BY CONTRACTOR

- A. If required by ENGINEER, CONTRACTOR shall promptly, as directed, either correct all defective work, whether or not fabricated, installed or completed, or, if the work has been rejected by ENGINEER, remove it from the site and replace it with non-defective work. No rejected material, the defects of which have been subsequently corrected, shall be used in the work unless approval in writing has been given by the ENGINEER. CONTRACTOR shall bear all direct, indirect and consequential costs of such correction or removal (including, but not limited to, fees and charges of OWNER, ENGINEERS, architects, and other professionals) made necessary thereby.

13.7 CORRECTION PERIOD

- A. If any portion of the work is found to be defective within 1 year after the date of substantial completion, CONTRACTOR shall correct it or replace it with non-defective work. The 1 year correction period may be superseded by such longer

period of time as prescribed in the Contract Documents or by special guarantee terms required by the Contract Documents.

- B. If CONTRACTOR fails to correct defective work within 15 days after rejection or notice by OWNER or ENGINEER, or in an emergency where notice and delay would cause serious risk of loss or damage, OWNER may have the defective work corrected or removed and replaced. The CONTRACTOR and CONTRACTOR's surety shall be liable for and pay for all direct, indirect and consequential costs of such correction or removal and replacement by OWNER (including, but not limited to, fees and charges of ENGINEERS, architects and other professionals).
- C. In circumstances where a portion of the work or a particular item of equipment is placed in continuous service before substantial completion of all the work, the correction period for that work or item may start from an earlier date if so provided in the Contract Documents or by Change Order.
- D. If material or equipment fails during the one year correction period or during its warranty or guarantee period and is therefore repaired or replaced by CONTRACTOR, the one year correction period or the warranty or guarantee period shall be extended by the CONTRACTOR for such repair or replacement from the date of such repair or replacement for a length of time equal to the original one year correction period or warranty or guarantee period.

13.8 ACCEPTANCE OF DEFECTIVE WORK

- A. Acceptance is OWNER's Choice: OWNER may accept defective work instead of requiring correction or removal and replacement. CONTRACTOR shall bear all direct, indirect and consequential costs attributable to ENGINEER's evaluation of and determination to accept such defective work (such costs to be approved by ENGINEER as to reasonableness and may include, but are not limited to, fees and charges of ENGINEERS, architects, and other professionals).
- B. Decrease in Contract Price: If acceptance of defective work occurs prior to final payment, a Change Order will be issued in the case of lump sum work, or in the case of unit price work, the quantities will be adjusted accordingly. Any necessary revisions in the Contract Documents with respect to the work will be described and the OWNER shall be entitled to an appropriate decrease in the contract price. If the parties are unable to agree as to the amount thereof, OWNER may make a claim therefore as provided in Part 11.
- C. Acceptance is Not a Waiver of OWNER's Rights: OWNER's acceptance of defective work shall not release or relieve CONTRACTOR from warranty and guarantee provisions of this Part 13.

13.9 OWNER MAY CORRECT DEFECTIVE WORK

- A. Notice: OWNER may correct and remedy any work deficiency:
 - 1. If CONTRACTOR fails after 15 days' written notice of ENGINEER to proceed to correct defective work or to remove and replace rejected work as required by ENGINEER in accordance with Article 13.6; or
 - 2. If CONTRACTOR fails to perform the work in accordance with the Contract Documents; or,

3. If CONTRACTOR fails to comply with any other provision of the Contract Documents.
- B. OWNER to Expedite Work: In exercising the rights and remedies under this paragraph, OWNER shall proceed expeditiously. To the extent necessary to complete corrective and remedial action, OWNER may:
 1. Exclude CONTRACTOR from all or part of the site;
 2. Take possession of all or part of the work, and suspend CONTRACTOR's services related thereto;
 3. Take possession of CONTRACTOR's tools, appliances, construction equipment and machinery at the site; and
 4. Incorporate in the work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere.
- C. CONTRACTOR to Allow Access: CONTRACTOR shall allow OWNER, OWNER's representatives, agents and employees such access to the site as may be necessary to enable OWNER to exercise the rights and remedies under this Article.
- D. Direct, Indirect and Consequential Costs: All direct, indirect and consequential costs of OWNER in exercising such rights and remedies will be charged against CONTRACTOR in an amount determined to be reasonable by ENGINEER. A Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the work and the OWNER shall be entitled to an appropriate decrease in the contract price. Such direct, indirect and consequential costs will include, but not be limited to, fees and charges of ENGINEERS, architects and other professionals, all court costs and all costs of repair and replacement of work of others destroyed or damaged by correction, removal or replacement of CONTRACTOR's defective work.
- E. CONTRACTOR Can Appeal: CONTRACTOR may appeal OWNER's claim in accordance with the dispute resolution process established in the Agreement.
- F. Contract Time Extension: CONTRACTOR shall not be allowed an extension of the Contract Time because of any delay in performance of the work attributable to the exercise by OWNER of OWNER's rights and remedies.

PART 14 PAYMENTS TO CONTRACTOR AND COMPLETION

14.1 BASIS FOR PROGRESS PAYMENTS

- A. Lump Sum Work: The schedule of values (as defined in Paragraph 2.5B.3. and established as provided in Article 2.7) will serve as the basis for progress payments and will be incorporated into an Application for Payment form acceptable to ENGINEER.
- B. Unit Price Work: Progress payments will be based on the number of units completed.

14.2 APPLICATION FOR PROGRESS PAYMENTS

- A. Once a Month: Progress payments shall not be processed more often than once a month.
- B. Contents of Applications: **To request payment, CONTRACTOR shall submit to ENGINEER a signed Application for Payment, utilizing form attached as Exhibit A to General Conditions,** which accurately reflects the work completed as of the date of the application and which is accompanied by such supporting

documentation as is required by the Contract Documents. Completed Quantities shall be in whole units and total of all billings shall not exceed one hundred percent (100%) of any Bid Item.

1. Such application may include requests for payment on account of changes in the Work which have been properly authorized by Work Directive Changes but not yet included in a Change Order, if such request does not exceed the current Contract Price.
 2. Such applications may not include requests for payment of amounts the CONTRACTOR does not intend to pay to a Subcontractor or Supplier because of dispute or other reason.
- C. Materials and Equipment Supplied but Not Installed: Payment may be made for materials and equipment not incorporated in the work but delivered and suitably stored at the site or at another location agreed to in writing if the CONTRACTOR satisfies the following requirements:
1. A bill of sale, invoice or other documentation shall be attached to the application warranting that OWNER has received the materials and equipment free and clear of all liens.
 2. Evidence shall be provided which indicates the materials and equipment are covered by appropriate property insurance and other arrangements to protect OWNER's interest therein.
 3. All documentation shall be satisfactory to the ENGINEER.
- D. Withholding of Payment: The OWNER reserves the right to withhold the first and all subsequent partial payments due the CONTRACTOR until submittals listed in Paragraph 2.5B are submitted in a form acceptable to the ENGINEER.
- E. Retainage: The amount of retainage (if any) with respect to progress payments will be as stipulated in the Agreement or supplementary conditions.

14.3 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

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

14.4 REVIEW OF APPLICATIONS FOR PROGRESS PAYMENT

- A. Submittal: ENGINEER will, within 10 days after receipt of each Application for Payment, either process the application or return the application to CONTRACTOR indicating reasons for refusing to approve payment. In the latter case, CONTRACTOR may make the necessary corrections and resubmit the application. Within 30 days after presentation of an approved Application for Payment, the amount approved will (subject to the provisions of Paragraph 14.4C) be paid by OWNER to CONTRACTOR.
- B. ENGINEER May Reject Submission: ENGINEER may refuse to approve the whole or any part of any payment if, in ENGINEER's opinion:
1. the work is unsafe or inaccessible and therefore ENGINEER cannot determine if the work is acceptable;

2. the work is defective, or completed work has been damaged requiring correction or replacement;
 3. the OWNER has been required to correct defective work or complete work in accordance with Article 13.9;
 4. the ENGINEER has actual knowledge of the occurrence of any of the events enumerated in Article 15.2; or
 5. Subsequently discovered evidence, or the results of subsequent tests, nullify any payments previously made.
- C. OWNER May Reject Submission: OWNER may refuse to make payment of the full amount because:
1. claims have been made against the OWNER on account of CONTRACTOR's performance or furnishing of the work;
 2. liens or claims have been filed in connection with the work and remain unsatisfied more than 45 days;
 3. there are other items (e.g. pay reductions for defective work) entitling OWNER to an off-set against the amount recommended, and OWNER has given CONTRACTOR written notice stating the reasons for such action;
 4. the OWNER does not have in its possession an accurate updated construction progress schedule; or
 5. subsequently discovered evidence, or the results of subsequent tests, nullify any payments previously made to the extent necessary, in ENGINEER's opinion, to protect OWNER from loss.

14.5 SUBSTANTIAL COMPLETION

- A. CONTRACTOR to Certify Work is Substantially Complete: When CONTRACTOR considers the work (or portion thereof) ready for its intended use, CONTRACTOR shall certify in writing to ENGINEER that the work (or portion thereof) has been completed in accordance with the Contract Documents. CONTRACTOR shall include in such written certification a list of any items not finished.
- B. ENGINEER to Review CONTRACTOR's Certifications: Within five (5) days after ENGINEER receives CONTRACTOR certification and list of work items not finished, ENGINEER will issue written notice either agreeing the work is substantially complete or stating reasons why the work is not substantially complete.
- C. Final Inspection: If substantially complete, ENGINEER shall within a reasonable time, schedule a Final Inspection preparatory to writing the Final Inspection punch list.
- D. OWNER's Rights: OWNER shall have the right to exclude CONTRACTOR from the work after the date of substantial completion, but OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the Final Inspection punch list.

14.6 PARTIAL UTILIZATION

- A. In General: No occupancy or separate operation of part of the work will be accomplished prior to execution of a Change Order between OWNER and CONTRACTOR which fully describes the liability between OWNER and CONTRACTOR in respect of property insurance.

- B. Part of the Work is Substantially Complete: Any finished part of the work may be used by the OWNER prior to substantial completion of all of the work if:
1. the part of the work has specifically been identified in the Contract Documents; or
 2. the ENGINEER and the CONTRACTOR agree the finished parts constitute a completed separately functioning and usable part of the work which can be used without significantly interfering with CONTRACTOR's performance of the remainder of the work.
 3. the OWNER requests in writing that the OWNER is to be permitted to use any such part of the work, and
 4. the CONTRACTOR agrees any finished part of the work may be used by the OWNER prior to substantial completion of all of the work. CONTRACTOR will certify in writing to OWNER that said part of the work is ready for its intended use and is substantially complete.
- C. Part of the Work is Not Substantially Complete: Any unfinished part of the work may be used by the OWNER prior to substantial completion of all of the work if:
1. the OWNER has requested in writing that it is to be permitted to take over operation of any part of the work although it is not substantially complete.
 2. the CONTRACTOR and the ENGINEER have made an Inspection of that part of the work to determine its status of completion and they have prepared a list of the items remaining to be completed or corrected thereon before final payment;
 3. the CONTRACTOR does not object to OWNER taking over that part of the work which is not ready for separate operation by OWNER.
 4. the ENGINEER has prepared and delivered to the CONTRACTOR a list of items to be completed or corrected.
 5. the ENGINEER has prepared written recommendation as to the division of responsibilities pending final payment between OWNER and CONTRACTOR with respect to security, operation, safety maintenance, utilities, insurance, warranties and guarantees for that part of the work, which will become binding upon OWNER and CONTRACTOR at the time when OWNER takes over such operation (unless they shall have otherwise agreed in writing); and
 6. during such operation and prior to substantial completion of such part of the work, OWNER shall allow CONTRACTOR reasonable access to complete or correct items on the list provided by the ENGINEER and to complete other related work.
- D. CONTRACTOR to Have Access: During OWNER's occupancy and operation within said part of the work, OWNER shall allow CONTRACTOR access to complete or correct items on the above-referenced list and to complete other related work.

14.7 FINAL INSPECTION

- A. When ENGINEER agrees the work (or portion of the work) is substantially complete, ENGINEER will make Final Inspection. ENGINEER will prepare a Final Inspection punch list and will deliver such list to CONTRACTOR in writing.
- B. Except for hidden or latent defects, damage due to punch list rework, fraud, gross mistakes amounting to fraud, or work required by the Contract Documents, the list shall be considered complete and final.

- C. Delivery of the Final Inspection punch list or accomplishment of the work thereon by CONTRACTOR does not relinquish any of the OWNER's rights under the CONTRACTOR's warranty and guarantee.

14.8 FINAL APPLICATION FOR PAYMENT

- A. In General: After CONTRACTOR has completed all punch list work to the satisfaction of ENGINEER and after ENGINEER has indicated that the work is acceptable (subject to the provisions of Article 14.10), CONTRACTOR may follow the procedures for progress payments and make application for final payment.
- B. Submittals Required for Final Payment: final payment (including any remaining retained money) shall not become due until CONTRACTOR submits all documentation called for in the Contract Documents and the following:
 - 1. an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the OWNER or the OWNER's property might be responsible or encumbered, have been paid or otherwise satisfied;
 - 2. a current or additional certificate evidencing that insurance required by the Contract Documents, which is to remain in force after final payment, is currently in effect and will not be canceled or allowed to expire until OWNER has been given at least 30 days prior written notice, by certified mail, return receipt requested.
 - 3. a written statement that the CONTRACTOR knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents;
 - 4. if previously requested by CONTRACTOR's surety, consent of surety to final payment;
 - 5. a certificate of occupancy if required by law, regulation or Contract Documents;
 - 6. all maintenance an operating instructions, schedules, guarantees, Bonds, certificates of Inspection, marked up record documents (Article 6.11) and other documents required by the Contract Documents; and
 - 7. if required by the OWNER, other data establishing payment or satisfaction of obligations, such as receipts, releases and waivers of liens, claims, security interests or encumbrances arising out of the contract, to the extent and in such form as may be designated by the OWNER. If a subcontractor refuses to furnish a release or waiver required by the OWNER, the CONTRACTOR shall furnish a bond satisfactory to the OWNER to indemnify the OWNER against such claim. If such claims remain unsatisfied after payments are made, CONTRACTOR shall refund to the OWNER all money that the OWNER may be compelled to pay in discharging such liens or claims, including all costs and reasonable fees and charges.

14.9 FINAL PAYMENT AND ACCEPTANCE

- A. ENGINEER's Determination: ENGINEER shall review CONTRACTOR's final Application for Payment and, based upon ENGINEER's observation of the work during construction and Final Inspection, submission by CONTRACTOR of all required documentation and determination of CONTRACTOR's compliance with the

Contract Documents, either forward the application to OWNER for payment or return it to CONTRACTOR.

- B. Work Has Been Completed: When forwarding the application to OWNER, ENGINEER shall state in writing that the work is acceptable, subject to the provisions of Article 14.10.
- C. Work Has Not Been Completed: If the work has not been completed, ENGINEER will return the application to CONTRACTOR, indicating in writing the reasons for refusing to recommend final payment. CONTRACTOR shall make the necessary corrections and resubmit the application. Unless indicated otherwise in the Contract Documents, and subject to provisions of Paragraph 14.4B, 40 days after presentation to ENGINEER of the application and accompanying documentation, and with ENGINEER's recommendation and notice of acceptability, the amount requested by CONTRACTOR and confirmed by ENGINEER will become due and owing by OWNER to CONTRACTOR.
- D. Delays Not CONTRACTOR's Fault: If after substantial completion of the work, final completion is materially delayed through no fault of CONTRACTOR, or by issuance of Change Orders affecting final completion, CONTRACTOR may submit final Application for Payment as stated above. Upon ENGINEER's recommendation, OWNER may, without terminating the Construction Contract, make payment of the balance due for that portion of the work fully completed and accepted. Such payment shall be deemed a final payment, except that it shall not constitute a waiver of claims.

14.10 WAIVER OF CLAIMS

- A. The making and acceptance of final payment constitutes:
 - 1. a waiver of all claims by OWNER against CONTRACTOR, except from unsettled liens, claims from defective work appearing after Final Inspection pursuant to Article 14.7 or from failure to comply with the Contract Documents or the terms of any special guarantees specified therein. Further, however, it will not constitute a waiver by OWNER of any rights in respect of CONTRACTOR's continuing obligations under the Contract Documents or of claims which have been specifically reserved by the OWNER; and
 - 2. a waiver of all claims by CONTRACTOR under the Contract Documents except those previously made in writing and still unsettled, or remaining in dispute after processing as required by Article 9.8.

14.11 POST CONSTRUCTION CONFERENCE

- A. *Within 20 days after the CONTRACTOR has completed all Punch List work to the satisfaction of the ENGINEER and after the ENGINEER has indicated that the work is acceptable, but prior to final application for payment, the CONTRACTOR shall attend a conference with the ENGINEER and others:*
 - 1. *to discuss the project's successes and failures;*
 - 2. *to discuss project procedures;*
 - 3. *to discuss change orders or work directives from the project;*
 - 4. *to discuss retainage and final payment;*
 - 5. *to discuss procedures pertaining to the processing of payments;*
 - 6. *to discuss the submittal of the "as-builts"; and*

7. *to review or discuss other items deemed necessary by ENGINEER or CONTRACTOR.*
- B. *The conference will be held at a mutually agreed time and place attended by CONTRACTOR, its superintendent and its subcontractors as appropriate. Other attendees will be:*
 1. *ENGINEER and/or resident project representative;*
 2. *representatives of OWNER;*
 3. *governmental representatives, as appropriate;*
 4. *others as requested by CONTRACTOR, OWNER or ENGINEER.*
- C. *The purpose of the conference is to review the project's successes and shortcomings, and to discuss improvements for future projects and improved communications.*
- D. *ENGINEER will preside at the post-construction conference and will arrange for recording and distributing minutes to all persons in attendance.*

PART 15 SUSPENSION OF WORK AND TERMINATION

15.1 OWNER MAY SUSPEND WORK

- A. Notice: By written notice to the CONTRACTOR, the OWNER shall have the authority to suspend the work or any portion thereof) for a period of not more than 160 days upon the occurrence of any one or more of the following events:
 1. if the work is defective;
 2. if CONTRACTOR fails to supply sufficient skilled workers or suitable materials or equipment;
 3. if CONTRACTOR fails to furnish or perform the work in such a way that the completed work will conform to the Contract Documents; or
 4. the occurrence of unsuitable weather or other such conditions ENGINEER considers unfavorable for suitable prosecution of the work.
- B. Suspension Shall Not Benefit CONTRACTOR: This right of OWNER to stop the work shall not give rise to any duty on the part of OWNER or ENGINEER to exercise this right for the benefit of CONTRACTOR or any other party.
- C. Safe, Secure and Smooth Site: If work is suspended by the OWNER, the CONTRACTOR shall do work necessary to provide a safe and secure site. If pedestrian or vehicular access is required, a smooth and unobstructed passageway shall be provided through the construction site. In the event the CONTRACTOR fails to perform this work, the OWNER may perform such work and the cost thereof will be deducted from money due or to become due the CONTRACTOR.
- D. Contract Time During Suspension: If a suspension of work is ordered by OWNER or ENGINEER because the CONTRACTOR refuses or fails to comply with the Contract Documents, the days on which the suspension order is in effect shall be considered as part of the Contract Time. Such suspension of work shall not release or relieve the CONTRACTOR from the CONTRACTOR's responsibilities set forth in the Contract Documents.
- E. Resumption of the Work: the suspended work shall be resumed on the date fixed by ENGINEER, which date shall be the earlier of 120 days after the issuance of the suspension order or the date all of the conditions cited in the order are satisfied.

- F. Work Suspension claims: Except as listed below, CONTRACTOR shall be allowed an increase in the contract price or an extension of the Contract Time, or both, if CONTRACTOR makes an approved claim as provided for in Parts 11 and 12.
1. Any work done during the suspension of the work will not be accepted and paid for unless approved in writing by the ENGINEER.
 2. There shall be no claim against or liability on the part of the OWNER and ENGINEER for failure on the part of the CONTRACTOR to comply with the Contract Documents.

15.2 OWNER MAY TERMINATE

- A. Notice, and Reason Therefore: OWNER may terminate the services of the CONTRACTOR and exclude the CONTRACTOR from the site after giving CONTRACTOR and the surety 10 days written notice. Such termination by OWNER may result from the occurrence of any one or more of the following events:
1. if a petition is filed against CONTRACTOR under any chapter of the bankruptcy code as now or hereafter in effect at the time of filing, or if a petition is filed seeking any such equivalent or similar relief against CONTRACTOR under any other federal or state law in effect at the time relating to bankruptcy or insolvency, and if such involuntary petition remains unsatisfied for more than 30 days.;
 2. if CONTRACTOR makes a general assignment for the benefit of creditors;
 3. if a trustee, receiver, custodian or agent of CONTRACTOR is appointed under applicable law or under contract, whose appointment or authority to take charge of property of CONTRACTOR is for the purpose of enforcing a lien against such property or for the purpose of general administration of such property for the benefit of CONTRACTOR's creditors;
 4. if CONTRACTOR admits in writing an inability to pay its debts generally as they become due;
 5. if CONTRACTOR fails to perform the work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the progress schedule established under Paragraph 2.7A.1. as revised from time to time);
 6. if CONTRACTOR disregards laws or regulations of any public body having jurisdiction;
 7. if CONTRACTOR disregards the authority of ENGINEER; or
 8. if CONTRACTOR otherwise violates in any substantial way any provisions of the Contract Documents.
- B. Completion of Work by Others: OWNER may, to the extent permitted by laws and regulations, either allow the surety to complete the work or take possession of the work and of all CONTRACTOR's tools, appliances, construction equipment and machinery at the site and use the same to complete the work (without any liability to CONTRACTOR for trespass or conversion). OWNER may incorporate in the work all materials and equipment stored at the site or for which OWNER has paid CONTRACTOR but which are stored elsewhere, and finish the work as ENGINEER may deem expedient. CONTRACTOR shall cooperate in any way necessary to allow the work to be completed.
- C. Adjustment to Cost of the Work:

1. Upon terminating the services of the CONTRACTOR, the CONTRACTOR shall not be entitled to receive any further payment until the work is finished. Final payment to CONTRACTOR or CONTRACTOR reimbursement to the OWNER shall be as follows:
 - a. if unpaid balance of the contract price exceeds the direct, indirect and consequential costs of completing the work (including, but not limited to, fees and charges of ENGINEERS, architects, and other professionals), such excess will be paid to CONTRACTOR; and
 - b. if the direct, indirect and consequential costs of completing the work exceed the unpaid balance, CONTRACTOR and the surety shall be liable to pay the OWNER for such costs exceeding the unpaid balance.
 2. Such direct, indirect and consequential costs incurred by the OWNER to complete the work will be incorporated in a Change Order. To secure such a Change Order, when exercising any rights or remedies under this paragraph ENGINEER shall not be required to obtain the lowest price for the work to be performed.
- D. Waiver of Any Default: Waiver of any default shall not be deemed to be a waiver of any subsequent default. Waiver of breach of any provision of the Contract Documents shall not be construed to be a modification of the Contract Documents, unless stated to be such in a Change Order, signed by OWNER.
- E. Termination Will Not Affect Any Right or Remedies: 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. An retention or payment of moneys due CONTRACTOR by OWNER will not release CONTRACTOR from liability.
- F. Termination for OWNER's Convenience: Upon 10 days' written notice to CONTRACTOR, OWNER may, without cause and without prejudice to any other right or remedy, elect to abandon the work and terminate the construction contract. In such case, CONTRACTOR shall be paid for all work executed and any expense sustained plus reasonable termination expenses, which will include, but not be limited to, direct, indirect and consequential costs *less OWNER's costs*. Anticipated profit upon terminated work shall not be included as part of CONTRACTOR's termination costs.

15.3 TERMINATION OF WORK BY CONTRACTOR

- A. In General: If the work is stopped for a period of more than 120 days through no act or fault of the CONTRACTOR or CONTRACTOR's agents or employees or any other persons performing portions of the work under contract with any of the above, the CONTRACTOR may terminate the Construction Contract in accordance with 15.3B herein below for any of the following reasons:
1. the OWNER has persistently failed to fulfill fundamental OWNER's obligations under the Contract Documents with respect to matters important to the progress of the work;
 2. issuance of an order of a court or other public authority having jurisdiction, except that where the CONTRACTOR has standing, the CONTRACTOR must cooperate in efforts to stay or appeal such order;

3. an act of government, such as a declaration or national emergency, making necessary materials unavailable; or
 4. unavoidable casualties or other similar causes as acts of God or of the public enemy, acts of the state or federal government in either their sovereign or contractual capacity, fires, floods, epidemics, quarantine restrictions, strikes, freight embargoes, and unusually severe weather which materially interfere with CONTRACTOR's ability to complete the work, but in every case the failure to perform must be beyond the control and without the fault or negligence of the CONTRACTOR or anyone for whom the CONTRACTOR may be liable.
- B. Notice: If one of the reasons for termination in 15.3A still exists after the CONTRACTOR gives an additional 10 days written notice to the ENGINEER, the CONTRACTOR may terminate the Construction Contract and recover from the OWNER payment for work executed and for proved loss with respect to materials, equipment, tools, construction equipment and machinery, including reasonable overhead. Anticipated profit on work not performed shall not be allowed.
- C. Continuing the Work: the provisions of 14.2A and 15.3B shall not release or relieve the CONTRACTOR from CONTRACTOR's obligation under Article 6.15 to carry on the work in accordance with the progress schedule and without delay during disputes and disagreements with the OWNER.

PART 16 DISPUTE RESOLUTION

16.1 APPEALS PROCESS

- A. Any written decision rendered by ENGINEER pursuant to Paragraph 9.8A may be appealed by CONTRACTOR. Such appeal may be taken from any such decision in accordance with any provisions provided in the Agreement or supplementary conditions concerning dispute resolution and with applicable laws and regulations.
- B. During any such appeal, OWNER may issue a work directive change requiring the CONTRACTOR to perform such disputed work and to continue the work as provided in Article 6.15.
- C. No demand for dispute resolution of any claim, dispute or other matter that is required to be referred to ENGINEER initially for decision in accordance with Paragraph 9.8A will be made until (a) the ENGINEER has rendered a written decision or (b) by the 31st day after the claim, dispute or other matter was presented to the ENGINEER.
- D. No demand for dispute resolution of any claim dispute or other matter will be made later than 30 days after the date on which ENGINEER has rendered a written decision in respect thereof in accordance with Paragraph 9.8; and the failure to demand dispute resolution within said 30 days' period will result in ENGINEER's decision being final and binding upon OWNER and CONTRACTOR.
- E. If the ENGINEER renders a decision after dispute proceedings have been initiated, such decision may be entered as evidence but will not supersede the dispute resolution proceedings, except where the decision is acceptable to the parties concerned.
- F. No demand for dispute resolution of any written decision of ENGINEER rendered in accordance with Paragraph 9.8 will be made later than 10 days after the party making

such demand has delivered written notice of intention to appeal as provided in paragraph 9.7.

- G. Notice of the demand for dispute resolution will be filed in writing with the ENGINEER. The demand for dispute resolution will be made within the 30 day or 10 day period specified in Paragraph 16.1C and 16.1F as applicable, and in all other cases within a reasonable time after the claim, dispute or other matter in question has arisen, and in no event shall any such demand be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statute of limitations.

PART 17 MISCELLANEOUS

17.1 GIVING NOTICE

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly received if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or it is received by registered or certified mail, postage prepaid or by facsimile.
- B. Notices sent as required by paragraph 17.1A shall be effective on the date on which such notice was sent.
- C. Facsimile notice shall be effective on the date of transmission provided that a confirmation establishing the successful transmission of the notice is sent by first-class mail, postage prepaid, along with a copy of the notice transmitted, no later than 24 hours after the facsimile notice is transmitted.
- D. If any notice requires a period of less than seven (7) days for response, the notice shall be sent by facsimile.
- E. Sureties shall receive notice at the business addresses shown on the Bonds.
- F. CONTRACTOR shall receive notice at the business address shown on the Agreement.

17.2 COMPUTATION OF TIME

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

17.3 NOTICE OF CLAIM TIME LIMITS

- A. Should OWNER or CONTRACTOR suffer injury or damage to person or property because of any error, omission or act of the other party or of any of the other party's employees or agents or others for whose acts the other party is legally liable, claim will be made in writing to the other party within a reasonable time of the first observance of such injury or damage. The provisions of this paragraph shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

17.4 CUMULATIVE REMEDIES

- A. The duties, obligations, rights and remedies imposed by these general conditions are in addition to any right and remedies available to OWNER and CONTRACTOR under available laws or regulations, special warranty or special guarantee. All representations, warranties and guarantees made in the Contract Documents will survive final payment and termination or completion of the Construction Contract.

END OF DOCUMENT

**EXHIBIT B
 OGDEN CITY ENGINEERING
 CONTRACT CHANGE ORDER REQUEST FORM**

| | | | | | | |
|---|---------------------|--------------------|---|-------------|-------------------|---------------|
| Change Order No. 1 | | | Contractor: | | | |
| Date: | | | Project: | | | |
| PO: | | | PA No.: | | | |
| Funding Account(s): | | | Contract No.: | | | |
| Item No. | Bid Item No. | Description | Est Qty | Unit | Unit Price | Amount |
| | | | | | | \$0.00 |
| Sub Total for Bid Items | | | | | | \$0.00 |
| Additional Items | | | | | | |
| | | | | | | \$0.00 |
| SUB TOTAL FOR ADDITIONAL ITEMS | | | | | | \$0.00 |
| | | Total Changes | | | | \$0.00 |
| Original Contract Price: | | | Percent of Contract Price Change: | | | #DN/0! |
| Net Change Increase: | | | | | | 0.00 |
| Previous Change Request(s): | | | | | | 0.00 |
| Contract Extensions: | | | | | | 0.00 |
| Original Contract Price: | | | | | | |
| New Contract Price: | | | | | | |
| The contract time shall be extended by 0 Calendar days . All other terms and conditions shall remain the same. | | | | | | |
| Change Order Justification: | | | | | | |
| 0 | | | Ogden City Corporation, A Utah Municipal Corporation | | | |
| By: _____ | | | By: _____ | | | |
| Title/Date _____ | | | Title/Date _____ <i>(Div Mgt/Dept Dir/CAO)</i> | | | |
| Approving Agencies: | | | Attest: _____ | | | |
| _____ | | | City Recorder/Date | | | |
| City Engineer/Eng Mgr/ Date | | | Approved as to form: | | | |
| _____ | | | _____ | | | |
| PS Director/Date | | | City Attorney/Date | | | |
| _____ | | | _____ | | | |
| Comptroller | | | Funding Source: | | | |
| _____ | | | Division Mgr | | | |
| Mgmt Serv Dir/Date | | | _____ | | | |
| _____ | | | _____ | | | |

DOCUMENT 00 81 00
MODIFICATIONS TO GENERAL CONDITIONS
(Supplementary Conditions)

- A. Section 00 72 00 (General Conditions), add to paragraph 14.2.A, subparagraph 1 to read as follows:
1. Submittal of a progress payment application shall be the Contractor's certification that the Record Documents required per **Section 01 78 50** have been updated to reflect the work which has occurred on the project to date and records actual construction information. Engineer may verify the accuracy of such certification prior to approval of progress payment application and within the allowable 10 days review period as indicated in Article 14.4 of **Section 00 72 00** (General Conditions). Failure of the Engineer to verify certification accuracy shall not release Contractor of his obligations toward Record Drawings under the Contract.
- B. Section 00 72 00 (General Conditions), modify paragraph 14.5.A, by adding subparagraph 1 to read as follows:
1. Written certification as to substantial completion submitted by the Contractor shall also be the Contractor's certification that the Record Documents required per Section 01785 have been updated to reflect the work which has occurred on the project to date and records actual construction information relating to the work (or portion thereof). Engineer may verify the accuracy of such certification prior to his written agreement as to the work being substantially complete. Failure of the Engineer to verify certification accuracy shall not release Contractor of his obligations toward Record Drawings under the Contract. The Engineer may deny or reject the Contractor's certification as to Substantial Completion (or portion thereof) based solely upon Contractor's failure to accurately maintain the required Record Documents.
- C. Section 01 29 00 (Payment Procedures), add paragraph D to Article 1.2 to read as follows:

1.2 SUBMITTAL PROCEDURES

- D. Submit certification that the Record Documents required per Section 01 78 39 have been updated to reflect the work which has occurred on the project to date and records actual construction information.

Paragraph 13.3c.3 of the General Conditions is hereby repealed and the following is substituted therefore.

13.3 TESTS AND INSPECTIONS

- C. Costs of Inspections Assessable to:
3. The cost of all inspections tests and approvals in addition to the above which are required by the Contract Documents shall be paid by Contractor.

END OF SECTION

DOCUMENT 00 90 00
ADDENDA AND MODIFICATIONS

PART 1 GENERAL

1.1 PROCEDURE

- A. For filing purposes, add Addenda and Modifications to the Contract Documents following this page.

END OF DOCUMENT

**SECTION 01 11 00
SUMMARY OF WORK**

PART 1 GENERAL

1.1 WORK COVERED BY CONTRACT DOCUMENTS

A. Work of this Construction Contract comprises of River Restoration work located at Weber River: about 1/4 mile downriver of Exchange Rd Bridge.

B. The Work generally includes, but is not limited to, the following:
River and River Bank Restoration, care of water, concrete weir removal, tree removal, rock and boulder placement, fish passage channel, steel sheet pile, concrete casting and pouring, OHI hydraulic gate system, concrete access ramp, and all appurtenant work in accordance with the Drawings and Specifications

1.2 CONTRACT METHOD

A. Construct the work under a single unit price contract.

1.3 SUBSTANTIAL COMPLETION

A. Substantial completion is defined as completing and constructing all bid items in the bid schedule.

PART 2 PRODUCTS (Not Used)

PART 3 EXECUTION (Not Used)

END OF SECTION

SECTION 01 12 00
SPECIAL PROVISION

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT
WEBER RIVER – OGDEN, UTAH

TECHNICAL SPECIFICATIONS



October 2025



Prepared by:
RiverRestoration.org

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This document supplements APWA 2025 Standard Specifications.
Meet or exceed all APWA Standard Specifications and those supplemented herein, including but not limited to:

015526, 015700, 017113, 017123, 017124, 310510, 310513, 310519, 310521, 311100, 312316, 312317, 312323, 312326, 312500, 313119, 320190, 320191, 320193, 328423, 329119, 329200, 329313, 329343.

Utah Department of Transportation 2012 Individual Standard Specifications (<http://udot.utah.gov>) are also referenced herein, including but not limited to Section 02743 and other sections reference therein.

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SECTION 01

SUMMARY OF WORK

PART 1 GENERAL

- A. The Work to be performed under this Contract shall consist of furnishing all labor, tools, equipment, materials, supplies, and manufactured articles for the Project. It shall also include the furnishing of all transportation and services, including fuel, power, water, and essential communications, and for the performance of all labor, work, or other operations required for the fulfillment of the Contract in strict accordance with the Contract Documents

1.1 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work under this Contract generally includes but is not limited to construction of the following: "General Activities, Care of Water, upper and lower drops including, rock placement, concrete casting and pouring, OHI gates system and peripherals, pool grading, Access Ramp, bank restoration and all appurtenant work in accordance with the Drawings and Specifications" prepared by the Engineer, RiverRestoration.org LLC (ENGINEER).
- B. The project is located on the Weber River in Ogden, UT. The geographic coordinates of the project are:
Latitude: 41.227738° N, Longitude: 111.987759° W

1.2 BEGINNING AND COMPLETION OF THE WORK

- A. Time is the essence of the Contract. In accordance with the provisions of Article 2 of the Agreement, the Contractor shall begin the Work on the date specified in the written Notice to Proceed from the City and shall complete all of the Work included in the Contract within the time specified in said Notice. Time stated for completion shall include final cleanup of the premises.

1.3 CONTRACT METHOD

- A. The Work hereunder will be constructed under a Unit Price contract.
- B. The Contractor shall include the requirements of the General Conditions and Supplementary General Conditions of the Contract as a part of all of its subcontract agreements.

1.4 ORDER OF THE WORK

- A. The Work shall be carried on at such places on the project and also in such order or precedence as may be found necessary by the Engineer to expedite completion of the Project. After work has begun on any portion of a designated part of the Project, it shall be carried forward to its final completion as rapidly as practicable. The order and time to complete shall conform to the requirements of the approved Contractor's schedule as submitted under the provisions for "*Contractor's Schedules*" in

Section 01 33 00, "Contractor Submittals" and the requirements of Section 01 32 16, "CPM Construction Schedule."

1.5 WORK BY OTHERS

- A. General: The Contractor's attention is directed to the fact that other contractors may conduct work at the site during the performance of the Work under this contract. The Contractor shall conduct its operations so as to cause a minimum of interference with the Work of such other contractors and shall cooperate fully with such contractors to provide continued safe access to their respective portions of the site, as required to perform their respective contracts.
- B. Interference With Work on Utilities: The Contractor shall cooperate fully with all utility forces of the City or forces of other public or private agencies engaged in the relocation, altering, or otherwise rearranging of any facilities which interfere with the progress of the Work, and shall schedule the Work so as to minimize interference with said relocation, altering, or other rearranging of facilities.
- C. Concurrent Work by Other Contractors: The Contractor's attention is directed to the fact that work *may* be conducted *at or adjacent to* the site by other contractors during the performance of the Work of this Contract. The Contractor shall conduct its operations so as to cause a minimum of interference with the work of such other contractors.

1.6 WORK SEQUENCE

- A. Construct Work in stages to accommodate OWNER use of premises during construction.
 - 1. Coordinate Progress Schedule during construction. At the City's discretion a notice to proceed for each schedule will be issued as progress is made on previous authorized schedules.
 - 2. Provide for continuous public usage. Roads should not be closed without the consent of the City's representative during any phase of construction.

1.7 PROJECT MEETINGS

- A. Preconstruction Conference: Prior to the commencement of Work at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by the Contractor, its superintendent, and its subcontractors as appropriate. Other attendees will be:
 - 1. Engineer or Representative.
 - 2. Representatives of City.
 - 3. Other Governmental representatives as appropriate.
 - 4. Others as requested by Contractor, City, or Engineer.
- B. Unless previously submitted to the Engineer, the Contractor shall bring to the conference one copy each of the following:
 - 1. Tentative Look Ahead Construction Schedule.
 - 2. Procurement schedule of major equipment and materials and items requiring long lead-time.
 - 3. Rock Sourcing Plan.
 - 4. Shop Drawing/Sample/Substitute or "Or Equal" submittal schedule.
 - 5. Schedule of values (Unit Price Contract) for progress payment purposes.
 - 6. Erosion and Sediment Control Plan (ESCP).
 - 7. Spill Prevention, Control and Countermeasure Plan (SPCC).

8. Care of Water Pan (CW).
 9. Traffic Control Plan (TC).
 10. Stormwater Protection Plan (SWPP)
- C. The purpose of the conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished to the Contractor prior to the meeting date, which may include the following:
1. Contractor's tentative schedules.
 2. Transmittal, review, and distribution of Contractor's submittals.
 3. Processing applications for payment.
 4. Maintaining of record documents.
 5. Critical work sequencing.
 6. Field decisions and Change Orders.
 7. Use of project site, office and storage areas, security, housekeeping, and City's needs.
 8. Major equipment deliveries and priorities.
 9. Contractor's assignments for safety and first aid.
- D. The *City's designated Construction Manager* will preside at the preconstruction conference and will arrange for keeping the minutes and distributing the minutes to all persons in attendance.
- E. Progress Meetings: The Contractor shall schedule and hold regular on-site progress meetings at least *bi-weekly* and at other times as requested by the City or Engineer or as required by progress of the Work. The Contractor, Engineer, City, and all subcontractors active on the site shall be represented at each meeting. Contractor may at its discretion request attendance by representatives of its suppliers, manufacturer's, and other subcontractors.
- F. The Contractor shall preside at the meetings and provide for keeping and distribution of the minutes. The purpose of the meetings will be to review the progress of the Work maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop.

END OF SECTION

SECTION 1 SCOPE OF WORK

1.00 INTRODUCTION

These TECHNICAL SPECIFICATIONS documents are for the construction of the Ogden Business Exchange Surf Wave Project on the Weber River, in Ogden, Utah.

1.01 GENERAL

The proposed Ogden Business Exchange Wave Project (Project) is located in Ogden, Utah, along the Weber River in the Ogden Business Exchange development area approximately a quarter mile downstream of the kayak park. Ogden City is hoping to expand on the whitewater recreation opportunities provided by the kayak park to add a standing wave surfable with surf boards, body boards, and standup paddle boards (SUPs) at the project site. The project would provide fish passage over the structure and add aquatic habitat to the project reach. The proposed project includes in-channel and bank improvements in and along the Weber River with a total project length of approximately 340 feet.

The geographic coordinates of the project are:

Latitude: 41.227738° N, Longitude: 111.987759° W

The purpose of the project is to:

- 1) Install one (1) upper main whitewater feature composed of a concrete ramp off the main grade control on river left to generate supercritical flow with a pneumatic, adjustable gate system composed of three (3) Steel Gates placed at the bottom of the ramp to redirect the jet upward, forming a wave.
- 2) Install one (1) boulder-formed fish passage channel off the main grade control on river right including five (5) engineered riffle structures.
- 3) Install six (6) adjustable gates (Rubber Rock) placed across the crest of the main grade control to control the headwater surface elevation and flow split into the recreation and fish passage channels during low flow periods. At high flows the gate would lower to increase flood conveyance.
- 4) Install one (1) grade control structure downstream of the surf wave to control the tailwater elevation at the main feature.
- 5) Install six (6) adjustable gates (Rubber Rock) placed across the crest of the downstream grade control structure to control the water surface elevations at low flows. Gates would be fully lowered during high flow events.
- 6) Regrade the channel between the two structures to increase the pool depth and width below the surf wave and the fish passage channel.
- 7) Install bank improvements on river left between and beyond the two structures which will include natural seating areas and bank stabilization measures.
- 8) Install a single (1) concrete access ramp and associated boulder access stairs
- 9) Install a single (1) overlook

The primary construction tasks associated with the project are the partial demolition of existing concrete diversion weir structure, abandoned headgate, installation of two new whitewater structures, boulder and slab stone bank terracing and revegetation. Construction of an overlook and concrete access ramp.

The Project is expected to complete, upland and channel grading work during summer and early fall of 2026, with concrete work being completed before freezing season of 2026. All in-channel work shall be done outside of runoff flow periods, or significant storm flow events. The CONTRACTOR shall be responsible to monitor weather patterns and storm flow events. Construction Sequencing and Care of Water to maximize access to work and minimize impacts to aquatic and riparian resources shall be implemented at all times during construction. The CONTRACTOR is responsible for compliance with the 404/401 State Joint Stream Alteration permit.

The General Scope of the Project shall be completed in accordance with these Specifications and as shown on the Project Drawings. Project Drawings include:

| <u>Sheet No.</u> | <u>Sheet Title</u> |
|------------------|---|
| G01 | Cover Sheet |
| G02 | Base Map & Horizontal Control Plan |
| G03 | Demolition & Protect In Place Plan I |
| G04 | Demolition & Protect In Place Plan - Section & Profiles |
| CW00 | Care of Water Overview & Notes |
| CW01 | Care of water & Access Stage 1 Plan |
| CW02 | Care of water & Access Stage 2 Plan |
| CW03 | Care of water & Access Stage 3 Plan |
| CW04 | Care of water & Access Stage 4 Plan |
| CW05 | Care of water Staging Area |
| CW06 | Care of water & Access Plan Details (1/2) |
| CW07 | Care of water & Access Plan Details (2/2) |
| CW08 | Erosion Control Details |
| R00 | Plan View, Profile & Index |
| R01 | Plan View & Profile Surf Wave |
| R02 | Plan View & Profile Fish Passage |
| R03 | Plan View & Profile Engineered Riffle Grade Control |
| R04 | Plan View & Profile Access Ramp |
| R05 | Profile and Sections |
| R06 | Bank Restoration Typical Sections |
| R07 | Obermeyer Hydro Inc, Rubber Rock and Steel Gate Layout |
| R08 | Rubber & Steel Gates Surf Wave Plan View |
| R09 | Rubber & Steel Gates Engineered Riffle Plan View |
| L00 | Seeding Notes |
| L01 | Seeding Plan |
| L02 | Erosion Control Blanket Installation |
| D01 | Boulder Toe and Slab Stone Bank Terracing Detail |
| D02 | Boulder Toe Protection / Slab Stone Terracing with 3:1 Vegetated Slope Detail |
| D03 | Concrete Access Ramp Detail |
| D04 | Obermeyer Hydro Inc Details |

| <u>Sheet No.</u> | <u>Sheet Title</u> |
|------------------|---|
| D05 | Obermeyer Hydro Inc Details |
| D06 | Obermeyer Hydro Inc Rubber Rock Details |
| D07 | Obermeyer Hydro Inc Steel Gate Details |
| D08 | Ogden City Details – Survey Monument |
| D09 | Ogden City Details – Concrete Base for Camera Pole |
| D10-12 | CXT Precast Products – 10.5' x 20' Control Building |
| D13 | Airline Bedding Detail |
| S-001 | General Structural Notes |
| S-002 | General Structural Notes |
| S-100 | Overall Plan |
| S-101 | Surf Wave Area and Riffle |
| S-102 | Access Ramp |
| S-103 | Wingwall & Headwall Plans |
| S-201 | Headwall & Wingwall Elevation |
| S-301 | Structural Sections |
| S-302 | Structural Sections |
| S-303 | Structural Sections |
| S-304 | Structural Sections |
| S-501 | Structural Details |
| S-502 | Structural Details |
| S-901 | Typical Structural Details |

1.1.1 Reference Drawings

- a. Manual of Standard Plans published in 2025 by the Utah Chapter of the American Public Works Association.

1.02 KEY PROJECT PERSONNEL CONTACTS

The following is a list of Project stakeholders and their contact information. CONTRACTOR shall notify all stakeholders 7 days prior to construction via email with read receipt confirmation. References to the OWNER are to Ogden City Corporation.

1.02.01 OWNER

Ogden City Corporation
Engineering Division
2549 Washington Blvd Ogden, UT 84401

OWNERS CONTACT:

Mr. Taylor Nielsen
City Engineer
(801) 629-8983
TaylorNielsen@ogdencity.com

1.02.02 ENGINEER

RiverRestoration.org, LLC.
Mr. Jason Carey, PE
PO Box 248
Carbondale, CO 81623
(970) 947-9568 (w)
jason.carey@riverrestoration.org

Engineer's Representatives:
Francois Escorihuela, River Engineer
(970) 947-9568 (w)
francois@riverrestoration.org

END OF SECTION

SECTION 2 GENERAL CONSTRUCTION METHODS

2.01 GENERAL CONSTRUCTION METHODS

This section provides additional detail to append to the Manual of Standard Specifications (APWA, 2025) for general work necessary for the construction including, but not limited to, permits; setting up and taking down temporary offices, buildings, utilities, and sanitary facilities; equipment and materials to and from the site; and preparation of the site for construction as specified. General construction includes: Permits, Project Limits, Site Integrity, Temporary Facilities, Traffic Control, Utility Locates, Manufactured Goods, Construction Staking and Special Guarantees.

2.02 PROJECT LIMITS

Meet or Exceed APWA 2025 Standard Specification 01 71 23 or as modified herein.

All construction activity shall be confined to the Project Limits as defined on the Plans. There are several different Property Owners adjacent to the Project. The boundary of the Project Limits shall be surveyed by the CONTRACTOR prior to construction activities.

Active Project Limits shall be flagged by CONTRACTOR in field for each setup. The CONTRACTOR is wholly responsible for protecting property lines and to limit disturbances to within defined Project Limits.

2.03 PERMITS AND REQUIREMENTS

The CONTRACTOR shall comply with all applicable requirements set forth in all permits obtained for this project. Required permits, with associated terms and conditions, include:

2.03.01 Joint Stream Alteration Permit

This project requires a Joint Stream Alteration Permit (Clean Water Act Section 404 and State Water Quality Certificate 401) issued by the Utah Division of Water Rights for discharge of materials into the waters of the United States. Permits have been applied for; the CONTRACTOR shall adhere to all general and special conditions of the permit when authorized. The CONTRACTOR is responsible for compliance with the 401 and 404 Permits which have term limits and the CONTRACTOR is responsible for obtaining necessary extensions. The CONTRACTOR is responsible for time changes to the Project permits.

2.03.02 UPDES General Permit No. UTG070000

A construction dewatering permit (UPDES General Permit No. UTG070000) from the STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY may be required if Contractor chosen construction methods include returning any pumped water is to the river or routed to storm water inlets. This permit is wholly the responsibility of the Contractor.

2.03.03 UPDES General Permit for Construction Activities UTRC00000

A general construction activities stormwater discharge permit (UPDES General Permit No. UTG070000) from the STATE OF UTAH, DEPARTMENT OF ENVIRONMENTAL QUALITY, DIVISION OF WATER QUALITY is required if construction disturbance is required greater than 1.0 acres. The CONTRACTOR is responsible for being in compliance with all regulatory requirements. The estimated project limits for this project are **2.99** acres. A Storm Water Pollution Prevention Plan SWPPP is required. This permit is wholly the responsibility of the Contractor.

2.03.04 Local Construction Permits

The CONTRACTOR is responsible for compliance with access agreements and obtaining all other local permits necessary for construction. Especially the Contractor's Right of Entry Agreement with Union Pacific for project N 0803248. (See Appendix C)

2.04 CONTRACTOR SUBMITTALS

The CONTRACTOR shall submit for review by the OWNER the following operating plans, schedules, and documentation. All plans and documentation shall be submitted a minimum of 21 days prior to beginning construction. Rejected plans and documentation shall be modified per review comments and re-submitted. Plans shall incorporate all appropriate detailed BMPs, means, methods, and materials necessary for achieving project performance, safety, and protection targets.

2.04.01 Erosion and Sediment Control (ESC) Plan

CONTRACTOR shall submit an Erosion and Sediment Control (ESC) Plan which shall detail all of the proposed BMPs, means, methods, and materials used to prevent and/or mitigate erosion and sediment mobilization within and surrounding all in-channel and upland construction and staging areas. The ESC Plan shall include a detailed Narrative as well as specific Locations, Maps, and Schedules for all stages of construction, and shall identify and provide contacts for all Qualified Subcontractors.

2.04.02 Spill Prevention, Control and Countermeasure (SPCC) Plan

CONTRACTOR shall submit a Spill Prevention, Control and Countermeasures (SPCC) Plan which shall detail all of the proposed BMPs, means, methods, and materials used to prevent and/or mitigate spills or other releases of fuels, chemicals, oils, sewage, and other contaminants within and surrounding all in-channel and upland construction and staging areas, and from entering Waters of the US and State of Utah. SPCC Plan shall include a detailed Narrative as well as specific Locations, Maps, and Schedules for all stages of construction, and shall identify and provide contacts for all Qualified Subcontractors. SPCC Plan shall identify and provide contacts for all Qualified Subcontractors, OWNER, UDEQ REPRESENTATIVE, and ENGINEER. SPCC Plan shall be posted on-site at all times during construction.

A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Utah (which include surface water, ground water and dry gullies or storm sewers leading to surface water) shall be reported to the Utah Department of Environmental Quality (UDEQ). It is wholly the responsibility of the CONTRACTOR to identify and notify the appropriate agencies in the event of a spill or release.

Releases of petroleum products and certain hazardous substances listed under the Federal Clean Water Act (40 CFR Part 116) must be reported to the National Response Center as well as to UDEQ as required

under the Clean Water Act and the Oil Pollution Act. Furthermore, contact must be made immediately, reporting any spill incident, with the UDEQ, the OWNER and ENGINEER.

2.04.03 Traffic Control (TC) Plan

Meet or Exceed APWA 2025 Standard Specification 01 55 26 or as modified herein.

CONTRACTOR shall submit a Traffic Control (TC) Plan, to include the Roads, Parking Areas, Walking Paths, Boat Ramps, River Navigation, and Construction Access to be approved by the OWNER. The (TC) Plan shall detail all of the proposed BMPs, means, methods and materials used to maintain street traffic surrounding all construction and staging areas, and to isolate construction and staging areas from the public. TC Plan shall include Site Access, Traffic Control, and Public Safety plans for all stages of construction, and shall include a detailed Narrative as well as specific Locations, Maps, and Schedules. TC Plan shall identify and provide contacts for all Qualified Subcontractors, OWNER, ENGINEER, and 24-Hour Emergency Traffic Control Technician. No construction activities shall impede public traffic patterns prior to written approval from the OWNER. If CONTRACTOR finds it necessary to close any Paths or re-route traffic, the OWNER shall work with CONTRACTOR to approve a reasonable alternative route.

2.04.04 Care of Water (CW) Plan

CONTRACTOR shall submit a Care of Water (CW) Plan which details all of the proposed BMPs, means, methods, and materials used to manage and treat waters in all construction and staging areas. On-site waters could include surface flows from adjacent terrain, direct rainfall, and seepage and groundwater discharge in coffered areas. The ENGINEER will provide a typical on-site water management detail in the project plans for reference; however, it is wholly the responsibility of the CONTRACTOR to design, submit for approval, and implement a comprehensive and site-specific CW Plan. The CW Plan shall include a detailed Narrative as well as specific Locations, Maps, and Schedules for all stages of construction, and shall identify and provide contacts for all Qualified Subcontractors. The Plan shall include a specific and detailed plan for returning on-site waters to the Active Channel which includes settling, pumping, and filtration methods and locations. The final accepted CW Plan shall provide a reliable means to conform to allowable construction discharge turbidity regulations and shall include methods and schedules for turbidity monitoring if required by project permits.

2.04.05 Look Ahead Construction Schedule

The CONTRACTOR shall submit construction Look Ahead Schedules 7 days prior to the start of any given stage of construction as well as bi-weekly during active construction. Schedules should include the following:

- a. All forecasted tasks associated with in-channel and upland construction, mobilization, staging and access, and materials acquisition and delivery
- b. Completed construction tasks
- c. Report submittals
- d. Progress and management meetings
- e. Permit timeframes and deadlines
- f. Inspections

2.04.06 Rock Sourcing Plan

The CONTRACTOR shall submit

2.04.07 Stormwater Pollution Prevention Plan (SWPPP)

Meet or Exceed APWA 2025 Standard Specification 01 78 45 or as modified herein.

1 GENERAL

1.1 Section includes

- A. Requirements for controlling erosion and capturing sediment laden runoff from leaving the construction site and areas under the Contractor's control.
- B. Requirements for installing, inspecting, maintaining, and removing temporary erosion and sediment control measures.

1.2 Related sections

- A. APWA Section 01 57 00 Temporary Controls
- B. APWA Section 31 25 00 Erosion and Sedimentation Control
- C. APWA Section 31 05 19 Geotextiles

1.3 Submittals

- A. A Storm Water Pollution Prevention Plan (SWPPP) for the project shall be submitted at least two weeks prior to beginning construction.
- B. The Notice of Intent (NOI) form for storm water discharges associated with construction activity to the Division of Water Quality at the Utah Department of Environmental Quality (DEQ).
- C. Close-out the Storm Water General Permit for Construction Activities by submitting a Notice of Termination (NOT) form to the Division of Water Quality.

2 PRODUCTS

2.1 Materials

- A. Temporary Materials: Contractor's choice.
- B. Riprap: Rock, APWA Section 31 37 00.
- C. Blankets: Uniform open weave jute, wood fiber or biodegradable.
- D. Geotextiles: Project specification 31 05 20S and APWA Section 31 05 19
- E. Topsoil and Fertilizer: APWA Sections 31 05 13 and 32 92 00

3 EXECUTION

3.1 Preparation

- A. Do not begin any earth-disturbing activities until the SWPPP has been approved and the NOI form has been completed online and submitted to the Division of Water Quality.
- B. Comply with requirements of Storm Water General Permit for Construction Activities.
- C. Follow the Storm Water Pollution Prevention Plan (SWPPP) for the project.
- D. Do not start earth-disturbing activities until BMPs along the project perimeter and those protecting environmentally sensitive areas are installed.
- E. Maintain a copy of the prepared SWPPP on the project site at all times.

- F. Use the most restrictive requirement if a conflict occurs between erosion and sediment control specifications and federal, state, or local agency laws, rules, or regulations.
- G. Remove foreign materials, roots, rocks, debris.
- H. Grade to eliminate rough spots, ponding areas.
- I. Grade soil to drain perimeter water away from protected areas.
- J. Temporary Controls: APWA Section 01 57 00 as applicable.

3.2 Installation

- A. Construct BMPs such as check dams, silt fence, and other sediment and erosion control devices to reduce erosion and sedimentation.
- B. Install stabilization measures as soon as practical on newly disturbed areas.

3.3 Inspection

- A. Perform weekly inspections of all disturbed areas during construction. Inspect the site within 24 hours of a storm event greater than ½ inch of precipitation. Conduct inspections at least once per month when construction activities are temporarily or seasonally shut down. Apply corrective measures as required.
- B. Complete the Division of Water Quality inspection form during each inspection. Keep copies of all inspection reports with the prepared SWPPP on the project site.

3.4 Maintenance

- A. Maintain erosion control and sediment control devices until all disturbed areas are stabilized.
- B. Remove erosion control and sediment control devices upon completion of construction.

2.04.07 Pneumatic Gate System Submittals

Final design of the pneumatic gate system shall be included in the bid price including:

- 1) Shop drawings of all proposed components.
- 2) Materials list with specifications.
- 3) Structural drawings revisions including concrete block-outs and modifications.
- 4) Control house modifications.
- 5) Electrical power supply.
- 6) Final field inspection and testing.
- 7) Final field wiring drawings as-built.
- 8) Final as-built Mechanical System Manual.
- 9) Airline trenches and Manhole shop drawings.

2.05 SITE INTEGRITY

Meet or Exceed APWA 2025 Standard Specification 01 31 13 or as modified herein.

The CONTRACTOR is required to document the condition of Utilities, Adjacent Streets and Sidewalks, Recreation Area Facilities, Construction Access Areas on the banks, Wetlands, Mature Vegetation and the

general area with pictures and video recordings, submitted to ENGINEER electronically prior to any construction phase and after each phase of construction is completed. The pictures and video recording shall document the surface integrity of the structures with clear and recognizable reference features or established and repeatable reference markers in the field of view. The CONTRACTOR is responsible for rehabilitating, repairing or replacing, to better than pre-construction conditions, any damage to the structures, roads, and vegetation directly or indirectly related to construction activities.

2.06 UTILITIES

Meet or Exceed APWA 2025 Standard Specification 01 31 13 or as modified herein.

CONTRACTOR shall field-locate and mark all utilities within or adjacent to Project Limits. Any utility locations marked on plans are approximate and actual field location of any utility is wholly the responsibility of the CONTRACTOR. Overhead powerlines shall be marked at ground level with warning signs where they cross haul routes. CONTRACTOR shall protect in-place all utilities. Known Utility contacts include, but are not limited to:

2.06.01 Bluestakes of Utah

www.bluestakes.org

800-662-4111

801-208-2100

2.06.02 Ogden Engineering Division

www.ogdencity.com/268/Engineering

801-629-8271

2.07 TEMPORARY FACILITIES

CONTRACTOR shall provide all temporary facilities required for performing the work. Temporary construction facilities and utility connections are solely the CONTRACTOR's responsibility based on his selected method of operation and schedule. CONTRACTOR is responsible for providing a clean and safe environment for all workers on the job site. CONTRACTOR is responsible for providing sanitary facilities. CONTRACTOR shall follow Occupational Safety and Health Administration (OSHA) regulations. CONTRACTOR is responsible for providing all electrical, water and other temporary utility needs. CONTRACTOR shall keep the Project Limits in a neat and orderly manner. CONTRACTOR is responsible for removing temporary facilities and controls after completion of all Work.

2.07.01 Staging Areas

Preliminary Staging Areas are shown on the Plans. Final staging and access are to be pre-approved in writing by the OWNER. All construction staging, stockpiling of materials, equipment storage, equipment fueling and maintenance, and other, shall take place in designated areas with adequate barriers to protect the public from entry. Staging areas shall have a designated office or contact information posted for public inquires. Staging areas shall provide employees all necessary facilities, legal postings, and safety protocol. Staging area shall include trash and recycling disposal containers and temporary restroom facilities maintained and serviced as necessary. The CONTRACTOR is responsible for maintaining a clean and organized staging area and restoring all disturbed areas equal to pre-project conditions.

2.07.02 Disposal Areas

Construction activities are anticipated to produce clean fill materials, as well as some other waste materials. All excess materials produced by construction activities shall be properly disposed. Prior to construction activities CONTRACTOR shall report any materials disposal locations to the OWNER. All disposal locations, and means and methods of disposal, shall be in accordance with any applicable regulations and permits, and it is solely the responsibility of the CONTRACTOR to acquire any applicable permits. It is wholly the responsibility of the CONTRACTOR to notify the OWNER of potentially contaminated materials, request for testing, and ensure proper disposal. The cost of testing and disposal will be reimbursed at a unit basis based on direct costs.

2.07.02 Dewatering Areas

Dewatering areas shall have adequate BMPs in place to stockpile material prior to disposal. All soaked waste materials shall be dewatered prior to exporting outside of the Project Limits. Dewatering shall be sufficient that no leakage is evident from any hauling equipment. The dewatering area shall be adequate to evaporate water or overflow shall be passed through filter fabric wrapped ECLs, or equivalent, and routed to the Weber River without erosion or turbidity.

Dewatering areas may also be configured to include a Washout Area for concrete pours. Pours shall not be conducted during or before an anticipated storm event. All excess concrete and concrete washout slurries from the concrete mixer trucks and chutes shall be discharged off site, or temporarily into a washout area designated in an unvegetated upland location and completely isolated from stormwater and drainage. All concrete residues shall be hauled off-site and properly disposed. Returning water from dewatering areas to surface flow routes may require a dewatering permit from the UDEQ and is wholly the responsibility of the CONTRACTOR.

2.07.03 Equipment Fueling, Greasing, and Maintenance Areas

Any and all fueling and greasing of equipment shall be in designated upland locations, with adequate BMP's to contain any potential spill. All major equipment/vehicle maintenance shall be performed off-site. Fuel tank may be kept on-site in the staging area with drip pans underneath the fueling area. All equipment fluids generated from maintenance activities shall be disposed of into designated drums stored on spill pallets in accordance with hazardous waste management practices. Drip pans shall be placed under all equipment receiving minor or routine maintenance. All equipment shall be inspected daily for leaks and proper function. Leaking or otherwise improperly functioning equipment shall not be used in any capacity for construction activities. Any equipment found to be leaking upon inspection shall be immediately taken out of service for maintenance.

- a)** A Spill Cleanup Plan is wholly the responsibility of the CONTRACTOR and shall be posted and available at all times on site for all work areas prior to any construction activities and shall include coordination with local emergency response agencies.

- b)** A release of any chemical, oil, petroleum product, sewage, etc., which may enter waters of the State of Utah (which include surface water, ground water and dry gullies or storm sewers leading to surface water) shall be reported to the Ogden City Representative, National Response Center (NRC) (800-424-8802) in accordance with the requirements of 40 CFR 117, 40 CFR 110, and 40 CFR 302 and the Division of Water Quality (DWQ) (801-538-6146) or the 24 hour DWQ answering service at 801-536-

4123 as soon as he or she has knowledge of the discharge as required under the Clean Water Act and the Oil Pollution Act.

- c) Any incident spills that do not threaten water resources shall be reported to: Utah State Emergency Response Commission (members include UDEQ, DERR, Utah Department of Public Safety, and the Division of Emergency Services & Homeland Security), at Toll-Free 24-hour Environmental Emergency Spill Reporting Line 1-801-538-4123, <http://www.environmentalresponse.utah.gov>. Furthermore, contact must be made immediately, reporting any spill incident, with the Weber-Morgan Health Department, the OWNER and ENGINEER. The CONTRACTOR shall submit within 14 calendar days of knowledge of the release a written description of: the release (including the type and estimate of the amount of material released), the date that such release occurred, the circumstances leading to the release, the measures taken and/or planned to be taken to clean up the release, and steps to be taken to minimize the chance of future occurrences.

2.07.04 Hauling Routes

The import and export of materials from the project limits shall occur at designated locations on defined haul routes. Haul routes shall be approved by the OWNER prior to commencement of the work. Haul routes should be designed to reduce impacts on existing valued vegetation and trees, including limiting any activities within the drip line of existing large cottonwood trees. The access routes to construction sites shall be maintained by the CONTRACTOR with standard maintenance activities, including minimizing and mitigating for equipment Track Out. Haul routes shall be graded and maintained to drain and not pool water. Haul routes shall have wheel washing locations and tracking pads at the junction of paved surfaces. All damage to paved surfaces due to construction activities are the responsibility of the CONTRACTOR to repair to pre-construction conditions or better. Haul routes shall also be flagged by the CONTRACTOR within the Project Limits and random access of equipment shall be prevented. Adequate dust suppression, such as watering of haul routes, shall be maintained at all times. Loads shall be covered while hauling where necessary. Haul routes shall be repaired, ripped and contoured to not pool water and seeded at the completion of the work, to pre project conditions as determined by OWNER.

2.07.05 Channel Access Areas

CONTRACTOR shall be responsible for establishing and maintaining channel access sites for equipment and workers within Project Limits defined on plans and for rehabilitating access sites once construction is complete. Channel access ramps will be graded per plan in order to protect flood walls and other bank structures from equipment damage. Gravel berms shall be installed at the top of the access ramp and other areas to eliminate sheet flow or drainage onto the exposed or disturbed Riverbanks. A silt barrier shall be erected along the toe of any and all out-of-channel open cuts to eliminate the migration of material outside of the limits of work. Straw Bales or wattles shall be used at the toe of the ramp when the access is not in use to prevent the migration of material into the River.

2.08 CONSTRUCTION STAKING

Meet or Exceed APWA 2025 Standard Specification 01 71 34 or as modified herein.

2.08.01 Control Points General

The ENGINEER shall provide adequate horizontal and vertical control points for the CONTRACTOR to establish the lines and grades shown on the plans. Grade elevations and construction staking shall be wholly the responsibility of the CONTRACTOR.

The ENGINEER will provide a proposed XML compatible digital surface model and river alignment to the CONTRACTOR. The CONTRACTOR shall have the means to load and survey the alignments and surface into a field survey controller, for use in staking out the project layout, checking tolerances, and as-builts of any location in the project area. Surveyor shall be available for ENGINEER inspection at 48 hours notice to provide measurements in the field at ENGINEER'S request. Prior to each days construction grading activities and at the completion of every day, CONTRACTORs site localized survey/stake-out equipment shall be control validated as accurate to within allowable tolerances and recorded daily.

2.08.02 Control Establishment

Established control points shall be provided with special colored flagging and it shall be the responsibility of the CONTRACTOR to protect those control points. In the event they are lost, due to any cause, the CONTRACTOR shall re-establish adequate and permanent control markers on the local survey datums.

2.08.03 Survey Control Monument Coordinates

Table 2.1 Survey Control Monuments (Feet)

| CONTROL POINTS | NORTHING | EASTING | ELEVATION | DESCRIPTIONS |
|---------------------------------|-------------|-------------|-----------|-------------------|
| CP1 | 3607005.77 | 1505907.368 | 4290.516 | CP1 Mag Nail |
| CP2 | 3607143.629 | 1505533.978 | 4288.974 | Yellow Survey Cap |
| CP3 | 3607244.976 | 1506197.388 | 4289.896 | CP3 Mag Nail |
| USGS Monument (To be relocated) | 3606840.700 | 1506388.020 | 4294.880 | USGS Stream Gage |

2.08.04 Survey Coordinate System and Datum

Coordinate System: Utah State Plane, NAD83 datum, Central Zone, US foot, (UT83-CF)
 Vertical Datum: NAVD88

2.08.05 As-built Survey

Coordinate System: Utah State Plane, NAD83 datum, Central Zone, US foot, (UT83-CF)
 Vertical Datum: NAVD88. Provide asbuilt survey and adjustments in autocad compatible format adequate to verify quantities and conditions of final work product.

2.09 SITE GRADING

CONTRACTOR shall establish and identify required lines, levels, contours and datum. Grade Site to match all lines, elevations and grades shown on the Project Drawings. CONTRACTOR is required to accomplish all site grading through the use of GPS Control. The ENGINEER will provide a proposed XML compatible digital surface model and alignments to the CONTRACTOR. The CONTRACTOR shall have the means to load the alignments and surface into handheld and/or machine mounted field survey controllers to establish proposed elevations and grades. ENGINEER will be present during critical construction activities to inspect grading against the proposed project elevations, alignments and grades.

2.10 SPECIAL GUARANTEE TERMS

Meet or exceed 2025 APWA Standard Specification 00 72 00 and 32 01 90

2.10.01 Protect in Place Trees and Shrubs

- a) CONTRACTOR guarantees that care, caution and best management techniques are implemented to maximize the survivability of native mature trees not specifically designated for removal. An initial walk through the project area shall be done to identify best access/hauling routes and to avoid large trees.
- b) All Protect in Place vegetation shall have 100% success rate, showing vigor and general health, for one year after PIP measures are conducted.
- c) Post-construction monitoring may recommend additional pruning, irrigation, or fertilizer to restore health to the marked tree. The CONTRACTOR is responsible for all measures to restore the health of vegetation for one year after construction disturbances around protect-in-place vegetation.
- d) If negligence results in potential mortality of trees, as determined by the ENGINEER, the CONTRACTOR shall replace all damaged trees with new native trees to reclaim an equivalent canopy cover at CONTRACTOR's sole expense.

2.10.02 Seeding

- a) Prior to final acceptance seeded areas shall be reviewed during the inspection period by the ENGINEER for bare soils caused by surface or wind erosion. Bare areas caused by surface or gully erosion, blown away mulch, etc. shall be regraded, seeded, mulched and have mulch tackifier (or erosion control fabric) applied as necessary.
- b) Areas where seed has not germinated after one growing season shall be evaluated by the ENGINEER. Areas that have not germinated shall have seed, mulch and mulch tackifier or (erosion control fabric) reapplied at CONTRACTORS expense.
- c) Weed infestations shall be treated in accordance with the specifications, as directed by the project ENGINEER, and shall be considered incidental to the work. Weed control shall be treated for the 12-month warranty period.
- d) Native seed areas shall have a minimum of 85 percent coverage, with weed control, prior to final acceptance. Any seed areas having poor germination (less than 85 percent coverage) shall be re-seeded at no additional cost to the project.

2.10.03 Live Stake Planting

- a) Replace all poles and stakes that do not sprout after 45 days if possible or wait until the following dormant season to harvest and replant.

b) Periodic inspection repair and maintenance shall be required during the first two years or until vegetation is established to a 70% success rate.

2.10.04 Structures/Channel work

- a. All constructed in-channel and bank features shall be functioning in accordance with the Plans and Specifications for one year after installation. The CONTRACTOR is responsible for the repair or replacement of in-channel and bank features to proper functioning conditions. CONTRACTOR is responsible for all incidentals such as permit authorizations, BMPs, channel access and any incidental damage caused by repair.
- b. Settlement in backfill, fill, or in structures and paving built over backfill or fill, which may occur within one-year warranty period, shall be corrected at no cost to the OWNER. Restore any structures damaged by settlement to their original condition at no cost to the Owner.
- c. All damage caused to the Pathways as a result of improper construction is wholly the responsibility of the CONTRACTOR. The CONTRACTOR shall replace all pathways that are dilapidated as a result from improper installation or construction activities.

2.11 ACCEPTABLE AS BUILT ELEVATION VARIATIONS

Average Elevations across each Cross-Section shall be exact according to Plans. With natural building materials variances are expected and shall be allowed for average locations of individual particles. The following As-Built Variances are allowed.

Table 2.2 Acceptable As-Built Variances for Average Locations of Individual Particles

| <u>Description</u> | <u>Variance Elevation (feet)</u> | <u>Variance Horizontal (feet)</u> |
|---|----------------------------------|-----------------------------------|
| Top and Bottom of Cast in Place Structure | +0.05;-0.05 | +/-0.1 channel alignment |
| Landscape and Stockpiles | +2.0;- 2.0 | +/-5.0 stockpile extents |
| Finished Grade - Drop Structure Boulder Inverts | +0.25;-0.25 | +/-1.0 channel alignment |
| Finished Grade - Channel Bed and Banks | +0.25;-0.25 | +/-0.5 |
| Finished Grade - Channel Overbanks | +0.5;-0.5 | +/-1.0 channel alignment |
| Planting Pocket and Overview | +0.5;-0.5 | +/-1.0 channel alignment |
| | | |

**See Table 5.1, 5.2 and 5.3 for gradation information*

END OF SECTION

SECTION 3 BEST MANAGEMENT PRACTICES

Meet or Exceed APWA 2025 Standard Specification 01 57 00 & 31 05 19 & 31 23 16 & 31 25 00 or as modified herein.

3.01 GENERAL

The Work covered by this section includes the furnishing of all labor, materials, equipment and incidentals for installation, maintenance and inspection of all on shore and in-channel BMPs. Within the Project Limits all disturbed surfaces shall utilize best management practices such as Turbidity Curtains, Silt Fences, Construction Sequencing, Care of Water, etc.; to minimize potential environmental damage, turbid conditions, locations of ponding, sediment loading in any flow path, dust, noise, light, etc. Adequate numbers, locations and properly functioning BMPs and erosion control are wholly the responsibility of the CONTRACTOR. CONTRACTOR is responsible for maintaining all BMPs during construction activities, and for the removal post-construction activities and/or adequate stabilization periods. All construction activities shall be performed in accordance with; guidelines set out in the project plans and specifications, specifications in applicable permits, and any local, state, and federal regulations. CONTRACTOR shall inspect all BMPs daily. The OWNER or ENGINEER may stop work in any area due to improperly installed, inadequate, or non-functioning BMP's based on OWNER's or ENGINEER's sole discretion. CONTRACTOR is responsible for coordinating and participating in any inspections of BMPs by appropriate regulatory authorities.

3.02 CONSTRUCTION SEQUENCING

Construction sequencing is an essential BMP to minimize impacts to the Weber River; this sequence attempts to minimize potential impacts from non-point source pollution by implementing Best Management Practices prior to commencing work. Prior to starting construction, the CONTRACTOR shall notify the ENGINEER and the OWNER of the date the CONTRACTOR intends to start construction with a written notice delivered a minimum 7 days in advance. Additionally, Look-Ahead schedules shall be submitted every 14 days during active construction periods.

The Weber River flow rate can change rapidly, and it is the responsibility of the CONTRACTOR to be informed of river flow forecast and historical information to manage construction activities accordingly. The CONTRACTOR should be ready at all times to remove equipment from the channel and floodplain and modify cofferdams and diversions quickly to accommodate flood flows and protect the public, the environment, city infrastructure, and equipment from damage or loss. The CONTRACTOR should anticipate periodic delays in work due to increased flow in the Weber River. These delays should be factored into the cost of the project. A table of statistically estimated river flows is included in Section 7.01 of the specifications for the CONTRACTOR use. Additionally, a table of approximate Water Surface Elevations (WSEL) associated with the river flows and in relation to the Coffey Diversion locations presented in the project plans is provided in Hydrology Section 12.01 of the specifications.

The construction sequencing of the critical construction processes are defined by the ENGINEER and CONTRACTOR shall follow the sequence or as amended by ENGINEER. It is the responsibility of the CONTRACTOR to develop a sequencing plan for the construction of the in-stream structures and verify plan with ENGINEER.

3.02.01 Initial Site Setup

1. Submit all required plan documentation and construction schedules.
2. Notify OWNER, and ENGINEER of start date with at least 7 days' notice.

3. Obtain Ogden City approval of Traffic Control Plans for roads, paths and river.
4. Document with referenced photographs and video the project vicinity, structures, haul road and vegetation and submit to ENGINEER.
5. Establish and post construction site safety protocol.
6. Locate, in field, all Structures and Utilities.
7. Place Barriers, Post Signs, Install Safety Fencing and Isolate Project Site.
8. Protect in place structures, roads, utilities, boulders, trees and other in accordance with submitted plans.
9. Locate and flag Project Limits.
10. Locate and Protect in Place Survey Control.
11. Install temporary erosion control measures.
12. Locate and isolate construction staging and stockpile areas.
13. Install oil booms across wet channel downstream of work area; replace used oil booms per manufacturer's specifications.
14. Locate area for storage of spare oil booms and designate oiling and petroleum handling areas with appropriate and adequate BMPs outside of the riparian zone.
15. Establish and post protocol for potential oil spill cleanup and emergency response.
16. Verify all construction equipment and materials are clean and inspect equipment for leaks, improper function and invasive species.

3.02.02 Staging

1. Locate construction haul routes, stockpile, and staging areas and place silt fence or other BMP down gradient.
2. Install and maintain temporary portable toilet and waste receptables.
3. Identify and mark out the location for a job trailer, concrete wash out area, stockpile area, dewatering area, and fueling area as needed and with proper BMPs in place.
4. Place adequate barriers to prevent public entry of staging area and existing trails.
5. Post contact information for public inquires and emergencies.
6. Implement approved Traffic Control Plan.
7. Install BMPs
 - i. Control erosion and concentrated runoff
 - ii. Maintain and facilitate any and all existing Drainage Channels
 - iii. Identify and install any other BMPs as necessary
8. Install wheel wash and equipment tracking at staging area with drainage and BMPs.
9. Install oil/fueling area with spill kit stored on site.
10. Protect in Place Mature Vegetation, Wetlands and other Natural Resources
11. Grade Access and Staging Areas to drain in the direction of placed BMPs.
12. Grade dewatering area and install overflow drain with filtration.
13. Located stormwater drain(s) and install gravel wattle to surround drain(s).
14. Maintain, add and repair BMP structures as necessary throughout project

3.02.03 River Corridor Construction

1. General
 - a. Maintain, add and repair BMP structures as necessary throughout project.
 - b. Submit to Engineer list of equipment using certified bio-degradable fluids.
 - c. Clean, repair and maintain to leak free condition any equipment accessing the riparian corridor.
 - d. Disinfect any equipment accessing any wet channel.
 - e. Protect in Place all trees adjacent to designated excavation areas.
 - f. Follow all necessary requirements set forth by permitting.

2. Installation of Channel Access Areas:
 - a. Locate areas for equipment to access the channel with berm at top of bank.
 - b. Install Oil Booms across channel downstream of channel access locations
 - c. Prepare channel access.
 - d. Install silt fence at toe of bank access cuts.
 - e. Install straw bales or wattles at toe of channel access ramp.

3. Construction of In-stream Structures:
 - a. Monitor river levels and weather patterns for potential runoff spikes.
 - b. Plan daily work. Each day's work shall be completed prior to advancing to subsequent work. No in-channel excavations or stockpiles shall be unattended for any period.
 - c. Install and maintain Oil Booms downstream of work area if working in the wet channel.
 - d. Install erosion and sediment controls bmp's and temporary construction access points.
 - e. Perform demolition work and rough grading of east bank above ordinary high water (OHW) line.
 - f. Install coffer dams, turbidity curtain, oil booms and dewatering system for STAGE 1 (upper grade control feature Fish passage channel).
 - g. Construct STAGE 1 of in-channel construction and bank improvements as shown in plans.
 - h. Relocate coffer dams, dewatering system and other in-channel bmp's for STAGE 2 (upper grade control feature – Surf wave Channel).
 - i. Construct STAGE 2 of in-channel construction and bank improvements as shown on plans.
 - j. Relocate coffer dams, dewatering system and other in-channel bmp's for STAGE 3 work. (west bank access, bank toe restoration and river left side of downstream structure)
 - k. Construct STAGE 3 of in-channel construction, access/bank improvements as shown on plans.
 - l. Relocate coffer dams, dewatering system and other in-channel bmp's for STAGE 4 work. (river right bank tie in and river right side of downstream structure)
 - m. Construct STAGE 4 of in-channel construction and bank tie in as shown on plans
 - n. Remove coffer dams and dewatering system.
 - o. Construct downstream engineered riffle and downstream west bank improvements (river left) as shown in plans. Work may be performed in the wet and flowing channel.
 - p. Remove temporary river access points and in-channel bmp's river.
 - q. Construct bank and riverside improvements as shown in plans.
 - r. Install erosion control matting and seeding.
 - s. Remove staging areas and other temporary bmp's.

3.03 CHANNEL ACCESS

Berms shall be installed at the top of the access ramp and other areas to eliminate sheet flow or drainage onto the exposed or disturbed banks. A silt barrier shall be erected along the toe of any and all out-of-channel open cuts to eliminate the migration of material outside of the limits of work. Straw Bales and/or wattles shall be used at the toe of the ramp when the access is not in use to prevent the migration of material into the body of water.

3.04 EQUIPMENT OPERATING IN WET CHANNELS

Meet or Exceed APWA 2025 Standard Plan No. 125 or as modified herein.

Equipment shall be allowed to operate in the wet channels. Equipment operating in or adjacent to any wet channels shall be free of any fluid leaks and in excellent operating condition. Biodegradable hydraulic fluids shall be utilized for any equipment operating in the flowing river channel. CONTRACTOR shall submit a list of equipment operating with certified biodegradable hydraulic fluids to the ENGINEER prior to use of the equipment in the flowing channel. No equipment shall be left unattended at any time in any wet channel or below the Ordinary High-Water Line. Any and all fueling and oiling of equipment shall be in a designated upland location, with adequate BMPs to contain any potential spill. Equipment storage shall occur in a designated upland location or in the Staging Area.

Mobilization within the channel shall be sequenced for minimal disturbance. The CONTRACTOR shall time the excavation and placing of materials in order to minimize equipment driving on the channel bed. All in-stream structures shall be constructed in sections sized to minimize open excavation area. Each day's work shall be completed prior to commencing new work and no excavations of the bank or streambed shall be left open to flow. Equipment shall access designated ramps closest to work and sequence work to minimize driving on the stream bed.

All equipment shall be cleaned prior to being on-site to minimize potential for spreading of invasive species. Equipment shall be power-sprayed and free of weeds, soil and untreated water. If any equipment being used for the Project has been previously working in another stream, river, lake, pond or wetland, one of the following disinfection practices is necessary prior to construction to prevent the spread of whirling disease, New Zealand mud snails, zebra mussels, didymosphenia, and other aquatic hitchhikers. These practices are also necessary after project completion, prior to the equipment being used in another stream, river, lake, pond, or wetland, for the same purpose:

Offsite, remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, hand tools, boots, etc.) and spray/soak equipment in a 1:15 solution of Sparquat institutional cleaner and water. Keep equipment moist for at least 10 minutes; or

Offsite, remove all mud and debris from equipment (tracks, turrets, buckets, drags, teeth, hand tools, boots, etc.) and spray/soak equipment with water greater than 140 degrees Fahrenheit for at least 10 minutes.

The excavators and backhoes may need to be cleaned on site to remove excess native sediments stuck to the track or hoes. Sediments that are removed with a shovel shall be placed in designated clean fill material storage areas. Sediments removed with clean water shall be washed into the dewatering area. All dewatering areas shall have erosion control logs, or equivalent, staked at flow lines before discharge into city curb gutters.

3.05 IN-CHANNEL CONSTRUCTION

The CONTRACTOR shall time in-channel and open bank excavation work to be completed prior to **DECEMBER 1st, 2026**. The CONTRACTOR shall coordinate with the Division of Wildlife Resources on time extensions and install other necessary BMPs required to minimize turbidity transported downstream. The CONTRACTOR shall be responsible to plan accordingly and monitor the weather forecast to anticipate for storm events. No work shall be partially completed that would be subjected to high flow, approximately greater than 500 cfs. Table 3.1 below provides the approximate existing Water Surface Elevations for anticipated flows at the location of the Project where work will involve the Weber channel and banks.

Water Surface Elevations (WSEL) are based on limited survey and two-dimensional hydraulic modeling. Actual WSELs in the field may vary from those listed herein. Approximate WSELs are provided herein solely for the information of the CONTRACTOR.

Water Surface Elevations may be affected to an unknown degree with temporary flow obstructions of equipment, coffer, temporary alluvium placement or other construction activities. The CONTRACTOR is wholly responsible for monitoring and controlling WSELs during construction and any associated erosion, flooding, structure integrity or environmental damage.

Base flows are typically between 50-150 cfs during the construction period (50% Exceedance), however storm flow events exceeding the 150cfs maximum may occur. Real-time Streamflow gage information is available for the Weber River at the project site and should be used to monitor and predict river flow rates during construction.

https://waterdata.usgs.gov/nwis/inventory/?site_no=10137000&agency_cd=USGS

The CONTRACTOR is wholly responsible for monitoring storm events, snow accumulation, and temperature to anticipate for high flow events.

Table 3.1 Existing Water Surface Elevations

| Flowrate (cfs) | WSE Upstream of Existing Dam (ft El NAVD-88) |
|----------------|--|
| 50 | 4281.07 |
| 150 | 4281.44 |
| 227 | 4281.51 |
| 450 | 4282.1 |
| 1000 | 4282.90 |
| 1500 | 4283.50 |

3.06 OIL BOOM

An adequate number of oil booms, PS-8W-S12G, manufactured by SPC (<http://www.sorbentproducts.com>), or equivalent, shall be placed in a designated stockpile location onsite, visible and unobstructed at all times. Any spills shall be contained and cleaned by the CONTRACTOR. Oil booms shall be installed at the downstream end of the Project Limits, and at all times when equipment is working in or adjacent to flowing waters. Velocities of the Weber River likely require Oil Booms to be installed in backwaters during channel diversions. All Booms shall be replaced as needed, approximately weekly, with new Oil Booms.

3.07 PERMEABLE TURBIDITY BARRIER

River bank excavations open to the flow shall have Permeable (Non-Woven, Medium Weight Geotextile) Turbidity Curtains isolating all bank excavations from the Weber River (See Drawing Detail). Silt master Turbidity Curtain Type II by Parker Systems, www.parkersystemsinc.com, or equivalent.



3.08 TEMPORARY DIVERSION STRUCTURES

Control of the River stage and associated erosion during construction is wholly the responsibility of the CONTRACTOR. Installation of in-channel Concrete Ramps will require Temporary Cofferd Dam structures; however, boulders and grading of clean native alluvium may be performed in the wet channel. The CONTRACTOR is responsible for installing and maintaining all temporary flow diversion structures and coffer dams. It is the responsibility of the CONTRACTOR to design and implement any isolation and dewatering measures. The project plans provide an alternative means, methods, and materials for coffer dam construction for CONTRACTOR's reference. However, the CONTRACTOR shall be wholly responsible for designing, implementing and maintaining the final in-channel work isolation plan.

In addition to controlling the variable stage of the river, seepage and ground water will likely require additional control methods such as pumping, sand bagging, impermeable membranes and jersey barriers. The CONTRACTOR shall be wholly responsible for the selection of suitable method(s), and for design, installation, and operation of the diversion and Care Of Water required during the performance of the work under these specifications. The CONTRACTOR is required to design and install adequate diversion and Care Of Water facilities in a timely fashion in accordance with his/her schedule of construction and the requirements of these specifications. All means, methods, and materials used for work area isolation and for the care of on-site waters shall be included in the Care of Water (COW) Plan submitted by the CONTRACTOR.

Areas disturbed for diversion practices shall be restored and stabilized to pre project conditions. Failure of the CONTRACTOR to become adequately familiar with and address the existing structures, access and river conditions which impact the work may result in unnecessary construction delays and associated increased efforts for which the CONTRACTOR shall be solely responsible.

Pumping and returning of coffered water may require a dewatering permit from the UDEQ and is wholly the responsibility of the CONTRACTOR. The CONTRACTOR shall be responsible for monitoring the

turbidity within the Weber River and notifying the Utah Department of Wildlife Resources (DWR) of potential impacts to water quality.

3.09 FILTERING OF PUMPED WATER

Pumping of groundwater or surface water may occur during construction. Any pumped water being returned to the main flow of the river, without sufficient detention, shall first be processed through a filter. The filter may be a GEOTUBE by US Fabrics or equivalent. Flows exiting the detention or filter systems shall be controlled to prevent erosion and shall be observed and cared for the entire course to the river. Dewatering permits may be required. It is the responsibility of the CONTRACTOR to obtain construction permits.

3.10 STRAW BALES

Meet or Exceed APWA 2025 Standard Plan No. 121 or as modified herein.

Bales shall be certified “Weed-Free” and not hay bales. Bales shall be secured with wood or metal stakes driven 2 feet into ground. 4 inches of 3 inch minus washed gravel shall be placed on the up-gradient toe of the bales. Bales can be removed when vegetation is in place.

3.11 STRAW WATTLES

Straw Wattles (Wattles) shall be certified “Weed-Free” and in sound new condition. Temporary Wattles are to be removed within one year of installation. Any non-temporary Wattles shall be fully biodegradable and have Burlap or Jute fabric netting. Wattles shall be installed in an approximately 2” – 3” deep rounded trench. Spoils from the excavated trench should be deposited and “Knifed In” on the up-hill side of the Wattle to direct flow into the Wattle and prevent under-cutting. Ends should overlap by 1’. Wattles shall be staked at approximately 4’ o.c. and at every end with 1” width 16” long wood stakes.

3.12 SILT FENCE

Meet or Exceed APWA 2025 Standard Plan No. 122 or as modified herein.

Silt Fences shall be placed to contain construction activities on land. Silt Fence shall be constructed with 6oz. non-woven Geotextile or equivalent, with a 6 inch by 6 inch anchor trench up-grade (i.e. uphill) of the fence line and fence posts in 6 ft centers. The anchor trench shall be backfilled to existing grade with native material sufficiently tamped or compacted to prevent flow from migrating under the silt fence.

3.13 EROSION CONTROL LOGS

The CONTRACTOR may choose to place Erosion Control logs at drainage exits for Staging Area, Stormwater Inlets, Dewatering Activities, and Channel Access Roads in place of Straw Bales. Erosion Control Logs of 8 inches in diameter and staked every 1 foot on center.

3.14 STORM INLETS

Meet or Exceed APWA 2025 Standard Plan No. 124.1 – 124.3 or as modified herein.

All storm water inlets shall have 6” gravel or bark filled wattles, or an equivalent BMP that is adequate to

prevent sediment or containment loading.

3.15 OVERLAND FLOW

Meet or Exceed APWA 2025 Standard Plan No. 123 or as modified herein.

All bank excavations shall have adequate BMP's to prevent overland flow from eroding the disturbed soils.

3.16 REMOVAL OF BMPs

Any non-erosion control BMPs (including trash bins, material storage areas, and sanitary toilets) shall be removed immediately after construction activities are complete at the staging area. All Erosion and Sediment Control measures are to remain in place until the establishment of vegetation. All non-biodegradable BMPs are the property of the Contractor. Any non-biodegradable BMPs shall be removed after vegetation has established at least 85% cover (approximately 1 year).

3.17 RIPARIAN PROTECTION

Any and all riparian areas and riparian vegetation outside of the limits of excavation shall be Protected In Place. No construction supplies, fuels nor oils shall be stored in riparian areas, no vehicles nor heavy equipment shall be allowed into riparian areas other than the designated channel access sites. No discharge of any materials shall be allowed into any riparian areas. Riparian areas shall be traversed only by foot and leak free hoses may cross riparian vegetation. Any incidentally disturbed riparian areas shall be restored to better than pre-construction conditions.

3.18 ENVIRONMENTAL PROTECTION

The construction site shall be maintained to minimize dust, noise, erosion, and water ponding. Any and all fuel operated equipment near or within drainage areas, wetlands, riparian areas or open water areas shall be leak-free and in excellent operational condition. The CONTRACTOR is wholly responsible for any environmental damage directly or indirectly related to storage of supplies and equipment, equipment operation, any fluid spills or any other construction activities.

3.19 BARRIERS

The CONTRACTOR shall furnish, install and maintain suitable barriers, as required to prevent public entry, and to protect the work, facilities, trees and wetland areas from any associated construction activities. Remove temporary barriers at the completion of work.

3.20 DISTURBED AREA SEEDING

After all other construction activities are completed; all disturbed areas are to be rehabilitated to pre-construction conditions. Clean the site of trash and debris and remove all construction measures, equipment and supplies. Permanent riparian plantings and seeding shall be installed immediately after the final design grades are achieved, but no later than 14 days after construction activities have permanently ceased at the disturbed area.

3.21 PROJECT SITE REHABILITATION

CONTRACTOR shall seed and plant in the early spring to take advantage of the cool weather and moist conditions. The CONTRACTOR may need to provide temporary water for adequate establishment of all

seeding and container plantings. The CONTRACTOR may need to use a water truck to periodically water and establish plants for site restoration.

3.22 CULTURAL RESOURCES

The project area has been disturbed by bank construction, diversion and irrigation systems, trail and railroad alignments, multiple utilities, and is within the main channel of the Weber River. No cultural resources are anticipated to be impacted by the project. If potential cultural resources in the project area are discovered during construction and cannot be avoided, CONTRACTOR shall suspend construction activities in that area until the properties can be evaluated for listing in the National Register of Historic Places in consultation with Utah State Historical Preservation Office. The CONTRACTOR shall notify the ENGINEER and OWNER immediately if potential cultural resources are discovered during construction.

END OF SECTION

SECTION 4

* This section is intentionally left blank.

SECTION 5 IN-CHANNEL AND BANK CONSTRUCTION

5.01 CONSTRUCTION OF IN-CHANNEL BOULDER MATRIX STRUCTURES

All Boulder Structures constructed In-Channel or below the Ordinary High-Water Line (OHWL) shall be constructed with Footer Rocks and Keying Techniques (See Drawing Details). Construction of Boulder Structures shall include rotation, placement and adjustment of each individual rock to minimize void spaces and maximize interlocking of boulders. The ENGINEER shall identify each imported boulder that may affect surface flow and observe the placement of marked boulder.

Boulder Structures shall be constructed by placing individual boulders in designed cross-sections of the channel. Each cross-section has specific elevations and alignments for the placement of rock as shown on the Project Drawings. Each structure shall include footer boulders placed at least to the depth shown on Project Drawings. Stacked boulders shall have a minimum 0.5:1 horizontal to vertical slope with the footer offset in the downstream direction when buried and footer offset in all directions when exposed.

Each individual boulder shall be set with the “B” axis in the direction of flow when exposed or the “A” or “B” axis when the boulder is interlocked between other boulders (See Drawing Details). See table 5.1 for gradation details.



5.02 CONSTRUCTION OF BOULDER TERRACING STRUCTURES

Boulder Terracing shall be constructed by placing individual boulders in designed sections of the bank. Each boulder shall include selection, rotation, placement and adjustment of each individual rock to minimize void spaces and maximize interlocking of boulders. Each section has specific elevations and

alignments for the placement of rock as well as spot elevations as shown on the Project Drawings. Each Surface Boulder shall include footer boulders placed at least to depth shown on Project Drawings and placed on 8oz Filter Fabric. Filter Fabric shall not be torn or ripped and preventative measures such as 6 inches of native alluvium bedding material shall be used. See table 5.1 for boulder gradation details.



5.03 FILTER FABRIC SPECIFICATION

An undamaged Filter Fabric with Geo-Composite shall underlay all Exposed earthen embankment materials. Filter Fabric shall be placed to eliminate migration of fines through the boulder structures and allow water to drain from structure. A composite that provides drainage, Hydrodrain 300 by, or approved equivalent shall be used at a minimum of 4 feet width on 10 feet center (approximately 40% of total Filter Fabric coverage). An acceptable non-woven 8oz Filter Fabric, Mirafi 180N or equivalent, may be used for the bank coverage not overlaid by drainage. Filter Fabric shall be placed to have intimate contact with undisturbed bank material. Washed Gravel bedding may be used to protect Filter Fabric from damage during boulder placement.

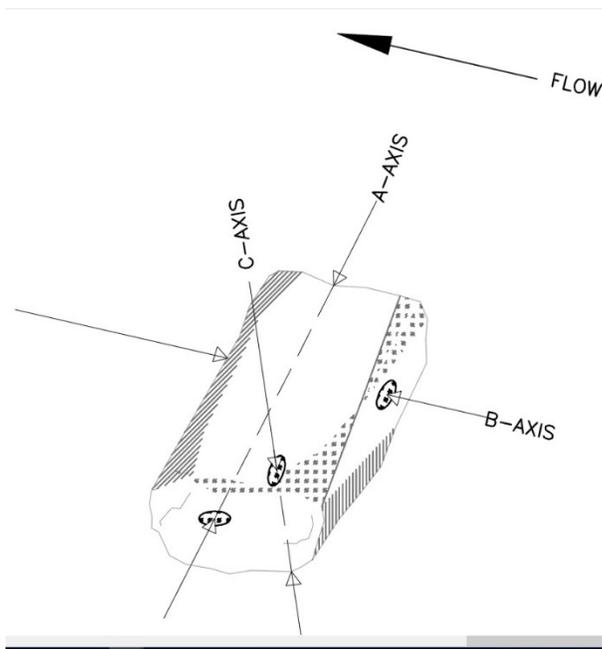


5.04 IMPORTED BOULDERS SPECIFICATION

Imported Boulders may be quarried or excavated and generally smooth in shape with the largest rock faces being approximately flat. Boulders shall be of a consistent material for the entire project and shall be a color that is aesthetically neutral with the native landscape. Boulder gradations shall conform to Table 5.1 by number, and measurement of the intermediate axis (“B”-Axis). The minor axis (shortest dimension or “C”-Axis) shall not be less than indicated in Table 5.1.

Table 5.1 B-Axis Rock Gradations (Inches)

| Percent of Stones | Indicator | 24 inch | 30 inch | 36 inch | 48 inch | 72 inch |
|-------------------|-----------|---------|---------|---------|---------|---------|
| < 10% | Greater | 36 | 42 | 48 | 60 | 84 |
| > 75% | Between | 32&18 | 36&24 | 42&30 | 54&36 | 78&60 |
| 0% | Less | 15 | 24 | 21 | 28 | 48 |
| C-Axis | Greater | 12 | 16 | 18 | 24 | 36 |



Imported Boulders shall consist of hard, dense durable stone, resistant to weathering. Surface stones must have an aesthetic neutral color. Stone shall be suitable for incidental human contact. CONTRACTOR shall submit source information and samples to ENGINEER. The ENGINEER shall approve or reject Boulder material. Granitic and Basaltic boulders subjected to weathering such as glacial or alluvial flows will be preferred.

The Engineer may require Contractor to furnish laboratory results if, in the Engineer's opinion, the material is marginal or unacceptable. At the request of the Engineer, the Contractor shall furnish laboratory test results indicating that the material meet the requirements including those for abrasion resistance and soundness as indicated below:

- a. Boulders shall have a minimum specific gravity of 2.65.
- b. Abrasion resistance by Los Angeles Machine; Test Method ASTM C535; Specification Requirement: 15% loss, maximum.
- c. Soundness by use of Sodium/Magnesium Sulfate, Test Method ASTM D5240-04 Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium Sulfate or Magnesium Sulfate; Specification Requirement: 5% loss, maximum.
- d. Soundness by Freezing and Thawing, Test Method ASTM D5312-04 Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions; Specification Requirement: 5% loss, maximum.

5.05 COBBLE/GRAVEL ALLUVIUM MATERIAL

Bank Run Alluvium shall be well-graded and consist of clean, hard, durable, weathered material, S.G. > 2.50. Material may be excavated directly from an alluvial or glacial deposit and selectively sorted.

Required gradations are presented in table 5.2.

Materials shall meet the following specification requirements:

- a. Minimum specific gravity of 2.50.

- b. Abrasion resistance by Los Angeles Machine; Test Method ASTM C535; Specification Requirement: 28% loss, maximum.
- c. Soundness by use of Sodium/Magnesium Sulfate, Test Method ASTM D5240-04 Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium Sulfate or Magnesium Sulfate; Specification Requirement: 10% loss, maximum.
- d. Soundness by Freezing and Thawing, Test Method ASTM D5312-04 Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions; Specification Requirement: 10% loss, maximum.

Table 5.2 Gradations for well graded Bank Run Alluvium

| Weight | Indicator | 24 inch minus (Cobble/Boulder) | 12 inch minus (Gravel/Cobble) | 3 inch minus |
|----------|-----------------|-----------------------------------|----------------------------------|--------------|
| 100% | Passing | 24" | 12" | 3" (Gravel) |
| 70%-95% | Passing | 15" | 8" | 2" |
| 60%-80% | Passing | 8" | 5" | - |
| 40%-70% | Passing | 5" | 2.5" | 1" |
| 30%-50% | Passing | 2.5" | 1" | 1/2" |
| 20%-40% | Passing | 1" | 3/4" | 1/4" |
| 10%-30% | Passing | 3/4" | 1/2" | No. 4 |
| 0%-20% | Passing | 1/2" | 1/4" | No. 20 |
| 0%-5% | Passing | No. 4 | No. 20 | No. 200 |
| | | | | |
| 5%-30% | Retained | 15" | 8" | 2" |
| 20%-40% | Retained | 8" | 6" | - |
| 30%-60% | Retained | 5" | 2.5" | 1" |
| 50%-70% | Retained | 2.5" | 1" | 1/2" |
| 60%-80% | Retained | 1" | 3/4" | 1/4" |
| 70%-90% | Retained | 3/4" | 1/2" | No. 4 |
| 80%-100% | Retained | 1/2" | 1/4" | No. 20 |
| 95%-100% | Retained | No.4 | No.20 | No. 200 |
| | | | | |
| | D ₈₅ | 18" | 8" | 2.5" |
| | D ₅₀ | 3"-6" | 2"-3" | 1/2"-1" |
| | D ₃₀ | 1/4"-3" | 1/4"-2" | 1/4"-1/2" |



Bank Run Alluvium Material 24 inch minus gradation

5.06 RIPRAP MATERIAL

Riprap Material shall consist of clean, hard, durable, well graded material, S.G. > 2.50. Coarse Alluvium may be screened or crushed material. Unless specified in drawings, gradation shall match the 24 inch minus defined in table 5.3. Materials shall meet the following specification requirements:

- a.** Minimum specific gravity of 2.55.
- b.** Abrasion resistance by Los Angeles Machine; Test Method ASTM C535; Specification Requirement: 28% loss, maximum.
- c.** Soundness by use of Sodium/Magnesium Sulfate, Test Method ASTM D5240-04 Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium Sulfate or Magnesium Sulfate; Specification Requirement: 10% loss, maximum.

- d. Soundness by Freezing and Thawing, Test Method ASTM D5312-04 Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions; Specification Requirement: 10% loss, maximum.

Table 5.3 Riprap Material Gradations (inches)

| Weight | Indicator | 24" | 18" |
|---------|-----------|-----|------|
| 100% | Passing | 36" | 24" |
| 35%-65% | Passing | 24" | 18" |
| 10%-30% | Passing | 6" | 5" |
| 0%-5% | Passing | 1" | 3/4" |



24 inch riprap gradation example

5.06.01 Riprap Placement

Riprap should be placed from the bottom working toward the top of the slope so that rolling and/or segregation does not occur. Riprap should be placed to the required thickness in one lift. Riprap may be placed from either land-based or water-based operations and can be placed under water or in the dry. Special-purpose equipment such as clamshells, orange-peel grapples, or hydraulic excavators (often equipped with a "thumb") should be used to place riprap.

Riprap Placement on Geotextiles: Riprap should be placed over the geotextile by methods that do not stretch, tear, puncture, or reposition the fabric. Equipment should be operated to minimize the drop

height of the stone without the equipment contacting and damaging the geotextile. Generally, this will be about 1 foot of drop from the bucket to the placement surface (ASTM Standard D 6825). When the preferred equipment cannot be utilized, a bedding layer of coarse granular material on top of the geotextile can serve as a cushion to protect the geotextile. Material comprising the bedding layer must be more permeable than the geotextile to prevent uplift pressures from developing.

Riprap Placement Under Water: Riprap placed in water requires close observation and increased quality control to ensure a continuous well-graded uniform rock layer of the required thickness (ASTM Standard D6825). A systematic process for placing and continuous monitoring to verify the quantity and layer thickness is important.

5.07 CRUSHER FINES SCREENINGS

Crusher Fines Screenings shall consist of clean, hard, durable particles or fragments of 3/8 inch minus select brown crushed granite or basalt. Fines shall be evenly mixed throughout the aggregate.

- a. When produced from gravel, fifty percent (50%) by weight, of the material retained on a Number four (4) sieve shall have one fractured face.
- b. The portion retained on the Number four (4) sieve shall have a maximum percentage of wear of fifty (50) at five hundred (500) revolutions as determined by AASHTO T96-77.
- c. The portion passing a Number forty (40) sieve shall have a maximum liquid limit of twenty-five (25) and a maximum plasticity index of seven (7), as determined by AASHTO T89-81, respectively.
- d. The crushed aggregate screenings shall be free from clay lumps, vegetative matter, and deleterious material.

Grading requirements are as follows:

- 1. Percentage of Weight Passing a Square Mesh Sieve
- 2. AASHTO T11-82 and T27-82

| <u>Sieve</u> <u>Designation</u> | <u>Percent</u> <u>Passing</u> | <u>Sieve</u> <u>Designation</u> | <u>Percent</u> <u>Passing</u> |
|------------------------------------|----------------------------------|------------------------------------|----------------------------------|
| 3/8 inch | 100 | No. 30 | 40 - 50 |
| No. 4 | 95 - 100 | No. 50 | 25 - 35 |
| No. 8 | 75 - 80 | No. 100 | 20 - 25 |
| No. 16 | 55 - 65 | No. 200 | 5 - 15 |

5.08 SLABSTONE STEPS

CONTRACTOR shall level, fit and stack individual slabs to maximize aesthetic value of finished wall face, seating surfaces and steps. Slabs shall be stacked with a minimum of 12” of intimate contact between successive slabs for terracing.



Figure 4.3. Slabstone terracing example

5.09 SLABSTONE SPECIFICATION

Slabstone shall consist of hard, dense durable stone, resistant to weathering. CONTRACTOR shall submit source information and samples to ENGINEER prior to delivery. Material may be approved by the ENGINEER if, by visual inspection, the material is determined to be suitable, sound and durable. The ENGINEER may require CONTRACTOR to furnish laboratory results if, in the ENGINEER'S opinion, the material is marginal or unacceptable. At the request of the ENGINEER, the CONTRACTOR shall furnish laboratory test results indicating that the material meets the requirements including those for abrasion resistance and soundness.

---Minimum specific gravity of 2.40.

---Abrasion resistance by Los Angeles Machine; Test Method ASTM C535; Specification Requirement: 30% loss, maximum.

--Soundness by use of Sodium/Magnesium Sulfate, Test Method ASTM D5240-04 Standard Test Method for Testing Rock Slabs to Evaluate Soundness of Riprap by Use of Sodium Sulfate or Magnesium Sulfate; Specification Requirement: 10% loss, maximum.

--Soundness by Freezing and Thawing, Test Method ASTM D5312-04 Standard Test Method for Evaluation of Durability of Rock for Erosion Control Under Freezing and Thawing Conditions; Specification Requirement: 10% loss, maximum.

Surface stones must have an aesthetic, neutral color unless otherwise specified in drawings. Stone shall be suitable for incidental human contact. Steps shall be constructed of natural stone slabs with dimensions per Table 5.1. Stones shall be generally flat and slab like.



Figure 4.4. Slabstone representative image

Table 5.1. Slabstone Material Dimensions and Variances (inches)

| Face | Indicator | Min | Max | Avg | Variance % |
|-----------|-----------|-----|-----|-----|------------|
| Thickness | Between | 8 | 16 | 8 | 20 |
| Length | Between | 48 | 192 | 96 | 100 |

5.10 FILTER FABRIC SPECIFICATION

An undamaged non-woven geotextile Filter Fabric shall overlay any exposed earthen embankment materials to be faced with more coarse materials. Filter Fabric shall be placed to eliminate migration of fines through the boulder structures and allow water to drain from structure. An acceptable non-woven 8oz filter fabric, Mirafi 180N or equivalent, may be used for the ramp subgrade and the boulder and slabstone embankments. Filter Fabric shall be placed to have intimate contact compacted subgrade material. Washed Gravel bedding or native alluvium may be used to protect Filter Fabric from damage during Geoweb panel placement. An acceptable non-woven 8oz Filter Fabric, Mirafi 180N or equivalent, may be used for the bank coverage overlain by boulder. Filter Fabric shall be placed to have intimate contact with intact bank material. Washed Gravel bedding may be used to protect Filter Fabric from damage during boulder placement.



Figure 4.5. Filter fabric installation example

5.11 DRAINAGE MAT

Drainage mat shall be Hydrotech USA's **Hydrodrain 1000** or approved equivalent. CONTRACTOR shall submit material specification for the chosen drainage to ENGINEER for approval. It shall be installed at 100 coverage beneath the slabstone steps as shown in the plans. Install per manufacturers recommendations.

5.12 PERFORMANCE CRITERIA OF WHITEWATER AND ENGINEERED RIFFLE STRUCTURES

- a. For post-project conditions, the water surface elevations above and between the hydraulic structures are critical to the success of the project.
- b. The ENGINEER will verify performance of the structures by measuring water surface elevations through the project reach.
- c. Adjustments to the structures' configurations may be required if the performance criteria is outside of the acceptable tolerance. These adjustments will primary consist of realigning/reconfiguring Gates operations and boulders along the crest of each structure.
- d. These adjustments will be made at no additional cost to the OWNER or ENGINEER.

END OF SECTION

SECTION 6 CONSTRUCTION OF CONCRETE STRUCTURES

6.01 GENERAL

The following specifications, standards and codes shall govern the construction of any and all concrete structures, where applicable, with modifications as specified on structural drawings.

6.02 PNEUMATIC GATE SYSTEM

Section 01100, which is not a Standard Specification, is included in this Project by Special Provision. The Pneumatic Gate System (System) is specified herein as required performance of the system. The System shall be Obermeyer Hydro, Inc or an approved equivalent.

Description

The Pneumatic Gate System (System) is comprised of 4 major sub systems.

- 1) **Control System**
- 2) **Control Building**
- 3) **Pneumatic Gate System**
- 4) **Air Supply System**

01100.01 Control System Description: The control system shall be configured to control water level above each set of gates along the two drops. Three (3) pressure transducers shall be mounted in stilling wells located in each of the three pools, one located in the tail water below the Lower drop (**PT-TW3 in Pool 3**), one located in the pool between the two drops (**PT-W2 in Pool 2**), and one located above the Upper drop (**PT-W1 in Pool 1**). Input from these transducers shall be used to control the flow of air into and exhausted from the flow control bladders in accordance with table 1. At least two (2) master programs with at least four (4) sub routines, are required. Master programs can be seasonal programs (high and low flows) and would include target elevations for the upstream and pool water levels during those seasons. The sub-routines would be for up to 4 different flow ranges. Master program and sub-routine would be read two times a day. Gates would be continuously adjusted under a sub-routine to limit significant fluctuations in water surfaces.

Each airline shall be connected to a pressure transducer providing pressure information for each air supply line. Provide surveyed project elevation datum accurate to 0.01' all pressure transducers and inclinometers. Provide Benchmark bronze monument in left abutment top of wall. This information is an indication of the position of the gate and can trigger an alarm if pressure cannot be maintained without adding more air, which may indicate a leak in the air supply line.

The control system includes:

- a) **Control**
- b) **Air Control Cabinet and Human Machine Interface (HMI)**
- c) **Internet connectivity and LAN.**
- d) **Telemetry and Conduit**
- e) **Web Camera**

Controls: Pressure Transducer Industrial Submersible Pressure Transducer, 700 Series by Pressure Systems Inc., titanium wetted materials or approved equivalent. Affixed in stilling wells per drawings.

- a. Static Accuracy +or- 0.05 % FSO BFSL
- b. Pressure Range: 0-120 inches of water.
- c. Self-sealing submersible “Kevlar Strength” polyurethane jacketed cable with polyethylene vent tube, 90 kilogram pull strength, 22 AWG conductors.

PLC shall be a Square D, M340 PLC, or approved equal with remote I/O based on Ethernet/IP.

- d. Control system components shall be non-proprietary and readily available.
- e. Provide internet connectivity
 - Perform control system programming and testing to assure proper operation.
 - Provide control system documentation in accordance with ISA Standards.

Internet connectivity provide 100 mb speed or greater.

- a. Static I.P. address and gateway shall be provided to the Control Building by Owner.
- b. Provide ethernet secure login to PLC (non-critical infrastructure) with Multi Factor Authentication over internet and remote viewing and operation of gates and water levels.
- c. Provide secured remote access (WiFi or Bluetooth) Local Area Network (LAN) to the control system reliably operated within 300 feet of the control house in dense forest.
- d. Provide a LAN portable HMI or laptop with software and programing to control system remotely within 300 feet.

Telemetry and Conduit.

To be used for routing telemetry lines from Control Building to junction box use HDPE Pipe of suitable diameter to pull all lines with 20lbs force. Material shall be PE 3408/PE100 high-density polyethylene meeting cell classification 345564 and 345566 per ASTM D3350; and shall be listed in PPI (Plastics Pipe Institute TR-4 with standard grade HDB ratings of 1600 psi at 73°F, and 1000 psi at 140° F. The material shall also be listed in the same PPI document as a PE100. Materials shall be stabilized against ultraviolet deterioration and shall be suitable for unprotected outdoor storage for at least four (4) years. The pipe shall be DR 11 wall thickness, and shall be manufactured and tested in accordance with the latest addition of ASTM D 2513.

For routing telemetry from Control Building to Stilling Well use galvanized steel schedule 40

pipe with threaded fittings.

Bury all telemetry conduit minimum 18 inches sub grade. Prune roots per specifications . Survey as-built of telemetry top of conduits.

Web Camera (2):

Provide foundation mount and conduit. City to provide pole. Install pole. City to install telemetry and camera.

(a) Control Gates and Pressure Transducers: The position of the gates may be controlled by the other transducers in accordance with Table 1.

- Automatic control will proceed in the following steps:
 - Read date and time and determine master program (Low, medium, high flow - read tail water if less than 4280.6 then set pool 2 to 4280.6 elevation and set pool 1 to 4282 elevation. If greater than 4282.2 then keep pool 2 above 4282.2 elevation and keep pool 1 below 4285.3 elevation)
 - Continuous reading of tail water elevation from the PT-TW3 pressure transducer and calculate River Flow Rate. The flow rate will determine which program sub-routine needs to run.
 - Based on flow rate, the W2-1,2 and 4 gates as well as W3-1 and 2 gates will be raised or lowered, by a specified length of time, at the head of upper drop.
 - Based on flow rate sub-routine, the W4 gates will be adjusted until the Pool water surface elevation minimum is reached at PT-W2.
 - Read W 1-1, 2 and 3 steel gates and adjust whitewater hydraulics per sub-routine.

| TABLE 1 | |
|-------------|---------------------------------|
| GATE NUMBER | CONTROLLING PRESSURE TRANSDUCER |
| W1-1 | PT-W1&2 |
| W1-2 | PT-W1&2 |
| W1-3 | PT-W1&2 |
| W2-1 | PT-W1&2 |
| W2-2 | PT-W1&2 |
| W2-3 | PT-W1&2 |
| W2-4 | PT-W1&2 |
| W3-1 | PT-W1&2 |
| W3-2 | PT-W1&2 |
| W4-1 | PT-W2&3 |
| W4-2 | PT-W2&3 |
| W4-3 | PT-W2&3 |
| W4-4 | PT-W2&3 |
| W4-5 | PT-W2&3 |
| W4-6 | PT-W2&3 |

01100.12 Control Building - The control building structure shall be a fire-resistive construction, reinforced concrete, welded steel or masonry construction to meet drawing requirements of plan. The structure must comply with all local, state and federal codes and requirements for enclosed spaces.

Control Building Includes:

- a. Building and Foundation
- b. Power Supply and Protection
- c. Enclosed Space Access

(a) Building: 10.5 X 20 [Schweitzer & Utility | CXT Precast Concrete Buildings](#) or equivalent to be provided by Owner to stockpile area onsite. Provide foundation per manufacturers specifications. Install per manufacturers specifications.

(b) Pull box: furnish and install locking concrete flatwall pull box 3'X5'X4' or similar to transition airlines and telemetry sweeps from control building to trench as necessary.

(c) **Power** - The Control Building shall have a three phase (IR R7.5I-115 10HP- 480/230 - volt) power supply. The compressor building shall have a 120 volt power supply for other equipment. Fused disconnects are required outside the building where all power to the building can be secured and locked out. All electrical components must be approved by the City prior to installation. The structural drawings revisions submittal shall show penetrations, seals and anchors for all equipment including and support under compressor operating conditions.

Provide electrical trench and wiring from W Stockman Way; approximately 650 feet. Install per City and Electrical Company codes and requirements. Provide survey of buried lines. Provide **meter mounted on building. Provide 2000 Amp electrical panel mounted inside of building.**

(d) **Access** - Utility Building shall have at least one locking double door or rolling with intrusion alarm. Equipment must be dimensioned and positioned to allow for access and removal of all equipment in the building, including lifting equipment.

(e) **Lighting** - Provide adequate lighting with average 30 foot candle illumination being provided; Furnish fluorescent lighting with heavy gauge, all steel housing and positive locking stainless-steel framed and gasketed enclosure. Additional localized lighting may serve instruments, control panels, gauges and other devices routinely used to control station operation. Convenience outlets may be provided for use by maintenance personnel. Emergency lighting with battery backup must also be provided.

(f) **Environmental Systems:**

- Heating and cooling shall be provided to prevent damage to equipment by condensation and to provide comfort for operating personnel. Air conditioning shall be provided to prevent damage to instruments and controls from high humidity. Temperature shall be maintained in the range of 55 to 85 degrees F.
- Positive ventilation shall be provided per confined space requirements. The fans shall be mounted so as to exhaust air as near the building roof as practical. The fan's capacity shall provide adequate volume to produce one (1) air change every three (3) minutes. The ventilation system shall have its own breaker and shall start with a signal generated when the door opens.

- **Direct exhaust heat from compressor to outside through building penetration and seal exhaust outlet.**

(g) Lightning Arrestor - These shall be motor savers adequately sized to the compressor motors.

(h) Electric Wiring - Electric wiring, equipment, piping and valves must be properly labeled and identified (wire numbers according to related schematic drawings.)

(i) Corrosion Protection:

- All steel structures above ordinary high water line shall be sandblasted after welding is complete and the prime coating operation shall take place immediately after surface preparation. The prime coat shall be durable, chemical resistant, and shall be followed by two (2) applications of finishing enamel. Follow coating manufacturer's recommendations. Submit complete coating spec to the Engineer for approval. The manufacturer shall provide packaged magnesium anodes for cathodic protection. The anodes shall be buried equally spaced around the station and be connected by heavy copper wire.
- All corrosion protection devices shall follow NACE guidelines.
- The homage of each anode ground bed shall not exceed 30 ohms each, with current flow limited to that required for cathodic protection.

The control building will be installed according to the manufacturer's recommendations. All equipment and hardware contained within the building will be installed per manufacturer's recommendation and as shown on plans.

(a) Layout –

- Prior to placement of building, a properly prepared sub-base shall be provided.
- Sub-base consists of 3/4" minus crushed rock (road base material) compacted to 95% of optimum density in accordance with the ASTM D 1557.
- Finished surface of sub-base shall be flat and leveled, with a maximum deviation of - 1/2", +0" From a true horizontal plane.
- The site shall be graded to extend sub-base to frost depth (3 feet in Ogden). Verify native Subgrade shall have a bearing capacity of at least 1500 PSF. Sub-base shall extend 2 feet outside the building's perimeter.
- Roadway access for maintenance vehicles shall be provided.
- Equipment layouts must provide vertical and horizontal clearances and access openings for maintenance and repair operations.
- Main aisles shall be 4 feet minimum clear width.
- Clearance around all electric panels and equipment shall meet the requirements of the national electric code.
- Floors shall slope to floor drains and a drainage sump which shall be equipped with a sump pump, or drain pipe (2.5 inch Sch 40 pvc) at least - 0.5% to daylight .

(b) Final Grade and Landscaping:

- Fill so that finished grade elevation drains away from slab elevation (above XXX) at 1%.
- Landscaping vegetation shall not interfere with entrance, and egress of the compressor building, including lifting equipment.

01100.13 Pneumatic gate system: shall be manufactured by Obermeyer Hydro Inc, or approved equal.

Pneumatic Gate System includes:

- a. Steel Gates and Abutment Plates
- b. Air Bladders and connections
- c. Anchor Bolts

(a) Steel Gates – All steel structures and attachments below ordinary high water line shall be stainless steel of highest grade suitable for the long-term corrosion resistance in the river environment. Each gate panel shall be individually actuated and act as a movable, rigid barrier to the flow of water. The gate panels attach along the upstream edge of a hinge flap molded in with the air bladder. The gate and bladder system are anchored to the gate slab with the main anchor bolts. Drawings specify lowest gate elevation and highest gate elevation. Tolerance for open gate elevation is +.01' to -.04'. Gate manufacturer shall specify final gate slab elevation or block out dimensions. Tolerance for closed gate elevation is +0.20 to -0.01'.

(b) Air Bladders - Each air bladder or rubber rock shall be individually actuated and act as a movable, rigid barrier to the flow of water. The air bladder and hinge flap rest on top and on the front of the Gate slab and are held in place by Clamp Bars that mount to the front of the slab. When inflated the Air Bladder imparts upward and upstream force on steel gate panels which impound water. For “rubber rocks” the bladder itself impounds water. Follow manufacturer’s instruction when installing gates and bladders.

(c) Air Bladder Connection - the air system is connected to the underside of the Air Bladders by a threaded fitting and ½” flexible rubber air hose (submit product information) which stores beneath the bladder in a concrete block out.

(d) Abutment Plates Heated abutment plates not required.

(e) Anchor Bolts shall be fully antiseeze to prevent galling during installation

(f) All Abutment Seals, and all main anchor assembly, and all bumpers shall be generally flush and contiguous with no significant hooks, ledges or entrapments that may catch debris, leashes or body parts.

Pneumatic gate system: shall be manufactured by Obermeyer Hydro Inc, or approved equal.

Air Supply System includes:

- a. Air Compressor and Vacuum Assist
- b. Low Pressure Air Lines
- c. High Pressure Lines

d. Valves and Mechanical Controls

(g) Air Compressor – Air compressor shall be capable of filling the air bladders of all 25 connections in 30 minutes or less. Ingersoll Rand IR R7.5I-115 10HP Air Compressor with integrated Air Dryer & tank or approved equal. Total Package Input Power at rated capacity and full operation pressure is equal to 10.72 kW. Submit complete technical specifications including, installation and testing procedure, maintenance schedule and procedure, and spare parts list.

- Air Dryer: Integrated with the Air Compressor - submit product specifications and maintenance instructions.
- Air Filters shall be installed to remove contaminants. Submit product and maintenance information. Both general purpose- 1 micron- and HE filter-.01 micron filters shall be provided.
- Compressor heat exhaust shall be routed to outside of building.

(h) Vacuum Assist: Provide vacuum assist to help evacuate at least half of rubber rock bladders in 60 minutes or less when required.

01100.13 Low Pressure Air Lines: HDPE Pipe Material shall be PE 3408/PE100 high-density polyethylene meeting cell classification 345564 and 345566 per ASTM D3350; and shall be listed in PPI (Plastics Pipe Institute TR-4 with standard grade HDB ratings of 1600 psi at 73°F, and 1000 psi at 140° F. The material shall also be listed in the same PPI document as a PE100. Materials shall be stabilized against ultraviolet deterioration and shall be suitable for unprotected outdoor storage for at least four (4) years. The pipe shall be DR 9 wall thickness, and shall be manufactured and tested in accordance with the latest addition of ASTM D 2513. Air supply lines to each gate will be 1" diameter, and purge lines will be ½" in diameter. Low pressure air lines shall be continuous between junction boxes with no fittings. Metal tag label each air line with gate connection designation inside of each junction box.

01100.14 Low Pressure HDPE fittings: shall be manufactured in accordance with ASTM D 2513. The same manufacturer shall supply pipe, and butt, socket, and saddle heat fusion fittings. Fittings shall only be installed within Junction Boxes or at gate connections. Seal redundant lines at each end.

01100.15 Ball Valves: To be used for condensate purge valves and isolation valves: Full port brass ball valves 600 WOG/150 WSP manual with locking lever, threaded connections Mueller series 282 or approved equal.

Junction Boxes shall be furnished and installed, suitable for manhole access.



01100.17 High Pressure Pipe: Material shall be schedule 10S 304 or 316 stainless steel. Filler material shall be 308 or as specified by The Welding Procedure Specification (WPS). Submit the WPS to the Engineer for approval. Welding shall be conducted in accordance with AWS D1.6/D1.6M-Structural Welding Code, Stainless Steel. Welders shall be qualified in conformance with code requirements and the WPS. Contractor shall provide qualified field and laboratory personnel to perform all required quality control field and laboratory testing.

01100.42 Low Pressure Air Piping: Protect against shear and bending loads in accordance with ASTM D 2774. Connections shall be protected where an underground branch or service pipe is joined to branch fitting and where pipes enter or exit casings or walls or slabs. The area surrounding the connection shall be embedded in properly placed compacted embedment material in combination with a protective pipe sleeve or other mechanical support to protect the pipe against shear and bending loads. Utilize Fernco flexible sleeve seals or equal for vault and slab penetrations, install per manufacturers recommendations.

01100.43 Trenching, Bedding and Backfill: HDPE Pipe shall be installed in accordance with CFR 49, Part 192, subpart G, applicable codes and regulations and ASTM D 2774. Minimum depth of burial is 18" of cover. Pipe shall be laid on grade and on a stable foundation. Unstable trench bottom soils shall be removed and a 6-inch minimum foundation of compacted bedding material shall be installed to pipe bottom grade. A trench cut in rock or stony bottom shall be excavated to 6" below pipe bottom grade, and brought back to grade with compacted bedding.

01100.41 Fitting and joints:

(a) Transition fittings: HDPE pipe may be joined to other material by full restrained mechanical couplings including mechanical OD compression couplings only at locations

specified in drawings. Submit product material to the Engineer for approval. Follow instructions of the joining device manufacturer. All transitions shall be fully accessible from the surface.

(b) Heat Fusion Joining. Butt and saddle fusion joints in polyethylene piping shall be made using procedures that have been qualified and approved by the Operator in accordance with Title 49, Code of Federal Regulations (CFR) and Part 192. In accordance with CFR 49, Part 192, Section 192.285, the Operator shall ensure that all persons making fusion joints have been qualified to make joints in accordance with the Operator's Approved Qualified Fusion Procedures. The Operator shall maintain records of qualified personnel and shall certify that qualification training was received not more than 12 months before commencing construction. The Contractor shall ensure that all persons making heat fusion joints are qualified in accordance with this section.

VALVES AND MECHANICAL CONTROLS:

Automated Mechanical Control

Furnish and install automated mechanical control system that can function without electricity. This patented Obermeyer system will automatically hold or lower the gate in proportion to upstream flow elevations, should the PLC become compromised. The automated mechanical system utilizes a bubbler in the upstream pool to sense water elevation (Max 4285.25). Back pressure on the bubbler operates a three way valve that will take the air supply equipment off line and automatically lower the gates in response to high upstream water surface elevation conditions. The bubbler utilizes air from the air compressor receiver tank to operate. If the receiver is depleted during an extended power outage, the bubbler will continue to operate using air bled from the gate system air bladders.

Manual Control

Supply valves capable of operated manually using quarter turn inflate (if the compressor has power) and deflate valves located in the mechanical control cabinet. These valves are mechanical and require no electricity to operate. The weight of the steel gates, with or without the hydrostatic pressure, will compress the air bladders and evacuate air through the manually opened valves.

- A. *Supply* normally closed solenoid valves on all control systems. Loss of electrical power will not lead to uncontrolled gate opening as the pressure established in the system prior to power loss can be held.
- B. Supply pilot operated solenoid valves for inflating and deflating the gate. Air for operating the valves is stored in a dedicated receiver tank. Using pilot operated valves minimizes electrical solenoid size and maximizes UPS operating time.
- C. Supply all control systems with pressure relief valves. The pressure relief valve is typically set 10% above operating pressure and protects the gate system from over pressurization.
- D. Supply isolating adjacent air bladders from each other via check valves if on same air circuit. In most instances, the check valves are located on shore and a separate pipe is run to each individual air bladder. The individual pipes merge upstream of the check valves into a common inflate and deflate pipe. This system allows all air bladders in the same operating zone to operate in unison while affectively isolating each individual

air bladder from the rest of the zone. If one air bladder is ever compromised, the other air bladders cannot deflate through the damaged air bladder or pipe.

Maintenance

01100.60 Pneumatic Air Line Testing

- **Fusion Quality.** The Contractor shall ensure the field set-up and operation of fusion equipment, and the fusion procedure used by the Contractor's fusion operator while on site. Upon request by Owner, the Contractor shall verify field fusion quality by making and testing a trial fusion. The trial fusion shall be allowed to cool completely; then test straps shall be cut out and bent strap tested in accordance with ASTM D2657. If the bent strap test of the trial fusion fails at the joint, the field fusions represented by the trial fusion shall be rejected. The Contractor at his expense shall make all necessary corrections to equipment, set up, operation and fusion procedure, and shall re-make the rejected fusions.
- **Leak Testing** shall be performed in accordance with CFR 49, Part 192, Sections 192.509, 192.511 or 192.513 as applicable, and in accordance with manufacturer's recommendations.
- The Contractor shall take all precautions to eliminate hazards to persons near lines being tested. Pipes being tested shall be supervised at all times. Submit test procedures and results to the Engineer.

01100.61 Pneumatic System Acceptance testing: shall be done in the presence of the ENGINEER and OWNER's representative.

- (a) Conduct bladder and air line leakage testing per manufacturer's instructions prior to pouring gate slabs. Fix any leaks. Replace or repair any pipes, bladders, valves, and connections that leak.
- (b) Operation and hydraulic testing:
 - **Gate Operation** After system is completed test each gate by operating it from highest to lowest position. Check to make sure the lowest elevation and highest elevation for each gate matches the specified elevation within tolerances. Make any and all adjustments required to achieve the required tolerances.
 - **Time to Fill and Exhaust:** Check the time it takes to raise all gates from the lowest position and to lower all gates from the highest position. It shall take no longer than 45 minutes to raise or and 60 minutes to lower all gates.
 - **Hydraulic Testing:** Under manual control raise all gates at the upper drop (W2-1-4 and W3-1-2; shut off flow to the fish passage channel, and raise all the W4-1-6 gates on the downstream drop, maximizing flow through the whitewater channel and pool elevation. Position all W1 gates as directed by the ENGINEER until desired whitewater effects can be observed. Make adjustments as needed to accomplish desired effects.
 - **Automatic Operations Testing:** Switch to automatic control and check the water level in each of the whitewater pools. If water level fails to stabilize at the desired level, make any necessary hardware or software adjustments until automatic

operations are successful. Run program over an extended period of time to see if operation is stable.

- **Remote Operation testing:** Test both manual and automatic operation with remote operating device. Check remote operations using Wi-Fi device and also over the internet. If remote access fails any of the operating functions, make necessary hardware and software adjustments.

Other

WARRANTY – Company warrants title to the product(s) and also warrants the product(s) on date of delivery to Purchaser to be of the kind and quality described herein, merchantable, and free of defects in workmanship and material. **THERE ARE NO WARRANTIES WHICH EXTEND BEYOND THOSE EXPRESSLY STATED IN THIS CONTRACT.**

If within two years from the date of initial operation, but not more than two years and six months from the date of shipment by Company of any item of the product(s), Purchaser discovers that such item was not as warranted and promptly notifies Company in writing thereof, Company shall remedy such non-conformance by, at Company's option, adjustment or repair or replacement of the item or any affected part of the product(s). Purchaser shall assume all responsibility and expense for removal, reinstallation, and freight in connection with the foregoing remedies. The same obligations and conditions shall extend to replacement parts furnished by Company there under. Company shall have the right of disposal of parts replaced by it. The Company shall not be liable for any repairs, replacements, or adjustments to the Product(s) or any cost of labor performed by the Purchaser or others without the Company's prior written approval.

The Purchaser shall not operate the Product(s) which is considered to be defective, without first notifying the Company in writing of its intention to do so. Any such use of the Product(s) will be at the Purchaser's sole risk and liability unless Company gives Purchaser approval to operate the Product(s). Such approval will not be unreasonably withheld.

The effects of corrosion, erosion, and normal wear-and-tear are specifically excluded from the Company's warranty.

Company's liability to Purchaser relating to the product(s) whether in contract or in tort arising out of warranties, representations, instructions, installations, or defects from any cause, shall be limited exclusively to correcting the product(s) and under the conditions aforesaid.

Any separately listed item of the product(s) that is not manufactured by the Company shall be covered only by the express warranty of the manufacturer thereof.

Contractor grants to OWNER a worldwide, non-exclusive, transferable, royalty-free, perpetual license to use, reproduce, distribute, modify, exercise, practice, perform, and exploit any assets subject to Contractor's works, patents, copyrights, or other intellectual property rights, to the extent that such license is necessary for OWNER to enjoy all rights associated with ownership of the Works.

Patent and Licenses – No separate measurement will be made for work performed under this Section.

6.03 CONCRETE

6.03.01 Concrete Section Includes

- a) Concrete Products
- b) Concrete References
- c) Concrete Submittals
- d) Concrete Execution
- e) Concrete Filed Quality Control
- f) Defective Concrete
- g) Concrete Reinforcement

6.03.02 Concrete Products

- a) Structural Concrete
 - i) As noted in the General Structural Notes, as shown on Drawings
 - (1) M4500-STD: Standard exterior concrete mix for all out-of-river concrete including slabs, walls, and foundations.
 - (2) M4500-SYN: Standard exterior structural concrete mix with secondary synthetic fiber reinforcement for all in-river concrete including structural walls, slabs, and foundations.
- b) Controlled Low Strength Material (Controlled Density Fill)
 - i) Lean concrete mix for use under foundations and slabs on grade shall meet the following design criteria:
 - (1) M-CDF: A mixture of cement, fine sand, coarse aggregate, fly ash and admixtures formulated to be flowable and self-consolidating with a net 28-day compressive strength of 200 to 300 psi
- c) Flexible Waterstop
 - i) Waterstop noted as flexible or PVC on the drawings shall be compounded from polyvinyl chloride (PVC) and shall have the following properties:
 - (1) Minimum Ultimate Elongation: 250 Percent
 - (2) Minimum Tensile Strength: 2,000 psi
 - (3) Brittle Temperature: -23 Degrees Fahrenheit
 - (4) Shore Durometer Type "A" Hardness: 80, Approximately
 - (5) Specific Gravity: 1.3 Approximately
 - ii) Waterstop shall be uniform in dimensions, homogeneous and free from porosity. Minimum thickness shall be one-quarter (1/4) inch and minimum width of six (6) inches unless otherwise shown on Drawings. Waterstop shall be ribbed center bulb type.
 - iii) Corrugated type waterstops are not acceptable.
- d) For all products not listed see General Structural Notes in Drawings

6.03.03 Concrete References

- a) ACI 302 – Guide for Concrete floor and Slab Construction
- b) ACI 304 – Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete
- c) ACI 305R – Hot Weather Concreting
- d) ACI 306R – Cold Weather Concreting
- e) ACI 308 – Standard Practice for Curing Concrete
- f) ACI 318 – Building Code Requirements for Reinforced Concrete
- g) ACI 350R – Environmental Engineering Concrete Structures
- h) American National Standards Institute (ANSI)/ASTM International (ASTM) D994 – Performed Expansion Joint Filler for Concrete (Bituminous Type)

- i) ANSI/ASTM D1190- Concrete Joint Sealer, Hot-Poured Elastic Type
- j) ANSI/ASTM D1751 – Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types)
- k) ANSI/ASTM D1752 – Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction
- l) ASTM C31 – Making and curing concrete test specimens in the field
- m) ASTM C33 – Concrete Aggregates
- n) ASTM C39- Compressive Strength of Cylindrical Concrete Specimens
- o) ASTM C94 – Ready-Mixed Concrete
- p) ASTM C150 – Portland Cement
- q) ASTM C260 – Air Entraining Admixtures for Concrete
- r) ASTM C494 – Chemicals Admixtures for Concrete
- s) ASTM C1260 – Standard Test Method of Potential Reactivity of Aggregates (Mortar-Bar Method)
- t) ASTM C618 – Fly Ash and Raw or Calcinated Natural pozzolan for Use as Mineral Admixture in Portland Cement Concrete.

ASTM C1567 – Standard Test Method of determining the Potential Alkali-Silica Reactivity of Combinations of Cementitious Materials and aggregate (Accelerated Mortar-Bar Method).

6.03.04 Concrete Submittals

- a) For list of required submittals see Structural General Notes in drawings
- b) Product Data: Provide data on joint devices, attachment accessories, and admixtures and aggregate and cement.
- c) Samples: Submit two-inch long samples of contraction joint and control joint.
- d) Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent Work.
- e) Submit mix design and certification of compliance for all admixtures and curing compounds
- f) Mitigation for aggregate Alkali-Silica Reaction (ASR)
 - i) For aggregate source with non-reactive material: Submit verification that selected source of aggregate is not susceptible to alkali-silica-reaction (ASR) within the proposed concrete mix designs for this project. Aggregate shall be classified R0 (Non-reactive).
 - ii) For aggregate source with moderately reactive materials; aggregates classified R1: Submit verification that the proposed mix design, with the specific aggregate source selected, has been designed through the addition of appropriate amounts of Fly Ash or other accepted additives to mitigate ASR. Provide test results proving effectiveness of mix design per ASTM C1567.
 - iii) For aggregate source with highly or very-highly reactive materials; aggregates classified R2 or R3: Mix designs with moderately or highly reactive materials shall not be permitted for use on this project.

6.03.05 Concrete Execution

- a) Examination
 - i) All reinforcement shall be inspected by Engineer prior to pouring concrete
 - ii) Verify site conditions under specified provisions
 - iii) Verify requirements for concrete cover over reinforcement
 - iv) Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not cause hardship in placing concrete.

- b) Preparation
 - i) Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instruction.
- c) Placing Concrete
 - i) Place concrete in accordance with ACI 318 and ACI 350
 - ii) Notify Engineer a minimum of 24 hours prior to commencement of operations
 - iii) Ensure reinforcement, inserts, embedded parts, formed expansion and contraction joints are not disturbed during concrete placement
 - iv) Install joint fillers, primers and sealant in accordance with the manufacturer's instructions
 - v) Separate slabs on grade from vertical surfaces with ½-inch thick joint filler.
 - vi) Extend joint filler from bottom of slab to within 1/4 inch of finished slab surface.
 - vii) Install joint devices in accordance with manufacturer's instructions.
 - viii) Install joint device anchors. Maintain correct position to allow joint cover to be flush with floor and wall finish.
 - ix) Install joint covers in one piece, longest practical length, when adjacent construction activity is complete.
 - x) Apply sealants in joint devices in accordance with manufacturer's recommendations.
 - xi) Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
 - xii) Place concrete continuously between predetermined control and construction joints.
 - xiii) Do not interrupt successive placement; do not permit cold joints to occur.
- d) Curing & Protection
 - i) Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - (1) Placing of concrete during hot weather shall be limited by the temperature of the concrete at the time of placing. Mixed concrete which has a temperature of 90 °F or higher, shall not be placed.
 - (2) Insulating blankets shall be used if concrete is placed when ambient air temperature is below 40°F. If the ambient temperature drops below 40°F the temperature of the concrete shall be monitored using an electronic sensing device placed between the concrete surface and insulating blankets. If the temperature at the surface of the concrete cannot be maintained above 40°F, then enclosures with artificial heat sources shall be installed. If insulating blankets or heated enclosures are utilized to keep the concrete surface above 40°F, the minimum curing period of the concrete shall be 120 hours from the time the concrete is placed; insulating blankets or heated enclosures shall remain in place for the duration of the minimum curing period. At the end of the curing period the protection shall remain in place until it can be removed without permitting the concrete temperature to fall more than 50° in a 24 hour period.
 - ii) Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete (Minimum curing period). The minimum curing period shall be 120 hours from the time the concrete is placed or until the concrete has reached a compressive strength of 80% of the required field compressive strength.

6.03.06 Concrete Field Quality Control

- a) Field review and testing will be performed in accordance with ACI 301
- b) All concrete repair or restoration shall comply with the provisions of 6.02.07 Defective Concrete

- c) Provide free access to Work and cooperate with appointed firm
- d) Submit proposed mix design of each class of concrete to Engineer and testing firm for review prior to commencement of Work
- e) Tests of cement and aggregates may be performed to ensure conformance with specified requirements
- f) One additional test cylinder may be taken during cold weather concreting, curing on job site under same conditions as concrete it represents
- g) Additional test cylinders shall be taken where 15%-20% of fly-ash is incorporated into the concrete mix to allow for a 56-day break.

6.02.07 Defective Concrete

- a) Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- b) During the progress of the work, if the laboratory-cured values shown for each concrete design strength and quality as determined by compression cylinders fail to attain the requirements specified, suspend all concrete work. Concrete that has been placed in the work and does not meet the specified requirements will be reviewed by the Engineer and the Contractor. Any field testing such as core drilling required to verify in-place concrete strengths after compression tests fail to meet requirements shall be at the Contractor's expense. The Contractor shall, at his own expense, correct or remove the defective work in a manner approved by the Engineer.
- c) The following criteria shall be followed in defining cracks by minimum measured crack width; using feeler gauges or other approved means:
- d) Cracks with maximum widths less than 0.015 inches (1/64") shall be considered hair-line cracks and shall be repaired or sealed as directed by the Project Engineer.
- e) Cracks equal to or greater than 0.015 inches (1/64") and less than or equal to .095 inches (3/32") in width at any point shall be considered medium cracks with mandatory repair by injection required.
- f) Any cracks equal to or greater than 0.095 inches (3/32") in width at any point shall be considered large cracks with mandatory repair by injection or as directed by the Project Engineer.
- g) Repair or replacement of defective concrete will be determined by the Engineer.
- h) Repair defects in formed concrete surfaces within 24 hours of removing forms.
- i) Replace defective concrete within 48 hours.
- j) Do not patch, fill, touch up, repair, or replace exposed concrete except upon express direction of Engineer for each individual area.
- k) Cut out and remove defective area.
- l) Cut edges square to avoid feathering.
- m) Comply with ACI 301, Chapter 9.
- n) Perform repair work so as not to interfere with curing of adjacent concrete.
- o) Adequately cure repair work.

6.03.08 Concrete Reinforcement

- a) Refer to Structural General Notes in Drawings
- b) Reinforcing Steel: ASTM A615, 60 kilopounds per square inch (ksi) yield grade; deformed billet steel bars (#3 bars may be grade 40 ksi), unfinished, free of dirt, oil, grease, loose scale or other substances that might reduce development of the bond strength.

- c) Submittals:
 - i) Shop Drawings:
 - (1) Indicate bar sizes, spacings, locations, and quantities of reinforcing steel and wire fabric bending and cutting schedules, and supporting and spacing devices, if dissimilar from Drawings.
 - (2) Indicate dimensions, materials, bracings, and arrangement of joints and ties.
 - ii) Submit plan for placement of all concrete walls four weeks prior to placement.
 - iii) Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
 - iv) Indicate locations of all construction joints prior to concrete placement
- d) Embedment Anchors
 - i) Simpson SET-3G epoxy system or Hilti, HVA epoxy embedment anchors. Refer to notes for Adhesive Anchors

6.04 STRUCTURAL STEEL

- a) Refer to Structural General Notes in Drawings
- b) References
 - i) American Institute of Steel Construction:
 - (1) AISC Code of Standard Practice for Steel Buildings and Bridges.
 - (2) AISC Load and Resistance Factor Design (LFRD) Specification for Structural Steel Buildings.
 - (3) AISC Load and Resistance Factor Design Specification for Single-Angle Members.
 - (4) AISC Specification for Allowable Stress Design of Single-Angle Members.
 - (5) AISC Specification for Structural Steel Buildings Allowable Stress Design, and Plastic Design.
 - ii) ASTM International:
 - (1) ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
 - (2) ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
 - (3) ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.
 - (4) ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - (5) ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
 - (6) ASTM A193/A193M - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
 - (7) ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
 - (8) ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
 - (9) ASTM A354 - Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners.
 - (10) ASTM A449 - Standard Specification for Quenched and Tempered Steel Bolts and Studs.
 - (11) ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
 - (12) ASTM A514/A514M - Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.

- (13) ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality.
 - (14) ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
 - (15) ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
 - (16) ASTM A588/A588M - Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 Mpa) Minimum Yield Point to 4-in. (100-mm) Thick.
 - (17) ASTM A618 - Standard Specification for Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
 - (18) ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates.
 - (19) ASTM A852/A852M - Standard Specification for Quenched and Tempered Low-Alloy Structural Steel Plate with 70 ksi (485 MPa) Minimum Yield Strength to 4 in. (100 mm) Thick.
 - (20) ASTM A913/A913M - Standard Specification for High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST).
 - (21) ASTM A992/A992M - Standard Specification for Structural Steel Shapes.
 - (22) ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
 - (23) ASTM E94 - Standard Guide for Radiographic Examination.
 - (24) ASTM E164 - Standard Practice for Ultrasonic Contact Examination of Weldments.
 - (25) ASTM E165 - Standard Test Method for Liquid Penetrant Examination.
 - (26) ASTM E709 - Standard Guide for Magnetic Particle Examination.
 - (27) ASTM F436 - Standard Specification for Hardened Steel Washers.
 - (28) ASTM F959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners.
 - (29) ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
 - (30) ASTM F1852 - Standard Specification for Twist Off Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
- iii) American Welding Society:
 - (1) AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
 - (2) AWS D1.1 - Structural Welding Code - Steel.
 - iv) Research Council on Structural Connections:
 - (1) RCSC - Specification for Structural Joints Using ASTM A325 or A490 Bolts.
 - v) SSPC: The Society for Protective Coatings:
 - (1) SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
 - (2) SSPC SP 3 - Power Tool Cleaning.
 - (3) SSPC SP 6 - Commercial Blast Cleaning.
 - (4) SSPC SP 10 - Near-White Blast Cleaning.
- c) Qualifications
- i) Fabricator: Company specializing in performing Work of this section with minimum 2 years documented experience.
 - ii) Erector: Company specializing in performing Work of this section with minimum 2 years documented experience with the following current AISC Certification:

- (1) Certified Steel Erector (CSE).
- (2) Advanced Certified Steel Erector (ACSE).
- iii) Shop Painter: Company specializing in performing Work of this section with minimum 2 years documented experience with the following current AISC Certification:
 - (1) Sophisticated Paint Endorsement - Enclosed (P1).
 - (2) Sophisticated Paint Endorsement - Covered (P2).
 - (3) Sophisticated Paint Endorsement - Outside (P3).
- iv) Welders and Welding Procedures: AWS D.1 qualified within previous 12 months.
- d) Structural Steel
 - i) Channels and Angles: ASTM A36/A36M
 - ii) Structural Plates and Bars: ASTM A36/A36M
 - iii) Anchor rods: ASTM F1554; Grade 36
 - (1) Shape: Hooked or Headed
 - (2) Plate Washers: ASTM A36/A36M
 - iv) Threaded Rods: ASTM A36/A36M
 - v) All steel to be Stainless (A304 or A316 as needed) or Hot-dipped Galvanized
- e) Welding Materials
 - i) Welding Materials: AWS D1.1; Type required for materials being welded
- f) Fabrication
 - i) Continuously seal joined members by continuous welds. Grind exposed welds smooth
 - ii) Fabricate connections for bolt, nut, and washer connectors.
- g) Finish
 - i) Prepare structural component surfaces in accordance with SSPC SP 3.
 - ii) Shop prime structural steel members. Do not prime surfaces that will be field welded, in contact with concrete, or high strength bolted.
 - iii) Galvanizing for Structural Steel Members: ASTM A123/A123M; galvanize after fabrication.
 - iv) Galvanizing for Fasteners, Connectors, and Anchors:
 - (1) Hot-Dipped Galvanizing: ASTM A153/A153M.
 - (2) Mechanical Galvanizing: ASTM B695; Class 50 minimum.

6.05 GROUT FOR GROUTED BOULDERS

The work shall consist of furnishing, transporting, and placing concrete grout, including filter, bedding or geotextile materials where specified, in the construction of grouted rock riprap sections as shown on the construction drawings.

- a. **Placing Boulders** - The rock shall be placed on the surfaces and to the depths specified in such a manner as to avoid displacement of underlying materials. The rock shall be placed to produce a uniform surface in which the tops of the individual rocks match the neat lines shown on the drawings within the appropriate tolerances given in table 2.2. Double decking flat rocks to bring the surface up to the required grade will not be permitted.

- b. **Grout Mix** - The Contractor shall be responsible for proportioning the mix. The cement content shall be 6 bags per cubic yard (564 lbs. per cu yd.); the fine aggregate to combined fine and coarse aggregate ratio shall be greater than 0.45 but less than 0.53. Water content shall not exceed 6 gallons of water per bag of concrete.

Fly ash may be used as a partial substitution for Portland cement in an amount not greater than 20 percent (based on absolute volume) of cement in the concrete mix.

Grout shall attain a compressive strength of 3000 pounds per square inch at 28 days. At least 10 days prior to placement of grout, the Contractor shall submit a certification of the mix design for approval. Submit mix design and 28 day test results for review by the engineer.

- c. **Air Content and Consistency** - Air entrainment may be used and shall not exceed 7 percent at time of placement. The consistency of the grout mixture shall be such that it will penetrate the rock to the minimum depth of 24 inches.
- d. **Conveying and Placing** - The grout mix shall not be placed until the rock riprap has been inspected and approved by the engineer for the placement of grout. Rock to be grouted shall be kept moist for a minimum of 2 hours before grouting.

The rock riprap shall be flushed with water before placing the grout to remove the fines from the rock surfaces. The rock shall be kept moist before the grouting and without placing in standing or flowing water. Grout placed on inverts or other nearly level areas may be placed in one operation. On slopes, the grout shall be placed in two nearly equal applications consisting of successive lateral strips about 10 feet in width starting at the toe of the slope and progressing upward. The grout shall be delivered to the place of final deposit by approved methods and discharged directly on the surface of the rock. A metal or wood splash plate is used to prevent displacement of the rock directly under the grout discharge. The flow of grout shall be directed with brooms, spades, or baffles to prevent grout from flowing excessively along the same path and to assure that all intermittent spaces are filled. Sufficient barring shall be conducted to loosen tight pockets of rock and otherwise aid in the penetration of grout to ensure the grout fully penetrates the total thickness of the rock blanket. All brooming on slopes shall be uphill. After the grout has stiffened, the entire surface shall be rebroomed to eliminate runs and to fill voids caused by sloughing. For sloped ramps the surface finish, following the completion of grout installation, shall consist of two inches of the rock extended above the level of grout. The exposed rock will not have a plastered appearance. The work shall consist of furnishing, transporting, and placing rock and concrete grout, including filter, bedding or geotextile materials where specified, in the construction of grouted rock riprap sections as shown on the construction drawings.

Hold grout minimum 3 inches below top of boulders. Boulders extending above final surface elevation of grout shall be cleaned of all grout residues. Clean appearance of final boulder surface is required.

After completion of any strip or panel, no individual(s) or equipment shall be permitted on the grouted surface for 24 hours. The grouted surface shall be protected from injurious action by the sun, rain, flowing water, mechanical injury, or other potential damaging activity.

- e. **Curing and Protection** - The completed finished surface shall be prevented from drying for a minimum curing period of 7 days following placement. Exposed surfaces shall be

maintained in a moist condition continuously for the 7-day curing period or until curing compound has been applied as specified in this section.

The grouted rock may be coated with an approved curing compound as an alternative method to maintaining continuous moisture condition during the curing period. The compound shall be applied per manufacturers recommendation/direction and shall form a continuous adherent membrane over the entire surface. Curing compound shall not be applied to surfaces requiring bond to subsequently placed grout and/or concrete. If the membrane is damaged during the curing period, the damaged area shall be reapplied at the rate of application specified for the original treatment.

Grout mix shall not be placed when the daily minimum temperature is less than 40 degrees Fahrenheit unless cold weather concrete measures are taken. Submit cold weather concreting plan to engineer for review prior to work commencing.

- f. **Inspecting and Testing Fresh Grout** - The grout material shall be checked and tested throughout the grouting operation. Sampling of fresh grout shall be conducted in conformance with ASTM C 172. The volume of each batch will be determined by methods prescribed in ASTM C 138. At a minimum samples will be taken daily or whenever there is a change in the mix or if the engineer deems there is a change in the mix attributes.

6.06 SHEET PILE

6.06.01 Products

a) General

- A. CONTRACTOR shall provide information from the manufacturer that indicates the sheet piling meets or exceeds the SPECIFICATIONS listed in this section.
- B. All steel sheet piling shall be new and unsliced material throughout, unless otherwise reviewed and accepted by ENGINEER. Splice locations, if necessary, shall be reviewed and accepted by ENGINEER prior to installation.
- C. Steel sheet piles and special fabricated shapes shall be of a design that ensures continuous interlock throughout the entire length when in place.

b) Materials

- A. Steel sheet piling, Nucor Hot-Rolled Steel Sheet Pile NZ 14 or equivalent (<https://www.nucorskyline.com/globalnav/products/steel-sheet-piling/z-piles>), shall be installed by the CONTRACTOR to the grades and lines described in the project plans and specifications.
- B. Steel sheet piling shall have a minimum section modulus 0.54 in³ to 2.23 in³(Ft. Wall).

| Section Type | Thickness | Weight | Weight | Sec. Mod. | Moment of Inertia | Coating Area |
|--------------|-----------|--------|--------|-----------|-------------------|--------------|
|--------------|-----------|--------|--------|-----------|-------------------|--------------|

| | Nominal | Lb/Square Ft. | Lb/Lineal Ft. | Inch ³ (Ft.Wall) | Inch ⁴ (Ft.Wall) Per Ft. of Wall | Sq.Ft/LF |
|-------|---------|---------------|---------------|-----------------------------|--|----------|
| NZ 14 | 0.375 | 21.77 | 55 | 25.65 | 171.7 | 6.10 |

- C. Steel sheet piling shall meet the requirements of ASTM A328, (Grade 50).
- D. Steel corners, tees, wyes, and crosses shall meet the requirements of ASTM A328.
- E. Steel sheet piles required for the PROJECT shall be the type and weight shown on the DRAWINGS.
 - a. Additional length beyond those indicated on the DRAWINGS may be required to provide for trimming of tops of sheet piling.
- F. The interlocks between steel sheet pile sections shall be configured such that the average width of the annular space between all contact points of the interlocks shall be a maximum of one-eighth (1/8) inch, as determined by ENGINEER.
- G. Steel sheet piles and interlocks shall not have excessive kinks, camber or twist that would prevent the pile from reasonably free sliding to grade.
- H. All fabricated connections shall be made with the use of angles or bent plates, as necessary, and shall be adequately welded or connected with high strength bolts as accepted by ENGINEER.
- I. Handling Holes:
 - a. If handling holes are provided, they shall be two (2) standard two and nine sixteenth (2-9/16) inch diameter handling holes located six (6) inches from one end.
 - b. The holes shall be plugged by welding a piece of steel over the hole prior to installing any riprap, backfill or drop structure cap.
 - c. The plated hole shall be watertight.

c)Storage and Handling

- A. Do not subject piles to damage by impact bending stresses in transporting to and storing piles onsite.
- B. Store and handle piles such that corrosion damage does not occur.

6.06.02 Execution

a) Examination

- A. Do not begin sheet pile installation until the earthwork in the area where the piles are to be driven has been completed to the extent that the grade elevation is at no more than

twelve (12) inches above or below the top of the piling elevation as indicated on the DRAWINGS.

b) Preparation

- A. Any fill along the alignment of the sheet pile must be in place to sub-grade elevations and compacted prior to driving the sheet pile.
- B. Fill material (except riprap, boulders, bedding and grout) is not to be placed around the sheet pile after the sheet pile is in place.

c) Installation

A. General:

- a. All welding or gas cutting shall be in accordance with the current standards of the American Welding Society.
- b. Virtual Refusal:
 - i. Steel sheet piling shall be driven to the depths shown on the DRAWINGS or to virtual refusal.
 - ii. Virtual refusal is defined as ten (10) blows per inch with an approved pile hammer.
- c. A pile hammer shall be used to determine virtual refusal.
- d. The hammer shall be operating at the manufacturer's recommended stroke and speed when virtual refusal is measured.

B. Sheet Piling Driving:

- a. Steel sheet piling shall be assembled before driving and then driven as a continuous wall, progressively in stages to keep the piles aligned correctly and minimize the danger of breaking the interlock between the sheets.
- b. Steel sheet piling shall be driven to form a tight bulkhead.
- c. A driving head shall be used and any piling which is damaged in driving or which has broken interlocks between sections shall be pulled and replaced at CONTRACTOR's expense.
- d. The piling shall be driven within the following tolerances:
 - i. Alignment:
 - 1. Sheet pile shall be driven to form a relatively straight line between the termini points shown on the DRAWINGS.
 - 2. Horizontal deviation of any point from a straight line connecting the two ends of the wall section shall be a maximum of six (6) inches.
 - ii. Plumbness: Each individual sheet pile section shall be driven vertical, within a horizontal tolerance of two percent (2%) of any vertical length measured along the pile.
 - iii. Elevation:
 - 1. Tops of sheet pile sections shall be within a tolerance of one (1)

inch from plan elevations.

2. CONTRACTOR shall not be paid for excess sheet pile trimmed off the end of the pile to meet final grade.
- C. CONTRACTOR shall brace and/or provide soil grading as necessary during construction operations in order to provide lateral stability for the sheet pile wall. The sheet pile wall has been designed for the soil grades of the final configuration denoted on the DRAWINGS only. Other temporary configurations during the construction period shall not be allowed.
 - D. Care shall be taken during driving to keep from causing deformations of the top of the piles, splitting of section, or breaking of the interlock between sections. Care shall also be taken during driving to prevent and correct any tendency of steel sheet piles to twist or get out of plumb.
 - E. Steel Z piling shall be driven with the ball-end leading. Proper care and planning shall be used to allow for this construction procedure in both immediate and possible future walls.
 - F. Alternate Z piles shall be reversed end for end for proper interlocking in the "normal" position. Piles shall also be aligned properly to maintain a "normal" driving width.
 - G. For sheet piles driven into the native soils, pre-drilled soils, or excavated soils a vibratory driver may be used as long as the required depth is obtained.
 - H. For sheet piles being driven into bedrock, an approved hammer utilizing a minimum hammer energy of 19,000 foot-pounds per square inch of steel section shall be used to obtain the required depth or virtual refusal. The hammer shall be clearly marked so that it can be identified at the job site.
 - I. Steel sheet pile that is full length as shown on the DRAWINGS and is required to be driven below the specified cutoff elevation shall be spliced with additional steel sheet piling with a full penetration butt weld.

6.07 STRUCTURAL BACKFILL

6.07.01 General

- a) The drawing shows typical installation. Refer to construction drawings for locations and elevations of backfill areas.
- b) Materials used for Structural Fill/Backfill shall be as noted in the Geotechnical Report and Structural General Notes, Foundations Section in the Drawings and as noted in the Soil Backfill Detail

END OF SECTION

SECTION 7 STREAMBANK WORK

7.01 STREAMBANK WORK GENERAL

Erosion and Sediment Control (ESC) and Care of Water (COW) practices, as part of BMP's, may be required for streambank construction activities.

7.02 STREAMBANK WORK CONSTRUCTION METHODS

7.02.01 Erosion Control Blankets

Disturbed banks shall be rehabilitated with Erosion Control Blankets. After final elevations have been graded and seed applied, excavate a trench parallel to the channel and up the slope of the bank. A 6 in. by 6in. trench should run along the length and width of the ECB installation. Staple the ECB along bottom of trench and backfill with compacted soil. Overlap the ECB a minimum of 24 inches at the top and bottom, and a minimum of 12 inches along adjacent ECBs. The ECB shall be stapled every 1 ft on center. The CONTRACTOR shall follow the specifications provided by the manufacturer of the ECB.

7.02.02 Restored Bank Compaction

Meet or Exceed APWA 2025 Standard Specification 31 23 26 or as modified herein.

Restored bank shall be constructed using material excavated on-site. The restored bank subgrade shall be compacted to 95% Standard Proctor Density using a vibratory compactor, sheepsfoot roller or equivalent. The subgrade material shall be moistened to obtain optimum moisture for compaction. After final subgrades have been established and compacted, place topsoil to a minimum of 12 inches depth and plant/seed as specified on the Drawing Plans.

7.03 STREAMBANK WORK MATERIALS

7.03.01 Erosion Control Blankets

- a. Install Erosion Control Blankets (ECB) over topsoil and specified seed mix on slopes as shown on Project Drawings.
- b. Erosion Control Blankets shall be all natural 100% biodegradable blanket of 100% coconut fiber with a functional longevity of up to 18 months. Tensile strength shall be 222 lbs/sqft (ASTM 6818), a thickness of 0.28" and mass of 8.83oz/sqyd and withstand a sheer stress of 2.35lbs/sqft and a velocity of 10 ft/sec such as Tensar, Rollmax BioNet C700BN or approved equivalent.
- c. Store all coir fabric elevated off the ground and ensure that it is adequately covered to protect the material from damage. Protect fabric from sharp objects that may damage the material. Materials damaged during transport, storage or placement shall be replaced at the CONTRACTOR expense. The ENGINEER shall inspect and approve all materials prior to installation.

7.03.02 ECB Staples

- a. ECB Staples to secure the ECB shall be 11 gauge staples. A minimum of 10in. long by 2 in. crown staples are to be used to secure the blanket to the ground surface, and at all locations where ECB is cut for planting.

7.03.03 Wood Stake Materials

- a. Wood Stakes shall be tapered with dimensions of 18 in by 1 in by 2 in. Wood Stakes shall be natural wood that is not treated with preservatives.

END OF SECTION

SECTION 8 VEGETATION PROTECTION, PRUNING OPERATIONS, AND DEBRIS REMOVAL

Meet or Exceed APWA 2025 Standard Specification 32 01 90, 32 01 91 and 32 01 93 or as modified herein.

8.01 GENERAL VEGETATION PROTECTION

The preservation of existing mature riparian vegetation is an essential component of the work and a measure of the successful completion thereof. Healthy root mass is essential to the stability of the banks and channel of the Weber River. The CONTRACTOR is responsible for the survivability of mature vegetation. Any vegetation lost or damaged due to construction activities shall be replaced by the CONTRACTOR at no expense to the OWNER, within the 1-year warranty period.

8.02 VEGETATION ROOT CUTTING

The Work covered by this section includes the furnishing of all labor, materials, equipment and incidentals for all tree root cutting necessary for excavation purposes with the goal of minimizing the impact to the existing environment. Excavation shall be limited to areas as shown on the Plans and described in these specifications.

8.02.01 Excavation Work Near Trees and Shrubs

Excavation work near trees and shrubs shall be outside of the drip line. Prune tree to allow for adequate viewing of base of tree and prevent damage. Roots exposed during excavation shall be cleanly cut.

8.02.02 Hand Excavations Under the Drip Line

Under the drip line, or at a minimum of 10 feet from the base of a Protect In Place Tree, all necessary excavating activities shall be done by hand to expose the roots.

- a. Expose all roots greater than 1" and preserve.
- b. If it is necessary to achieve grades, the roots may be cleanly cut, and shall not be ripped or torn.

8.02.03 Treatment of Cut and Exposed Roots

Backfill all cut and exposed roots the same day of root cutting, or cover with wood chips, mulch and water until backfilling is accomplished.

8.02.04 Root Care

Roots can be up to 2-3 times the diameter of the drip line.

The CONTRACTOR shall take as much care as possible to preserve roots.

- a. All roots that are necessary to remove for excavation activities shall be cleanly cut.
- b. The CONTRACTOR shall apply all root cuts with approved root stimulator.

8.02.05 Areas of Cut Near Marked Trees

- a. If necessary, any cut slope areas shall be held away from marked trees with a boulder retaining wall with a discontinuous footing.

- b. No soils shall be compacted under the drip line without ENGINEER approval.

8.02.06 Pruning of trees and shrubs

Pruning shall follow Utah Shade Tree Pruning Standards as well as the American National Standards for tree care operations. Class II, medium pruning, is generally for lifting the lower bottom branches of trees for under clearance. All Class II pruning cuts shall be less than 12 feet above the ground. Pruned limbs shall be less than 1 inch in diameter. Class II Pruning is intended to clear obstructions for equipment access and excavation areas.

8.02.07 Medium Pruning

Shall consist of the removal of dead, dying, diseased, interfering, objectionable and weak branches on the main trunks as well as those within the leaf area. An occasional branch up to one inch in diameter may remain within the main leaf area where it is not practical to remove it. The following specifications shall apply:

- a. All cuts shall be made sufficiently close to the trunk or parent limb, without cutting into the branch collar or leaving a protruding stub, so that closure can readily start under normal conditions. Clean cuts shall be made at all times.
- b. It is necessary to pre-cut branches too heavy to handle to prevent splitting or peeling the bark. Where necessary to prevent tree or property damage, branches shall be lowered to the ground by proper ropes or equipment.
- c. On trees known to be diseased, tools are to be disinfected with methyl alcohol at 70% (denatured wood alcohol diluted appropriately with water) or Clorox solution after each cut and between trees where there is known to be a danger of transmitting the disease on tools.
- d. Old injuries are to be inspected. Those not closing properly and where the callus growth is not already completely established and show signs of extensive rot shall be reported to the Owner.
- e. All girdling roots visible to the eye are to be reported to a supervisor and/or the Owner.

The presence of any structural weakness, disease conditions, decayed trunk or branches, split crotches or branches should be reported in writing to a supervisor and/or the Owner, and corrective measures recommended.

8.02.08 Class IV Pruning and Debris Removal

Excavation of the fill material to establish design grade will require the removal of trees and shrubs and associated debris. Class IV pruning may be required for equipment access and to protect adjacent vegetation and utilities. Class IV pruning shall follow Utah Shade Tree Pruning Standards as well as the American National Standards for tree care operations. Class IV pruning typically requires a lift and chainsaw work to remove the upper limbs to prepare the tree for removal and stumping.

- a. Appropriate safety procedures shall be implemented at all times during Class IV pruning operations.
- b. Debris shall be stored in the Staging Area with adequate BMPs until hauled off-site.

END OF SECTION

SECTION 9 SEEDING

Meet or Exceed APWA 2025 Standard Specification 32 01 90, 32 91 13, 32 91 19, 32 93 13, 32 93 43 and 32 98 00 or as modified herein.

9.01 SEEDING

All soil areas within the Project Limits, disturbed by construction activities, shall be seeded with the Upland Stabilization Seed mix. All Slope Stabilization areas shall have Riparian Seed mix. All mixes shall be Certified Seed that is weed free and native strands of Pure Live Seed (PLS). Table 9.1 provides the seed type and rate for Upland Mix Species (Zone A) and Table 9.2 provides the seed type and rate for Riparian Emergent Mix Species (Zone B).

1. Soil Preparation: Where topsoil is specified place stored topsoil to a minimum of 6 inches in depth up to 12 inches as suited. Soil shall be graded and raked to a depth of 0.25' to 0.5' to create a seed bed. Soils must be moist prior to seed application. Sprinkle areas to be seeded with water, using fine spray to avoid washing or erosion of soil.
2. Seed Application: Within 48 hours of soil placement, broadcast seed at the specified rate and lightly rake into soil, then tamp soil to ensure seed to soil contact. Do not apply seeds when weather is too windy, hot or drying, or other adverse conditions exist
3. Apply hydro-mulch to all seeded areas.

Table 9.1 Upland Mix Application (Zone A)

| Upland Mix Application | | |
|------------------------------------|--|------------------|
| Common Name | Scientific Name | pls/acre* |
| Sand dropseed | <i>Sporobolus cryptandrus</i> | 1% |
| Blanket flower | <i>Gaillardia aristata</i> | 6.4% |
| Rocky Mountain beeplant | <i>Cleome serrulata</i> | 19.2% |
| Scarlet globemallow | <i>Sphaeralcea coccinea</i> | 3.2% |
| Alkali sacaton | <i>Sporobolus airoides</i> | 3.2% |
| Great Basin wildrye | <i>Leymus cinereus</i> | 25.5% |
| Western wheatgrass | <i>Pascopyrum smithii</i> | 25.5% |
| Sandberg bluegrass | <i>Poa secunda ssp. Sandbergii</i> | 6.4% |
| Inland saltgrass | <i>Distichlis spicata</i> | 3.2% |
| Lewis blue flax | <i>Linum lewisii</i> | 6.4% |
| *Broadcast Application=60 lbs/acre | | 100% |

Table 9.2 Riparian Mix Application (Zone B)

| Emergent Riparian Mix Application | | |
|--|--------------------------------|------------------|
| Common Name | Scientific Name | pls/acre* |
| Inland saltgrass | <i>Distichlis spicata</i> | 25% |
| Creeping spikebrush | <i>Eleocharis palustris</i> | 25% |
| Spike muhly | <i>Muhlenbergia wrightii</i> | 25% |
| Nuttal's alkaligrass | <i>Puccinellia nuttalliana</i> | 25% |
| *Broadcast Application=15 lbs/acre | | 100% |

9.04 TRANSPLANTING ON-SITE VEGETATION

Vegetation to be disturbed by excavation activities should be transplanted when feasible. Vegetation suitable for transplants should be healthy native species. Prune shrub or tree to approximately 6 feet in height. Cleanly cut all broken and damaged limbs. Herbaceous clusters are also suitable for transplants. Excavate a hole that is larger, but not deeper, than the transplant rootball. Scoop the entire root mass of the transplant with the bucket of a trackhoe, keeping intact the rootball and soils. Immediately place transplant in the excavated hole and hand backfill lightly compacting the soil. Water transplant as necessary to ensure survival.

END OF SECTION

SECTION 10 TOPSOIL

10.01 TOPSOIL PRESERVATION

Topsoil stripped from the immediate construction area shall be stockpiled in an area designated in the SWPPP. The stockpiles shall be in areas that shall not interfere with construction phases and at least 15 feet away from areas of concentrated flows or pavement. The slopes of the stockpile shall be roughened by equipment tracking and shall not exceed 2:1 horizontal to vertical. A silt fence or other adequate erosion control shall be installed around the perimeter of each stockpile.

Current conditions of the Project Area are compacted soil and fill material with concrete and litter. Topsoil excavated on areas disturbed for construction shall be removed up to 18'' and stored in the Staging Area until after construction. Once construction is complete, remove stockpile and place topsoil onto disturbed areas for revegetation.

10.02 TOPSOIL MATERAILS

Meet or Exceed APWA Standard Specifications 31 05 13 or as modified herein.

Soil material may be approved by the ENGINEER if, by visual inspection, the soil is determined to be high quality. The ENGINEER may require CONTRACTOR to furnish laboratory results if, in the ENGINEER'S opinion, the material is marginal or unacceptable. At the request of the ENGINEER, the CONTRACTOR shall furnish laboratory test results indicating that the material meets the requirements including those for composition and pH as indicated below: Material that does not conform to the specification requirements and is placed in the work area shall be removed and replaced at the CONTRACTOR'S expense.

10.03 IMPORTED TOPSOIL APPLICATION

The Project requires the import of topsoil. The Contractor shall provide a Certificate of Compliance to the Engineer to verify the organic matter content, pH, electrical conductivity and cation exchange capacity of the humate product in all imported soils. Topsoil shall be placed on all compacted soil and fill areas.

- a. Topsoil shall be applied a minimum of 6 inches depth on all disturbed areas within the riparian corridor.
- b. Topsoil shall be applied to all planting wells (tree and shrubs) at least the depth and 2 times the width of the root ball.
- c. Topsoil shall be applied to all wetland areas at a minimum of 6-10'' inches in depth.
- d. Topsoil shall not be placed when the ground or Topsoil is frozen, excessively wet, or otherwise in a condition detrimental to uniform spreading operations, proper grading and seedbed preparation.
- e. Following the spreading operation, the Topsoil surface shall be left reasonably smooth and without surface irregularities that could contribute to concentrated waterflow downslope.

10.04 SALVAGED AND STORED TOPSOIL

The CONTRACTOR shall store topsoil that consists of plant propagules (roots, rhizomes, seed) from locations that have been cleared and grubbed. Salvaged Topsoil shall be properly stockpiled and protected in locations indicated on the SWPPP. To the best extent possible, salvaged Topsoil shall be free and clear of cobbles and or gravel exceeding 2 inches in size. Strip and remove off site all weed infested soils to a min. depth of 3" prior to salvaging topsoil. Salvaged Topsoil shall comply with the following requirements:

10.04.01 Percent Organic Matter

Contain no less than 2 percent nor more than 13 percent organic matter, as determined by the test for organic matter in accordance with ASTM D2974.

10.04.02 Percent Clay

Contain no less than 12 percent or more than 40 percent clay, as determined in accordance with ASTM D422.

10.04.03 Percent Sand

Sand content shall not exceed 55 percent, as determined in accordance with ASTM D422.

10.04.04 pH

The pH shall not be lower than 5.0 or higher than 8.0. The pH shall be determined with an acceptable pH meter on that portion of the sample passing the No. 10 sieve, in accordance with the "Suggested Methods of Tests for Hydrogen Ion Concentration (pH) of Soils," included in the ASTM Procedures for Testing Soils issued December 1964.

10.05 IMPORTED TOPSOIL

Imported topsoil shall be a natural sandy loam that is invasive and noxious weed free and cheatgrass free. Imported Topsoil shall be properly stored and protected, and shall be free of roots, hard clay and stones which shall not pass through a 1-inch square opening. It shall be a loamy mixture having at least 90 percent passing No. 10 sieve. Below lists the soil properties:

10.05.01 Percent Organic Matter

Contain no less than 2 percent nor more than 13 percent organic matter, as determined by the test for organic matter in accordance with ASTM D2974.

10.05.02 Percent Clay

Contain no less than 12 percent or more than 25 percent clay, as determined in accordance with ASTM D422.

10.05.03 Percent Sand

Sand content shall not exceed 55 percent, as determined in accordance with ASTM D422.

10.05.04 pH

The pH shall not be lower than 5.0 or higher than 8.0. The pH shall be determined with an acceptable pH meter on that portion of the sample passing the No. 10 sieve, in accordance with the “Suggested Methods of Tests for Hydrogen Ion Concentration (pH) of Soils,” included in the ASTM Procedures for Testing Soils issued December 1964.

10.05.05 Mechanical Criteria

Topsoil shall meet the following mechanical criteria: 100 percent shall pass the 1-inch screen; 97-100 percent shall pass the 1.5-inch screen; and 40-60 percent shall pass the No. 100 mesh sieve.

10.05.06 Vegetative Content

Topsoil shall be free of clods, gravel, and other inert material. It shall be free of thistle, reed canary grass, creeping foxtail, noxious vegetation and seed. Should such regenerative material be present in the soil, the Contractor shall remove, at his expense and in a manner satisfactory to the Owner’s Representative, all such growth, both surface and root, which may appear in the imported Topsoil within 1 year following acceptance of the work.

SECTION 11 INVASIVE SPECIES CONTROL

11.01 GENERAL INVASIVE VEGETATION SPECIES CONTROL

Meet or exceed APWA Standard Specifications 31 31 19

All equipment entering the site shall be clean of mud, debris, organic matter or other material that may contain weed seeds (Invasive species and noxious weed seeds shall be removed from the staging area, ingress and egress, and all areas disturbed by construction activities prior to mobilization into the site.). Equipment cleaning shall adhere to section 3.04

END OF SECTION

SECTION 12 HYDROLOGY

12.01 EXISTING PROJECT SITE HYDROLOGY

The Weber River Gage at Ogden, Utah is located immediately upstream and in close proximity to the project site and can be used to forecast flows during construction. **The Gage will be impacted by construction activities and may be inaccurate due to construction.** Hydrologic information for the project is based on 4 years of record for the USGS 10137000 Weber River at Ogden, Utah, which can be accessed online at:

https://waterdata.usgs.gov/nwis/inventory/?site_no=10137000&agency_cd=USGS

Real time data may be seasonal and is provisional, subject to change. Statistical Analysis of historical data is not a guarantee for the flow rates during construction and are provided herein solely for the information of the CONTRACTOR. Maintenance of the River Flows, diversions, erosion, COW, environmental protection, BMPs and River stages during the construction period are wholly the responsibility of the CONTRACTOR.

Exceedance probabilities for mean daily flows on the Weber River at Ogden, UT are shown below in Table 1.

Table 1 Percent of record that average daily flows were exceeded on the Weber River downstream of the Project Area (cfs)

| Date | Mean | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | |
|--------|------|---|-----|-----|-----|-----|
| | | 90% | 75% | 50% | 25% | 10% |
| 1-Jan | 152 | 57 | 75 | 90 | 241 | 350 |
| 2-Jan | 151 | 42 | 69 | 93 | 278 | 331 |
| 3-Jan | 147 | 39 | 61 | 90 | 285 | 330 |
| 4-Jan | 146 | 47 | 66 | 92 | 267 | 320 |
| 5-Jan | 155 | 50 | 67 | 102 | 263 | 340 |
| 6-Jan | 164 | 55 | 77 | 98 | 276 | 325 |
| 7-Jan | 160 | 58 | 72 | 96 | 283 | 312 |
| 8-Jan | 157 | 56 | 65 | 106 | 252 | 325 |
| 9-Jan | 165 | 57 | 83 | 129 | 249 | 324 |
| 10-Jan | 175 | 53 | 81 | 140 | 297 | 370 |
| 11-Jan | 183 | 56 | 81 | 146 | 300 | 404 |
| 12-Jan | 172 | 60 | 82 | 129 | 297 | 330 |
| 13-Jan | 162 | 52 | 82 | 118 | 256 | 329 |
| 14-Jan | 170 | 46 | 80 | 146 | 265 | 346 |
| 15-Jan | 179 | 52 | 72 | 137 | 314 | 375 |
| 16-Jan | 247 | 53 | 73 | 112 | 325 | 884 |
| 17-Jan | 198 | 61 | 80 | 125 | 328 | 496 |
| 18-Jan | 184 | 58 | 72 | 116 | 326 | 433 |
| 19-Jan | 202 | 54 | 75 | 103 | 324 | 572 |
| 20-Jan | 182 | 53 | 81 | 102 | 318 | 453 |
| 21-Jan | 177 | 61 | 86 | 110 | 308 | 398 |

| Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | | | |
|---|------|-----|-----|-----|-----|------|
| Date | Mean | 90% | 75% | 50% | 25% | 10% |
| 22-Jan | 172 | 60 | 83 | 106 | 294 | 384 |
| 23-Jan | 182 | 70 | 79 | 152 | 323 | 364 |
| 24-Jan | 184 | 72 | 78 | 124 | 319 | 361 |
| 25-Jan | 187 | 65 | 78 | 113 | 321 | 391 |
| 26-Jan | 184 | 66 | 76 | 109 | 309 | 386 |
| 27-Jan | 196 | 66 | 81 | 123 | 340 | 408 |
| 28-Jan | 183 | 65 | 77 | 95 | 326 | 380 |
| 29-Jan | 179 | 67 | 75 | 110 | 309 | 365 |
| 30-Jan | 182 | 67 | 73 | 118 | 329 | 369 |
| 31-Jan | 180 | 61 | 75 | 103 | 328 | 380 |
| 1-Feb | 174 | 60 | 78 | 107 | 322 | 369 |
| 2-Feb | 175 | 63 | 79 | 107 | 305 | 365 |
| 3-Feb | 180 | 73 | 85 | 119 | 290 | 365 |
| 4-Feb | 181 | 69 | 81 | 136 | 274 | 362 |
| 5-Feb | 188 | 69 | 76 | 161 | 276 | 371 |
| 6-Feb | 189 | 68 | 81 | 169 | 278 | 365 |
| 7-Feb | 237 | 66 | 97 | 199 | 338 | 606 |
| 8-Feb | 263 | 65 | 87 | 216 | 326 | 785 |
| 9-Feb | 294 | 67 | 83 | 189 | 329 | 1030 |
| 10-Feb | 309 | 64 | 85 | 185 | 310 | 1160 |
| 11-Feb | 312 | 65 | 79 | 199 | 308 | 1180 |
| 12-Feb | 280 | 71 | 87 | 213 | 313 | 875 |
| 13-Feb | 256 | 71 | 108 | 223 | 306 | 672 |
| 14-Feb | 241 | 70 | 90 | 223 | 319 | 557 |
| 15-Feb | 237 | 69 | 85 | 263 | 311 | 499 |
| 16-Feb | 245 | 73 | 95 | 271 | 346 | 466 |
| 17-Feb | 244 | 76 | 106 | 263 | 355 | 453 |
| 18-Feb | 242 | 74 | 90 | 279 | 361 | 447 |
| 19-Feb | 275 | 72 | 81 | 265 | 363 | 711 |
| 20-Feb | 265 | 71 | 82 | 257 | 380 | 607 |
| 21-Feb | 322 | 68 | 81 | 245 | 443 | 933 |
| 22-Feb | 303 | 65 | 82 | 234 | 404 | 865 |
| 23-Feb | 294 | 65 | 77 | 240 | 412 | 759 |
| 24-Feb | 304 | 68 | 84 | 242 | 450 | 813 |
| 25-Feb | 331 | 68 | 79 | 242 | 497 | 908 |
| 26-Feb | 294 | 68 | 83 | 259 | 498 | 661 |
| 27-Feb | 269 | 70 | 82 | 257 | 438 | 604 |
| 28-Feb | 261 | 67 | 83 | 250 | 401 | 603 |
| | 321 | | 141 | 261 | 562 | |
| 1-Mar | 275 | 65 | 76 | 263 | 326 | 734 |
| 2-Mar | 286 | 65 | 79 | 257 | 320 | 823 |
| 3-Mar | 289 | 75 | 86 | 253 | 340 | 819 |
| 4-Mar | 290 | 76 | 105 | 243 | 366 | 829 |
| 5-Mar | 303 | 70 | 90 | 233 | 386 | 890 |

| Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | | | |
|---|------|-----|-----|-----|------|------|
| Date | Mean | 90% | 75% | 50% | 25% | 10% |
| 6-Mar | 315 | 73 | 112 | 234 | 394 | 916 |
| 7-Mar | 327 | 74 | 107 | 246 | 452 | 888 |
| 8-Mar | 360 | 75 | 102 | 303 | 477 | 945 |
| 9-Mar | 375 | 77 | 132 | 318 | 458 | 1010 |
| 10-Mar | 408 | 75 | 135 | 348 | 534 | 1070 |
| 11-Mar | 399 | 75 | 179 | 349 | 463 | 1100 |
| 12-Mar | 388 | 80 | 168 | 295 | 457 | 1110 |
| 13-Mar | 394 | 76 | 166 | 321 | 469 | 1120 |
| 14-Mar | 397 | 93 | 169 | 301 | 459 | 1140 |
| 15-Mar | 408 | 82 | 203 | 303 | 521 | 1130 |
| 16-Mar | 421 | 114 | 168 | 286 | 579 | 1240 |
| 17-Mar | 418 | 117 | 164 | 293 | 518 | 1280 |
| 18-Mar | 415 | 112 | 158 | 281 | 494 | 1290 |
| 19-Mar | 425 | 117 | 142 | 280 | 491 | 1370 |
| 20-Mar | 431 | 134 | 165 | 299 | 491 | 1310 |
| 21-Mar | 433 | 120 | 157 | 335 | 562 | 1220 |
| 22-Mar | 487 | 116 | 159 | 326 | 737 | 1330 |
| 23-Mar | 602 | 114 | 170 | 419 | 711 | 1880 |
| 24-Mar | 597 | 106 | 187 | 491 | 713 | 1670 |
| 25-Mar | 585 | 141 | 205 | 476 | 789 | 1430 |
| 26-Mar | 565 | 115 | 230 | 485 | 853 | 1230 |
| 27-Mar | 544 | 102 | 224 | 462 | 834 | 1200 |
| 28-Mar | 523 | 108 | 210 | 512 | 673 | 1170 |
| 29-Mar | 515 | 123 | 234 | 509 | 785 | 1080 |
| 30-Mar | 513 | 143 | 248 | 526 | 631 | 1090 |
| 31-Mar | 512 | 126 | 200 | 479 | 709 | 1150 |
| 1-Apr | 525 | 118 | 200 | 452 | 802 | 1150 |
| 2-Apr | 539 | 125 | 224 | 431 | 921 | 1180 |
| 3-Apr | 557 | 134 | 203 | 399 | 945 | 1180 |
| 4-Apr | 551 | 121 | 203 | 388 | 897 | 1240 |
| 5-Apr | 558 | 103 | 204 | 384 | 889 | 1370 |
| 6-Apr | 617 | 115 | 203 | 397 | 1010 | 1470 |
| 7-Apr | 627 | 140 | 255 | 386 | 955 | 1660 |
| 8-Apr | 680 | 139 | 278 | 373 | 1020 | 1880 |
| 9-Apr | 671 | 143 | 291 | 335 | 1190 | 1700 |
| 10-Apr | 645 | 133 | 283 | 364 | 1130 | 1580 |
| 11-Apr | 626 | 145 | 274 | 418 | 966 | 1500 |
| 12-Apr | 648 | 136 | 260 | 443 | 1090 | 1530 |
| 13-Apr | 647 | 125 | 259 | 421 | 1170 | 1580 |
| 14-Apr | 699 | 161 | 291 | 445 | 1290 | 1750 |
| 15-Apr | 783 | 215 | 316 | 445 | 1420 | 1770 |
| 16-Apr | 825 | 183 | 293 | 417 | 1460 | 2060 |
| 17-Apr | 784 | 188 | 324 | 489 | 1440 | 1670 |
| 18-Apr | 841 | 181 | 305 | 474 | 1560 | 2000 |

| Date | Mean | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | |
|--------|------|---|-----|-----|------|------|
| | | 90% | 75% | 50% | 25% | 10% |
| 19-Apr | 873 | 166 | 299 | 497 | 1630 | 2120 |
| 20-Apr | 888 | 125 | 286 | 451 | 1630 | 2200 |
| 21-Apr | 894 | 107 | 288 | 462 | 1630 | 2230 |
| 22-Apr | 918 | 119 | 264 | 556 | 1680 | 2280 |
| 23-Apr | 910 | 89 | 284 | 707 | 1530 | 2240 |
| 24-Apr | 931 | 41 | 266 | 657 | 1560 | 2400 |
| 25-Apr | 929 | 44 | 274 | 565 | 1610 | 2590 |
| 26-Apr | 941 | 96 | 240 | 492 | 1460 | 2860 |
| 27-Apr | 978 | 69 | 223 | 525 | 1500 | 3070 |
| 28-Apr | 941 | 74 | 270 | 515 | 1350 | 2850 |
| 29-Apr | 943 | 60 | 308 | 490 | 1280 | 2950 |
| 30-Apr | 940 | 66 | 274 | 453 | 1230 | 3140 |
| 1-May | 942 | 121 | 221 | 491 | 1220 | 3090 |
| 2-May | 921 | 112 | 230 | 521 | 1290 | 3000 |
| 3-May | 950 | 87 | 229 | 516 | 1170 | 3130 |
| 4-May | 995 | 66 | 285 | 453 | 1120 | 3430 |
| 5-May | 1080 | 46 | 269 | 410 | 1240 | 3870 |
| 6-May | 1150 | 43 | 298 | 561 | 1470 | 4020 |
| 7-May | 1230 | 52 | 310 | 712 | 1690 | 4100 |
| 8-May | 1190 | 62 | 242 | 713 | 1530 | 3920 |
| 9-May | 1090 | 68 | 198 | 628 | 1340 | 3610 |
| 10-May | 1030 | 76 | 156 | 578 | 1380 | 3380 |
| 11-May | 960 | 87 | 166 | 508 | 1430 | 3120 |
| 12-May | 978 | 56 | 236 | 434 | 1500 | 3260 |
| 13-May | 929 | 46 | 183 | 414 | 1200 | 3180 |
| 14-May | 866 | 48 | 139 | 346 | 1250 | 3050 |
| 15-May | 814 | 65 | 141 | 302 | 1280 | 2810 |
| 16-May | 824 | 73 | 122 | 262 | 1350 | 2810 |
| 17-May | 865 | 36 | 131 | 286 | 1600 | 2830 |
| 18-May | 821 | 23 | 146 | 268 | 1460 | 2680 |
| 19-May | 838 | 26 | 122 | 341 | 1370 | 2530 |
| 20-May | 909 | 24 | 102 | 562 | 1470 | 2600 |
| 21-May | 958 | 46 | 111 | 583 | 1940 | 2630 |
| 22-May | 921 | 79 | 149 | 755 | 1560 | 2620 |
| 23-May | 875 | 27 | 152 | 773 | 1300 | 2590 |
| 24-May | 868 | 16 | 117 | 741 | 1430 | 2500 |
| 25-May | 837 | 34 | 84 | 594 | 1260 | 2430 |
| 26-May | 816 | 24 | 99 | 543 | 1400 | 2370 |
| 27-May | 794 | 14 | 107 | 458 | 1370 | 2290 |
| 28-May | 772 | 16 | 123 | 390 | 1240 | 2240 |
| 29-May | 809 | 15 | 151 | 356 | 1440 | 2230 |
| 30-May | 832 | 28 | 137 | 520 | 1680 | 2320 |
| 31-May | 776 | 57 | 163 | 349 | 1590 | 2280 |
| 1-Jun | 755 | 56 | 103 | 287 | 1550 | 2130 |

| Date | Mean | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | |
|--------|------|---|-----|-----|------|------|
| | | 90% | 75% | 50% | 25% | 10% |
| 2-Jun | 726 | 38 | 111 | 276 | 1280 | 1970 |
| 3-Jun | 683 | 43 | 78 | 258 | 1300 | 1720 |
| 4-Jun | 647 | 42 | 77 | 246 | 1030 | 1820 |
| 5-Jun | 630 | 22 | 87 | 242 | 989 | 1910 |
| 6-Jun | 606 | 22 | 89 | 225 | 930 | 1900 |
| 7-Jun | 616 | 45 | 83 | 385 | 947 | 1910 |
| 8-Jun | 569 | 15 | 71 | 296 | 985 | 1890 |
| 9-Jun | 532 | 12 | 111 | 162 | 1100 | 1840 |
| 10-Jun | 532 | 15 | 103 | 153 | 1140 | 1830 |
| 11-Jun | 545 | 21 | 93 | 161 | 1120 | 1910 |
| 12-Jun | 543 | 13 | 75 | 172 | 1020 | 1850 |
| 13-Jun | 543 | 28 | 86 | 189 | 1270 | 1660 |
| 14-Jun | 547 | 46 | 82 | 232 | 1160 | 1580 |
| 15-Jun | 523 | 36 | 75 | 181 | 819 | 1630 |
| 16-Jun | 523 | 35 | 96 | 190 | 849 | 1620 |
| 17-Jun | 479 | 41 | 105 | 323 | 914 | 1230 |
| 18-Jun | 444 | 57 | 84 | 267 | 849 | 1050 |
| 19-Jun | 390 | 38 | 101 | 213 | 760 | 897 |
| 20-Jun | 343 | 33 | 90 | 216 | 619 | 797 |
| 21-Jun | 347 | 49 | 77 | 203 | 596 | 878 |
| 22-Jun | 328 | 44 | 88 | 190 | 513 | 883 |
| 23-Jun | 287 | 37 | 57 | 177 | 461 | 832 |
| 24-Jun | 240 | 37 | 75 | 107 | 410 | 674 |
| 25-Jun | 249 | 42 | 65 | 136 | 295 | 861 |
| 26-Jun | 254 | 43 | 62 | 90 | 215 | 1060 |
| 27-Jun | 229 | 40 | 53 | 102 | 193 | 927 |
| 28-Jun | 198 | 45 | 51 | 96 | 195 | 724 |
| 29-Jun | 173 | 31 | 42 | 103 | 240 | 512 |
| 30-Jun | 172 | 32 | 40 | 127 | 245 | 481 |
| 1-Jul | 155 | 36 | 53 | 117 | 201 | 418 |
| 2-Jul | 139 | 43 | 58 | 122 | 182 | 354 |
| 3-Jul | 129 | 47 | 61 | 122 | 172 | 273 |
| 4-Jul | 113 | 31 | 55 | 93 | 154 | 248 |
| 5-Jul | 104 | 41 | 52 | 89 | 135 | 221 |
| 6-Jul | 89 | 44 | 51 | 73 | 84 | 199 |
| 7-Jul | 90 | 45 | 53 | 71 | 109 | 207 |
| 8-Jul | 85 | 39 | 57 | 71 | 102 | 185 |
| 9-Jul | 87 | 35 | 55 | 71 | 116 | 166 |
| 10-Jul | 88 | 30 | 54 | 65 | 140 | 165 |
| 11-Jul | 95 | 47 | 65 | 80 | 122 | 174 |
| 12-Jul | 91 | 50 | 53 | 68 | 123 | 165 |
| 13-Jul | 83 | 43 | 53 | 69 | 131 | 154 |
| 14-Jul | 84 | 36 | 46 | 72 | 110 | 179 |
| 15-Jul | 86 | 43 | 50 | 71 | 107 | 170 |

| Date | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | | |
|--------|---|-----|-----|-----|-----|-----|
| | Mean | 90% | 75% | 50% | 25% | 10% |
| 16-Jul | 83 | 36 | 46 | 64 | 128 | 157 |
| 17-Jul | 91 | 34 | 49 | 92 | 136 | 185 |
| 18-Jul | 83 | 30 | 44 | 76 | 119 | 169 |
| 19-Jul | 85 | 26 | 47 | 80 | 104 | 163 |
| 20-Jul | 81 | 25 | 48 | 79 | 115 | 140 |
| 21-Jul | 79 | 29 | 51 | 75 | 105 | 138 |
| 22-Jul | 74 | 32 | 43 | 65 | 98 | 138 |
| 23-Jul | 82 | 34 | 40 | 71 | 131 | 152 |
| 24-Jul | 87 | 26 | 38 | 92 | 119 | 163 |
| 25-Jul | 88 | 34 | 45 | 90 | 128 | 167 |
| 26-Jul | 86 | 35 | 40 | 71 | 130 | 195 |
| 27-Jul | 86 | 35 | 45 | 65 | 112 | 197 |
| 28-Jul | 89 | 33 | 52 | 69 | 122 | 183 |
| 29-Jul | 85 | 26 | 52 | 72 | 124 | 153 |
| 30-Jul | 86 | 24 | 57 | 78 | 115 | 156 |
| 31-Jul | 86 | 31 | 47 | 68 | 133 | 172 |
| 1-Aug | 90 | 33 | 45 | 70 | 158 | 180 |
| 2-Aug | 82 | 26 | 42 | 65 | 112 | 174 |
| 3-Aug | 92 | 26 | 51 | 93 | 116 | 172 |
| 4-Aug | 107 | 32 | 46 | 99 | 127 | 264 |
| 5-Aug | 102 | 28 | 47 | 69 | 122 | 275 |
| 6-Aug | 91 | 32 | 42 | 73 | 101 | 225 |
| 7-Aug | 93 | 33 | 44 | 65 | 116 | 255 |
| 8-Aug | 81 | 24 | 43 | 59 | 116 | 181 |
| 9-Aug | 79 | 25 | 34 | 71 | 116 | 168 |
| 10-Aug | 78 | 23 | 34 | 64 | 97 | 189 |
| 11-Aug | 73 | 26 | 35 | 66 | 103 | 165 |
| 12-Aug | 67 | 28 | 32 | 48 | 100 | 141 |
| 13-Aug | 64 | 24 | 30 | 51 | 90 | 132 |
| 14-Aug | 56 | 21 | 29 | 45 | 90 | 114 |
| 15-Aug | 55 | 17 | 26 | 47 | 93 | 112 |
| 16-Aug | 60 | 26 | 29 | 47 | 105 | 115 |
| 17-Aug | 62 | 26 | 30 | 45 | 86 | 137 |
| 18-Aug | 63 | 19 | 30 | 46 | 85 | 137 |
| 19-Aug | 82 | 24 | 30 | 54 | 110 | 217 |
| 20-Aug | 82 | 25 | 30 | 79 | 96 | 189 |
| 21-Aug | 82 | 18 | 36 | 85 | 93 | 184 |
| 22-Aug | 79 | 24 | 40 | 81 | 101 | 150 |
| 23-Aug | 86 | 25 | 39 | 71 | 112 | 200 |
| 24-Aug | 76 | 25 | 33 | 50 | 132 | 158 |
| 25-Aug | 71 | 25 | 36 | 56 | 109 | 141 |
| 26-Aug | 70 | 22 | 34 | 64 | 94 | 127 |
| 27-Aug | 63 | 19 | 29 | 60 | 90 | 110 |
| 28-Aug | 65 | 20 | 33 | 77 | 86 | 105 |

| Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | | | |
|---|------|-----|-----|-----|-----|-----|
| Date | Mean | 90% | 75% | 50% | 25% | 10% |
| 29-Aug | 62 | 25 | 33 | 62 | 82 | 106 |
| 30-Aug | 63 | 18 | 29 | 64 | 93 | 113 |
| 31-Aug | 69 | 22 | 29 | 72 | 105 | 130 |
| 1-Sep | 73 | 24 | 29 | 64 | 122 | 150 |
| 2-Sep | 77 | 23 | 34 | 54 | 113 | 157 |
| 3-Sep | 75 | 23 | 31 | 79 | 107 | 160 |
| 4-Sep | 76 | 20 | 29 | 55 | 101 | 197 |
| 5-Sep | 75 | 18 | 24 | 52 | 107 | 193 |
| 6-Sep | 74 | 22 | 35 | 49 | 110 | 162 |
| 7-Sep | 75 | 20 | 32 | 70 | 93 | 166 |
| 8-Sep | 76 | 16 | 26 | 54 | 102 | 200 |
| 9-Sep | 79 | 15 | 26 | 55 | 112 | 224 |
| 10-Sep | 83 | 15 | 30 | 49 | 122 | 251 |
| 11-Sep | 96 | 15 | 39 | 65 | 125 | 280 |
| 12-Sep | 98 | 16 | 40 | 57 | 134 | 260 |
| 13-Sep | 90 | 16 | 23 | 73 | 104 | 253 |
| 14-Sep | 100 | 16 | 20 | 75 | 116 | 288 |
| 15-Sep | 104 | 16 | 26 | 68 | 141 | 306 |
| 16-Sep | 92 | 12 | 25 | 64 | 132 | 246 |
| 17-Sep | 82 | 19 | 27 | 56 | 133 | 191 |
| 18-Sep | 73 | 17 | 24 | 54 | 133 | 153 |
| 19-Sep | 65 | 16 | 21 | 57 | 106 | 135 |
| 20-Sep | 66 | 14 | 20 | 45 | 126 | 175 |
| 21-Sep | 77 | 13 | 20 | 56 | 154 | 198 |
| 22-Sep | 90 | 14 | 21 | 65 | 151 | 208 |
| 23-Sep | 97 | 13 | 27 | 77 | 146 | 261 |
| 24-Sep | 95 | 12 | 28 | 62 | 121 | 283 |
| 25-Sep | 82 | 18 | 28 | 52 | 120 | 214 |
| 26-Sep | 74 | 19 | 28 | 55 | 120 | 173 |
| 27-Sep | 71 | 13 | 21 | 46 | 121 | 148 |
| 28-Sep | 67 | 9.9 | 16 | 43 | 127 | 154 |
| 29-Sep | 69 | 9.1 | 22 | 53 | 104 | 168 |
| 30-Sep | 66 | 12 | 23 | 46 | 110 | 153 |
| 1-Oct | 77 | 11 | 23 | 56 | 138 | 175 |
| 2-Oct | 76 | 11 | 18 | 64 | 142 | 175 |
| 3-Oct | 76 | 11 | 18 | 61 | 144 | 159 |
| 4-Oct | 91 | 8.1 | 19 | 91 | 151 | 200 |
| 5-Oct | 87 | 12 | 18 | 80 | 144 | 199 |
| 6-Oct | 78 | 14 | 26 | 76 | 114 | 172 |
| 7-Oct | 83 | 13 | 32 | 90 | 115 | 168 |
| 8-Oct | 92 | 13 | 31 | 107 | 120 | 205 |
| 9-Oct | 111 | 13 | 29 | 112 | 151 | 267 |
| 10-Oct | 98 | 12 | 29 | 90 | 126 | 241 |
| 11-Oct | 85 | 12 | 26 | 61 | 119 | 224 |

| Date | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | | |
|--------|---|-----|-----|-----|-----|-----|
| | Mean | 90% | 75% | 50% | 25% | 10% |
| 12-Oct | 89 | 17 | 26 | 92 | 128 | 221 |
| 13-Oct | 93 | 14 | 33 | 111 | 120 | 232 |
| 14-Oct | 107 | 12 | 33 | 110 | 155 | 258 |
| 15-Oct | 118 | 10 | 35 | 106 | 198 | 255 |
| 16-Oct | 120 | 23 | 47 | 94 | 203 | 270 |
| 17-Oct | 100 | 14 | 38 | 92 | 149 | 243 |
| 18-Oct | 92 | 12 | 28 | 95 | 118 | 233 |
| 19-Oct | 103 | 13 | 43 | 97 | 117 | 280 |
| 20-Oct | 97 | 25 | 59 | 94 | 102 | 244 |
| 21-Oct | 100 | 37 | 69 | 88 | 104 | 241 |
| 22-Oct | 103 | 46 | 75 | 88 | 111 | 238 |
| 23-Oct | 107 | 63 | 83 | 90 | 111 | 239 |
| 24-Oct | 113 | 69 | 86 | 95 | 116 | 243 |
| 25-Oct | 117 | 85 | 89 | 96 | 117 | 244 |
| 26-Oct | 124 | 76 | 81 | 98 | 135 | 276 |
| 27-Oct | 122 | 77 | 90 | 102 | 130 | 252 |
| 28-Oct | 126 | 76 | 96 | 105 | 138 | 259 |
| 29-Oct | 119 | 72 | 81 | 99 | 135 | 242 |
| 30-Oct | 117 | 67 | 79 | 95 | 141 | 231 |
| 31-Oct | 116 | 67 | 79 | 96 | 131 | 230 |
| 1-Nov | 118 | 75 | 84 | 103 | 130 | 225 |
| 2-Nov | 121 | 73 | 84 | 101 | 133 | 245 |
| 3-Nov | 123 | 68 | 77 | 96 | 128 | 284 |
| 4-Nov | 121 | 62 | 72 | 93 | 145 | 268 |
| 5-Nov | 120 | 58 | 70 | 90 | 169 | 255 |
| 6-Nov | 122 | 58 | 72 | 86 | 197 | 251 |
| 7-Nov | 128 | 56 | 74 | 86 | 216 | 266 |
| 8-Nov | 130 | 58 | 72 | 90 | 218 | 269 |
| 9-Nov | 130 | 59 | 71 | 89 | 220 | 272 |
| 10-Nov | 135 | 62 | 72 | 93 | 222 | 280 |
| 11-Nov | 140 | 68 | 75 | 90 | 223 | 309 |
| 12-Nov | 150 | 70 | 74 | 85 | 222 | 363 |
| 13-Nov | 147 | 65 | 79 | 88 | 212 | 360 |
| 14-Nov | 151 | 61 | 79 | 103 | 225 | 352 |
| 15-Nov | 149 | 60 | 74 | 102 | 216 | 381 |
| 16-Nov | 154 | 65 | 77 | 101 | 237 | 363 |
| 17-Nov | 162 | 70 | 72 | 111 | 248 | 365 |
| 18-Nov | 143 | 68 | 74 | 101 | 186 | 360 |
| 19-Nov | 138 | 66 | 77 | 90 | 178 | 347 |
| 20-Nov | 134 | 57 | 76 | 90 | 165 | 353 |
| 21-Nov | 144 | 63 | 79 | 111 | 164 | 370 |
| 22-Nov | 139 | 63 | 80 | 108 | 155 | 356 |
| 23-Nov | 138 | 69 | 78 | 107 | 153 | 335 |
| 24-Nov | 142 | 67 | 86 | 109 | 163 | 333 |

| Date | Mean | Percent Exceedance of Daily Flows on Weber River at Ogden, Ut | | | | |
|--------|------|---|-----|-----|-----|-----|
| | | 90% | 75% | 50% | 25% | 10% |
| 25-Nov | 139 | 66 | 83 | 101 | 165 | 344 |
| 26-Nov | 134 | 68 | 75 | 97 | 164 | 334 |
| 27-Nov | 132 | 65 | 74 | 94 | 163 | 330 |
| 28-Nov | 132 | 70 | 77 | 89 | 158 | 322 |
| 29-Nov | 132 | 67 | 81 | 96 | 161 | 312 |
| 30-Nov | 131 | 62 | 80 | 88 | 178 | 308 |
| 1-Dec | 155 | 58 | 74 | 98 | 213 | 419 |
| 2-Dec | 152 | 58 | 76 | 85 | 210 | 425 |
| 3-Dec | 153 | 63 | 74 | 90 | 212 | 430 |
| 4-Dec | 153 | 61 | 66 | 100 | 211 | 436 |
| 5-Dec | 159 | 59 | 75 | 96 | 241 | 438 |
| 6-Dec | 160 | 65 | 71 | 93 | 264 | 434 |
| 7-Dec | 164 | 60 | 69 | 91 | 296 | 432 |
| 8-Dec | 166 | 58 | 68 | 99 | 324 | 425 |
| 9-Dec | 167 | 62 | 79 | 92 | 314 | 425 |
| 10-Dec | 176 | 62 | 85 | 101 | 303 | 425 |
| 11-Dec | 172 | 60 | 80 | 103 | 304 | 375 |
| 12-Dec | 180 | 62 | 79 | 130 | 308 | 375 |
| 13-Dec | 179 | 57 | 83 | 121 | 306 | 377 |
| 14-Dec | 180 | 53 | 81 | 120 | 306 | 377 |
| 15-Dec | 172 | 63 | 88 | 113 | 300 | 375 |
| 16-Dec | 200 | 62 | 80 | 107 | 344 | 488 |
| 17-Dec | 185 | 67 | 79 | 105 | 341 | 381 |
| 18-Dec | 170 | 57 | 77 | 105 | 316 | 375 |
| 19-Dec | 162 | 57 | 72 | 105 | 295 | 375 |
| 20-Dec | 157 | 59 | 65 | 108 | 286 | 375 |
| 21-Dec | 156 | 61 | 67 | 106 | 280 | 355 |
| 22-Dec | 157 | 59 | 72 | 97 | 289 | 357 |
| 23-Dec | 202 | 61 | 76 | 98 | 322 | 571 |
| 24-Dec | 261 | 60 | 78 | 104 | 288 | 994 |
| 25-Dec | 231 | 65 | 86 | 103 | 308 | 770 |
| 26-Dec | 201 | 63 | 88 | 105 | 302 | 575 |
| 27-Dec | 181 | 66 | 85 | 98 | 299 | 462 |
| 28-Dec | 170 | 58 | 76 | 92 | 299 | 407 |
| 29-Dec | 161 | 51 | 65 | 90 | 307 | 372 |
| 30-Dec | 162 | 61 | 73 | 91 | 298 | 374 |
| 31-Dec | 157 | 59 | 72 | 89 | 271 | 374 |

12.02 TEMPORARY DIVERSION WATER SURFACE ELEVATIONS

Calculated Water Surface Elevations (WSEL) are based on limited survey and two-dimensional hydraulic modeling. Actual WSELs in the field may vary from those listed herein. Approximate WSELs are provided herein solely for the information of the CONTRACTOR.

WSELs will be affected by temporary flow obstructions of equipment, coffer, temporary alluvium placement or other construction activities. The WSELs provided in Table 2, 3, 4 and 5 are estimated given the coffer dam obstruction in the river at the location proposed in the plans. This coffer dam scheme assumes four separate setups.

The Stage 1 COW Plan would block off the river on the right side of the channel, at the crest of the existing dam, for a distance of approximately 40 feet. The work would focus on the river right bank boulder and abutment wall, concrete demo and pouring of new slab, as well as the fish passage side of the new upper structure. The access to the isolated work area would occur through an access bridge (37ft Span, see Table 2 below)). The upstream coffer dam would need to be set at a minimum elevation of 4282.5 feet to contain flows up to 450cfs. A separate downstream coffer dam will simultaneously need to be constructed to prevent backwatering from below at an assumed minimum elevation of 4280 feet (450cfs Backwater WSE behind coffer dam).

The Stage 2 configuration would block off the river on the left side of the channel, at the lower crest of the existing dam, for a distance of approximately 70 feet. The work would focus on the river left bank boulder and abutment wall, existing dam concrete demo and casting and pouring of new Surf Wave slab and walls, OHI Pneumatic gate system would be installed for this side of the channel during this phase. The upstream coffer dam would need to be set at a minimum elevation of 4283.5 feet to contain flows up to 450cfs. A separate downstream coffer dam will simultaneously need to be constructed to prevent backwatering from below at an assumed minimum elevation of 4280 feet (450cfs Backwater WSE behind coffer dam).

Once the upper drop is built and concrete cured, the Stage 3 configuration would block off the river, on the left side of the channel, 100 feet downstream of the upper drop, for a width of approximately 60 feet. The work would focus on the river left bank slab stone steps and boulder toe restoration, concrete access ramp, pool grading and work associated with the river left side of the Downstream drop (boulder placement, concrete work and OHI pneumatic gate system installation). The upstream coffer dam would need to be set at a minimum elevation of 4283.0 feet to contain flows up to 450cfs. A separate downstream coffer dam will simultaneously need to be constructed to prevent backwatering from below at an assumed minimum elevation of 4280 feet (450cfs Backwater WSE behind coffer dam).

The Stage 4 configuration would block off the river on the right side of the channel, approximately 100 feet downstream of the upper drop, for a width of approximately 60 feet. The work would focus on the downstream grade control structure and river right boulder wing and tie ins. The access to the isolated work area would occur through an access bridge (37ft Span, see Table 2 below) The upstream coffer dam would need to be set at a minimum elevation of 4282.0 feet to contain flows up to 450cfs. A separate downstream coffer dam will simultaneously need to be constructed to prevent backwatering from below at an assumed minimum elevation of 4280 feet (450cfs Backwater WSE behind coffer dam).

The monthly flows used to model and estimate these WSELs are within the range of flows observed at the project site during the anticipated construction season, as described in Table 1. These WSELs are estimates and only valid for the aforementioned Cofferdam Alignment and Elevation. They should not be considered for other Cofferdam Alignments or orientations. The CONTRACTOR is wholly responsible for monitoring and controlling WSELs during construction and any associated erosion, flooding, structure integrity or environmental damage.

Table 2 Approximate WSEL for the Proposed Stage 1 COW Plan (Per Project Plan Sheets CW01) Access Bridge span of 37ft @450cfs

| Stage 1 COW Plan - Recreational Channel Stationing | | | |
|--|---------------------------------|--------------------------|--------------------------|
| Flow Rate | Upstream Existing Dam WSEL (ft) | US Cofferd Dam WSEL (ft) | DS Cofferd Dam WSEL (ft) |
| 50 | 4281.07 | 4280.62 | 4278.07 |
| 150 | 4281.44 | 4281.31 | 4278.51 |
| 227 | 4281.51 | 4281.66 | 4279.69 |
| 450 | 4282.1 | 4282.40 | 4279.80 |

Table 3 Approximate WSEL for the Proposed Stage 2 COW Plan (Per Project Plan Sheets CW02)

| Stage 2 COW Plan - Recreational Channel Stationing | | | |
|--|---------------------------------|--------------------------|--------------------------|
| Flow Rate | Upstream Existing Dam WSEL (ft) | US Cofferd Dam WSEL (ft) | DS Cofferd Dam WSEL (ft) |
| 50 | 4281.07 | 4281.19 | 4278.33 |
| 150 | 4281.44 | 4281.97 | 4278.81 |
| 227 | 4281.51 | 4282.40 | 4279.04 |
| 450 | 4282.1 | 4283.43 | 4279.87 |

Table 4 Approximate WSEL for the Proposed Stage 3 COW Plan (Per Project Plan Sheets CW03)

| Stage 3 COW Plan - Recreational Channel Stationing | | | |
|--|--|--------------------------|--------------------------|
| Flow Rate | Existing WSEL (ft) @ COW3 US Cofferd dam Location | US Cofferd Dam WSEL (ft) | DS Cofferd Dam WSEL (ft) |
| 50 | 4277.76 | 4279.93 | 4277.17 |
| 150 | 4278.85 | 4281.23 | 4277.85 |
| 227 | 4279.95 | 4281.76 | 4278.21 |
| 450 | 4279.95 | 4282.68 | 4279.70 |

Table 5 Approximate WSEL for the Proposed Stage 4 COW Plan (Per Project Plan Sheets CW04) – Access Bridge span of 37ft @450cfs

| Stage 4 COW Plan - Recreational Channel Stationing | | | |
|--|--|--------------------------|--------------------------|
| Flow Rate | Existing WSEL (ft) @ COW4 US Cofferd dam Location | US Cofferd Dam WSEL (ft) | DS Cofferd Dam WSEL (ft) |
| 50 | 4277.76 | 4278.64 | 4277.15 |
| 150 | 4278.85 | 4279.32 | 4277.92 |
| 227 | 4279.95 | 4279.72 | 4278.32 |
| 450 | 4279.95 | 4280.67 | 4279.64 |

END OF SECTION

SECTION 13 MODIFICATIONS TO TIME OF COMPLETION

13.01 CONSTRUCTION WINDOW

Anticipated Construction window is 180 calendar days from January 1st, 2026 through November 30th, 2026 with a contract suspension period during spring runoff months (March-May). All removal of large trees should occur before the bird migratory nesting season starts in March.

If IN-STREAM construction is anticipated to take place outside of these dates, CONTRACTOR shall notify OWNER in writing. ON-SHORE construction may take place outside of these dates with OWNER approval. OWNER shall be notified of any work anticipated outside of these dates.

No construction activities shall be performed on soil during periods when the soil is too wet to adequately support construction equipment as measured by ruts greater than 4 inches deep.

The date of beginning and the time for completion of the work are essential conditions of the Contract Documents and the work embraced shall be commenced on a date specified in the Notice to Proceed. The Contractor will proceed with the work at such rate of progress to ensure full completion within the Contract time. It is expressly understood and agreed, by and between the Contractor and the Owner, that the Contract time for the completion of the work described herein is a reasonable time, taking into consideration the climatic and other factors prevailing in the locality of the work. Every effort shall be made by the Contractor to complete the project within the "Contract Time" shown in the bid, quote or proposal. The "Contract Time" anticipates "Normal" weather and climate conditions in and around the vicinity of the Project site during the times of year that the construction will be carried out. Freezing conditions are likely to be regularly encountered during the construction window.

Frazil ice is a winter occurrence throughout much of Utah. Ice can pile up significantly on many in-channel obstructions. CONTRACTOR is wholly responsible for maintaining conditions that prevent buildup of ice during construction and for delays associated with ice.

SECTION 14 DEFINITIONS

B-Axis - The intermediate (and overturning) axis on a boulder.

Best Management Practices (BMPs) - Water and Soil Care Measures designed to prevent sediment soil erosion, minimize turbidity and protect wetlands.

Care of Water (COW) - Any and all measures implemented to predict the native flow of a watershed and to manage, divert and control that flow in order to access and perform the work and simultaneously minimize impacts on the environment, property and infrastructure.

Coffer Dam - Structure used to isolate an area for dewatering.

Ordinary High-Water Line (OHWL) - Approximate Water Surface Elevation at the 1 ½ year Flood.

Obermeyer Hydro Inc (OHI)

In-Channel Work - All construction work occurring below the ordinary high-water line or one and a half year flood or in a wet channel.

Invert - The cross-section that controls water flow.

On-Shore Work - All construction work occurring above the ordinary high-water line or one and a half year flood.

Protect-In-Place - Protection of Structures or Vegetation by not disturbing them with adjacent construction activities.

Thalweg - Lowest elevation of the river channel in cross section perpendicular to the direction of the main current flow.

Toe - Point where a ground slope meets a low point and flattens out. Most commonly in rivers it refers to the point where the bank slope meets the channel bottom slope.

River Right - The right side of the channel when looking downstream.

River Left - The left side of the channel when looking downstream.

Riparian Vegetation - Vegetation which is rooted in the water table of the adjacent river which includes the drip line of all mature trees that are protected in place.

Water Surface Elevation - Elevation on the project datum, of the surface of water at a specified location.

Waters of the United States - Any waters that are relatively permanent, meaning they contain water at least seasonally; and Wetlands that directly abut relatively permanent waters

PART IV

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APPENDIX A Project Drawings

OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT WEBER RIVER - OGDEN, UT October 2025

BID SET

SHEET INDEX

| SHEET NO. | SHEET TITLE |
|-----------|--|
| G01 | COVER SHEET |
| G02 | BASE MAP & HORIZONTAL CONTROL PLAN |
| G03 | DEMOLITION & PROTECT IN PLACE PLAN |
| G04 | DEMOLITION & PROTECT IN PLACE SECTION & PROFILES |
| CW00 | CARE OF WATER OVERVIEW & NOTES |
| CW01 | CARE OF WATER ACCESS STAGE 1 PLAN |
| CW02 | CARE OF WATER ACCESS STAGE 2 PLAN |
| CW03 | CARE OF WATER ACCESS STAGE 3 PLAN |
| CW04 | CARE OF WATER ACCESS STAGE 4 PLAN |
| CW05 | CARE OF WATER STAGING AREA |
| CW06 | CARE OF WATER DETAILS (1/2) |
| CW07 | CARE OF WATER DETAILS (2/2) |
| CW08 | EROSION CONTROL DETAILS |
| R00 | PLAN VIEW, PROFILE & INDEX |
| R01 | PLAN VIEW AND PROFILE SURF WAVE |
| R02 | PLAN VIEW AND PROFILE FISH PASSAGE |
| R03 | PLAN VIEW AND PROFILE ENGINEERED RIFFLE GRADE CONTROL |
| R04 | PLAN VIEW AND PROFILE ACCESS RAMP |
| R05 | PROFILE AND SECTIONS |
| R06 | BANK RESTORATION TYPICAL SECTIONS |
| R07 | OBERMEYER HYDRO INC, RUBBER & STEEL GATE LAYOUT |
| R08 | RUBBER & STEEL GATES SURF WAVE PLAN VIEW |
| R09 | RUBBER & STEEL GATES ENGINEERED RIFFLE PLAN VIEW |
| L00 | SEEDING NOTES |
| L01 | SEEDING PLAN |
| L02 | EROSION CONTROL BLANKET INSTALLATION |
| D01 | BOULDER TOE AND SLAB STONE BANK TERRACING DETAIL |
| D02 | BOULDER TOE PROTECTION / SLAB STONE BANK TERRACING WITH 3:1 VEGETATED SLOPE DETAIL |
| D03 | CONCRETE ACCESS RAMP DETAIL |
| D04 | OBERMEYER HYDRO INC DETAILS |
| D05 | OBERMEYER HYDRO INC DETAILS |
| D06 | OBERMEYER HYDRO INC RUBBER ROCK DETAIL |
| D07 | OBERMEYER HYDRO INC STEEL GATE DETAIL |
| D08 | OGDEN CITY DETAILS - SURVEY MONUMENT |
| D09 | OGDEN CITY DETAILS - CONCRETE BASE FOR CAMERA POLE |
| D10-12 | CXT PRECAST PRODUCTS - 10.5' x 20' CONTROL BUILDING |
| D13 | AIRLINE BEDDING DETAIL |
| S-001 | GENERAL STRUCTURAL NOTES |
| S-002 | GENERAL STRUCTURAL NOTES |
| S-100 | OVERALL PLAN |
| S-101 | SURF WAVE AREA AND RIFFLE |
| S-102 | ACCESS RAMP |
| S-103 | WINGWALL AND HEADWALL PLANS |
| S-201 | HEADWALL AND WINGWALL ELEVATION |
| S-301 | STRUCTURAL SECTIONS |
| S-302 | STRUCTURAL SECTIONS |
| S-303 | STRUCTURAL SECTIONS |
| S-304 | STRUCTURAL SECTIONS |
| S-501 | STRUCTURAL DETAILS |
| S-502 | STRUCTURAL DETAILS |
| S-901 | TYPICAL STRUCTURAL DETAILS |

CONTACTS

Mr. Phil Suiter
Ogden City Corporation - Engineering
Ogden City
(801) 629-8971

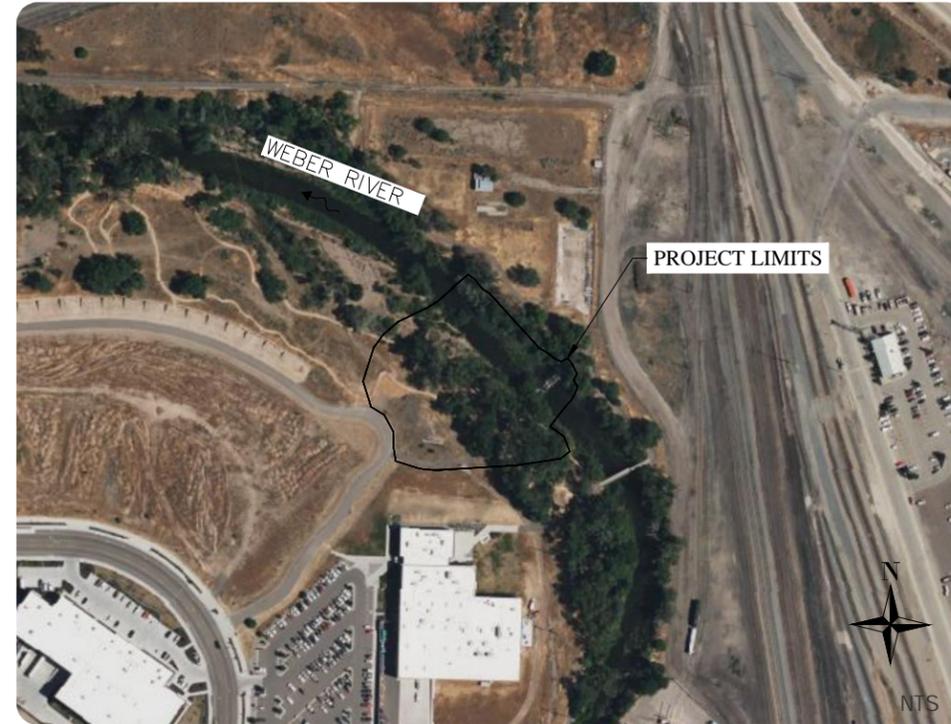
Mr. Francois Escorihuela
Lead Design Engineer
RiverRestoration.org, LLC.
(970) 947-9568

Mr. Jason Carey, P.E.
Project Manager
RiverRestoration.org, LLC.
(970) 947-9568

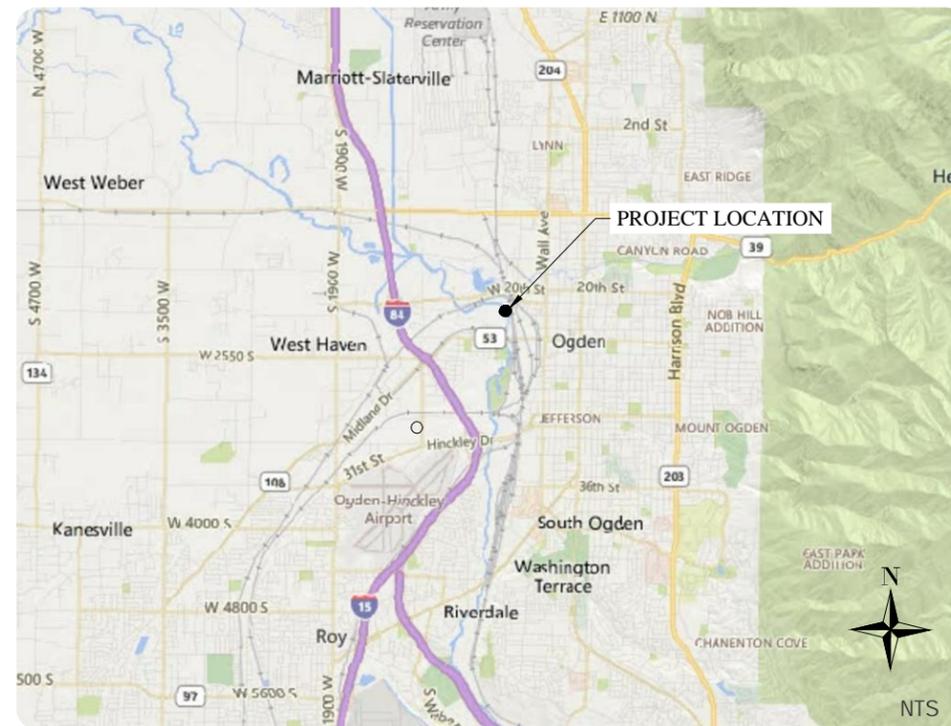
NOTE

Utilities shown on plans are approximate.
Contractor wholly responsible for field
locating & protecting in place utilities

LOCATION MAP



VICINITY MAP



PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT COVER SHEET

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |
| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



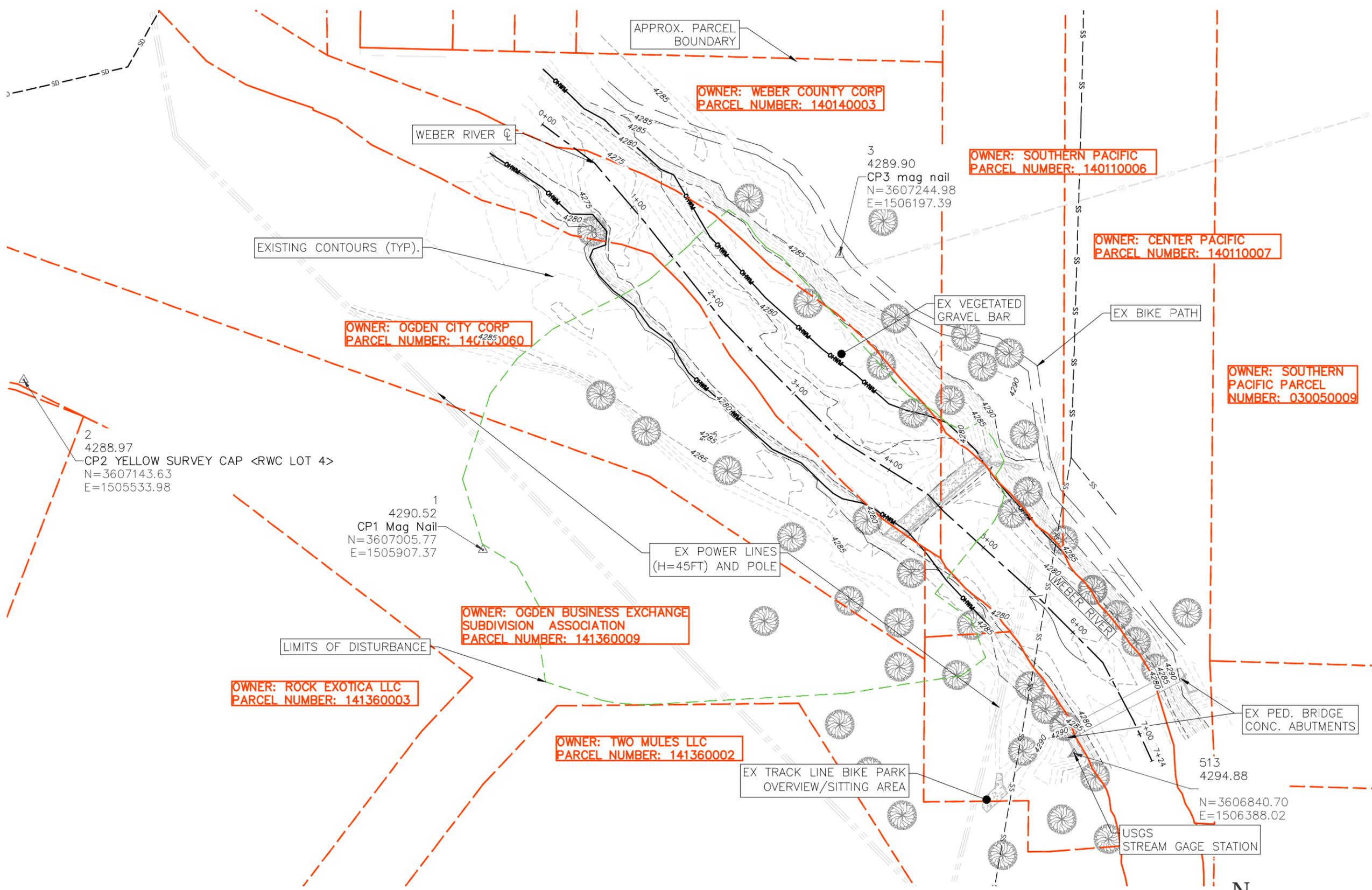
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

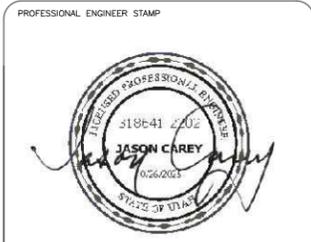
| Project | Sheet |
|---------|--------------|
| 45072 | G01 |
| Date | OCTOBER 2025 |
| Scale | NTS |

BID SET



SURVEY NOTES:

1. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88)
2. HORIZONTAL COORDINATE SYSTEM: UTAH STATE PLANE, NORTH AMERICAN DATUM 1983 (NAD83), NORTH ZONE, US FOOT



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
BASE MAP & HORIZONTAL
CONTROL PLAN**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

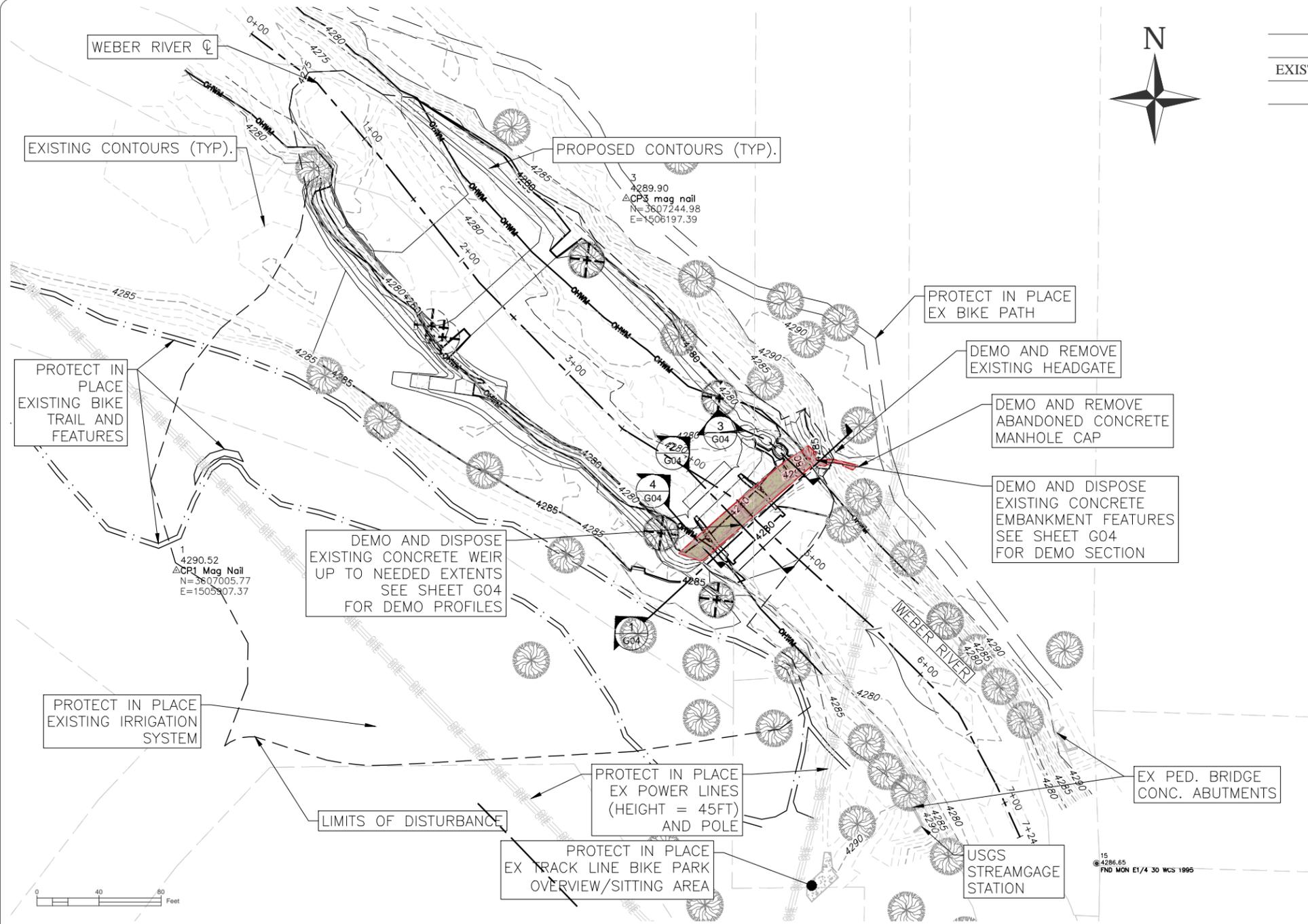


RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | |
|----------------------|-------------------------------|
| Project 45072 | Sheet G02 |
| Date OCTOBER 2025 | Scale 1" = 40' (FULL SIZE) |

BID SET



| DEMO ITEMS | | |
|--|------|----|
| GENERAL EXCAVATION & STOCKPILING (PROJECT TOTAL) | 3980 | CY |
| EXISTING CONCRETE DEMOLITION AND HAUL OFF AND DISPOSAL | 186 | CY |
| TREES | 6 | EA |



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
DEMOLITION & PROTECT
IN PLACE PLAN**



4
G03 EXISTING ABANDONED CONCRETE MANHOLE CAP & ABANDONED HEADGATE



5
G03 EXISTING CONCRETE WEIR AND RIVER LEFT BANK VIEW



1
G03 EXISTING CONCRETE WEIR



2
G03 EXISTING CONCRETE WEIR & RIVER RIGHT EMBANKMENT



3
G03 RIVER RIGHT CONCRETE EMBANKMENT (DETAIL)

- TO BE REMOVED
- TO PROTECT IN PLACE
- REMOVE AND DISPOSE EXISTING TREE

BID SET

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|----------------------|-------|-----|
| Project | 45072 | Sheet | G03 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 40' (FULL SIZE) | | |



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
DEMOLITION & PROTECT
SECTION AND PROFILES**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

 Ogden City Corporation
 Engineering Division
 2549 Washington Blvd
 Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

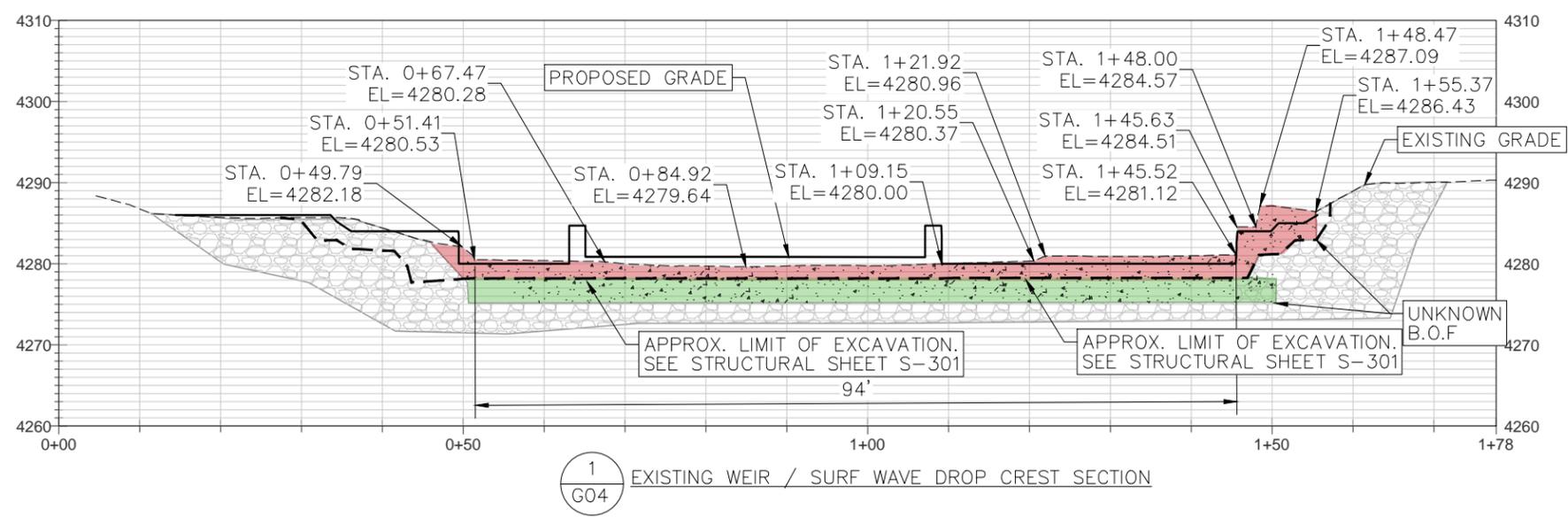
 RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

| | |
|-------------------------------|--------------|
| Project 45072 | Sheet G04 |
| Date OCTOBER 2025 | |
| Scale 1" = 10' (FULL SIZE) | |

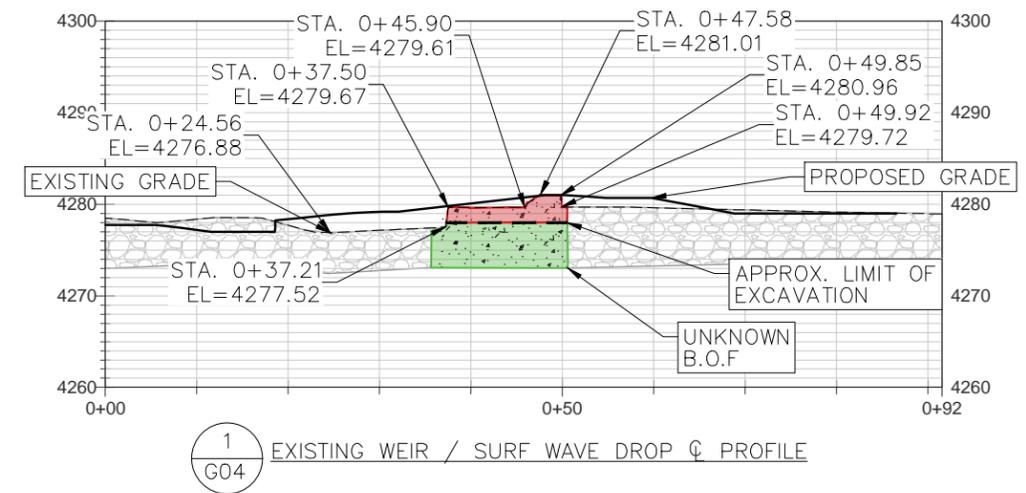
BID SET

TO BE REMOVED
 TO PROTECT IN PLACE

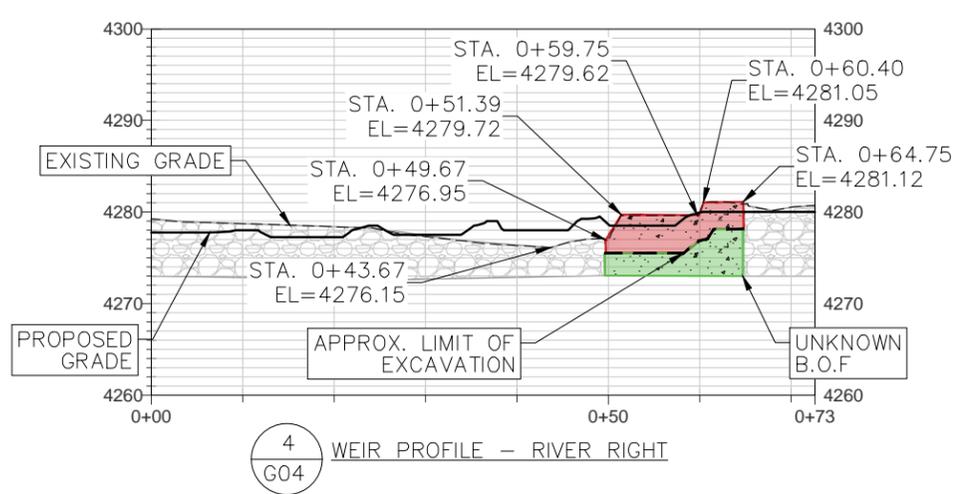


1 G04 EXISTING WEIR / SURF WAVE DROP CREST SECTION

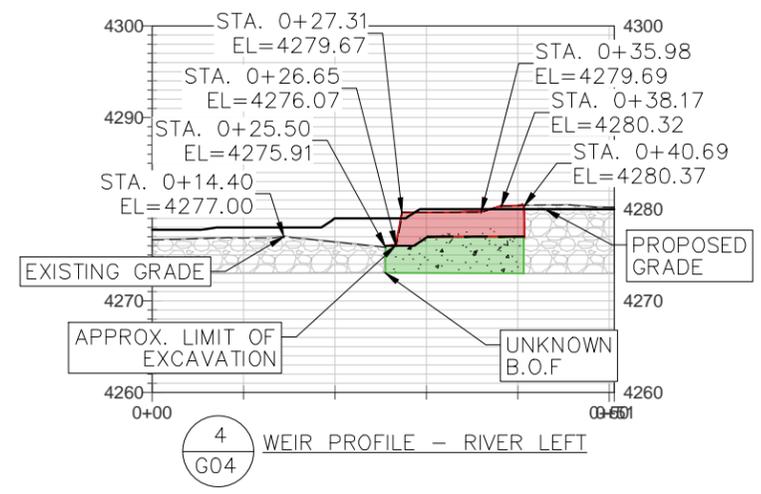
NOTE:
 ASSUMED TYPICAL EXCAVATION
 RELATIVE TO PROPOSED GRADE,
 UNLESS OTHERWISE NOTED, :
 · -2' FOR CONCRETE
 · -3' FOR BOULDER PLACEMENT
 · FOUNDATION OF RIVER RIGHT
 ABUTMENT WALL TO SEAT ON
 EXISTING CONCRETE IF SUITABLE



1 G04 EXISTING WEIR / SURF WAVE DROP CREST PROFILE



4 G04 WEIR PROFILE - RIVER RIGHT

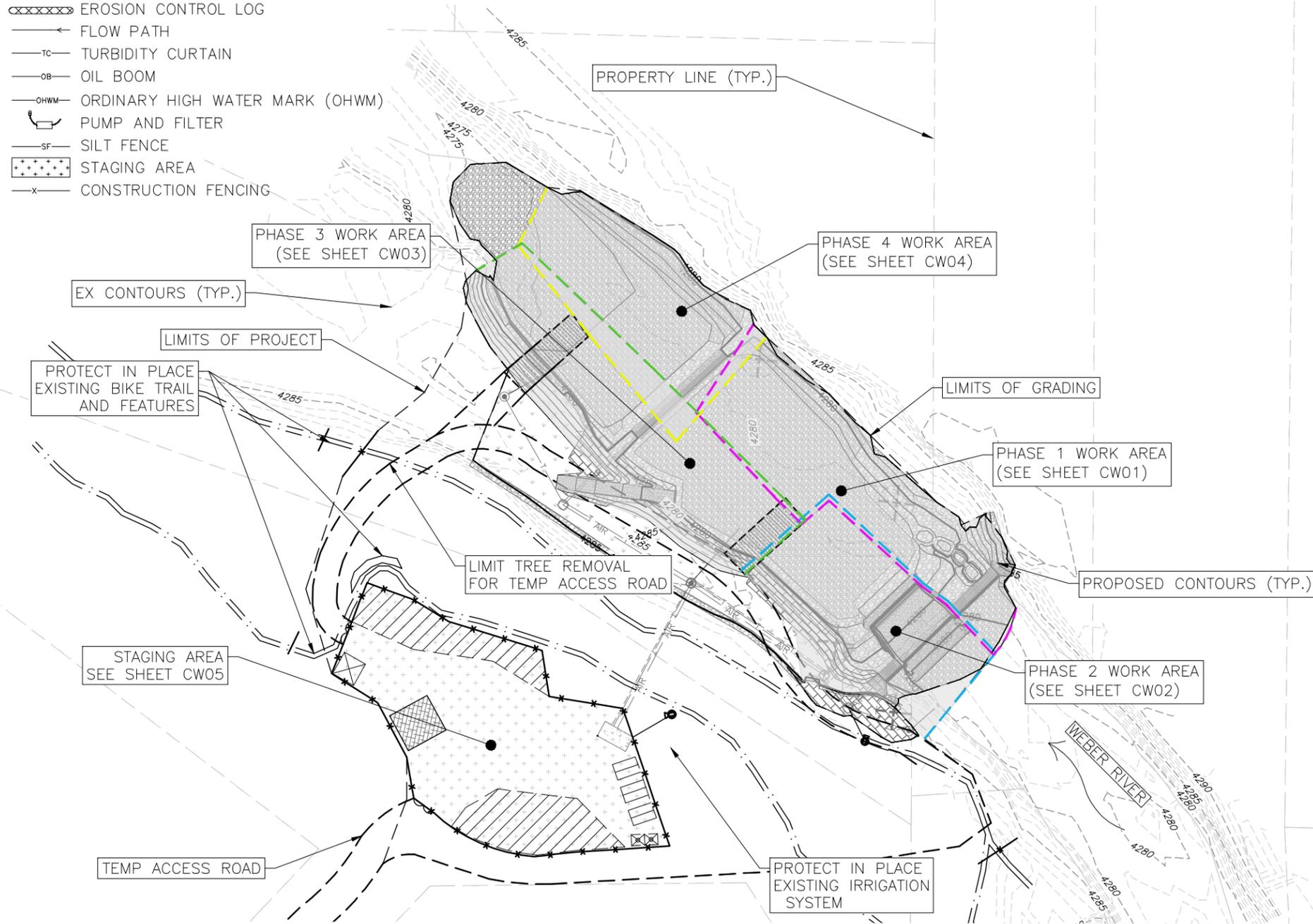


4 G04 WEIR PROFILE - RIVER LEFT



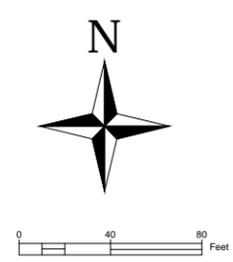
LEGEND

- ===== ACCESS ROAD
- ▨ ACCESS BRIDGE
- ▬ COFFERDAM
- ⊗ EROSION CONTROL LOG
- FLOW PATH
- TC— TURBIDITY CURTAIN
- OB— OIL BOOM
- OHWM— ORDINARY HIGH WATER MARK (OHWM)
- ⊠ PUMP AND FILTER
- SF— SILT FENCE
- ⊕ STAGING AREA
- x— CONSTRUCTION FENCING



EROSION CONTROL AND CARE OF WATER NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLIANCE WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS AND BEST MANAGEMENT PRACTICES (BMP'S).
2. CONTRACTOR SHALL BE RESPONSIBLE FOR DEVELOPMENT OF STAGING AREAS, ACCESS, AND CARE OF WATER DURING CONSTRUCTION.
3. IF ISOLATION FROM THE FLOWING RIVER IS DESIRED DURING CONSTRUCTION, CONTRACTOR IS RESPONSIBLE FOR IMPLEMENTATION OF ISOLATION PLAN.
4. CONTRACTOR IS RESPONSIBLE FOR DEMOBILIZATION OF EQUIPMENT TO AVOID DESTABILIZATION OF EQUIPMENT AND PARTIALLY CONSTRUCTED FEATURES. SEE SPECIFICATIONS FOR REQUIREMENTS AND DETAILS.
5. UTILITY LOCATIONS SHOWN IN PLANS ARE APPROXIMATE, CONTRACTOR IS RESPONSIBLE FOR ALL UTILITY LOCATES INCLUDING UTILITIES NOT SHOWN IN PLANS.
6. MINIMIZE TREE CUTTING IN MATURE FOREST WITHIN DISTURBANCE AREA. ANY TREES OUTSIDE THE ITEM NUMBER IN COST OPINION WILL NEED TO BE APPROVED BEFORE CUTTING



CARE OF WATER SEQUENCE:

COW PHASE 1 (CW01):

- 1.1 SALVAGE AND REMOVE ABANDONED CONCRETE MANHOLE CAP;
- 1.2 SALVAGE AND REMOVE EXISTING HEADGATE;
- 1.3 DEMO AND DISPOSE EX. CONCRETE EMBANKMENT FEATURES;
- 1.4 DEMO AND DISPOSE RIVER RIGHT SIDE OF EXISTING CONCRETE WEIR;
- 1.5 REBUILD BANK;
- 1.6 GRAVEL BAR EXCAVATION, AND POOL GRADING;
- 1.7 BOULDER PLACEMENT FOR RIVER RIGHT BANK TIE IN AND FISH PASSAGE CHANNEL;
- 1.8 POUR CREST CONCRETE SLAB AND INSTALL OHI GATE SYSTEM;

COW PHASE 2 (CW02):

- 2.1 DEMO AND DISPOSE RIVER LEFT SIDE OF EX CONCRETE WEIR;
- 2.2 BUILD BANK AND RIVER LEFT WING;
- 2.3 POUR CREST CONCRETE SLAB AND INSTALL OHI GATE SYSTEM;
- 2.4 CAST AND POUR CONCRETE SLAB AND WALLS FOR SURF WAVE FEATURE; INSTALL OHI GATE SYSTEM;
- 2.6 SCOUR PAD, POOL AND RIVER LEFT UPSTREAM BANK IMPROVEMENTS (LAID BACK STEPS AND VIEWING PLATFORM).

COW PHASE 3 (CW03):

- 3.1 LEFT BANK AND BANK TOE RESTORATION;
- 3.2 ACCESS RAMP;
- 3.3 POOL GRADING;
- 3.4 DOWNSTREAM GRADE CONTROL STRUCTURE (G.C.S), CONCRETE AND BOULDER PLACEMENT;
- 3.5 INSTALL OHI GATE SYSTEM;

COW PHASE 4 (CW04):

- 4.1 DOWNSTREAM G.C.S & RIVER RIGHT BOULDER WING;
- 4.2 BANK TIE IN AND GRADING.

ALL OTHER WORK, AS PER RIFFLE GRADE BELOW G.C.S, IN WET WITH DOWNSTREAM OIL BOOM AND TURBIDITY CURTAIN IN PLACE AT ALL TIMES.

PROFESSIONAL ENGINEER STAMP



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CARE OF WATER
OVERVIEW AND NOTES**

| No. | REVISION/UPDATE | Date |
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| | | |
| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|-------------------------------|---------------|
| Project 45072 | Sheet CW00 |
| Date OCTOBER 2025 | |
| Scale 1" = 40' (FULL SIZE) | |

BID SET



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER PHASE 1

| No. | REVISION/UPDATE | Date |
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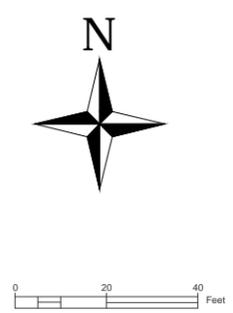
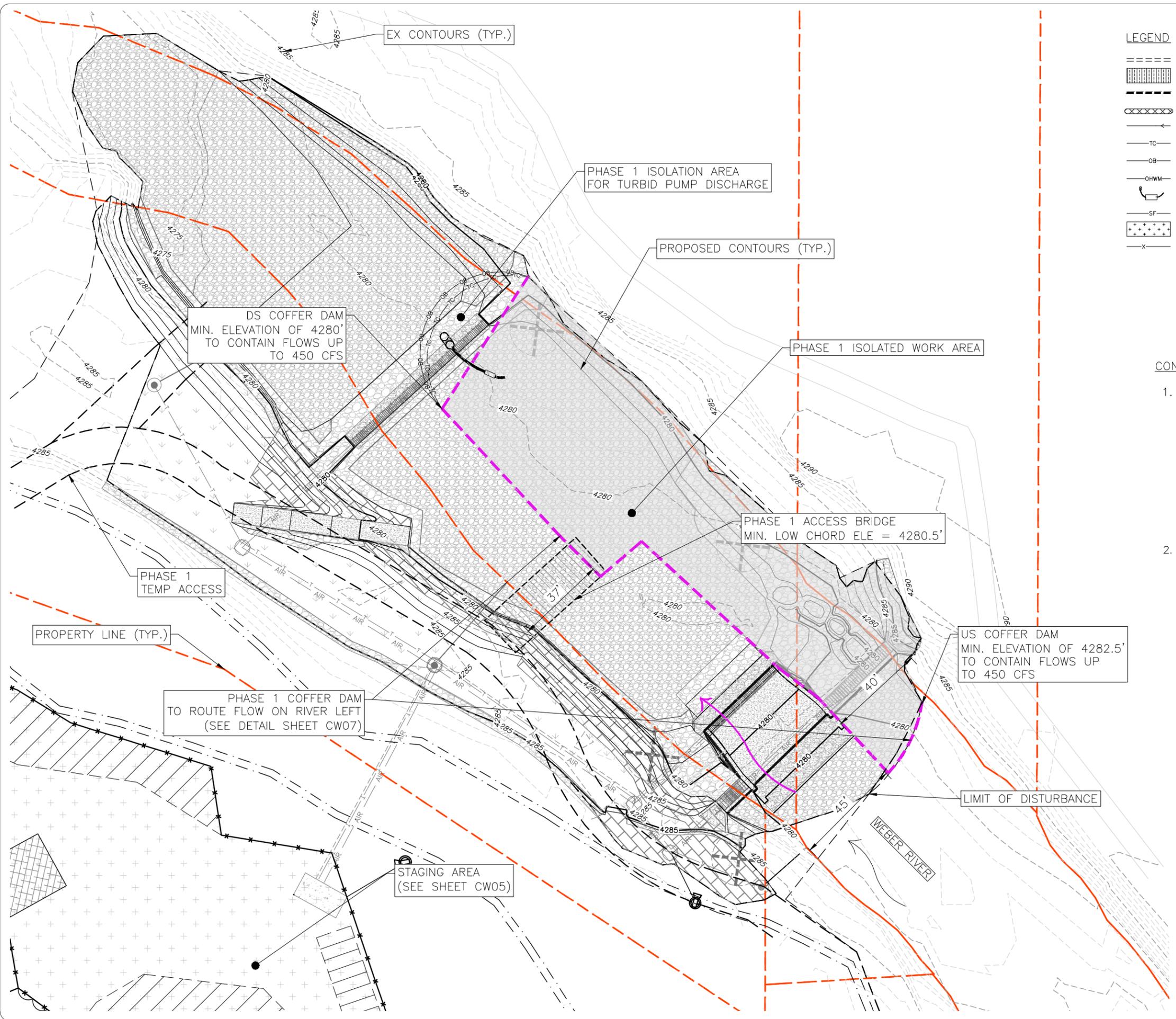
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|---------|----------------------|-------|------|
| Project | 45072 | Sheet | CW01 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 20' (FULL SIZE) | | |

LEGEND

- ==== ACCESS ROAD
- ▨ ACCESS BRIDGE
- COFFERDAM
- ⊗ EROSION CONTROL LOG
- FLOW PATH
- TC— TURBIDITY CURTAIN
- OB— OIL BOOM
- OHWM— ORDINARY HIGH WATER MARK (OHWM)
- ⊕ PUMP AND FILTER
- SF— SILT FENCE
- ⊕ STAGING AREA
- x— CONSTRUCTION FENCING

CONSTRUCTION NOTES:

- SEE SHEET CW00 AND TECHNICAL SPECIFICATIONS, SECTIONS 2 AND 3 FOR A DETAILED DESCRIPTION OF CONTRACTOR REQUIREMENTS CONCERNING EROSION CONTROL (NPDES) AND CARE OF WATER (USACE 404, UDWQ 401); & SECTION 12 FOR EXISTING PROJECT SITE HYDROLOGY AND TEMPORARY DIVERSION WATER SURFACE ELEVATIONS.
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BID SET



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER PHASE 2

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |
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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

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www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|---------|----------------------|-------|------|
| Project | 45072 | Sheet | CW02 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 20' (FULL SIZE) | | |

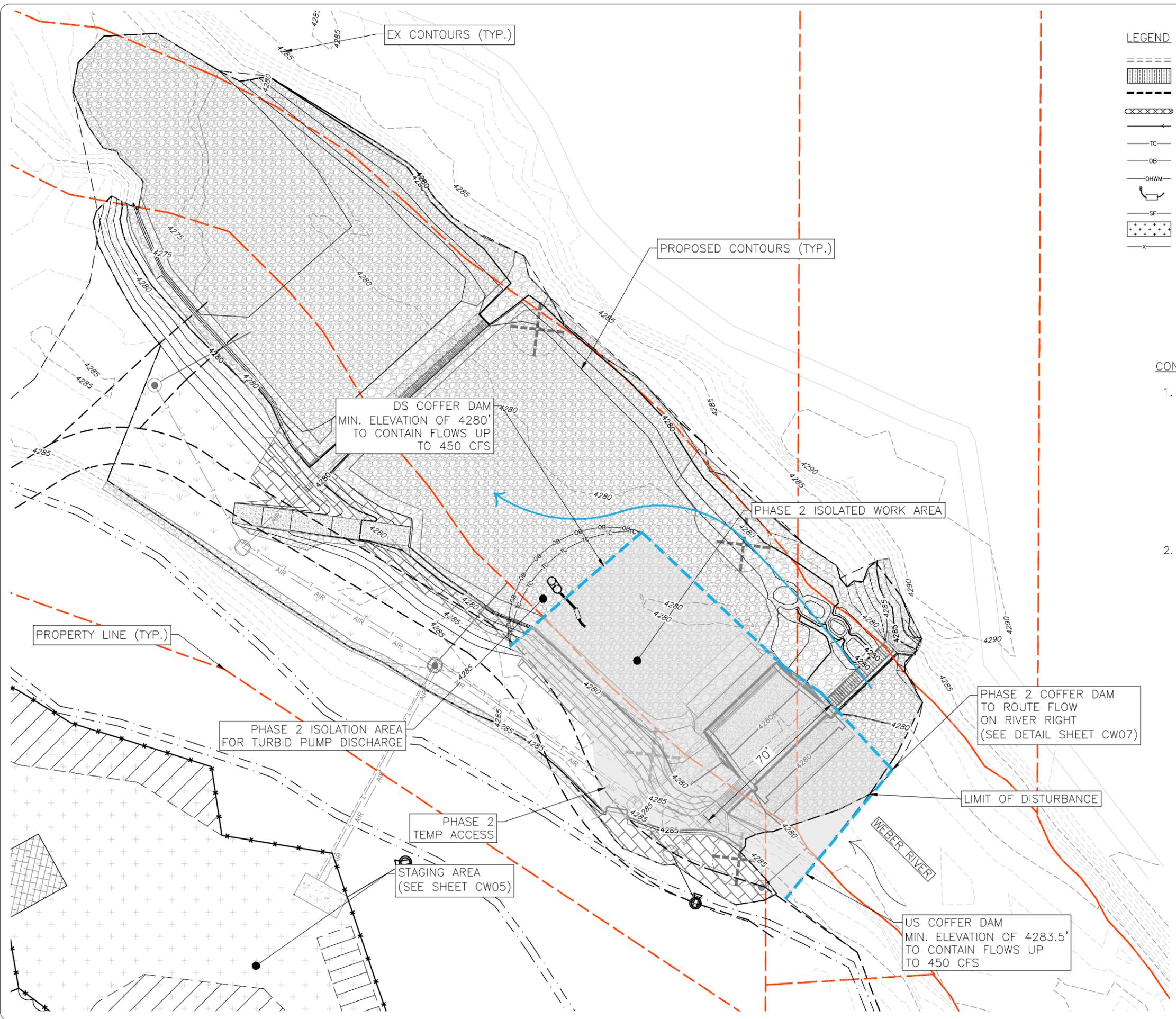
BID SET

LEGEND

- ===== ACCESS ROAD
- ▨▨▨▨▨▨ ACCESS BRIDGE
- COFFERDAM
- XXXXXX EROSION CONTROL LOG
- FLOW PATH
- TC— TURBIDITY CURTAIN
- OB— OIL BOOM
- OHWM— ORDINARY HIGH WATER MARK (OHWM)
- ⊡ PUMP AND FILTER
- SF— SILT FENCE
- +++++ STAGING AREA
- x— CONSTRUCTION FENCING

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DS COFFER DAM
MIN. ELEVATION OF 4280'
TO CONTAIN FLOWS UP
TO 450 CFS

PROPOSED CONTOURS (TYP.)

PHASE 2 ISOLATED WORK AREA

PHASE 2 COFFER DAM
TO ROUTE FLOW
ON RIVER RIGHT
(SEE DETAIL SHEET CW07)

LIMIT OF DISTURBANCE

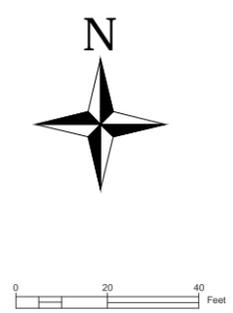
US COFFER DAM
MIN. ELEVATION OF 4283.5'
TO CONTAIN FLOWS UP
TO 450 CFS

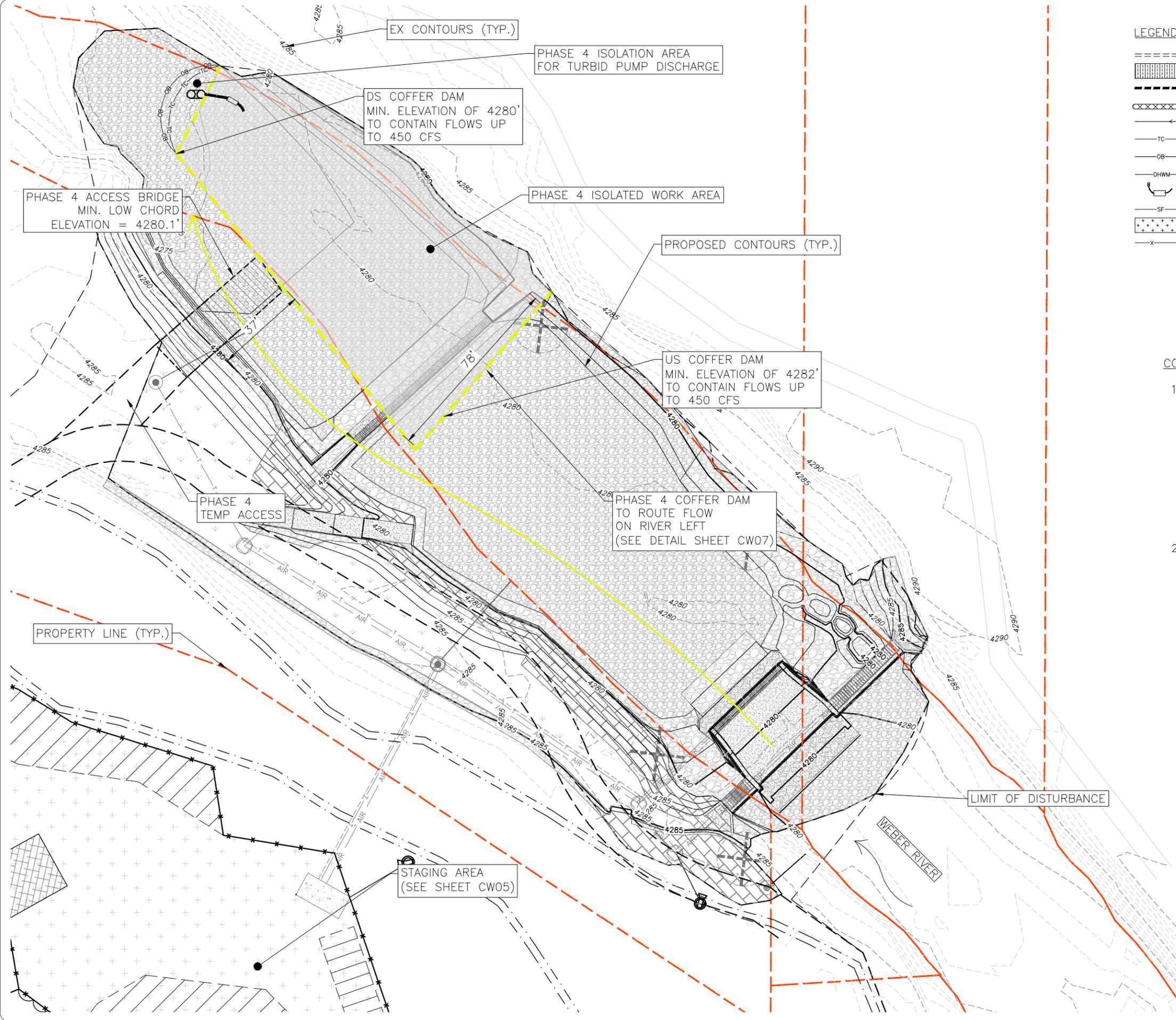
PHASE 2 ISOLATION AREA
FOR TURBID PUMP DISCHARGE

PHASE 2
TEMP ACCESS

STAGING AREA
(SEE SHEET CW05)

PROPERTY LINE (TYP.)

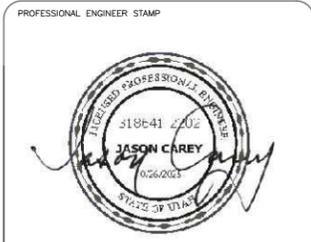
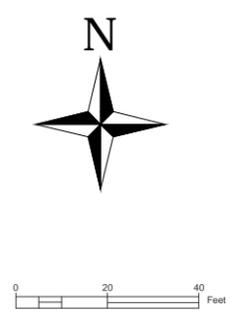




- LEGEND**
- ===== ACCESS ROAD
 - ▨▨▨▨▨▨ ACCESS BRIDGE
 - COFFERDAM
 - ⊗⊗⊗⊗⊗ EROSION CONTROL LOG
 - FLOW PATH
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 - ⊕ PUMP AND FILTER
 - SF— SILT FENCE
 - ⊕⊕⊕⊕⊕ STAGING AREA
 - x— CONSTRUCTION FENCING

CONSTRUCTION NOTES:

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**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CARE OF WATER
PHASE 4**

| No. | REVISION/UPDATE | Date |
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CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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| Project 45072 | Sheet CW04 |
| Date OCTOBER 2025 | |
| Scale 1" = 20' (FULL SIZE) | |

BID SET



OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT CARE OF WATER STAGING AREA

| No. | REVISION/UPDATE | Date |
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2549 Washington Blvd
Ogden, UT 84401

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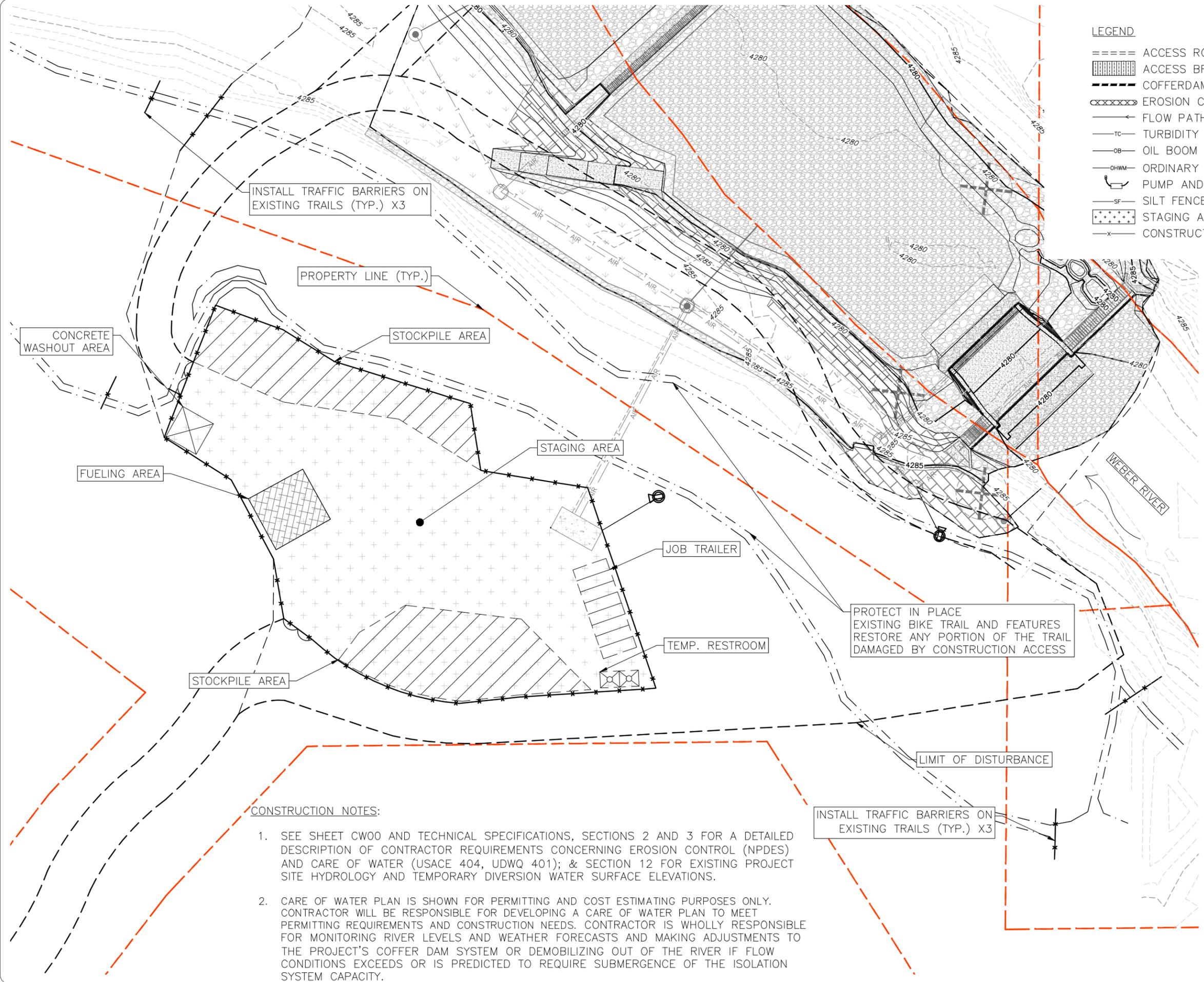
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
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PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|-------------------------------|---------------|
| Project 45072 | Sheet CW05 |
| Date OCTOBER 2025 | |
| Scale 1" = 20' (FULL SIZE) | |

- LEGEND**
- ==== ACCESS ROAD
 - ▨▨▨▨ ACCESS BRIDGE
 - ▬▬▬▬ COFFERDAM
 - ⊗⊗⊗⊗ EROSION CONTROL LOG
 - FLOW PATH
 - TC— TURBIDITY CURTAIN
 - OB— OIL BOOM
 - OHWM— ORDINARY HIGH WATER MARK (OHWM)
 - ⊕ PUMP AND FILTER
 - SF— SILT FENCE
 - ⊕⊕⊕⊕ STAGING AREA
 - x— CONSTRUCTION FENCING



CONSTRUCTION NOTES:

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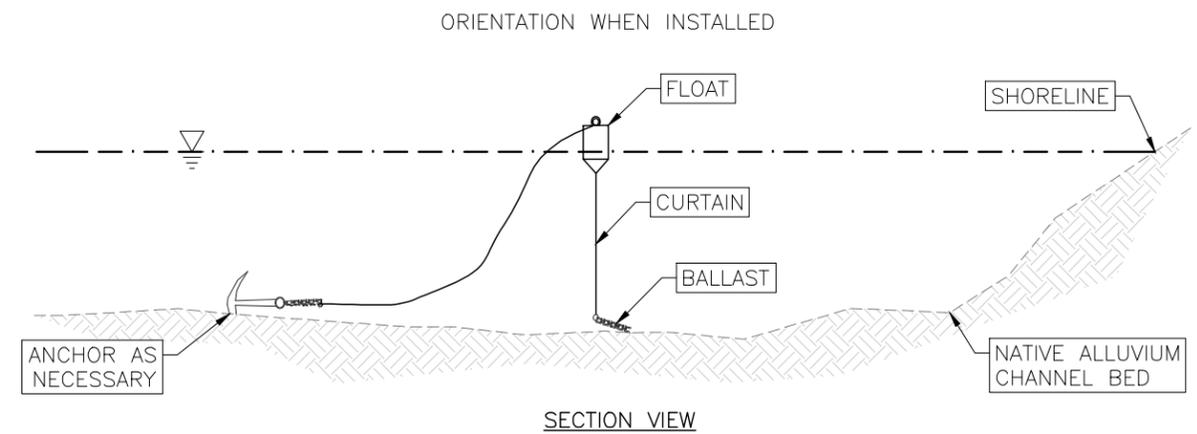


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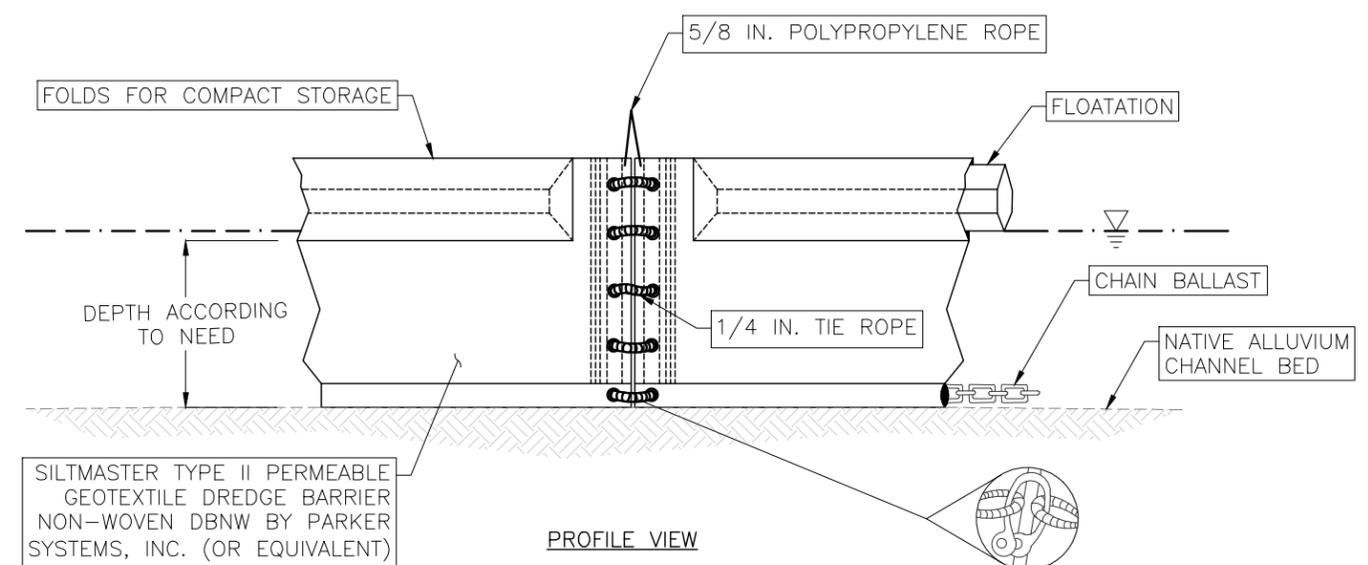


**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT**

**CARE OF WATER
DETAILS 1 OF 2**

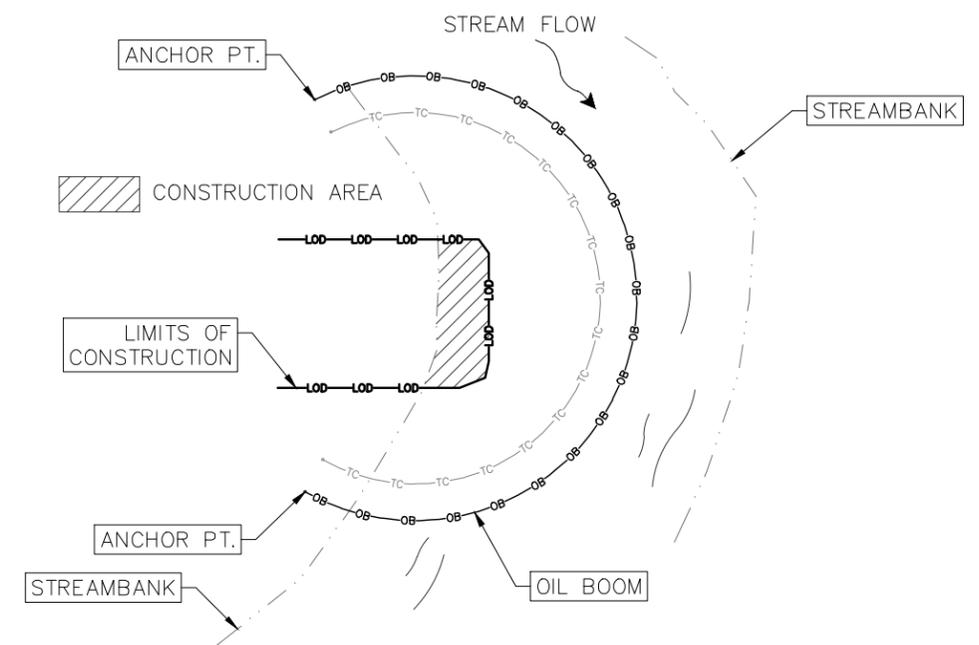


SECTION VIEW



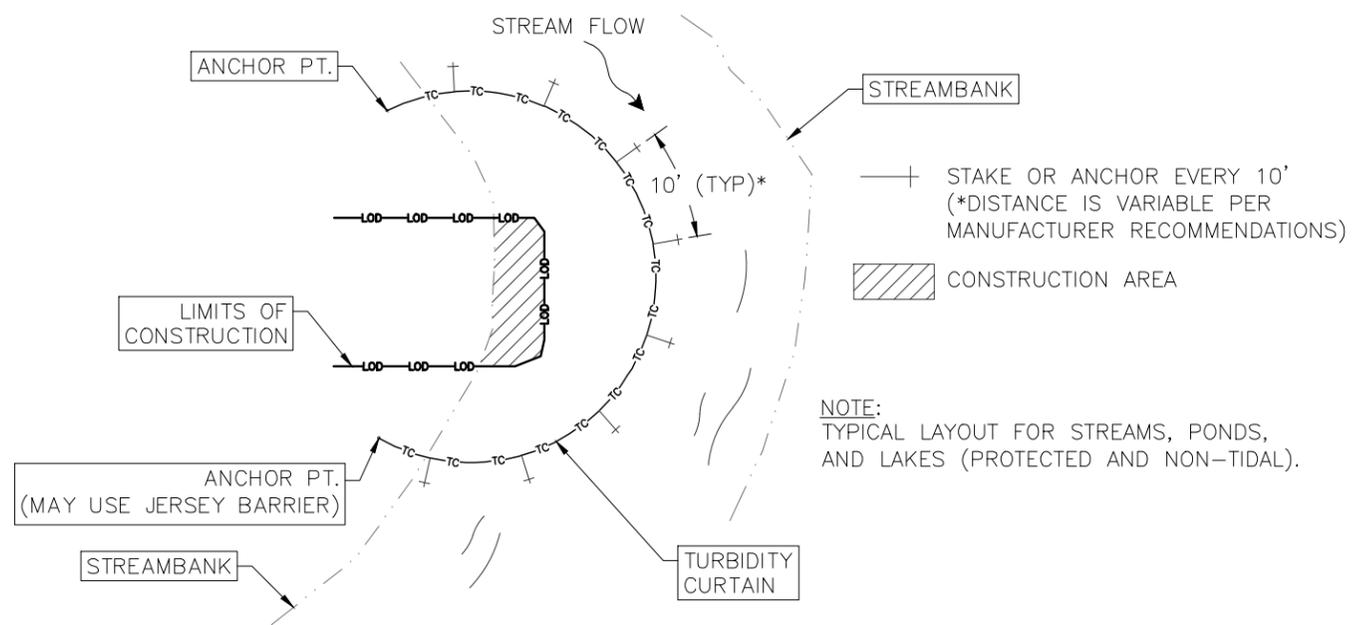
PROFILE VIEW

(BLOW-UP OF SHACKLE CONNECTION)



NOTE:
TYPICAL LAYOUT FOR STREAMS AND RIVERS.
OIL BOOM TO BE PLACED BEHIND
TURBIDITY CURTAIN AND DOWNSTREAM OF
ANY EQUIPMENT WORKING IN THE WET.

2 OIL BOOM (TYP)
CW06 PLAN VIEW - NTS



NOTE:
TYPICAL LAYOUT FOR STREAMS, PONDS,
AND LAKES (PROTECTED AND NON-TIDAL).

1 TURBIDITY CURTAIN (TYP)
CW06 PLAN VIEW - NTS

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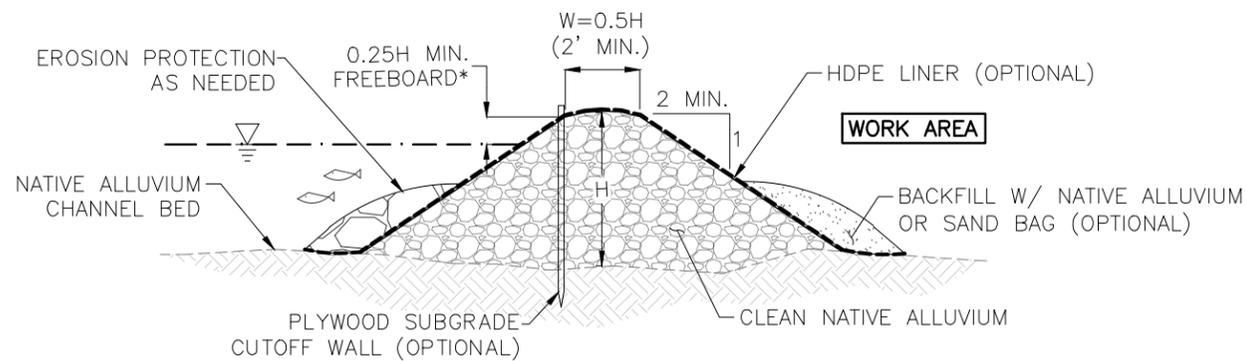
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|--------------|-------|------|
| Project | 45072 | Sheet | CW06 |
| Date | OCTOBER 2025 | | |
| Scale | NTS | | |

BID SET

NOTE:
 HMAX=8.0'
 WMIN=0.5H; MIN FREEBOARD*=0.25H; MAX DEPTH=6'

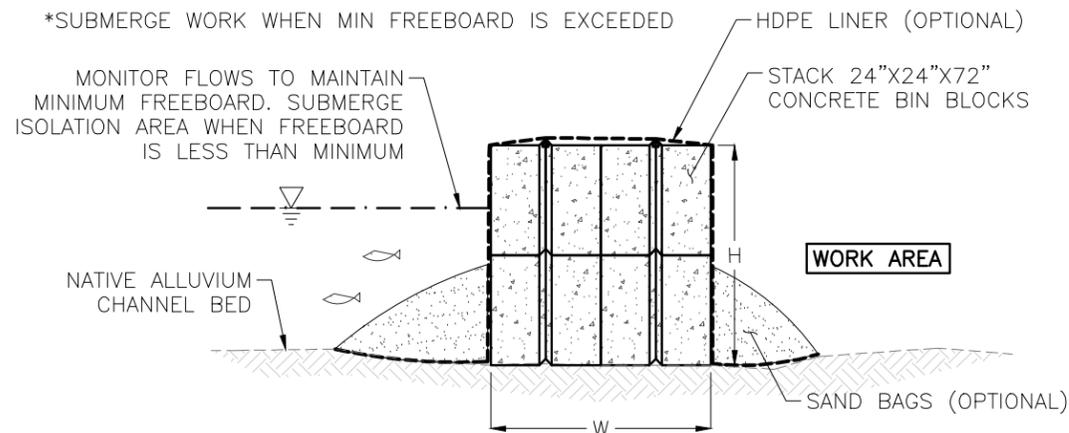
*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



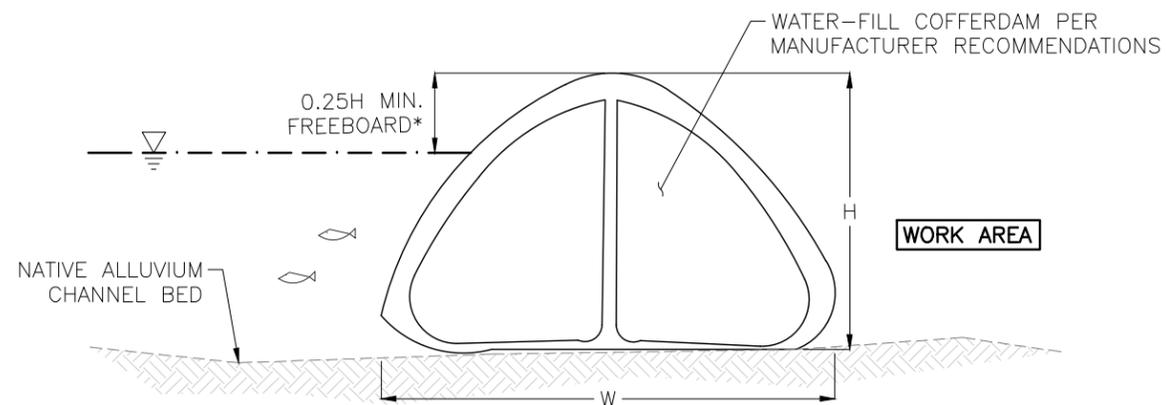
1 ALLUVIUM COFFERDAM (TYP)
 CW07 SECTION VIEW - NTS

NOTE:
 H MAX=8.0'
 MAX H=W; MIN FREEBOARD*=0.25H; MAX DEPTH=0.75H

*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



2 CONCRETE BLOCK COFFERDAM (TYP)
 CW07 SECTION VIEW - NTS



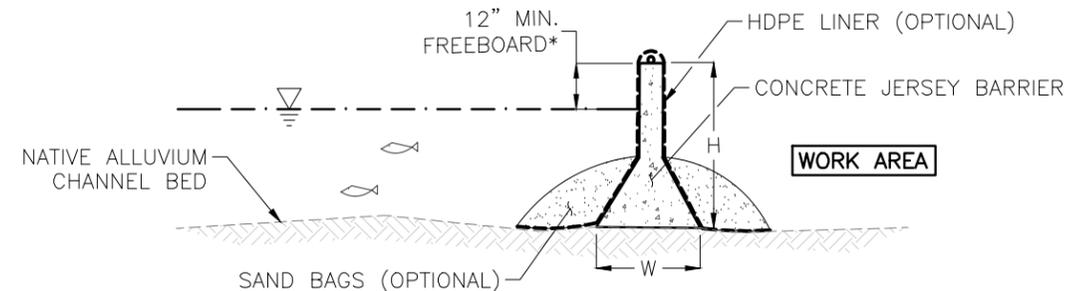
3 WATER-FILLED COFFERDAM (TYP)
 CW07 SECTION VIEW - NTS

NOTE:
 H MAX = PER MANUFACTURERS RECOMMENDATIONS.
 W MIN = PER MANUFACTURERS RECOMMENDATIONS.

*SUBMERGE WORK WHEN MINIMUM FREEBOARD IS EXCEEDED

NOTE:
 H MAX=34" (TYP. JERSEY BARRIER HEIGHT)
 W MIN=23" (TYP. JERSEY BARRIER BASE WIDTH)
 MIN FREEBOARD*=12"
 MAX DEPTH=0.75H

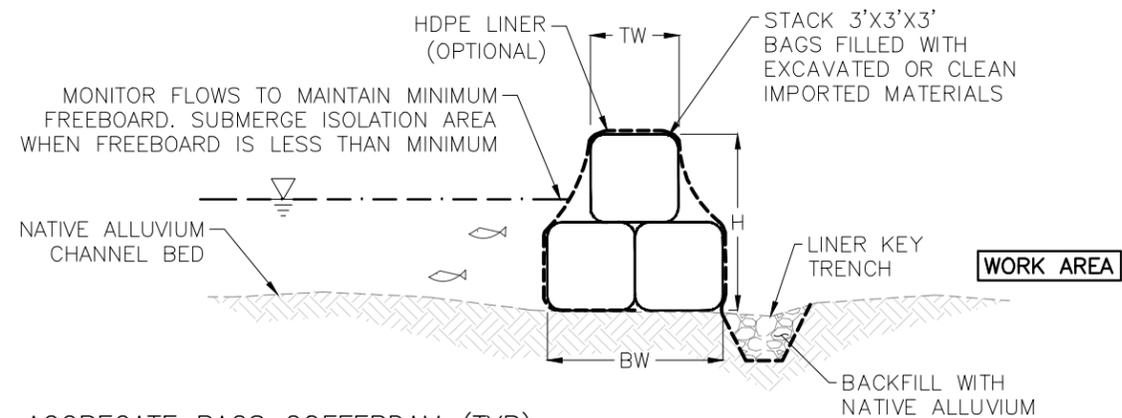
*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



4 JERSEY BARRIER COFFERDAM (TYP)
 CW07 SECTION VIEW - NTS

NOTE:
 H MAX = 8.0'
 BW MIN = H
 MIN FREEBOARD* = 0.25H
 MAX DEPTH = 0.75H
 TW = H/2

*SUBMERGE WORK WHEN MIN FREEBOARD IS EXCEEDED



5 AGGREGATE BAGS COFFERDAM (TYP)
 CW07 SECTION VIEW - NTS

PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE
 SURF WAVE PROJECT
 CARE OF WATER
 DETAILS 2 OF 2

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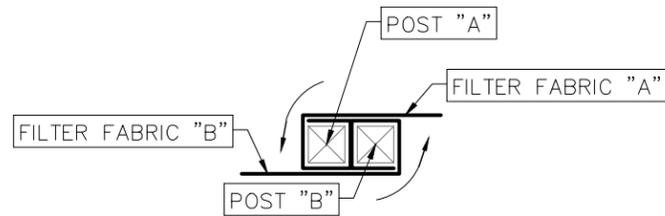
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Weber River
 Ogden, UT
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| 45072 | CW07 |
| Date | |
| OCTOBER 2025 | |
| Scale | |
| NTS | |

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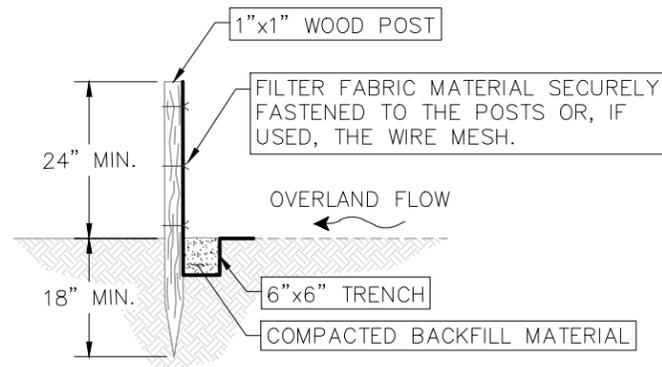
JOINING SECTION DETAIL (PLAN VIEW)

SILT FENCE JOINING NOTES:

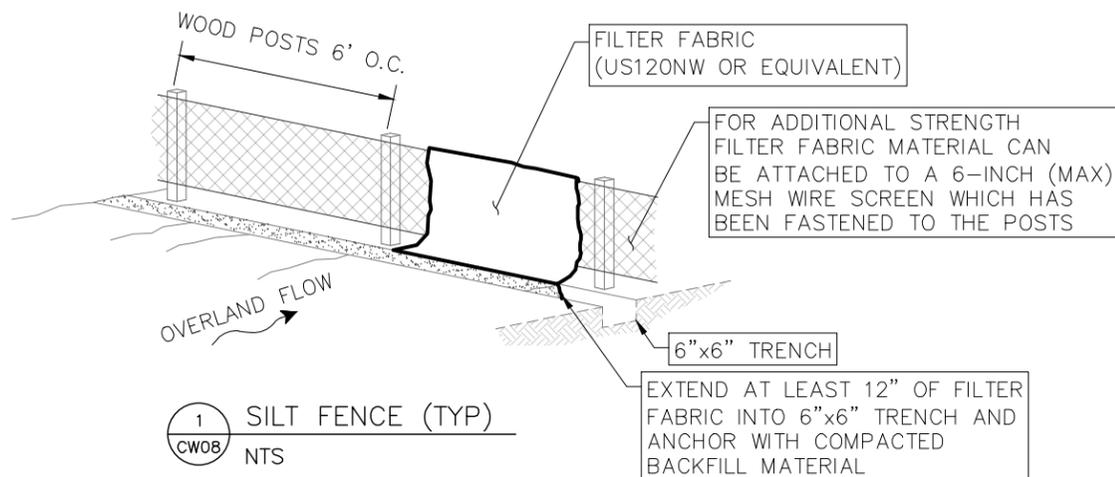
1. WRAP APPROXIMATELY 6" OF FILTER FABRIC OF EACH END AROUND A WOODEN POST ONE FULL TURN, THEN SECURED ALONG THE POST WITH HEAVY DUTY WIRE STAPLES AT LEAST 1" LONG.
2. POST SHALL BE TIGHTLY ABUTTED WITH NO GAPS TO PREVENT POTENTIAL FLOW-THROUGH OF SEDIMENT AT JOINT.



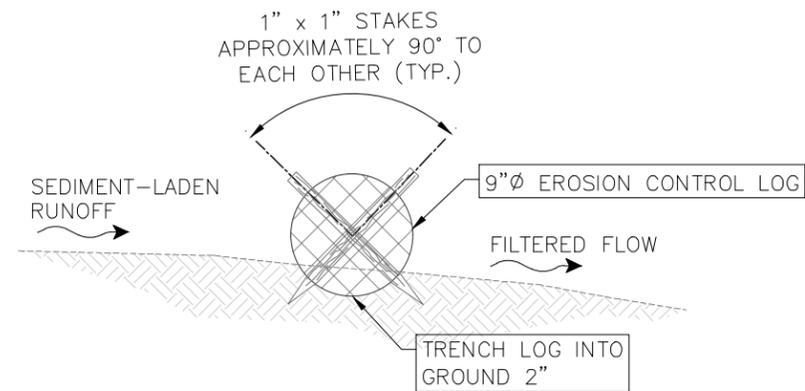
END SECTION DETAIL (PLAN VIEW)



SECTION VIEW



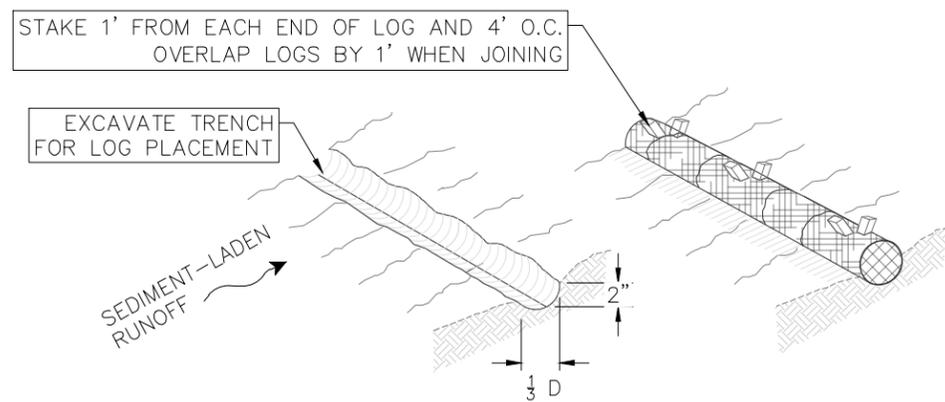
1 SILT FENCE (TYP)
CW08 NTS



SECTION VIEW

EROSION CONTROL LOG INSTALLATION NOTES:

1. EXCAVATE TRENCH 2".
2. PLACE AND STAKE EROSION CONTROL LOG.
3. PLACE SPOILS UP-SLOPE FROM LOG, KNIFE-IN AND COMPACT.



2 EROSION CONTROL LOG INSTALLATION (TYP)
CW08 NTS

PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
EROSION CONTROL
DETAILS

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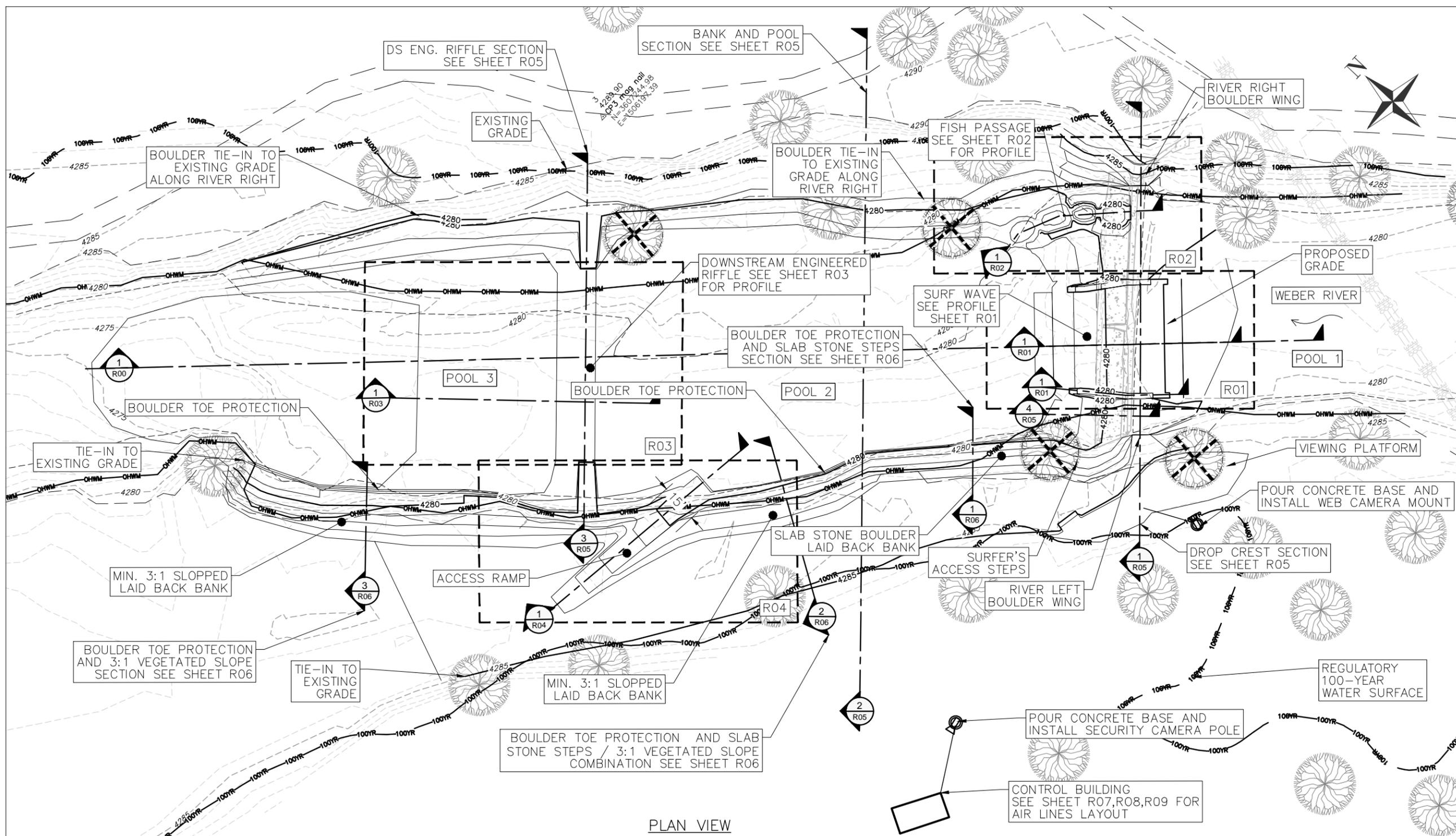
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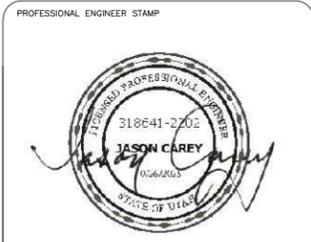
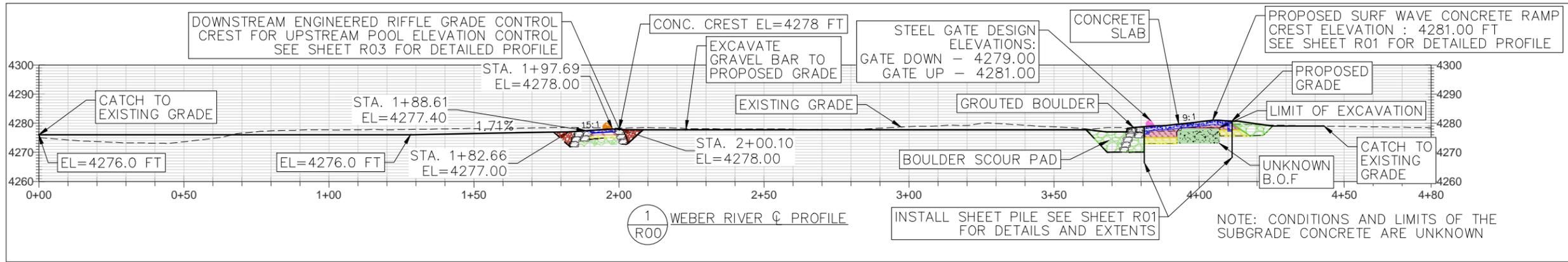
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|----------------------|---------------|
| Project 45072 | Sheet CW08 |
| Date OCTOBER 2025 | |
| Scale NTS | |

BID SET



PLAN VIEW



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
PLAN VIEW, PROFILE AND
INDEX

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

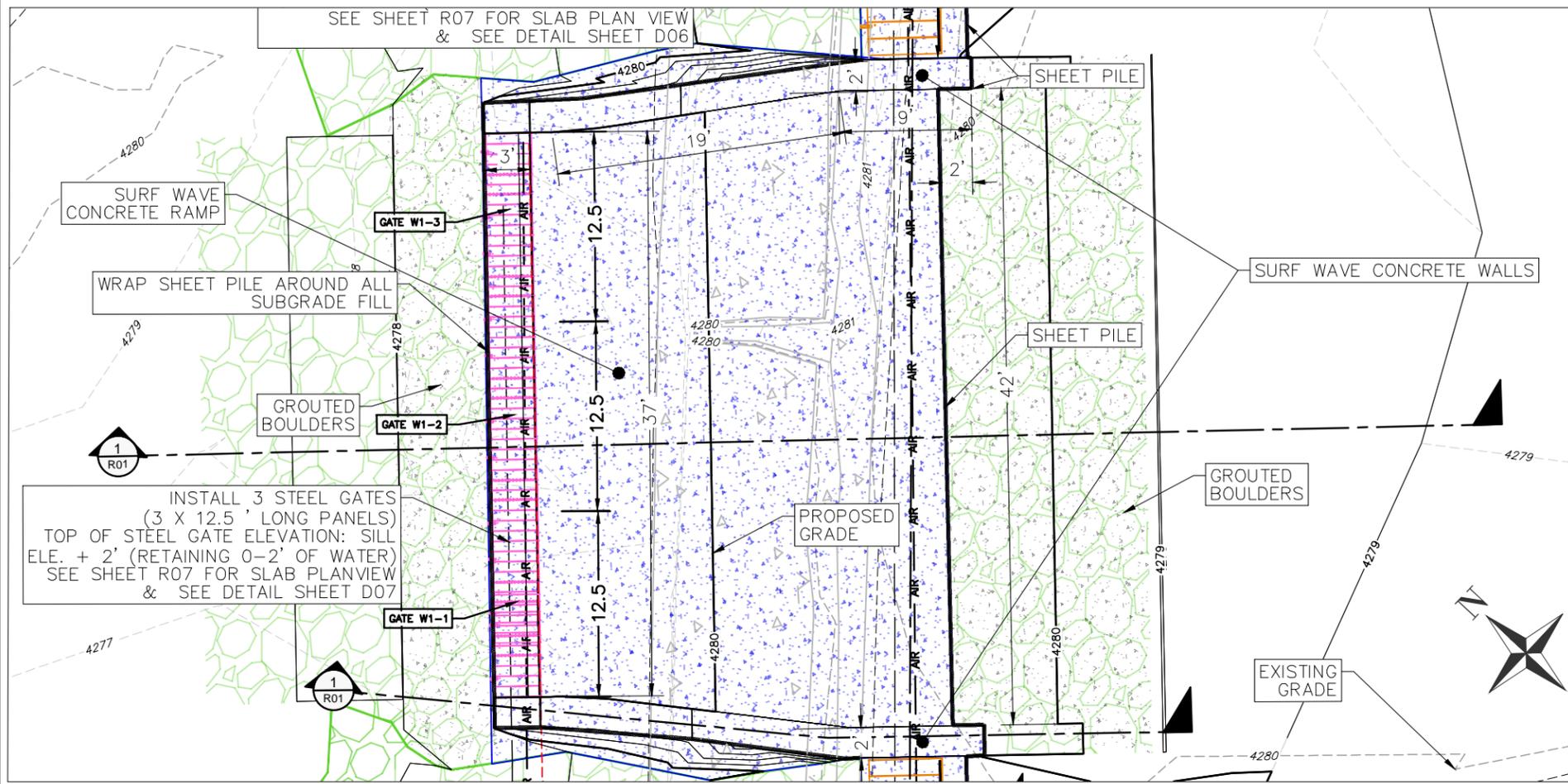
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|----------------------|-------|-----|
| Project | 45072 | Sheet | R00 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 20' (FULL SIZE) | | |

BID SET



- LEGEND:**
- CONCRETE
 - BOULDERS
 - ALLUVIAL SUBSTRATE
 - TO PROTECT IN PLACE
 - CDF OR CLSM FILL
 - FILTER FABRIC
 - SHEET PILE
 - TOPSOIL
 - GROUT
 - SLABSTONE STEPS

- OBERMEYER HYDRO INC. (OHI) RUBBER ROCK
- OHI STEEL GATES

NOTES:
 1. BOULDERS, OTHERWISE SPECIFIED, SHALL CONSIST OF MIN. 36" B-AXIS. SELECT BOULDERS



**OGDEN BUSINESS EXCHANGE
 SURF WAVE PROJECT
 PLAN VIEW AND PROFILE
 SURF WAVE**

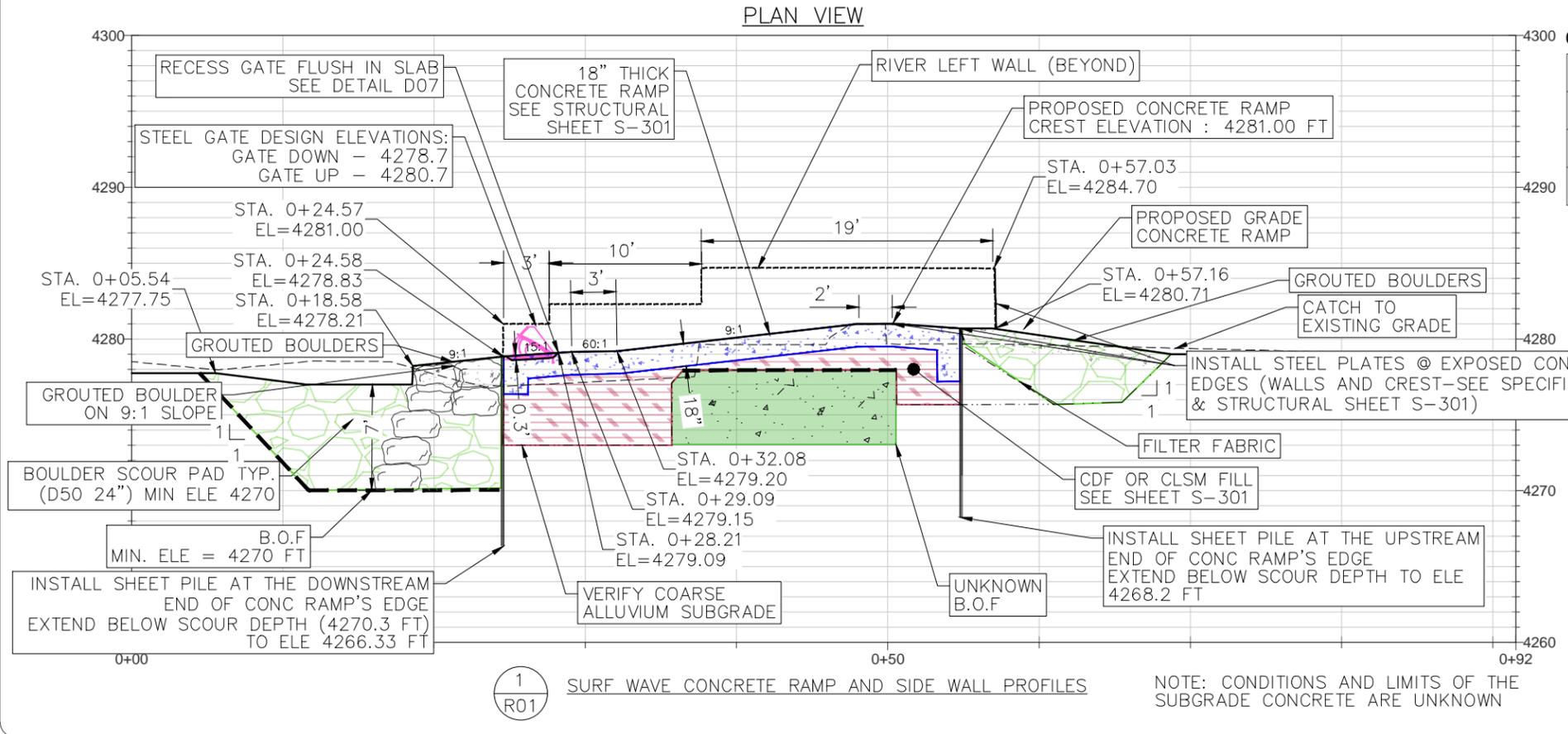
| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS
 Ogden City Corporation
 Engineering Division
 2549 Washington Blvd
 Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS
 RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

| | | | |
|---------|---------------------|-------|-----|
| Project | 45072 | Sheet | R01 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 5' (FULL SIZE) | | |



OHI GATE ELEVATIONS

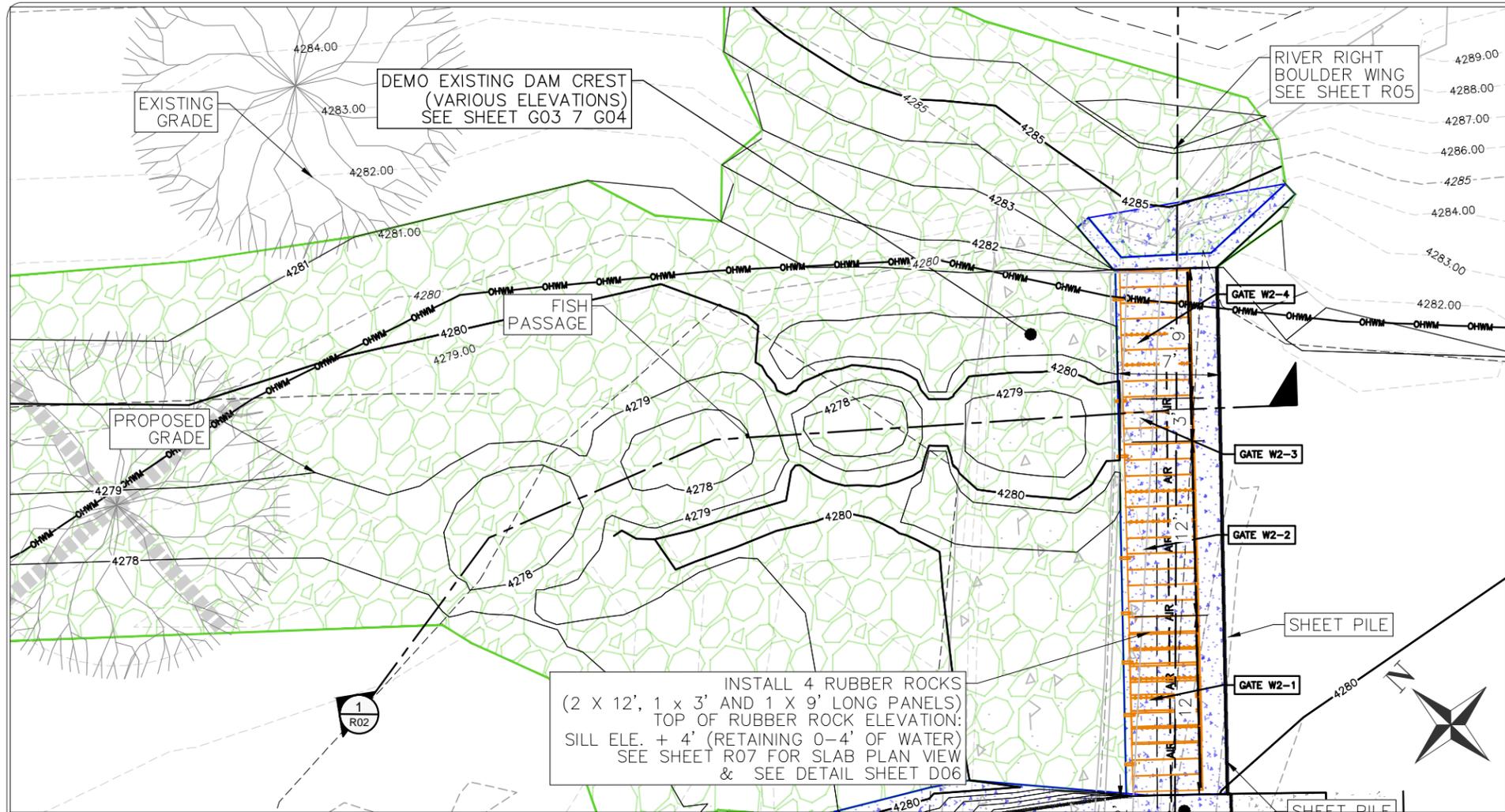
| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|------|---------------------|-------------------|-----|
| W1-1 | 4278.7 | 4280.7 | 2.0 |
| W1-2 | 4278.7 | 4280.7 | 2.0 |
| W1-3 | 4278.7 | 4280.7 | 2.0 |

1 SURF WAVE CONCRETE RAMP AND SIDE WALL PROFILES
 R01

NOTE: CONDITIONS AND LIMITS OF THE SUBGRADE CONCRETE ARE UNKNOWN



BID SET



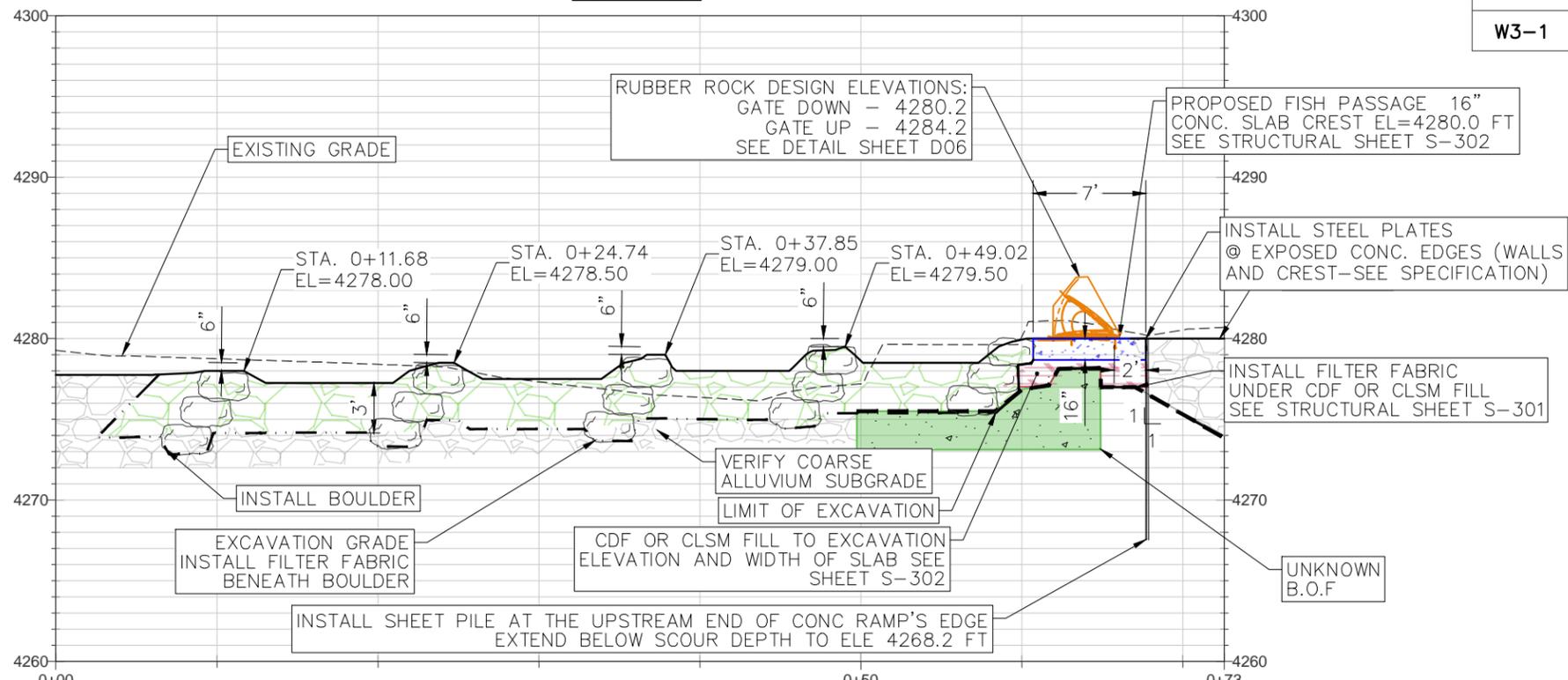
PLAN VIEW

- LEGEND:**
- CONCRETE
 - BOULDERS
 - ALLUVIAL SUBSTRATE
 - TO PROTECT IN PLACE
 - FILTER FABRIC
 - CDF OR CLSM FILL
 - SHEET PILE
 - OBERMEYER HYDRO INC. (OHI) RUBBER ROCK
 - TOPSOIL
 - GROUT
 - SLABSTONE STEF

NOTES:
 1. BOULDERS SHALL CONSIST OF MIN. 36" B-AXIS. SELECT BOULDERS

OHI GATE ELEVATIONS

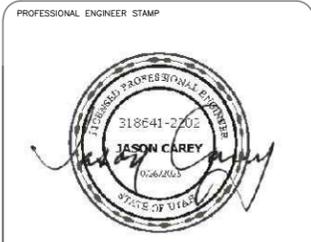
| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|------|---------------------|-------------------|-----|
| W2-1 | 4280.2 | 4284.2 | 4.0 |
| W2-2 | 4280.2 | 4284.2 | 4.0 |
| W2-3 | 4280.2 | 4284.2 | 4.0 |
| W2-4 | 4280.2 | 4284.2 | 4.0 |
| W3-1 | 4280.2 | 4284.2 | 4.0 |



1 FISH PASSAGE C PROFILE
R02



BID SET



**OGDEN BUSINESS EXCHANGE
 SURF WAVE PROJECT
 PLAN VIEW AND PROFILE
 FISH PASSAGE**

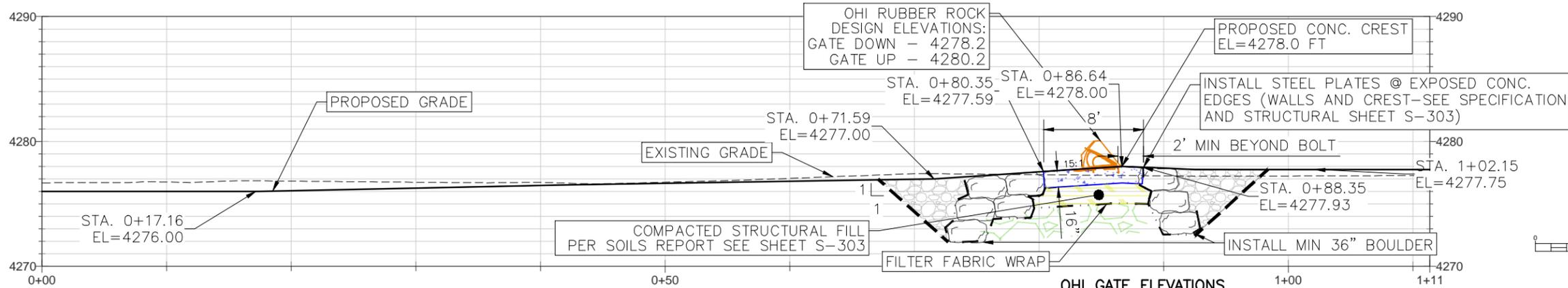
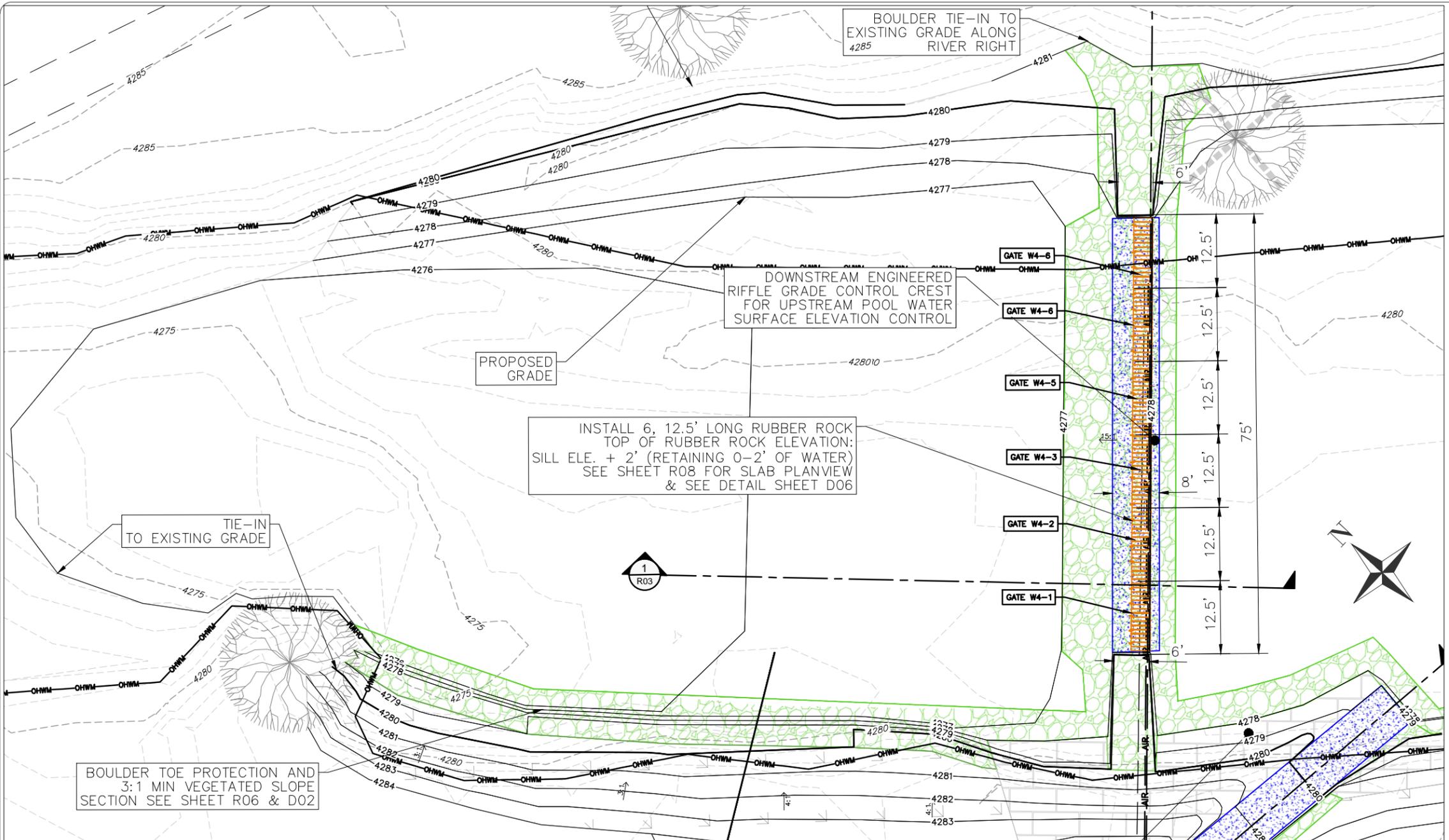
| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |

CLIENT NAME AND ADDRESS
 Ogden City Corporation
 Engineering Division
 2549 Washington Blvd
 Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS
 RiverRestoration
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 Carbondale, CO 81623
 www.RiverRestoration.org

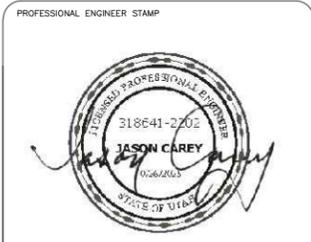
PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

| | |
|------------------------------|--------------|
| Project 45072 | Sheet R02 |
| Date OCTOBER 2025 | |
| Scale 1" = 5' (FULL SIZE) | |



1 R03 DOWNSTREAM ENGINEERED RIFFLE GRADE CONTROL PROFILE

| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|--------|---------------------|-------------------|-----|
| W4-1-6 | 4278.2 | 4280.2 | 2.0 |



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
PLAN VIEW AND PROFILE
ENGINEERED RIFFLE
GRADE CONTROL

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |

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Ogden, UT 84401

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PROJECT NAME AND ADDRESS

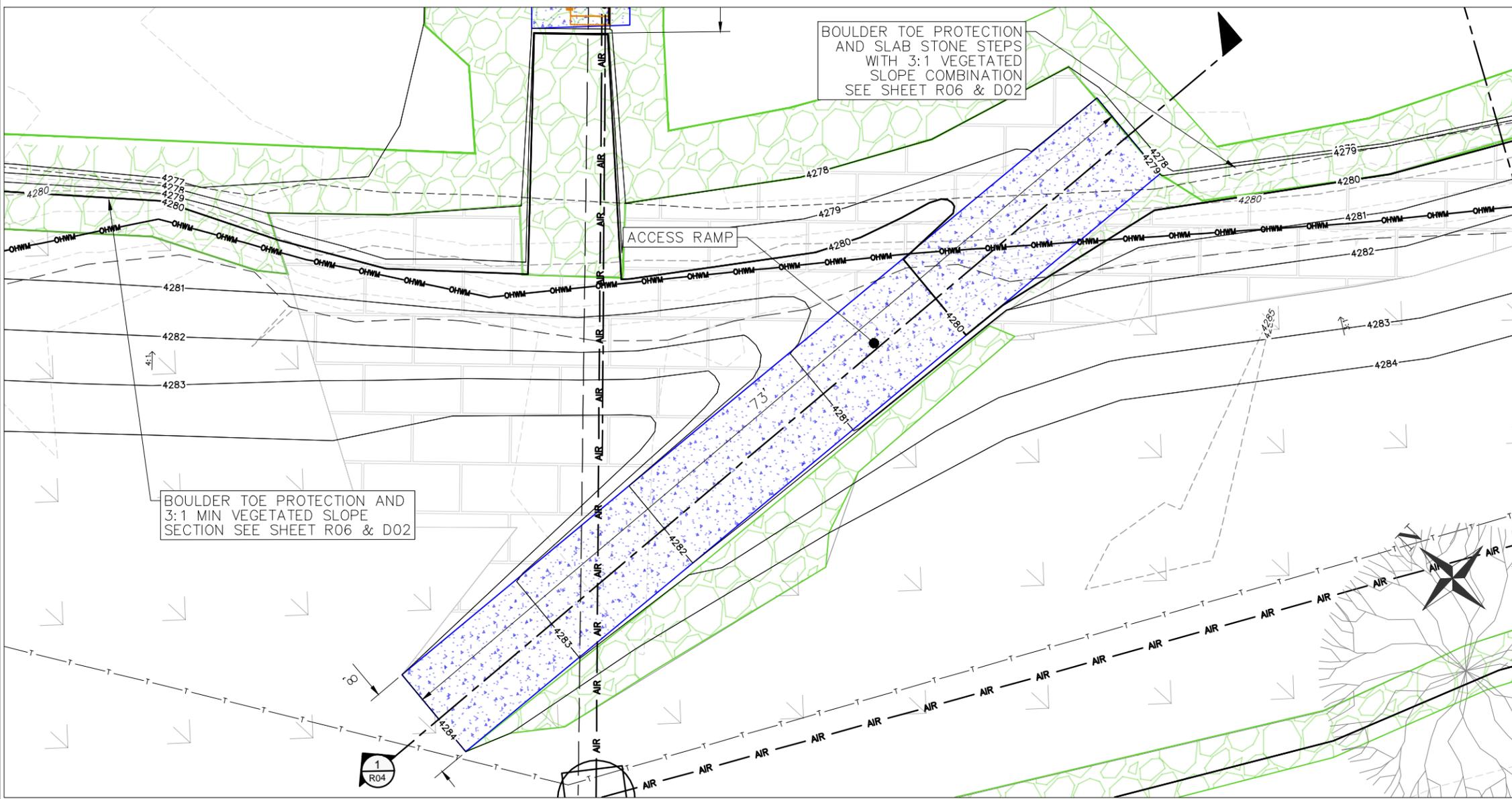
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|---|-------|-----|
| Project | 45072 | Sheet | R03 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 10' (PLAN VIEW) 1" = 5' (PROFILE) | | |

BID SET

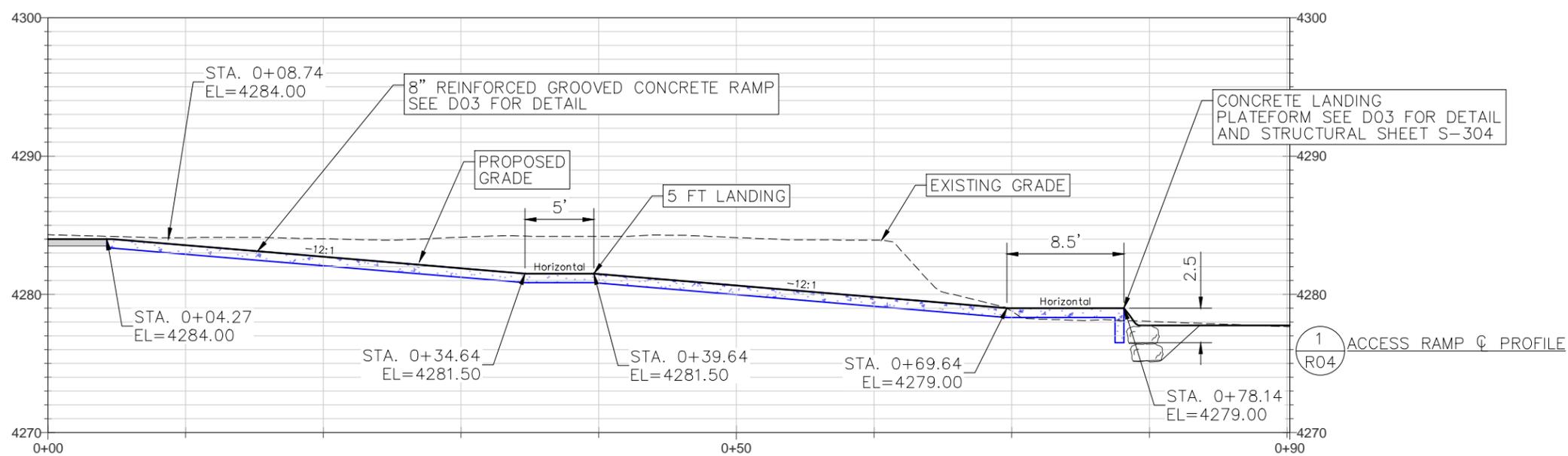


OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT PLAN VIEW AND PROFILE ACCESS RAMP



- LEGEND:**
- CONCRETE
 - BOULDERS
 - ALLUVIAL SUBSTRATE
 - TOPSOIL
 - GROUT
 - SLABSTONE STEPS
 - FILTER FABRIC

PLAN VIEW



BID SET

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |

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Engineering Division
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Ogden, UT 84401

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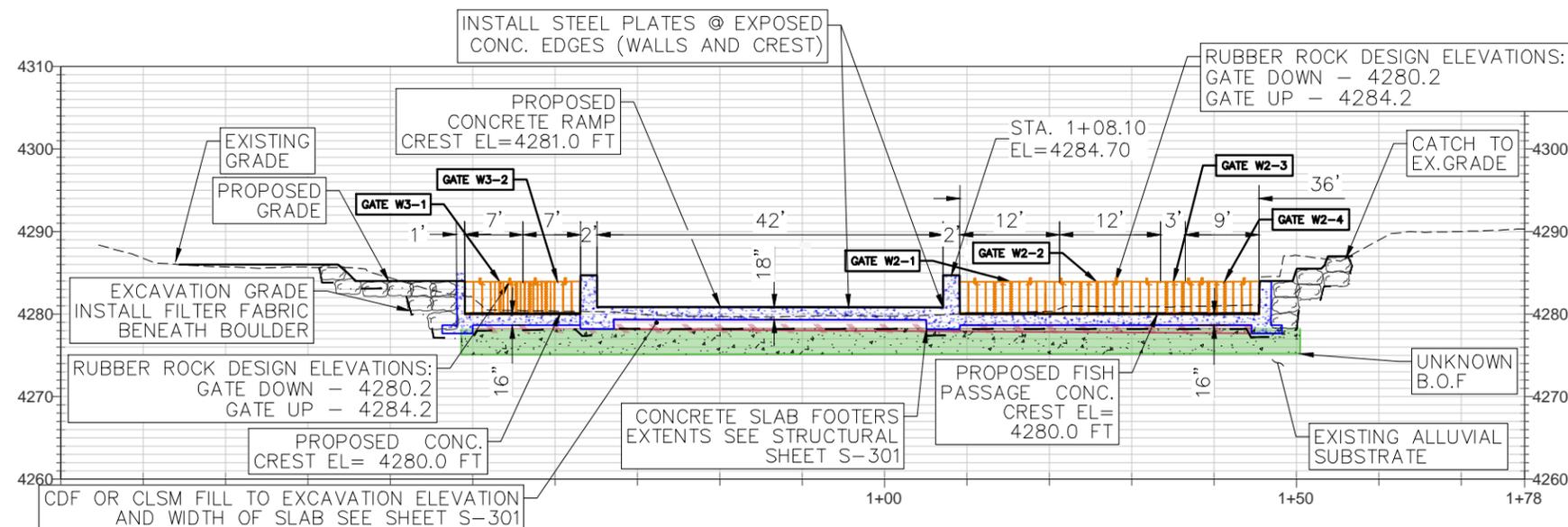
PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|---------------------|-------|-----|
| Project | 45072 | Sheet | R04 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 5' (FULL SIZE) | | |



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
PROFILE AND SECTIONS**



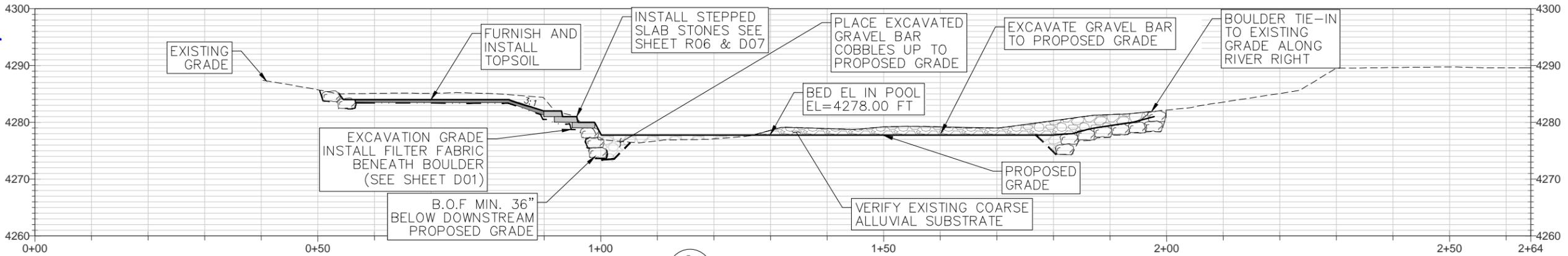
1 SURF WAVE DROP CREST SECTION
R05

LEGEND:

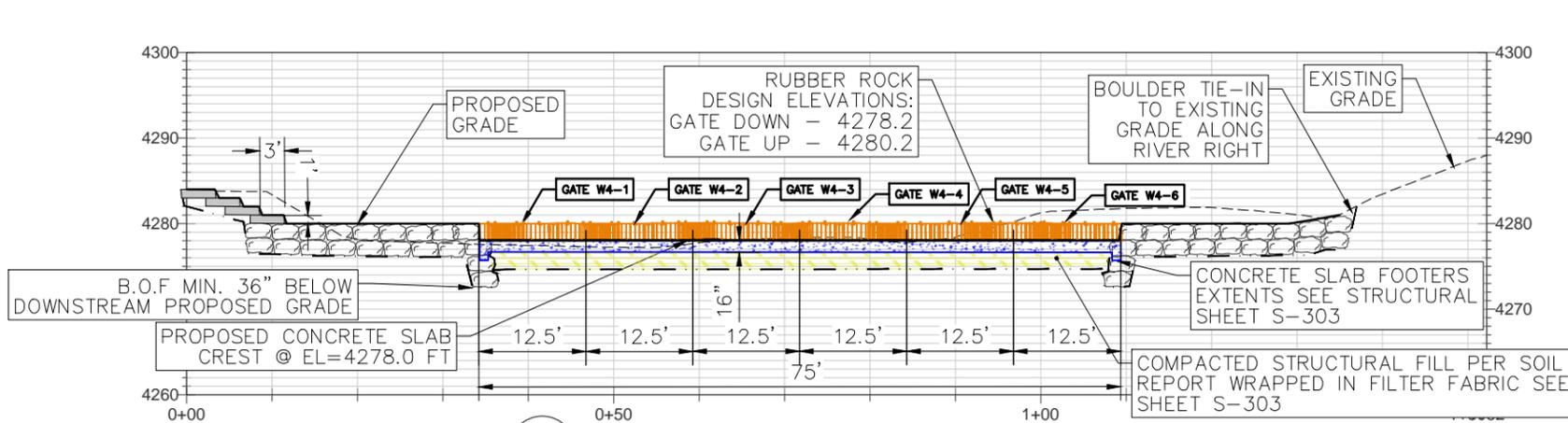
- CONCRETE
- BOULDERS
- BOULDERS/SLABSTONE
- TO PROTECT IN PLACE
- ALLUVIAL SUBSTRATE
- CDF OR CLSM FILL
- TOPSOIL
- COMPACTED STRUCTURAL FILL
- FILTER FABRIC
- SHEET PILE
- OBERMEYER HYDRO INC. (OHI) RUBBER ROCK

OHI GATE ELEVATIONS

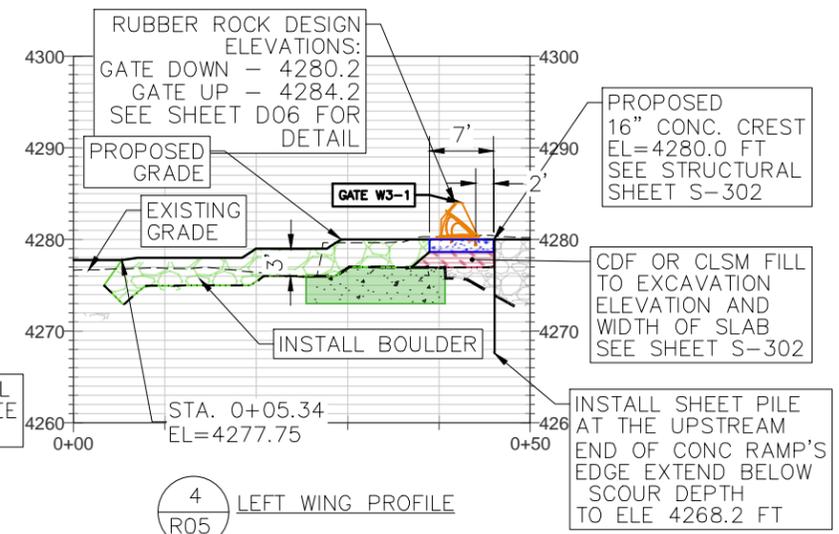
| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|------|---------------------|-------------------|-----|
| W2-1 | 4280.20 | 4284.20 | 4.0 |
| W2-2 | 4280.20 | 4284.20 | 4.0 |
| W2-3 | 4280.20 | 4284.20 | 4.0 |
| W2-4 | 4280.20 | 4284.20 | 4.0 |
| W3-1 | 4280.20 | 4284.20 | 4.0 |
| W3-2 | 4280.20 | 4284.20 | 4.0 |



2 POOL SECTION
R05



3 DOWNSTREAM ENGINEERED RIFFLE GRADE CONTROL SECTION
R05



4 LEFT WING PROFILE
R05

OHI GATE ELEVATIONS

| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|--------|---------------------|-------------------|-----|
| W4-1-6 | 4278.20 | 4280.20 | 2.0 |

BID SET

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

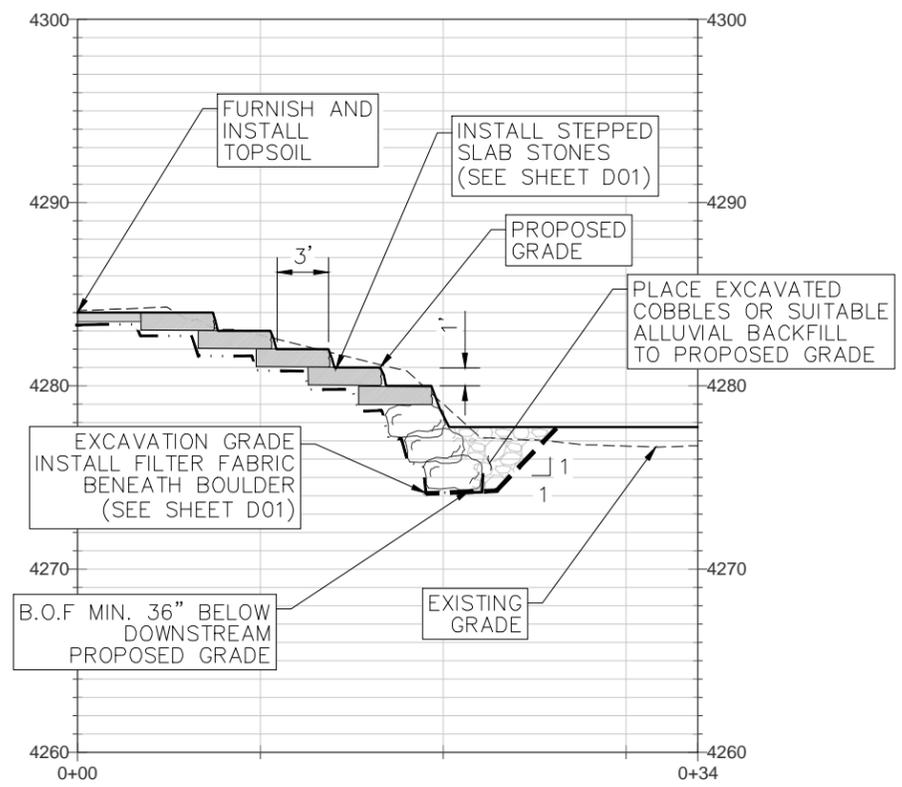
PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

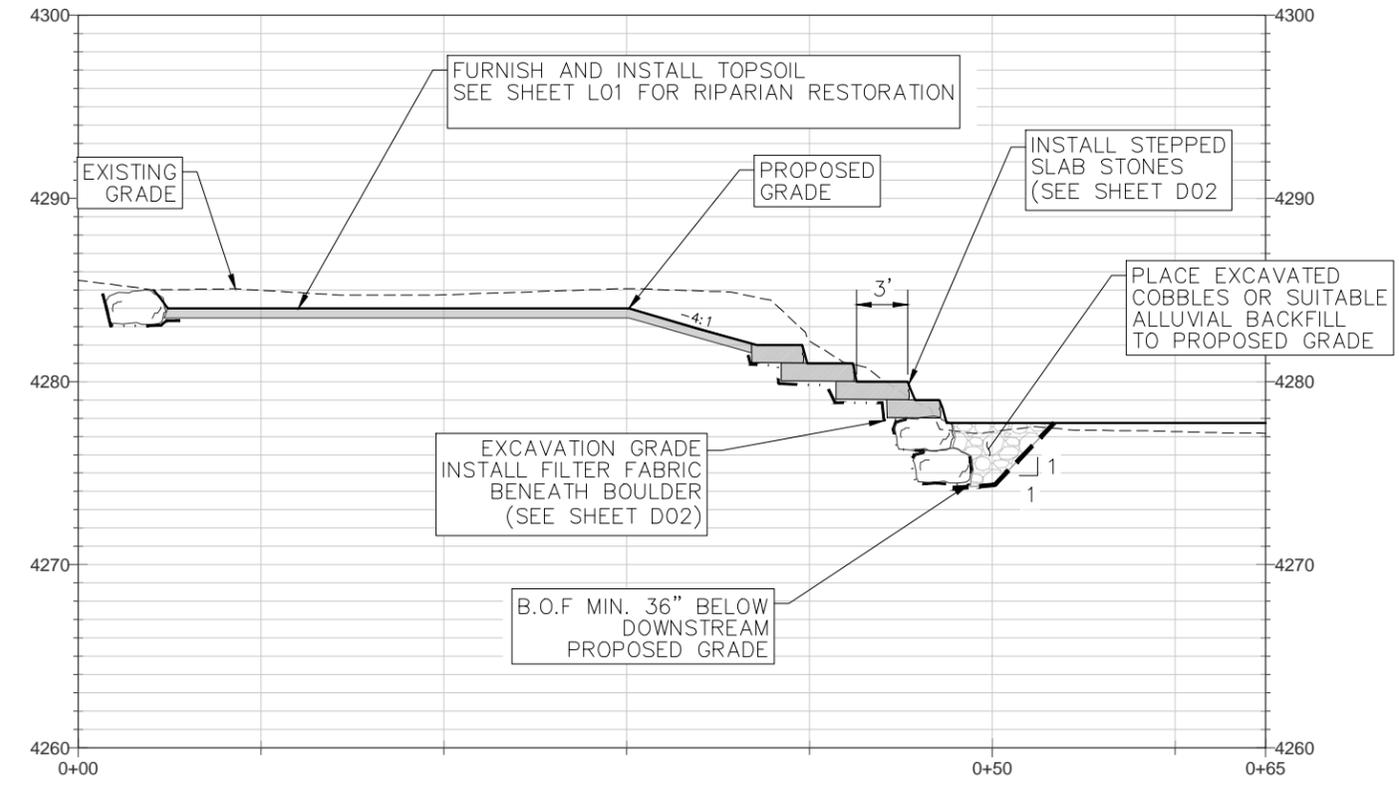
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|---------|----------------------|-------|-----|
| Project | 45072 | Sheet | R05 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 10' (FULL SIZE) | | |



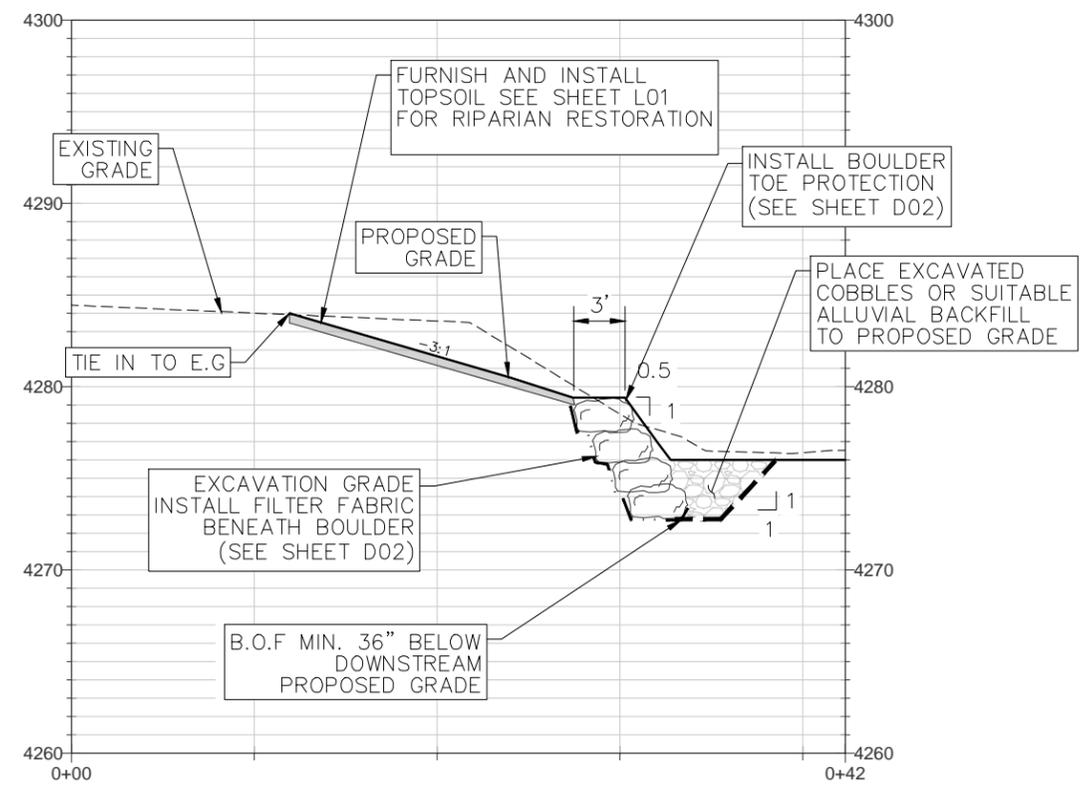
OGDEN BUSINESS EXCHANGE SURF WAVE PROJECT BANK RESTORATION TYPICAL SECTIONS



1 R06 BOULDER TOE PROTECTION/ SLAB STONE BANK TERRACING SECTION



2 R06 BOULDER TOE PROTECTION WITH SLAB STONE STEPS AND 3:1 MIN. VEGETATED SLOPE SECTION



3 R06 BOULDER TOE PROTECTION AND 3:1 VEGETATED SLOPE SECTION



| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

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 Ogden City Corporation
 Engineering Division
 2549 Washington Blvd
 Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

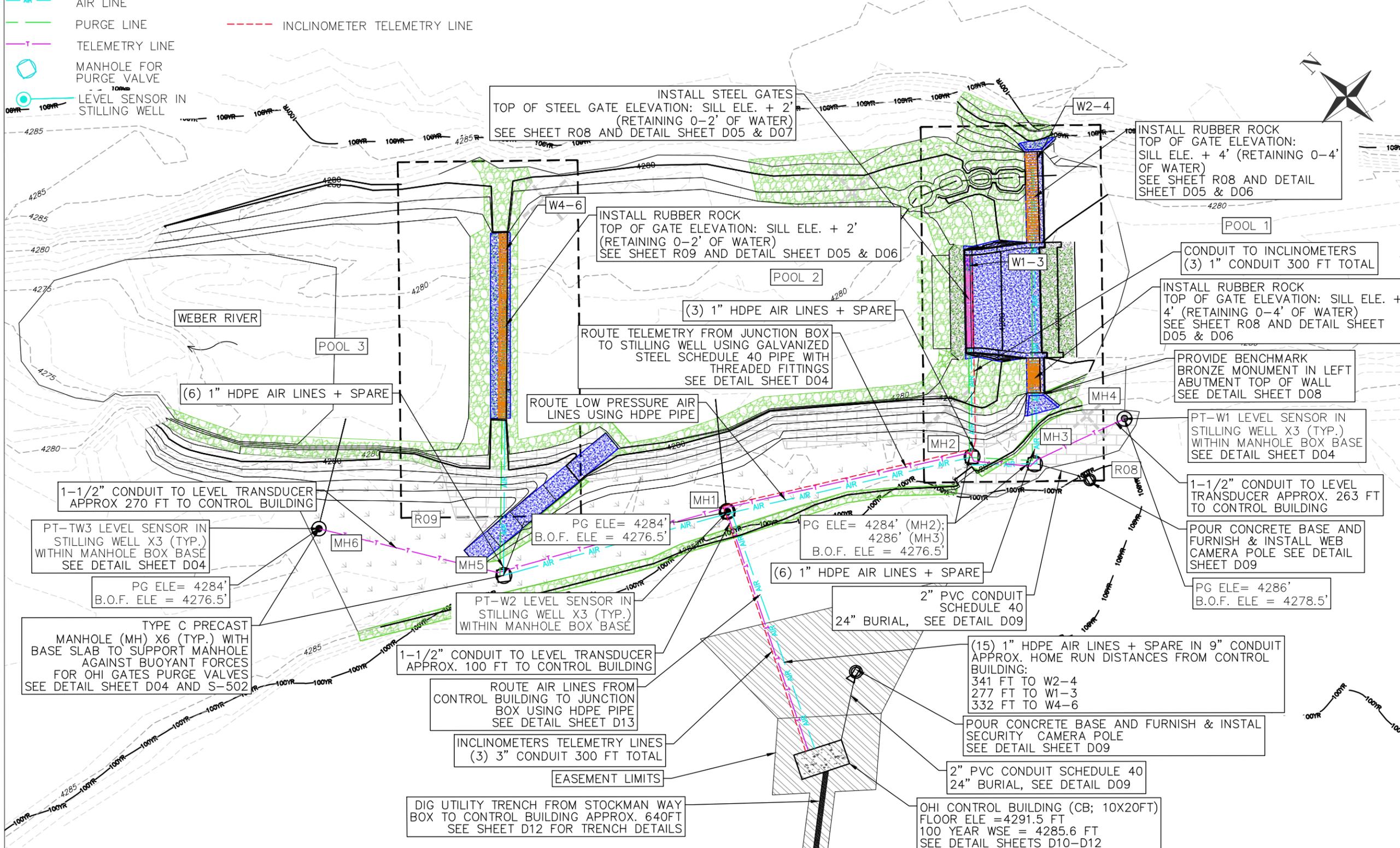
 RiverRestoration
 P.O. Box 248
 Carbondale, CO 81623
 www.RiverRestoration.org

PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

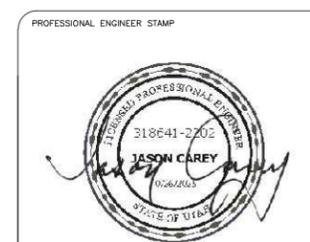
| | |
|------------------------------|--------------|
| Project 45072 | Sheet R06 |
| Date OCTOBER 2025 | |
| Scale 1" = 5' (FULL SIZE) | |

BID SET

- LEGEND:**
- OBERMEYER HYDRO INC. (OHI) RUBBER ROCK
 - OHI STEEL GATES
 - AIR LINE
 - PURGE LINE
 - TELEMETRY LINE
 - MANHOLE FOR PURGE VALVE
 - LEVEL SENSOR IN STILLING WELL
 - CONCRETE
 - BOULDERS
 - ALLUVIAL SUBSTRATE
 - TOPSOIL
 - GROUT
 - SLABSTONE STEPS
 - INCLINOMETER TELEMETRY LINE



- AIR LINE NOTES:**
- AIR LINE ROUTING IS SCHEMATIC ONLY TO SHOW APPROXIMATE LOCATION AND CONNECTIVITY.
 - MINIMIZE THE NUMBER OF PIPE JOINTS. ALL NON ACCESSIBLE PIPE JOINTS SHALL BE FUSION WELDED.
 - PROVIDE CONCRETE BLOCK-OUT AT BLADDER CONNECTION POINTS PER MANUFACTURERS DRAWINGS.
 - SLAB DIMENSIONS VARY, SEE SHEETS R08-R09.
 - STILLING WELL SHOULD BE LOCATED AS SHOWN ON PLANS, APPROXIMATELY 1-1/2 FT. OFF THE BOTTOM OF CHANNEL.
 - BACKFILL ABOVE PIPE BEDDING SHALL BE MINUS 6" INCH ALLUVIUM FOR A MINIMUM OF 18" ABOVE BEDDING.
 - SPARE AIR LINE IN SLAB ONLY. ROUTED CONTINUOUSLY THROUGH ALL BLOCK-OUTS - SEAL ENDS.



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
RUBBER & STEEL GATES, AIRLINE
LAYOUT PLAN**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |

CLIENT NAME AND ADDRESS

Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

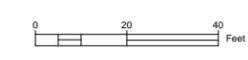
DESIGN FIRM NAME AND ADDRESS

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www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|----------------------|-------|------------|
| Project | 45072 | Sheet | R07 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 20' (FULL SIZE) | | |



BID SET



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
RUBBER & STEEL GATE
SURF WAVE PLAN VIEW**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

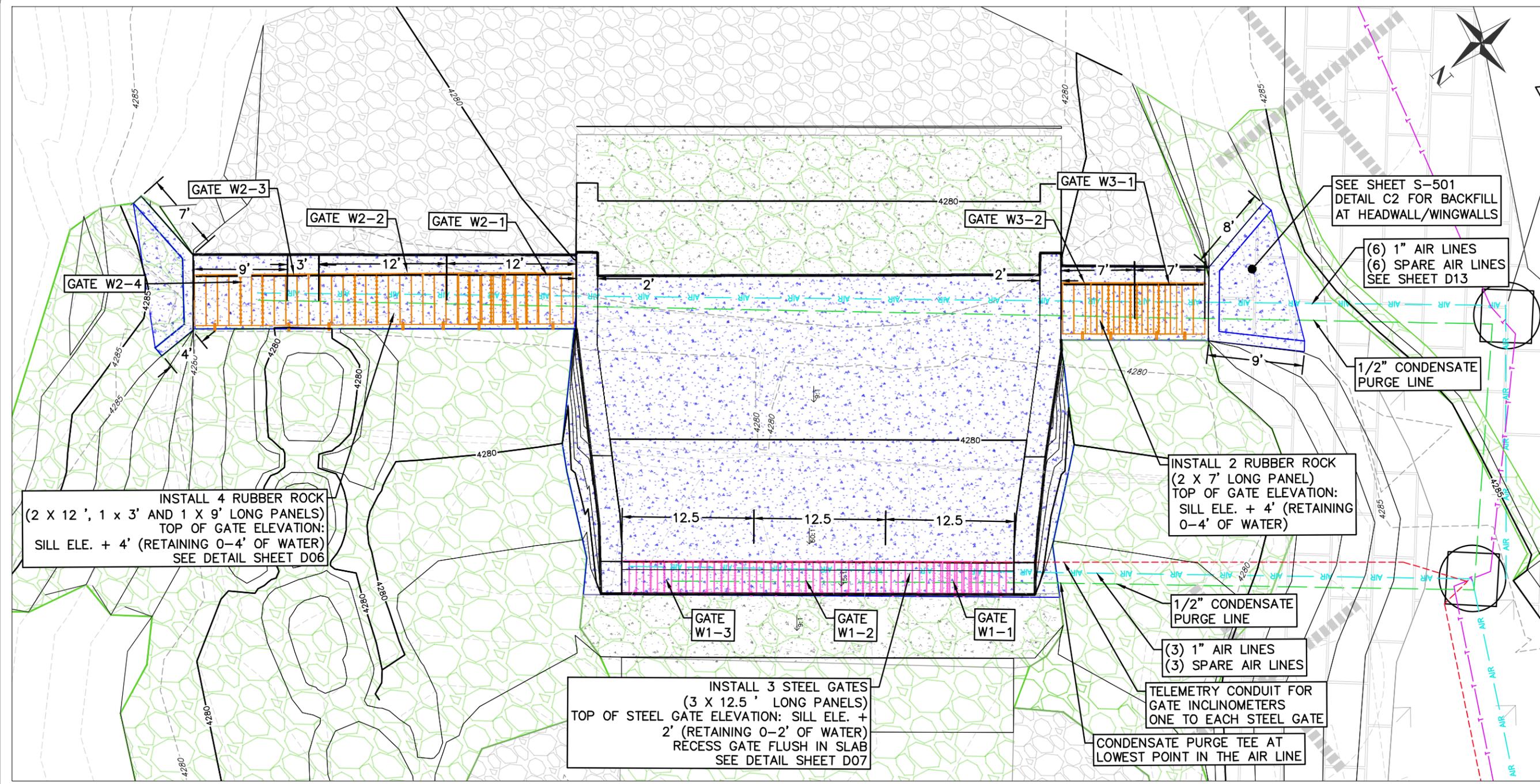
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 Ogden, UT
 Ogden Business Exchange Surf Wave

| | | | |
|---------|---------------------|-------|-----|
| Project | 45072 | Sheet | R08 |
| Date | OCTOBER 2025 | | |
| Scale | 1" = 5' (FULL SIZE) | | |



INSTALL 4 RUBBER ROCK
 (2 X 12', 1 X 3' AND 1 X 9' LONG PANELS)
 TOP OF GATE ELEVATION:
 SILL ELE. + 4' (RETAINING 0-4' OF WATER)
 SEE DETAIL SHEET D06

INSTALL 3 STEEL GATES
 (3 X 12.5' LONG PANELS)
 TOP OF STEEL GATE ELEVATION: SILL ELE. +
 2' (RETAINING 0-2' OF WATER)
 RECESS GATE FLUSH IN SLAB
 SEE DETAIL SHEET D07

INSTALL 2 RUBBER ROCK
 (2 X 7' LONG PANEL)
 TOP OF GATE ELEVATION:
 SILL ELE. + 4' (RETAINING
 0-4' OF WATER)

SEE SHEET S-501
 DETAIL C2 FOR BACKFILL
 AT HEADWALL/WINGWALLS

(6) 1" AIR LINES
 (6) SPARE AIR LINES
 SEE SHEET D13

1/2" CONDENSATE
 PURGE LINE

1/2" CONDENSATE
 PURGE LINE

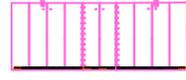
(3) 1" AIR LINES
 (3) SPARE AIR LINES

TELEMETRY CONDUIT FOR
 GATE INCLINOMETERS
 ONE TO EACH STEEL GATE

CONDENSATE PURGE TEE AT
 LOWEST POINT IN THE AIR LINE

-  AIR LINE
-  PURGE LINE
-  TELEMETRY LINE
-  MANHOLE FOR PURGE VALVE
-  LEVEL SENSOR IN STILLING WELL
-  INCLINOMETER TELEMETRY LINE

-  CONCRETE
-  BOULDERS
-  ALLUVIAL SUBSTRATE
-  TOPSOIL
-  GROUT
-  SLABSTONE STEPS

-  OBERMEYER HYDRO INC. (OHI) RUBBER ROCK
-  OHI STEEL GATES

MAXIMUM WATER PRESSURE DIFFERENTIAL IN FEET OF WATER

| WHITewater COURSE FLOW | UPSTREAM W.S.E | DOWNSTREAM W.S.E. | HEAD PRESSURE |
|------------------------|----------------|-------------------|---------------|
| 150 CFS | 4282.0 | 4278.7 | 3.3 |
| 1500 CFS | 4285.3 | 4282.2 | 3.2 |

100 YEAR WATER PRESSURE DIFFERENTIAL IN FEET OF WATER

| WHITewater COURSE FLOW | UPSTREAM W.S.E | DOWNSTREAM W.S.E. | HEAD PRESSURE |
|------------------------|----------------|-------------------|---------------|
| 6205 CFS | 4286.91 | 4285.64 | 1.27 |

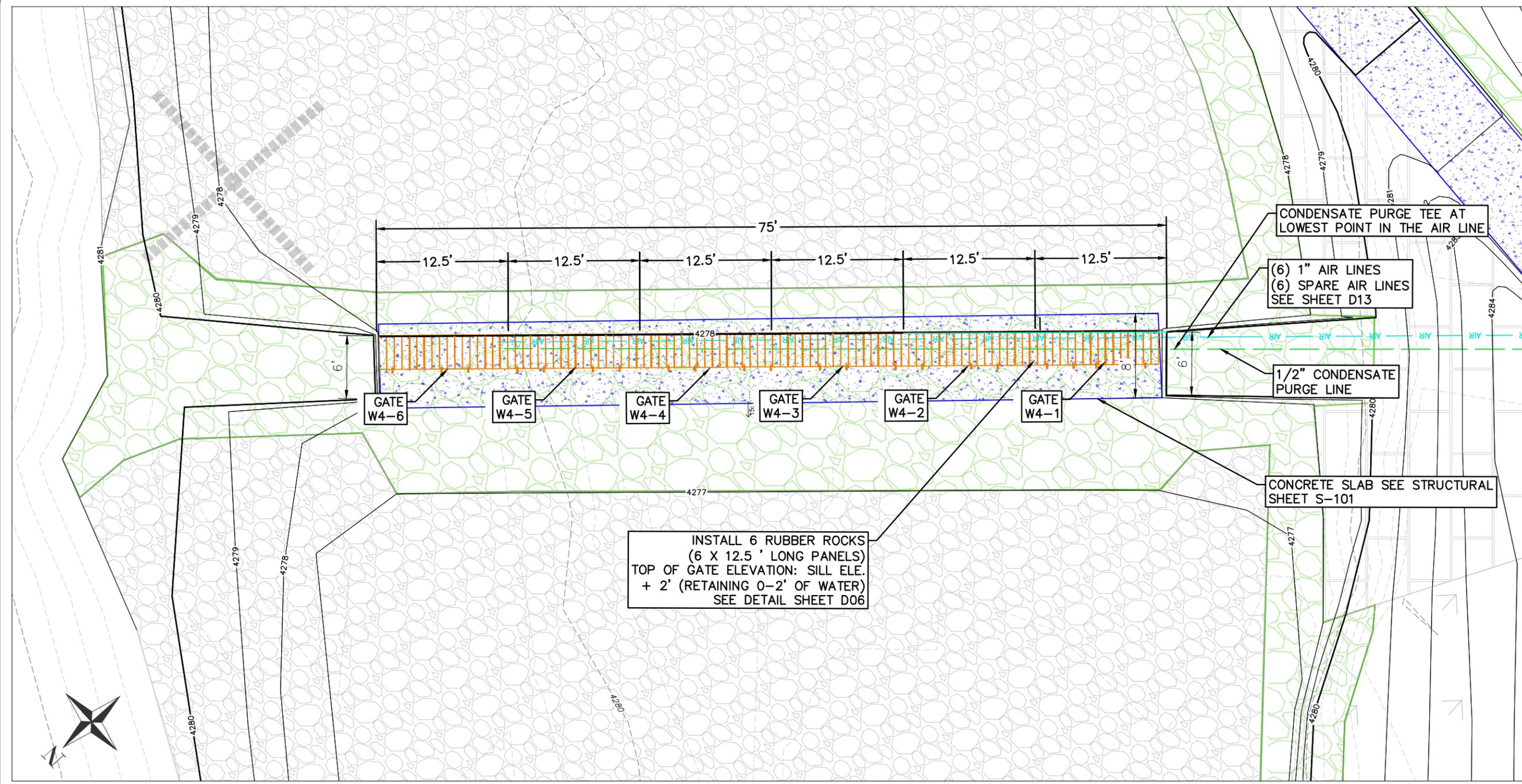
OHI GATE ELEVATIONS

| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|------|---------------------|-------------------|-----|
| W1-1 | 4278.7 | 4280.7 | 2.0 |
| W1-2 | 4278.7 | 4280.7 | 2.0 |
| W1-3 | 4278.7 | 4280.7 | 2.0 |
| W2-1 | 4280.2 | 4284.2 | 4.0 |
| W2-2 | 4280.2 | 4284.2 | 4.0 |
| W2-3 | 4280.2 | 4284.2 | 4.0 |
| W2-4 | 4280.2 | 4284.2 | 4.0 |
| W3-1 | 4280.2 | 4284.2 | 4.0 |
| W3-2 | 4280.2 | 4284.2 | 4.0 |

BID SET



**OGDEN BUSINESS EXCHANGE
 SURF WAVE PROJECT
 RUBBER & STEEL GATE
 ENGINEERED RIFFLE PLAN VIEW**



INSTALL 6 RUBBER ROCKS
 (6 X 12.5' LONG PANELS)
 TOP OF GATE ELEVATION: SILL ELE.
 + 2' (RETAINING 0-2' OF WATER)
 SEE DETAIL SHEET D06

CONDENSATE PURGE TEE AT
 LOWEST POINT IN THE AIR LINE

(6) 1" AIR LINES
 (6) SPARE AIR LINES
 SEE SHEET D13

1/2" CONDENSATE
 PURGE LINE

CONCRETE SLAB SEE STRUCTURAL
 SHEET S-101

- AIR LINE
- PURGE LINE
- TELEMETRY LINE
- MANHOLE FOR PURGE VALVE
- LEVEL SENSOR IN STILLING WELL

- CONCRETE
- BOULDERS
- ALLUVIAL SUBSTRATE

- TOPSOIL
- GROUT
- SLABSTONE STE



OBERMEYER HYDRO INC.
 (OHI) RUBBER ROCK



| WHITWATER COURSE FLOW | UPSTREAM W.S.E | DOWNSTREAM W.S.E. | HEAD PRESSURE |
|--|----------------|-------------------|---------------|
| 150 CFS (all gates up for tailwater control) | 4280.6 | 4278.0 | 2.70 |

OHI GATE ELEVATIONS

| GATE | GATE DOWN ELEVATION | GATE UP ELEVATION | Δ |
|------|---------------------|-------------------|-----|
| W4-1 | 4278.2 | 4280.2 | 2.0 |
| W4-2 | 4278.2 | 4280.2 | 2.0 |
| W4-3 | 4278.2 | 4280.2 | 2.0 |
| W4-4 | 4278.2 | 4280.2 | 2.0 |
| W4-5 | 4278.2 | 4280.2 | 2.0 |
| W4-6 | 4278.2 | 4280.2 | 2.0 |

BID SET

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PROJECT NAME AND ADDRESS
 Weber River
 Ogden, UT
 Ogden Business Exchange Surf Wave

| | |
|------------------------------|---------------------|
| Project 45072 | Sheet R09 |
| Date OCTOBER 2025 | |
| Scale 1" = 5' (FULL SIZE) | |

GENERAL NOTES

1. ALL WORK SHALL CONFORM TO APPLICABLE LOCAL, COUNTY AND/OR STATE CODES, REGULATIONS AND RULES.
2. ALL WORK SHALL BE PERFORMED BY A UTAH LICENSED CONTRACTOR.
3. CONTRACTOR SHALL OBTAIN, COORDINATE, AND PAY FOR ANY AND ALL PERMITS AND AGENCY INSPECTIONS AS REQUIRED.
4. CONTRACTOR SHALL CARRY ALL WORKER' COMPENSATION, PUBLIC LIABILITY, PROPERTY DAMAGE INSURANCE AS REQUIRED BY ALL APPLICABLE CODES AND REGULATIONS AND BY THE OWNER'S REPRESENTATIVE.
5. PROPERTY LINES SHOWN ARE APPROXIMATE, BASED ON PLATTED INFORMATION, CONTRACTOR TO PROTECT INDIVIDUAL PROPERTY PINS FOUND IN FIELD.
6. CONTRACTOR TO FIELD VERIFY ALL EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. CALL FOR UTILITY LOCATES.
7. ALL SURFACE DRAINAGE SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PERIOD.
8. CONTRACTOR IS RESPONSIBLE FOR COMPLIANCE WITH APPLICABLE WATER QUALITY & CONTROL REGULATIONS.
9. CONTRACTOR TO BE RESPONSIBLE FOR ALL TRAFFIC CONTROL FOR THE UTILITY CONSTRUCTION.

SITE PREPARATION NOTES

1. CONSTRUCTION FENCING TO BE PUT UP ALONG LIMITS OF WORK TO PREVENT TRAMPLING BY PEDESTRIANS. ALL CONSTRUCTION FENCE SHALL BE GREEN PLASTIC AND SUPPORTED AT ADEQUATE INTERVALS TO BE STRAIGHT AND FULL HEIGHT.
2. CONTRACTOR SHALL NOT DISTURB INTERSECTING WALKS, STAIRS, OR HANDRAILS. IF AFFECTED, CONTRACTOR IS RESPONSIBLE FOR REPAIRING TO ORIGINAL CONDITION.
3. DUE TO SITE ACCESS RESTRICTIONS, USE ALL ACCESS/STAGING AND PARKING INDICATED ON PLANS.

SEEDING ZONE A

| Upland Mix Application | | |
|------------------------------------|--|-----------|
| Common Name | Scientific Name | pls/acre* |
| Sand dropseed | <i>Sporobolus cryptandrus</i> | 1% |
| Blanket flower | <i>Gaillardia aristata</i> | 6.4% |
| Rocky Mountain beeplant | <i>Cleome serrulata</i> | 19.2% |
| Scarlet globemallow | <i>Sphaeralcea coccinea</i> | 3.2% |
| Alkali sacaton | <i>Sporobolus airoides</i> | 3.2% |
| Great Basin wildrye | <i>Leymus cinereus</i> | 25.5% |
| Western wheatgrass | <i>Pascopyrum smithii</i> | 25.5% |
| Sandberg bluegrass | <i>Poa secunda ssp. Sandbergii</i> | 6.4% |
| Inland saltgrass | <i>Distichlis spicata</i> | 3.2% |
| Lewis blue flax | <i>Linum lewisii</i> | 6.4% |
| *Broadcast Application=60 lbs/acre | | 100% |

SEEDING ZONE B

| Emergent Riparian Mix Application | | |
|------------------------------------|--------------------------------|-----------|
| Common Name | Scientific Name | pls/acre* |
| Inland saltgrass | <i>Distichlis spicata</i> | 25% |
| Creeping spikebrush | <i>Eleocharis palustris</i> | 25% |
| Spike muhly | <i>Muhlenbergia wrightii</i> | 25% |
| Nuttal's alkaligrass | <i>Puccinellia nuttalliana</i> | 25% |
| *Broadcast Application=15 lbs/acre | | 100% |

PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
SEEDING NOTES

| No. | REVISION/UPDATE | Date |
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| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | |
|-------------------------------|--------------|
| Project 45072 | Sheet LOO |
| Date OCTOBER 2025 | |
| Scale 1" = 20' (FULL SIZE) | |

BID SET

FEATURES LEGEND:

- OHI = OBERMEYER HYDRO INC.
- OHI RUBBER ROCK
- OHI STEEL GATES
- AIR LINE
- PURGE LINE
- TELEMTRY LINE
- MANHOLE FOR PURGE VALVE
- LEVEL SENSOR IN STILLING WELL
- REMOVE TREE
- DEMO CONCRETE
- CONCRETE
- BOULDERS
- GROUTED BOULDERS
- ALLUVIAL SUBSTRATE
- TOPSOIL AND SEED
- BOULDER STEPS
- SEEDING ZONE A
- SEEDING ZONE B

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**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
SEEDING PLAN**

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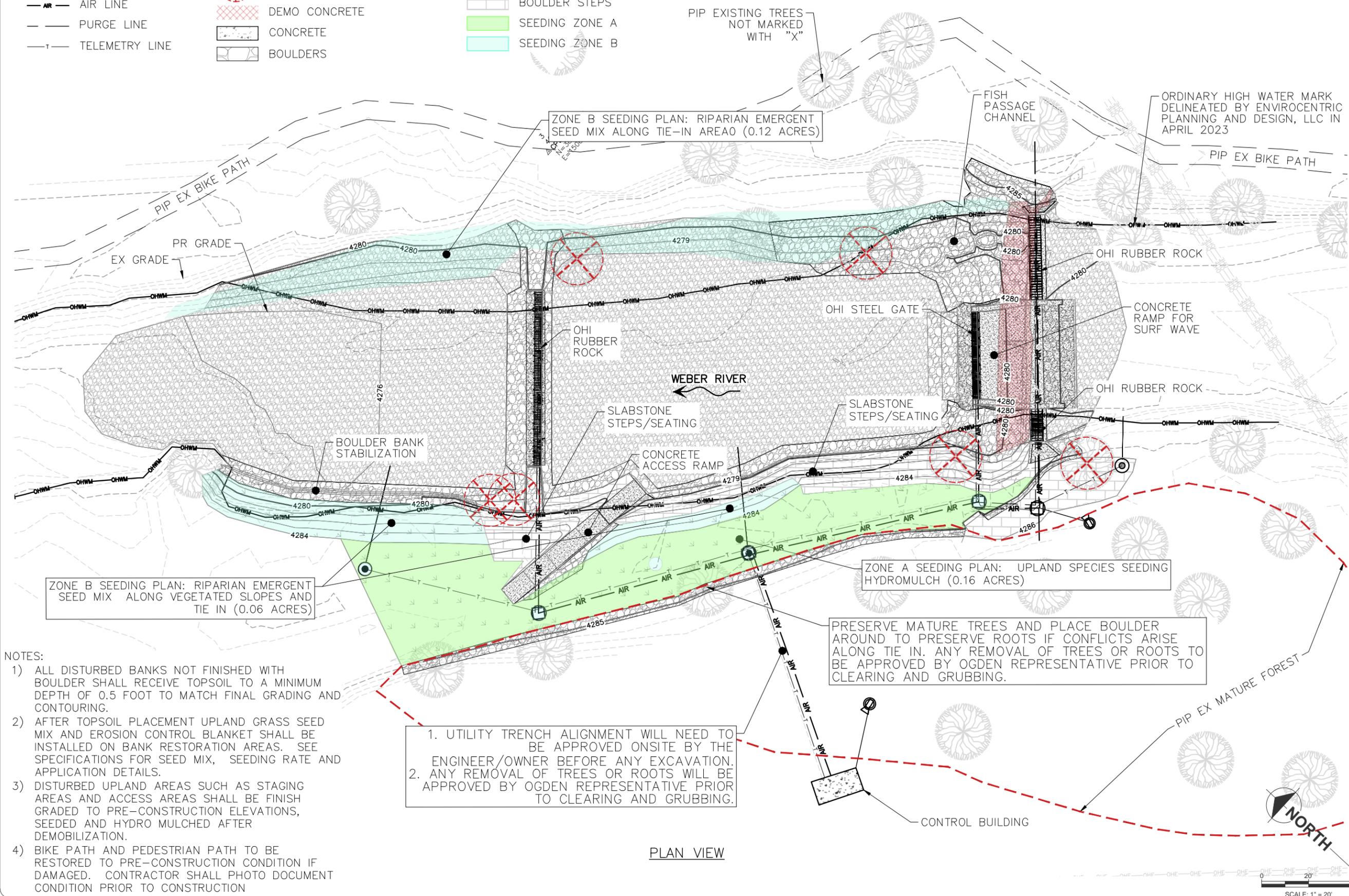
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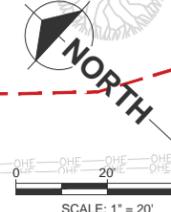
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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| Project | 45072 | Sheet | L01 | |
| Date | OCTOBER 2025 | Scale | | 1" = 20' (FULL SIZE) |
| Scale | 1" = 20' (FULL SIZE) | | | |



- NOTES:
- ALL DISTURBED BANKS NOT FINISHED WITH BOULDER SHALL RECEIVE TOPSOIL TO A MINIMUM DEPTH OF 0.5 FOOT TO MATCH FINAL GRADING AND CONTOURING.
 - AFTER TOPSOIL PLACEMENT UPLAND GRASS SEED MIX AND EROSION CONTROL BLANKET SHALL BE INSTALLED ON BANK RESTORATION AREAS. SEE SPECIFICATIONS FOR SEED MIX, SEEDING RATE AND APPLICATION DETAILS.
 - DISTURBED UPLAND AREAS SUCH AS STAGING AREAS AND ACCESS AREAS SHALL BE FINISH GRADED TO PRE-CONSTRUCTION ELEVATIONS, SEEDED AND HYDRO MULCHED AFTER DEMOBILIZATION.
 - BIKE PATH AND PEDESTRIAN PATH TO BE RESTORED TO PRE-CONSTRUCTION CONDITION IF DAMAGED. CONTRACTOR SHALL PHOTO DOCUMENT CONDITION PRIOR TO CONSTRUCTION

- UTILITY TRENCH ALIGNMENT WILL NEED TO BE APPROVED ONSITE BY THE ENGINEER/OWNER BEFORE ANY EXCAVATION.
- ANY REMOVAL OF TREES OR ROOTS WILL BE APPROVED BY OGDEN REPRESENTATIVE PRIOR TO CLEARING AND GRUBBING.



BID SET

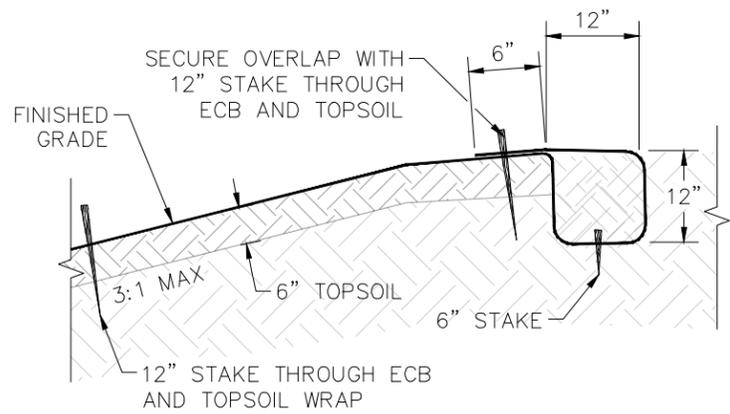


FIGURE A: SECURE ECB AT TOP OF BANK - NTS

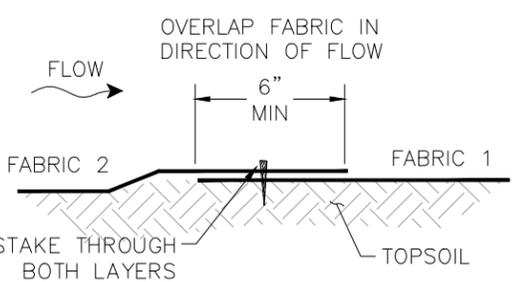


FIGURE B: CROSS SECTION VIEW OF OVERLAP - NTS

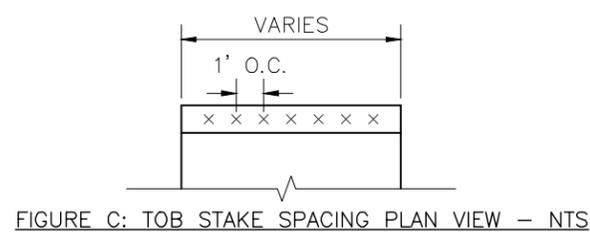
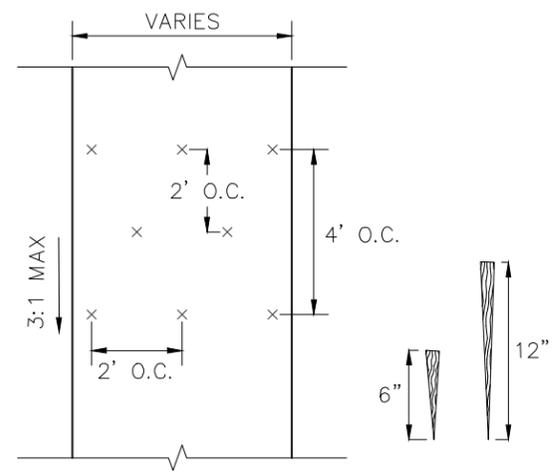


FIGURE C: TOP STAKE SPACING PLAN VIEW - NTS



x DENOTES STAKE LOCATION (APPROXIMATELY 6 STAPLES PER SY)

FIGURE D: STAKE SPACING PLAN VIEW - NTS

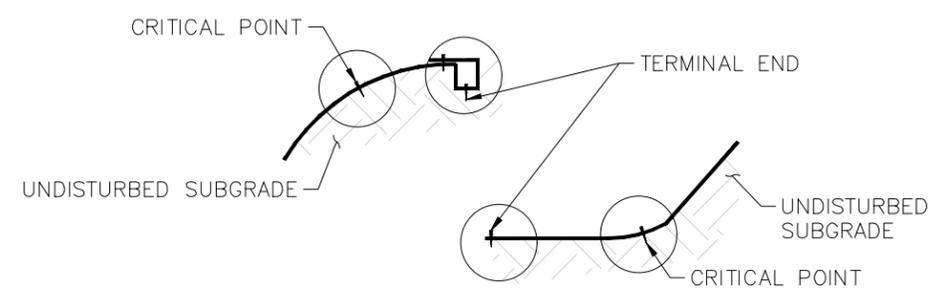
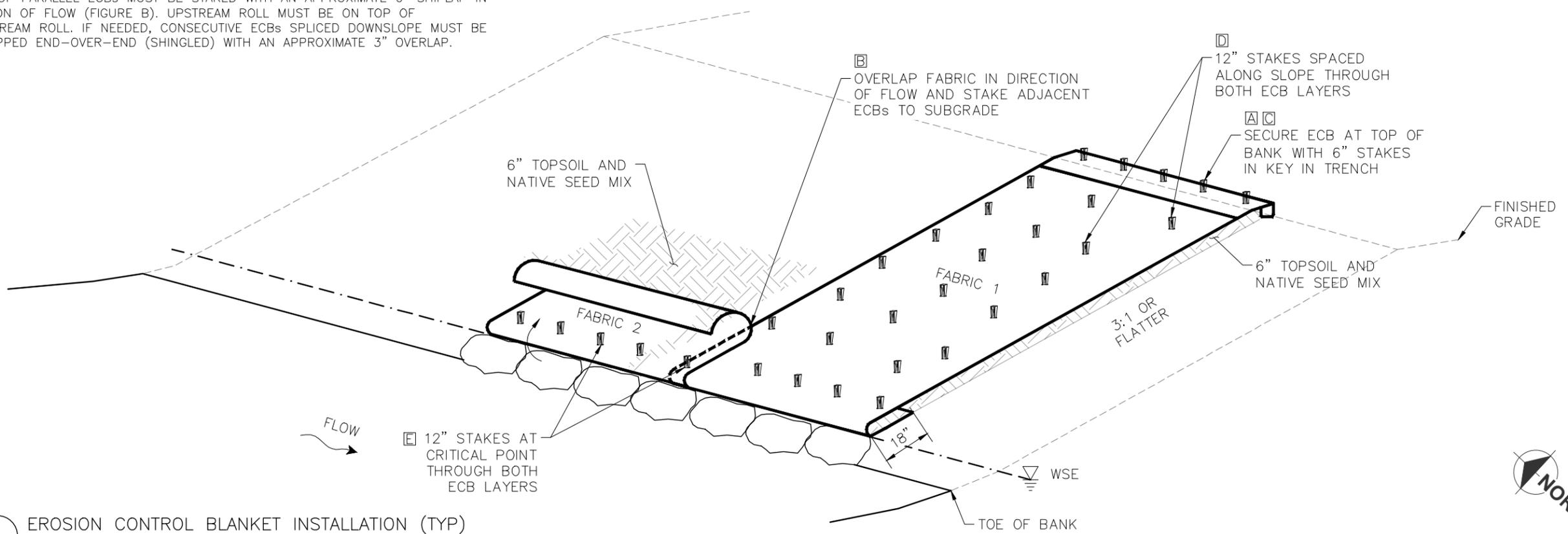


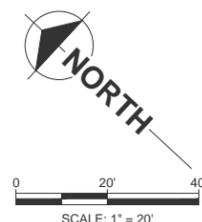
FIGURE E: CRITICAL POINT SECURING - NTS

ECB INSTALLATION NOTES:

1. CONTRACTOR SHALL USE ALL NATURAL 100% BIODEGRADABLE COIR NORTH AMERICAN GREEN C700BN EROSION CONTROL BLANKETS (ECBs) OR APPROVED EQUIVALENT. STAKES SHALL ALSO BE 100% BIODEGRADABLE. SEE SPECIFICATIONS AND MANUFACTURER'S INSTALLATION GUIDELINES FOR ADDITIONAL INFORMATION.
2. PREPARE SOIL BEFORE INSTALLATION. GROUND SURFACE MUST BE FREE OF DEBRIS, ROCKS, CLAY CLODS AND RAKED SMOOTH SUFFICIENT TO ALLOW INTIMATE CONTACT OF THE ECB WITH THE SOIL OVER THE ENTIRETY OF INSTALLATION.
3. STARTING AT THE TOE, KEY-IN 18" OF ECB BEHIND BOULDER TOE .
4. IN THE FOLLOWING ORDER, APPLY TOPSOIL, SEED MIX, THEN WRAP ECB FROM THE TOE TOWARDS THE TOP OF BANK. ECB MUST BE PLACED LOOSELY OVER GROUND SURFACE. DO NOT STRETCH. SECURE IN PLACE PER STAKING PLAN (FIGURE D).
5. EXCAVATE A 12" WIDE BY 12" DEEP TRENCH AT THE TOP. THE TRENCH SHALL RUN ALONG THE LENGTH OF THE INSTALLATION. STAKE ECB ALONG BOTTOM OF TRENCH, FILL WITH COMPACTED SOIL, OVERLAP ECB TOWARDS TOE OF SLOPE, AND SECURE WITH 6" STAKES EVERY 1.0' (FIGURES A&C).
6. EDGES OF PARALLEL ECBs MUST BE STAKED WITH AN APPROXIMATE 6" SHIPLAP IN DIRECTION OF FLOW (FIGURE B). UPSTREAM ROLL MUST BE ON TOP OF DOWNSTREAM ROLL. IF NEEDED, CONSECUTIVE ECBs SPLICED DOWNSLOPE MUST BE OVERLAPPED END-OVER-END (SHINGLED) WITH AN APPROXIMATE 3" OVERLAP.



1 EROSION CONTROL BLANKET INSTALLATION (TYP)
L02 NTS



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
EROSION CONTROL
BLANKET INSTALLATION

| No. | REVISION/UPDATE | Date |
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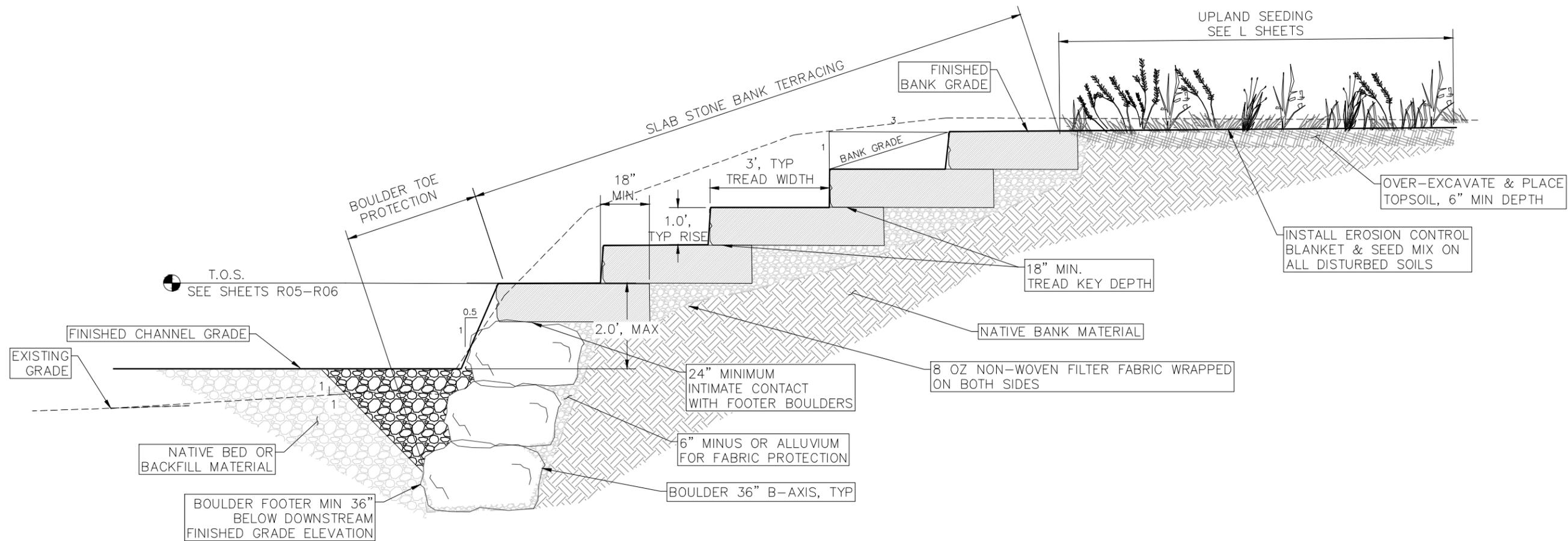
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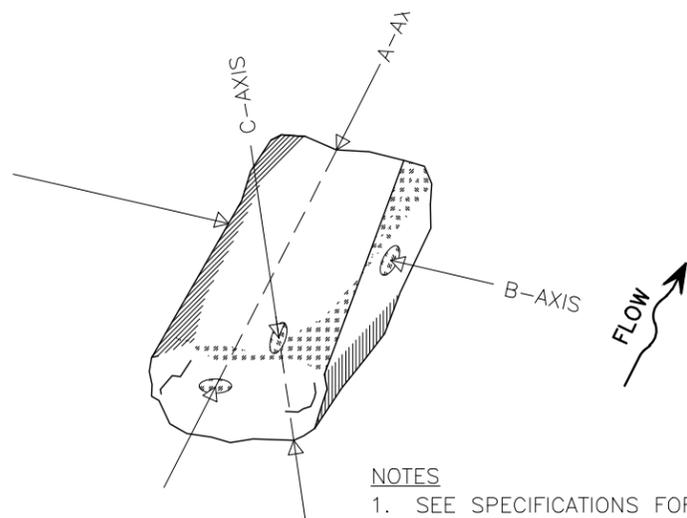
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 Ogden Business Exchange Surf Wave

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| Project 45072 | Sheet L02 |
| Date OCTOBER 2025 | |
| Scale 1" = 20' (FULL SIZE) | |

BID SET



1 BOULDER TOE PROTECTION WITH SLAB STONE BANK TERRACING, TYP.
D01 NTS



2 BOULDER AXIAL PLACEMENT (TYP)
D01 NTS

SLAB STONE NOTES

1. CONTRACTOR SHALL LEVEL, FIT, AND STACK INDIVIDUAL SLABS TO MAXIMIZE AESTHETIC VALUE OF FINISHED STEPS AND TERRACING. REFER TO TECHNICAL SPECIFICATIONS FOR MATERIAL AND CONSTRUCTION REQUIREMENTS.

BOULDER NOTES:

1. CONSTRUCTION OF BOULDER BANK SHALL INCLUDE SELECTION, ROTATION, PLACEMENT, AND ADJUSTMENT OF EACH INDIVIDUAL BOULDER TO MINIMIZE VOID SPACE AND MAXIMIZE INTIMATE CONTACT BETWEEN BOULDERS.
2. SEE SPECIFICATIONS FOR ACCEPTABLE AS-BUILT VARIANCES ON ELEVATIONS OF BOULDER AND ALLUVIAL BACKFILL.
3. HORIZONTAL CONTROL INFORMATION, INCLUDING COORDINATES OF ALIGNMENTS AND CROSS SECTIONS WILL BE PROVIDED ELECTRONICALLY.

PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
BOULDER TOE - SLAB STONE
BANK TERRACING DETAIL

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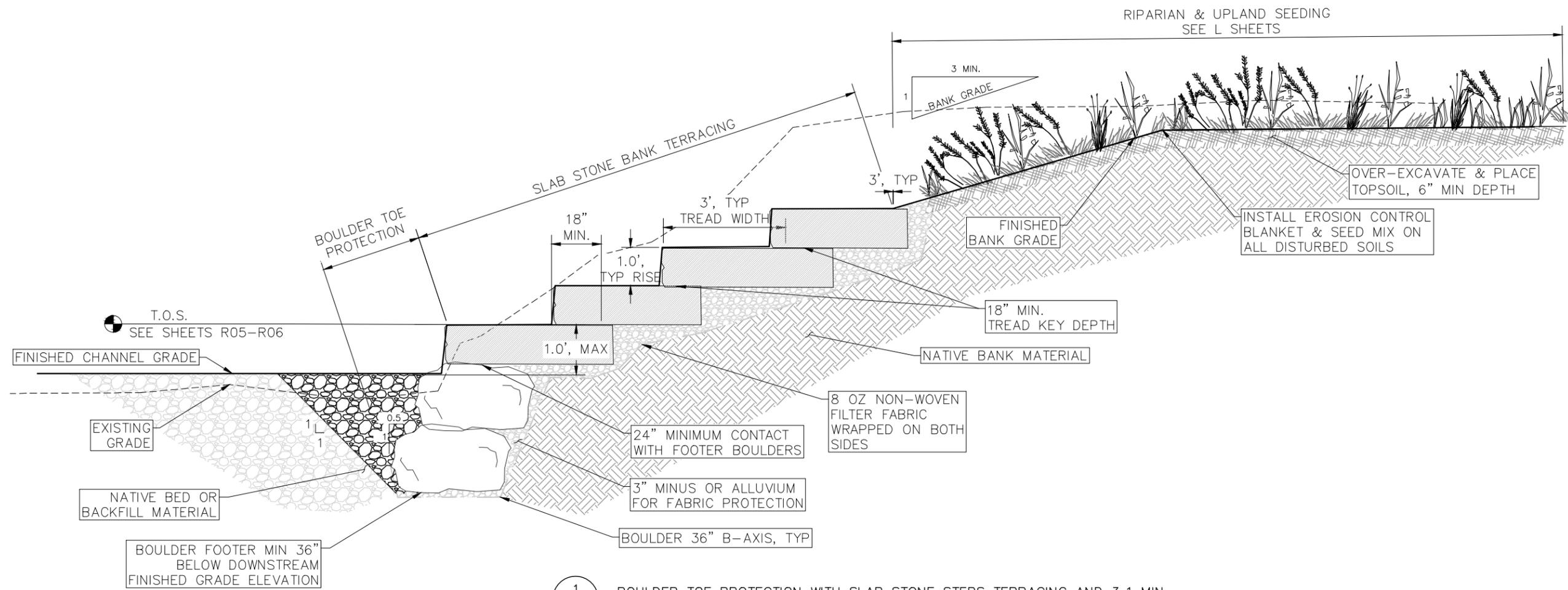
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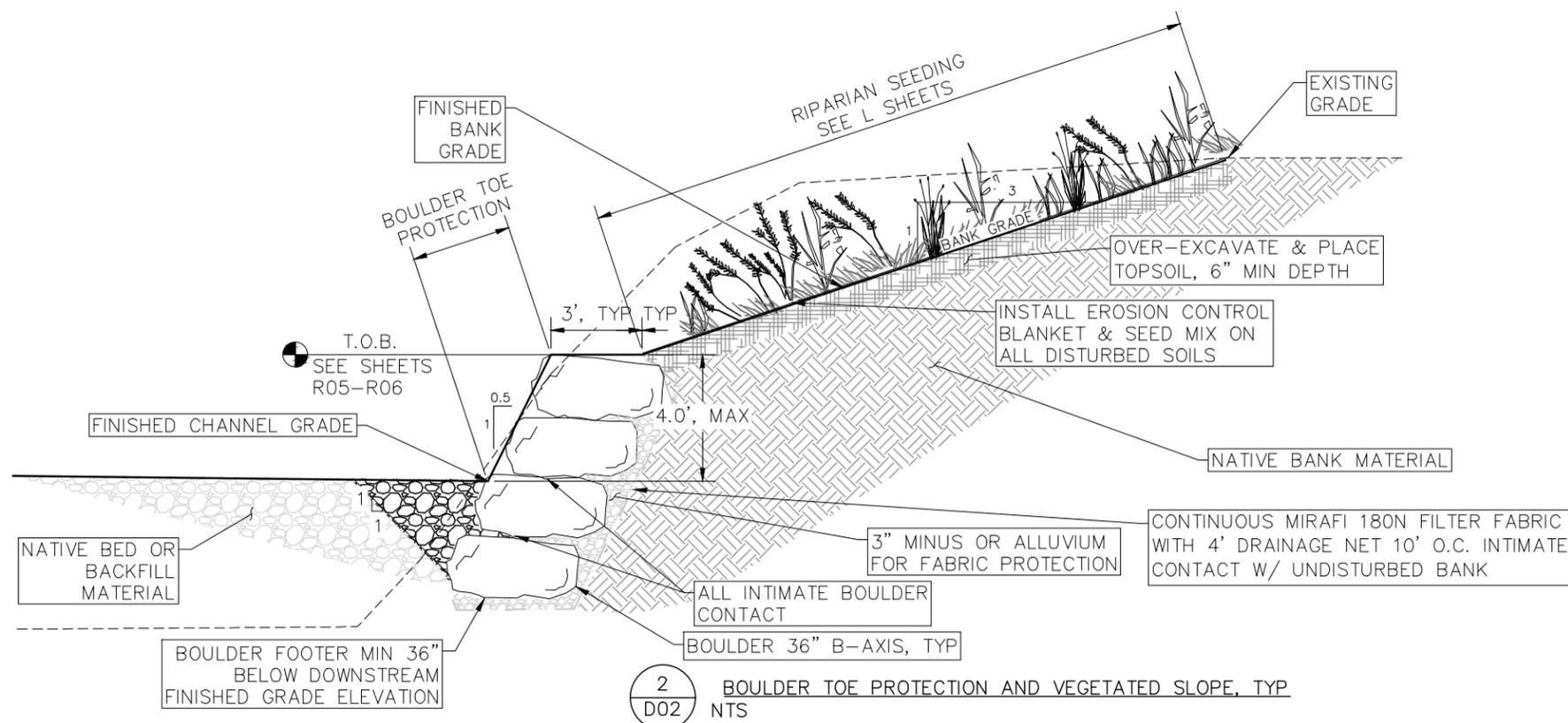
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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| Project 45072 | Sheet D01 |
| Date OCTOBER 2025 | |
| Scale NTS | |

BID SET



1
D02 BOULDER TOE PROTECTION WITH SLAB STONE STEPS TERRACING AND 3:1 MIN. VEGETATED SLOPE, TYP NTS



2
D02 BOULDER TOE PROTECTION AND VEGETATED SLOPE, TYP NTS

PROFESSIONAL ENGINEER STAMP



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
BOULDER TOE PROTECTION /
SLAB STONE BANK TERRACING
3:1 VEGETATED SLOPE DETAIL**

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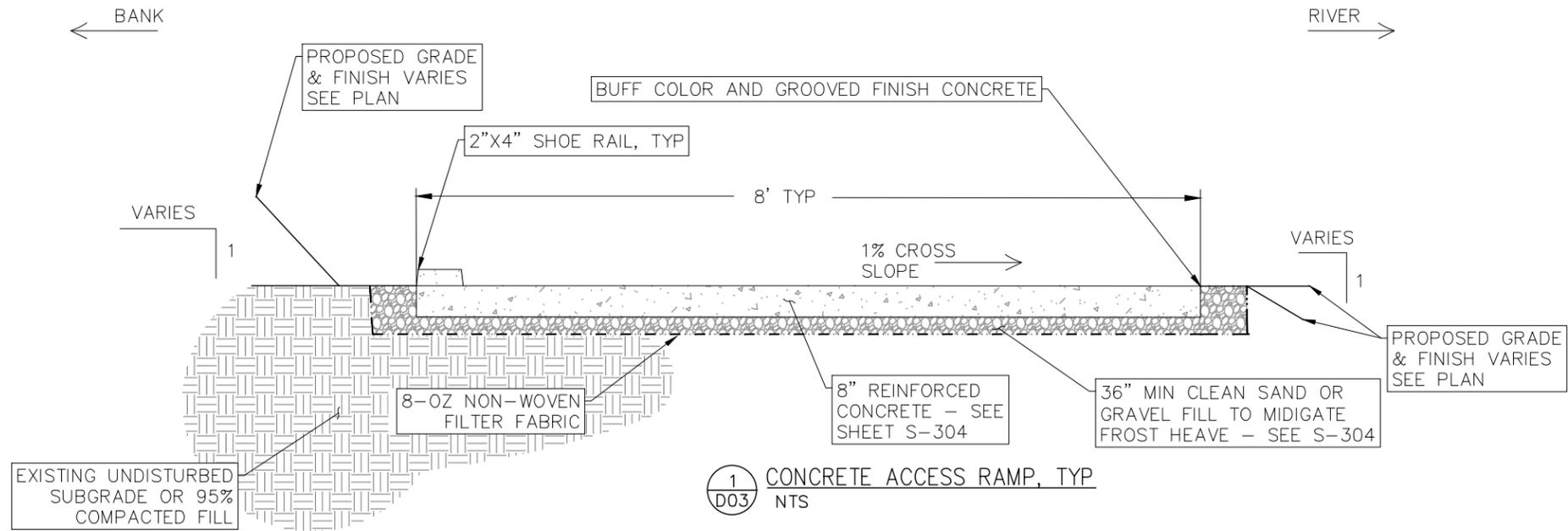
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**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CONCRETE ACCESS
RAMP DETAIL**

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Engineering Division
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Ogden, UT 84401

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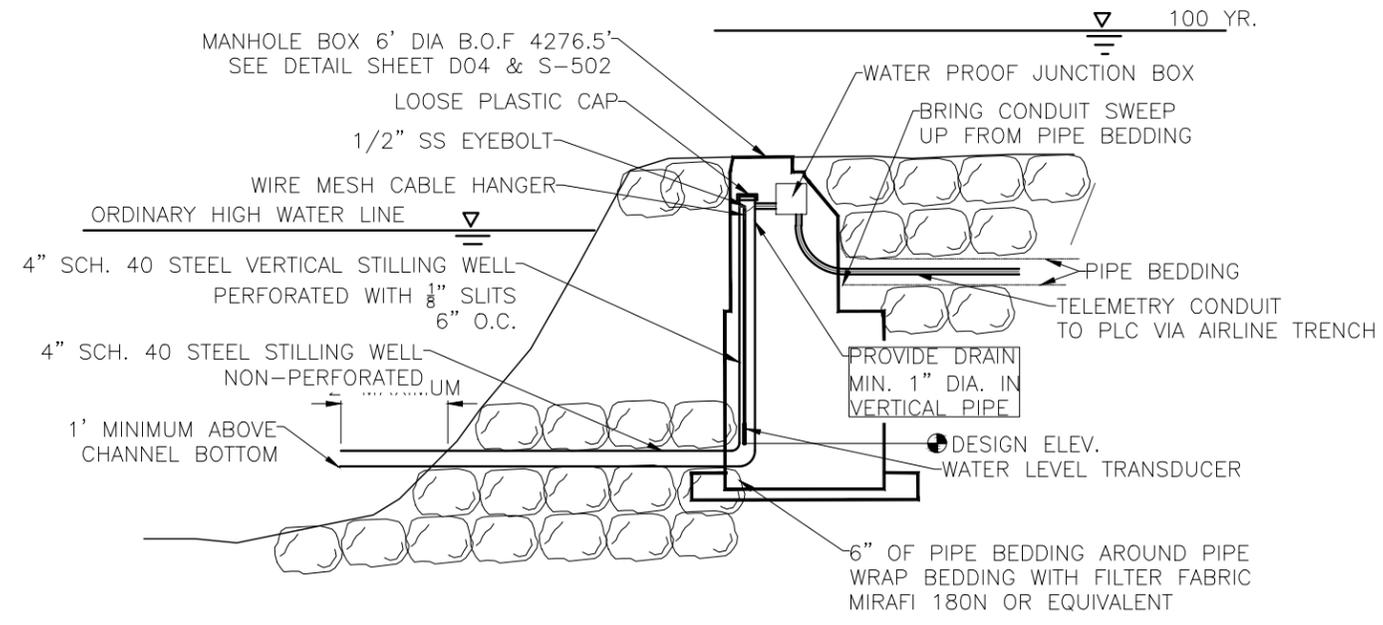
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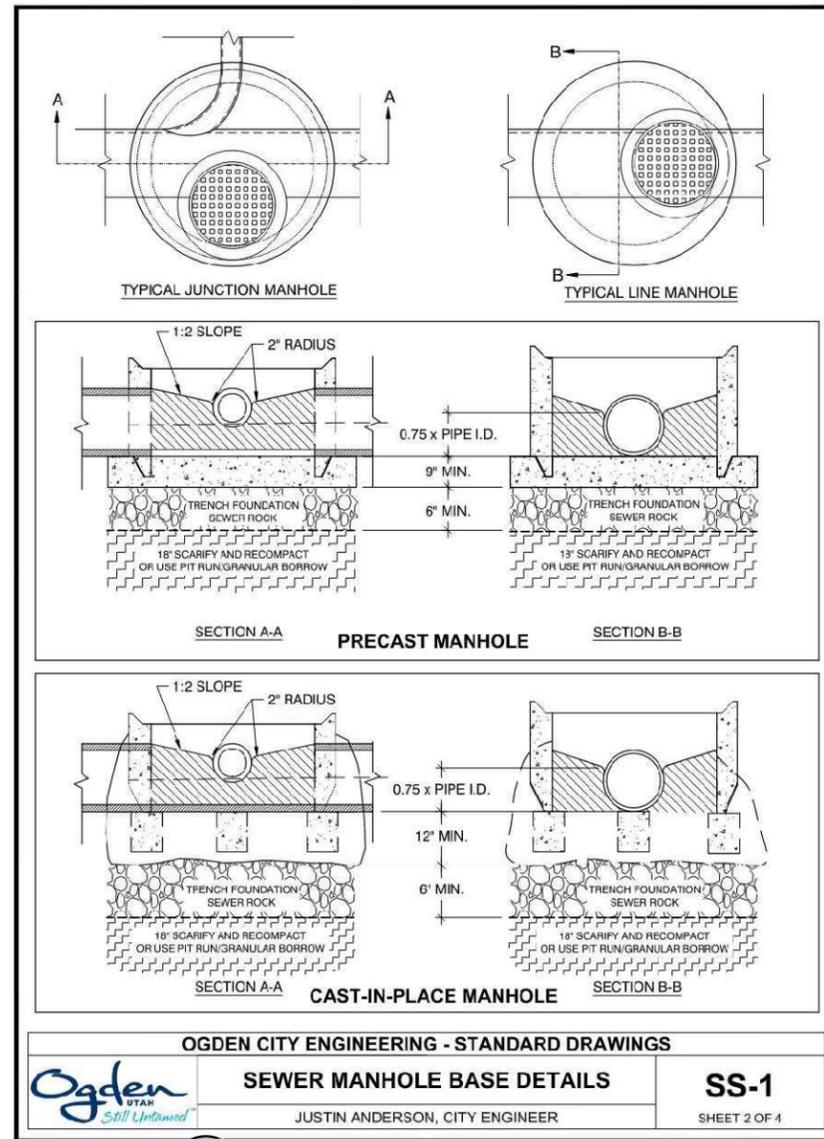
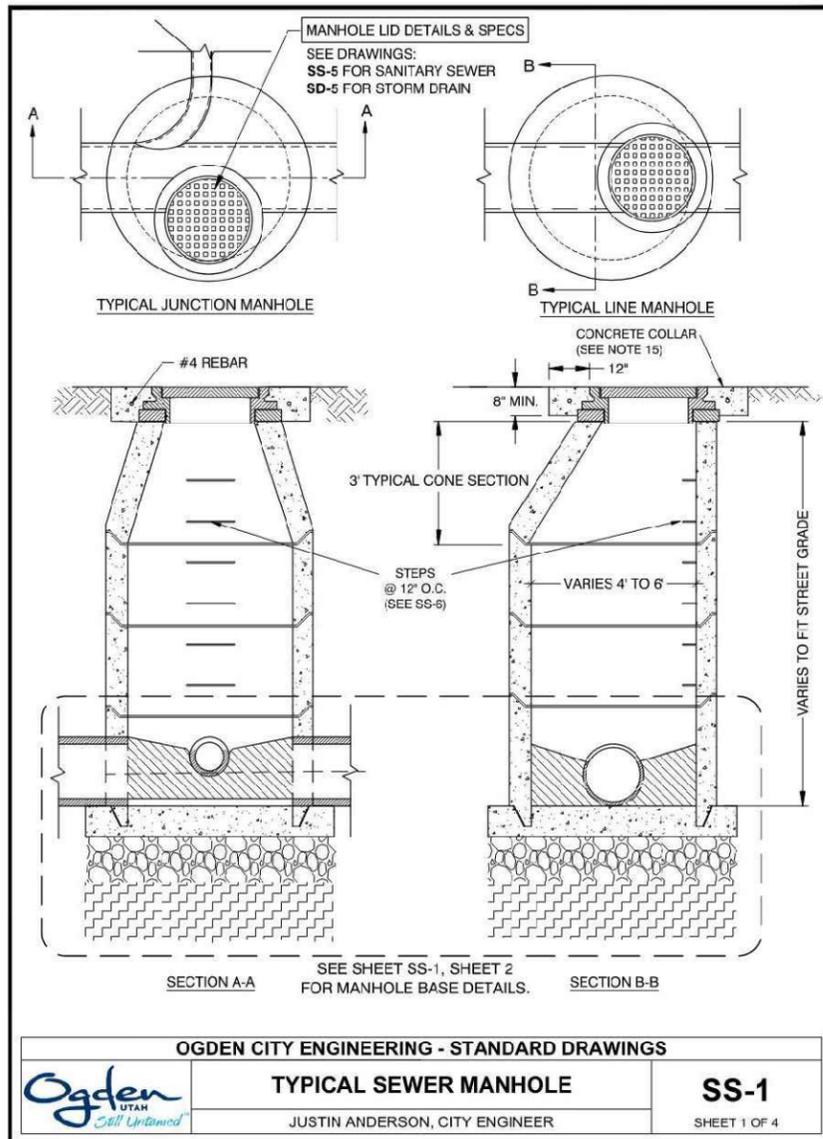
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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| Project 45072 | Sheet D03 |
| Date OCTOBER 2025 | |
| Scale NTS | |

BID SET



1
D04 TYPICAL WATER LEVEL TRANSDUCER INSTALLATION DETAIL
NTS (PROVIDE SHOP DRAWINGS)



NOTES:

- BACKFILL: PROVIDE AND PLACE PER APWA SECTION 31 23 23.
 - COMPACT PER APWA SECTION 31 23 26 TO A DENSITY OF 95 PERCENT OR GREATER. MAXIMUM LIFT THICKNESS BEFORE COMPACTION IS 8" WHEN USING RIDING AND 6" WHEN USING HAND COMPACTION EQUIPMENT. SEWER ROCK SHALL BE PER APWA SECTION 31 05 13.
- CONCRETE CLASS 4000 PER APWA SECTION 03 30 04. PLACE CONCRETE PER APWA 03 30 10.
- MANHOLE SIZE
 - 4" DIAMETER FOR SEWER PIPES UNDER 12" IN DIAMETER AND NOT SUBJECT TO ANY CONDITIONS LISTED FOR THE 5' MANHOLE.
 - 5" DIAMETER FOR THE FOLLOWING:
 - DEFLECTION ANGLE IS GREATER THAN OR EQUAL TO 45°
 - WHEN THE MANHOLE HAS THREE OR MORE LINES
 - FOR SEWERS WITH A PIPE DIAMETER OF 12" OR GREATER
 - WHEN THE COVER IS GREATER THAN 14.
- SEE SS-5 FOR MANHOLE LID SPECIFICATIONS.
- OUTLET PIPE TO BE A MINIMUM OF 1" BELOW INLET PIPE FLOW LINES EXCEPT AS NOTED BELOW IN FIG. 1 (BELOW).
- STEEL FRAMES: USE ASTM A 36 STEEL.
- LOW PROFILE LIDS WILL NOT BE ALLOWED IN ANY OGDEN CITY RIGHT OF WAY.
- REINFORCEMENT: USE ASTM A 615, GRADE 60. REFER TO APWA 03 20 00.
 - CAST IN PLACE REBAR SCHEDULE MUST BE STAMPED BY A STRUCTURAL ENGINEER.
- COATINGS: EXCEPT MACHINED SURFACES, COAT ALL METAL WITH ASPHALTUM PAINT.
- GROUT ALL PIPE OPENINGS WITH 2:1 SAND/CEMENT MORTAR.
- PLACE FLEXIBLE GASKET-TYPE SEALANT IN ALL MANHOLE JOINTS. SEAL MUST MEET THE REQUIREMENTS OF SS-S-00210 (210A), AASHTO M-198, AND ASTM C990.
- PRECAST REINFORCED CONCRETE WALLS MUST BE 5" THICK.
- CAST-IN-PLACE CONCRETE WALLS MUST BE A MINIMUM OF 8" THICK.
- CONTRACTOR SHALL CONTACT SEWER DEPARTMENT PRIOR TO ENTRANCE INTO MANHOLE
 - ENTRANCE INTO MANHOLE SHALL BE PER OSHA STANDARDS
- MINIMUM PIPE SLOPE: REFER TO TABLE 1 - MINIMUM SEWER MAIN PIPE SLOPE, OF THE OGDEN CITY ENGINEERING STANDARDS FOR MINIMUM SEWER MAIN PIPE SLOPE.

| INLET SIZE | 8" | 10" | 12" | 15" | 18" |
|------------|------|------|------|------|-----|
| 8" | 0.10 | --- | --- | --- | --- |
| 10" | 0.17 | 0.10 | --- | --- | --- |
| 12" | 0.33 | 0.17 | 0.10 | --- | --- |
| 15" | 0.58 | 0.42 | 0.25 | CL | --- |
| 18" | 0.80 | 0.71 | 0.63 | 0.50 | CL |

FIGURE 1 CL INDICATES THE DROP THROUGH THE MANHOLE SHALL BE THE EXISTING FLOWLINE BASED ON THE PIPE SLOPE

OGDEN CITY ENGINEERING - STANDARD DRAWINGS

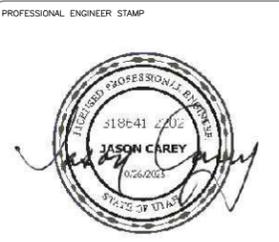
SEWER MANHOLE

SS-1

JUSTIN ANDERSON, CITY ENGINEER

SHEET 3 OF 4

2
D04 MANHOLE (TELEMETRY - AIRLINES - TYP.)
SEE SHEET S-502 FOR PRECAST MANHOLE FOOTING DETAIL



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OBERMEYER HYDRO INC
DETAIL

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Engineering Division
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DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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SURF WAVE PROJECT
OBERMEYER HYDRO INC
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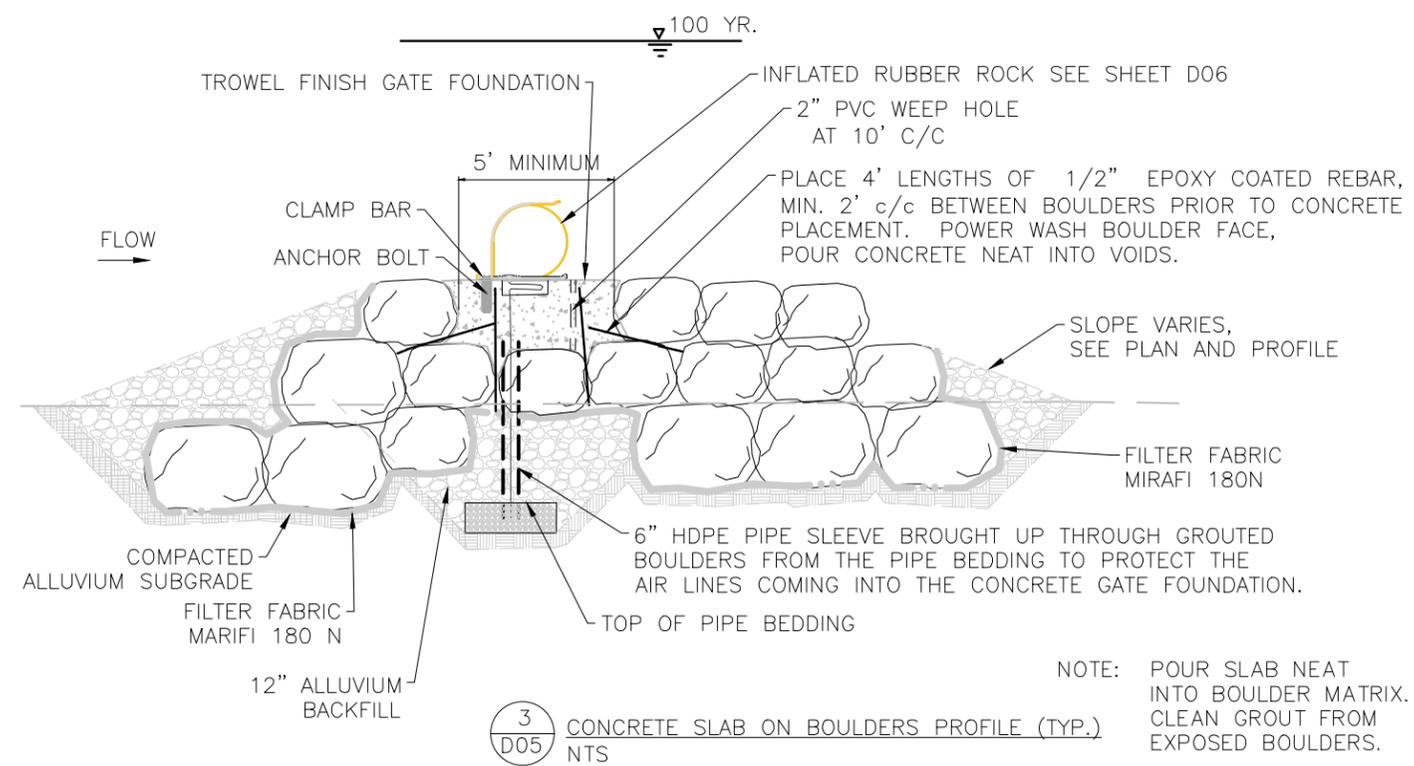
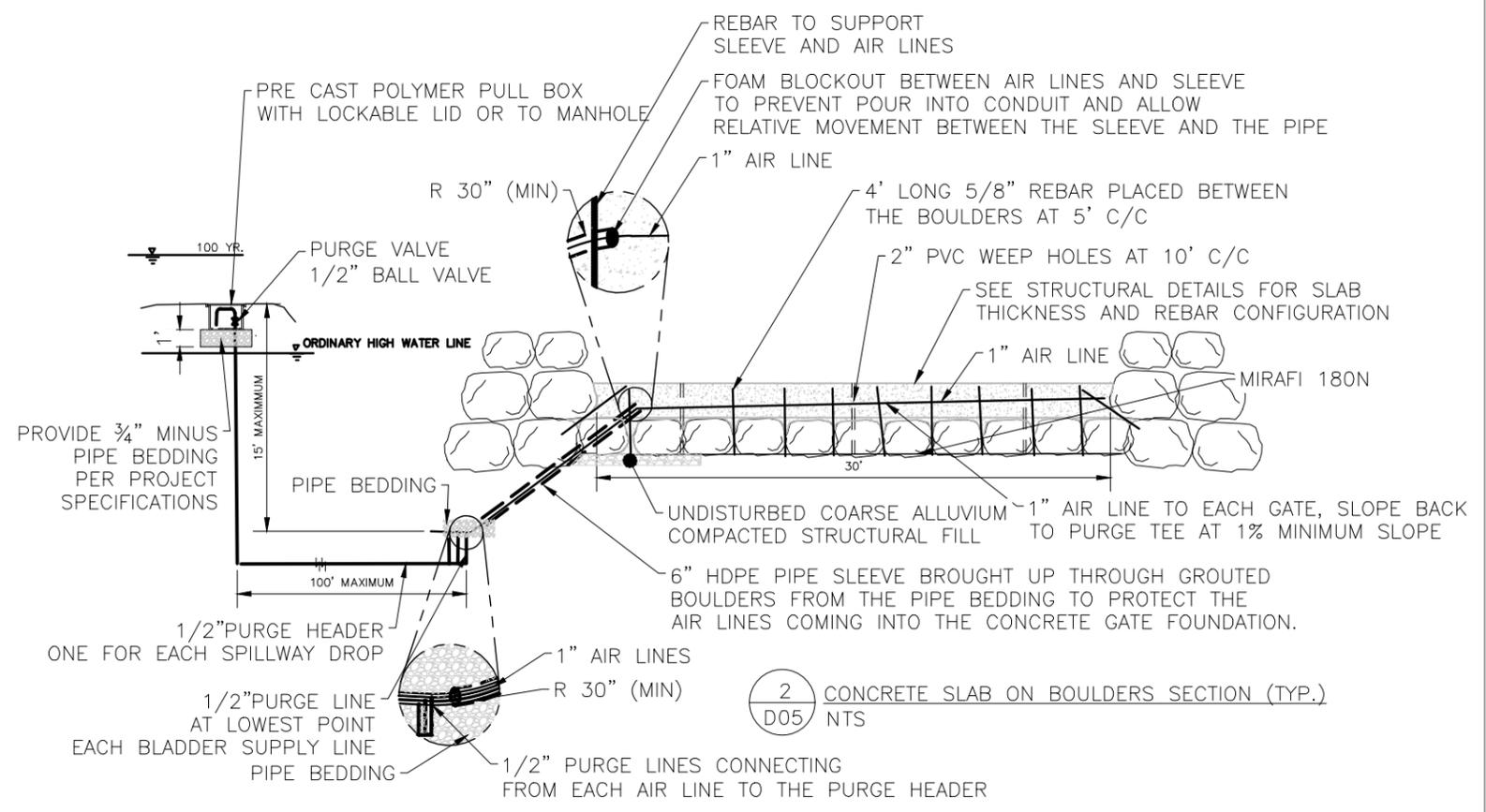
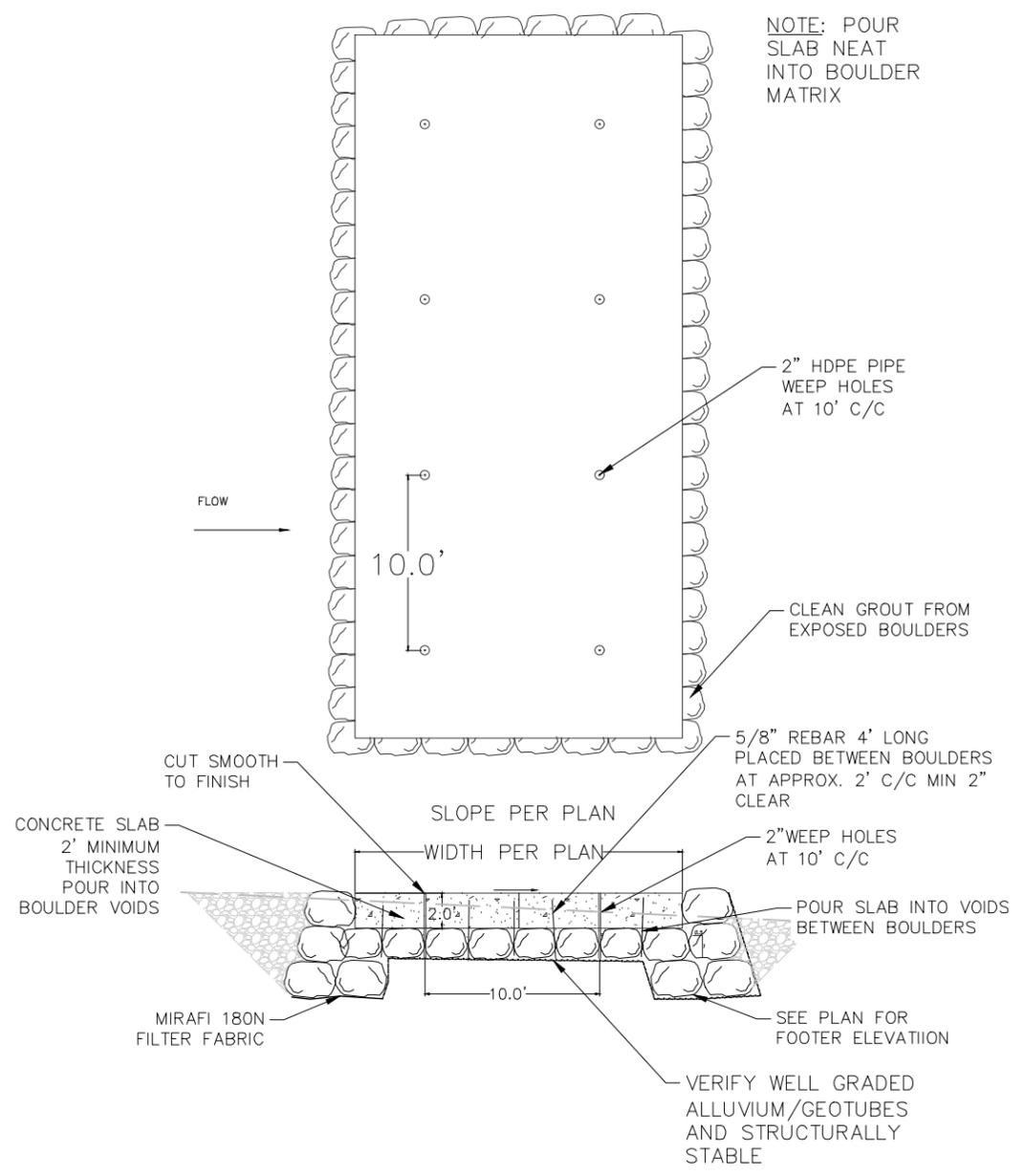
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| Project 45072 | Sheet D05 |
| Date OCTOBER 2025 | |
| Scale NTS | |

BID SET



- NOTES:**
1. CONCRETE UNDER GATE SYSTEM, GRIND HIGH SPOTS FLUSH AND FILL VOIDS. SURFACE SHOULD BE FREE FROM ANY SHARP SURFACES AND SHOULD BE LEVEL WITHIN 1/4".
 2. ALL DIMENSIONS TO WITHIN ±1/8" OF TRUE POSITION UNLESS OTHERWISE DIMENSIONED OR NOTED ON PART DRAWING.
 3. ANCHOR BOLTS TO BE PERPENDICULAR TO WITHIN ±1/8" OVER LENGTH OF ANCHOR BOLTS AS COMPARED TO THE HORIZONTAL CONCRETE CLAMPING SURFACE.
 4. CONTRACTOR RESPONSIBLE FOR ALL CONCRETE CUTTING, GROUTING, GROUT, AIR PIPE, AIR PIPE FITTINGS/WELDING, VALVING, ELECTRICAL CONDUIT, CONDUIT FITTINGS, ASSOCIATED TOOLS, REBAR, ANCHORING AND SURFACE EPOXY, AND ANYTHING ELSE PERTAINING TO COMPONENTS NOT SUPPLIED BY OBERMEYER HYDRO, INC. OR OUTLINED IN THE OBERMEYER BILL OF MATERIAL.
 5. ALL DIMENSIONS IN FEET UNLESS OTHERWISE NOTED.

NOTE: POUR SLAB NEAT INTO BOULDER MATRIX. CLEAN GROUT FROM EXPOSED BOULDERS.



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OBERMEYER HYDRO INC
RUBBER ROCK DETAIL**

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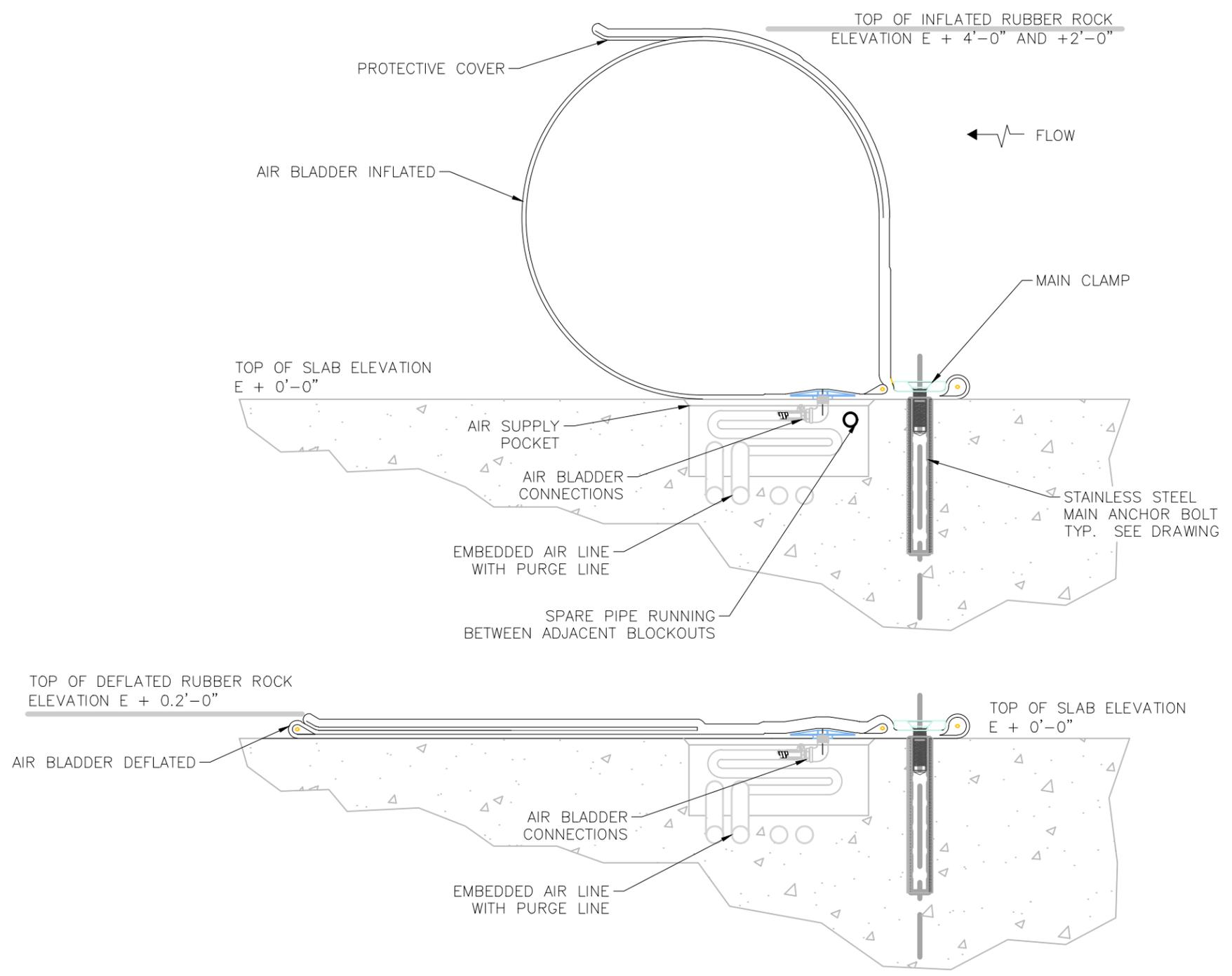
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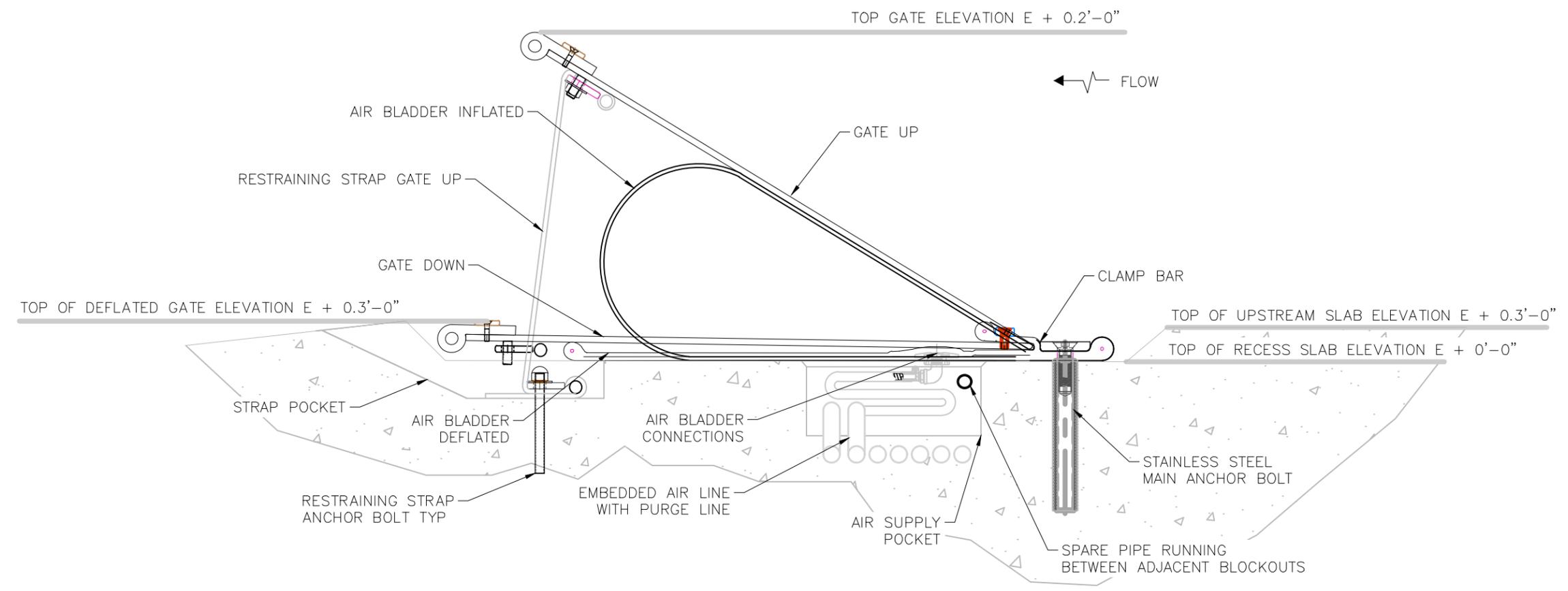


1
D06 OHI RUBBER ROCK DETAIL – SECTION ELEVATION 2–4 FT HIGH
(NTS – NOT FOR CONSTRUCTION PROVIDE SHOP DRAWINGS)

BID SET



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OBERMEYER HYDRO INC
STEEL GATE DETAIL**



1 / D07 OHI STEEL GATE DETAIL – SECTION ELEVATION 2.0 FT HIGH
(NTS – NOT FOR CONSTRUCTION PROVIDE SHOP DRAWINGS)

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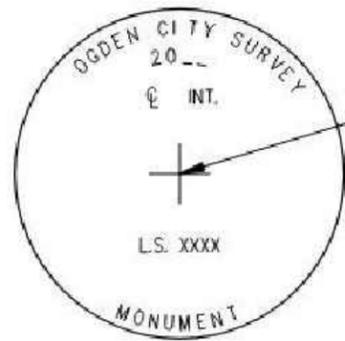
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| Date | OCTOBER 2025 | | |
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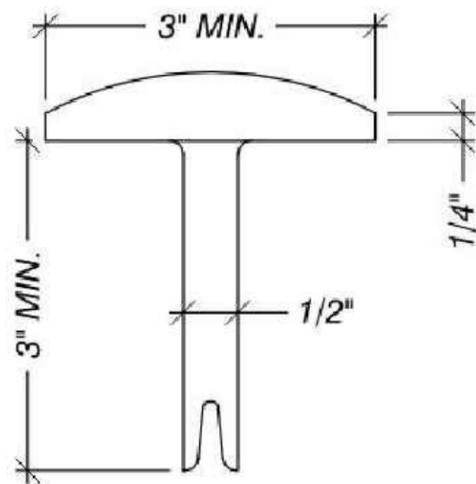


CAP PLAN

CAP CAN BE PURCHASED FROM ENGINEERS OFFICE

ABBREVIATIONS:

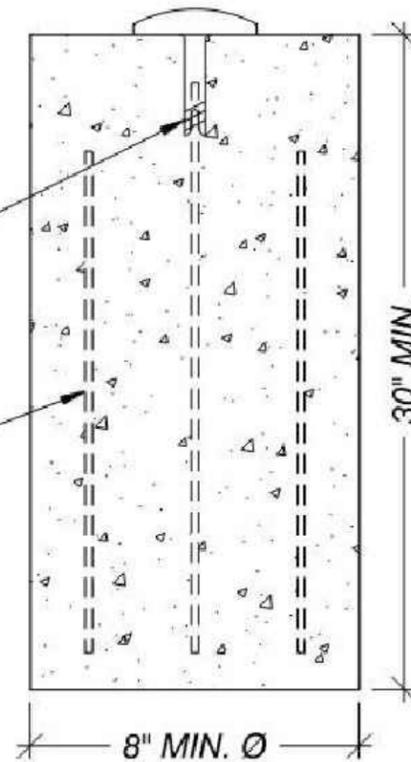
- INT - INTERSECTION
- ML INT - MONUMENT LINE INTERSECTION
- P.C. - POINT OF CURVATURE
- P.C.C. - POINT OF COMPOUND CURVATURE
- P.I. - POINT OF INTERSECTION
- P.O.C. - POINT ON CURVE
- P.O.T. - POINT ON TANGENT
- P.R.C. - POINT OF REVERSE CURVE
- P.T. - POINT OF TANGENCY
- S.C. - SECTION CORNER
- W.C. - WITNESS CORNER



CAP SECTION

ATTACH CAP TO REBAR WITH WIRE FOR INITIAL PLACEMENT

REINFORCEMENT (3) #5 @ 24"



SECTION OF BASE
(TYPICAL SETTING)

NOTES:

1. DATE: SHOW MONTH, DAY, AND YEAR WHEN CAP WAS MARKED.
2. LICENCE: SHOW LICENCE NUMBER OF LAND SURVEYOR WHO MARKED THE CAP.
3. CONCRETE: CLASS 4000 PER APWA SECTION 03 30 04.
4. REINFORCEMENT: ASTM A 615, GRADE 60, DEFORMED STEEL REBAR.

PROFESSIONAL ENGINEER STAMP



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OGDEN CITY DETAILS -
SURVEY MONUMENT**

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Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



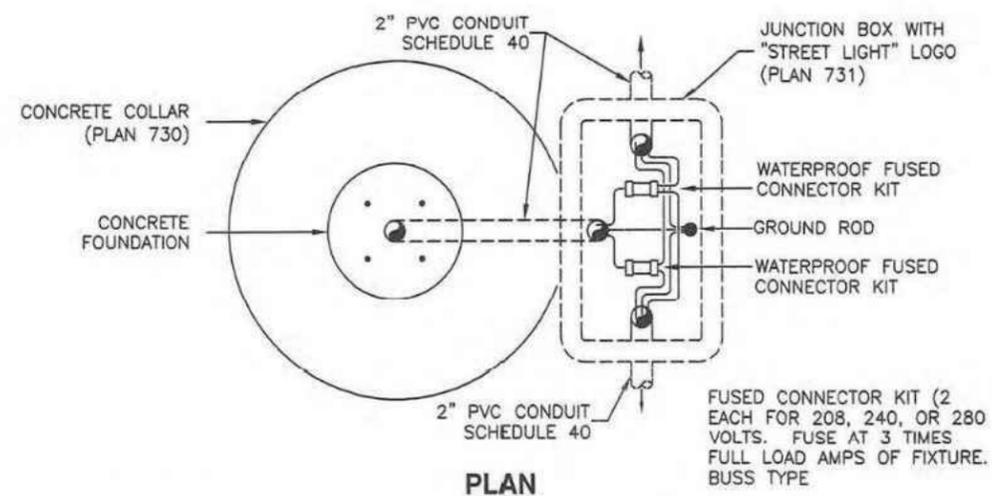
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | |
|----------------------|--------------|
| Project 45072 | Sheet D08 |
| Date OCTOBER 2025 | |
| Scale NTS | |

BID SET



Concrete base for street light pole

1. GENERAL

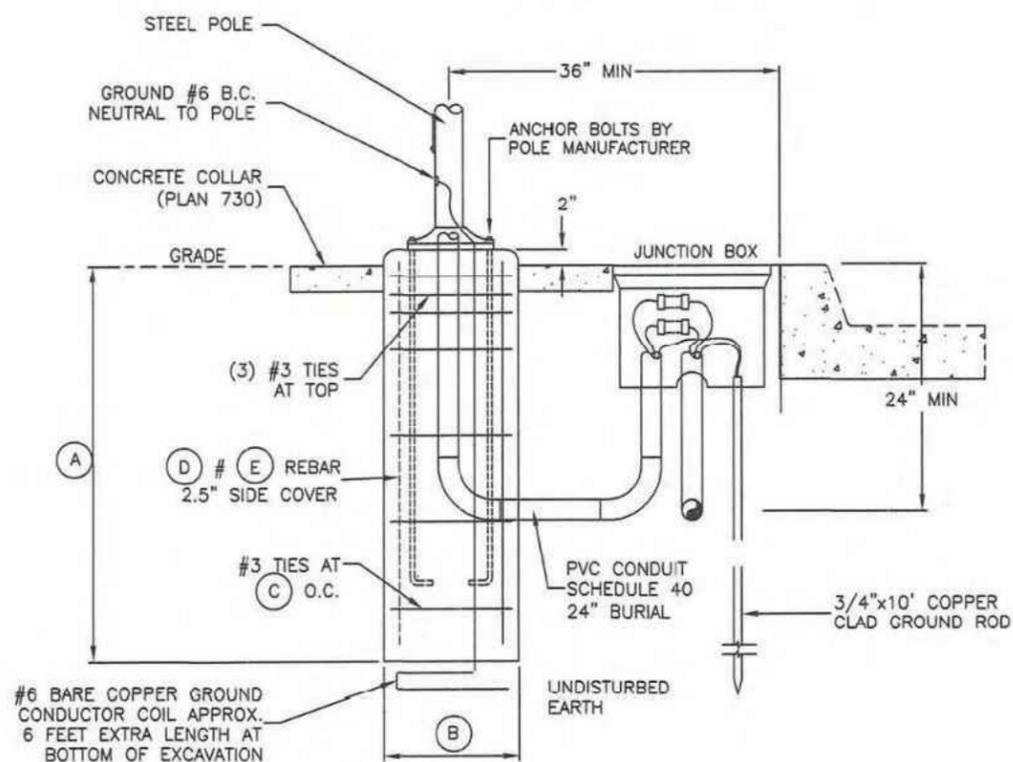
- A. Match longitudinal grades of foundation cap with top of existing curb.
 - 1) Existing Curb and No Sidewalk: Grade is 1/4-inch per foot sloped upward from the top of the back of curb.
 - 2) Existing Curb and Sidewalk: Straight grade from top back of curb to near edge of sidewalk.
 - 3) Inside of Existing Median: Straight grade between top of back of one curb to top of back of other curb.
- C. When foundation cap is located in an area to be paved, the cap is to be placed below grade with bolts extending above top of cap to accommodate paving surface.

2. PRODUCTS

- A. Reinforcement: Galvanized or epoxy coated, deformed, 60 ksi yield grade steel, ASTM A615.
- B. Anchor Bolt: Galvanized steel with galvanized washer and nut, APWA Section 05 05 23.
- C. Concrete: Class 4000, APWA Section 03 30 04.

3. EXECUTION

- A. Keyhole to verify pole placement and protect utilities, APWA Section 31 23 16.
- B. Excavation. Use vacuum extraction or excavate by hand if utilities are in the site vicinity.
- C. Formwork: Use a circular form for the top 18-inches of foundation. If ground water is encountered, excavate additional depth and install sewer rock. Pump out water and provide a circular form for full length of foundation.
- D. Before Concrete Placement:
 - 1) Do not weld reinforcing steel, anchor bolts, or galvanized steel conduit.
 - 2) Place all conduits in same trench.
 - 3) Use a template to hold anchor bolts in the proper positions and to the proper heights until concrete is placed and sets.
 - 4) Protect conduits from plugging by sealing conduit ends before concrete placement.
- E. Concrete Placement: APWA Section 03 30 10. Provide 1/2-inch radius edges. Cure concrete for 7 days before erecting pole.



| POLE LENGTH | DEPTH (A) | DIAMETER (B) | REBAR (C) | VIRTUAL (D) | REBAR (E) |
|-------------|-----------|--------------|-----------|-------------|-----------|
| 10'-15' | 4'-0" | 18" | 1 1/4" | 8.6" | 14 |
| 16'-25' | 6'-0" | 24" | 1" | 8.6" | 14 |
| 26'-50' | 9'-0" | 30" | 1" | 6.6" | 12 |

ELEVATION

Concrete base for street light pole



Plan
743
January 2011

743

**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
OGDEN CITY DETAILS -
CONCRETE BASE FOR
CAMERA POLE**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |
| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



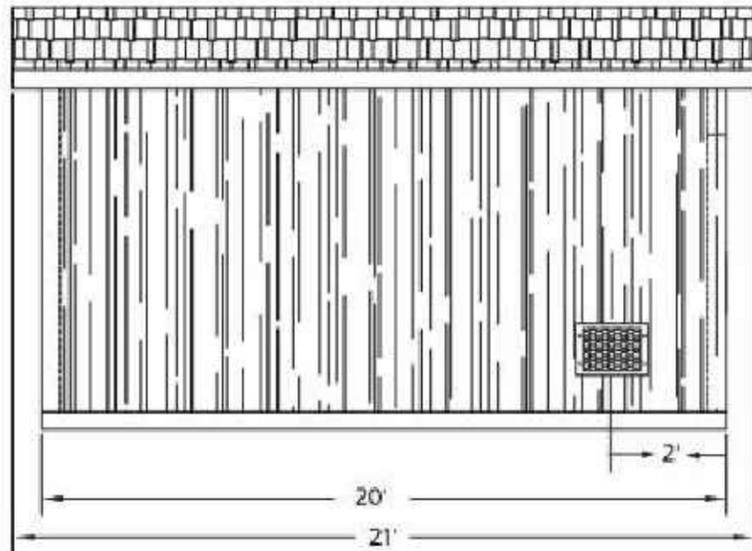
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

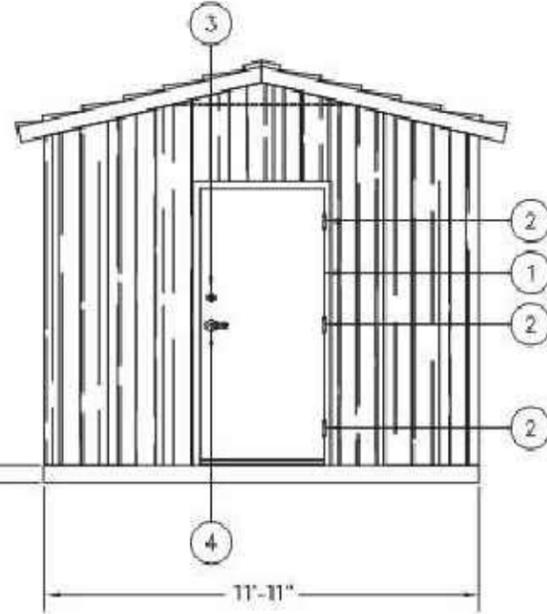
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|---------|--------------|-------|-----|
| Project | 45072 | Sheet | D09 |
| Date | OCTOBER 2025 | | |
| Scale | NTS | | |

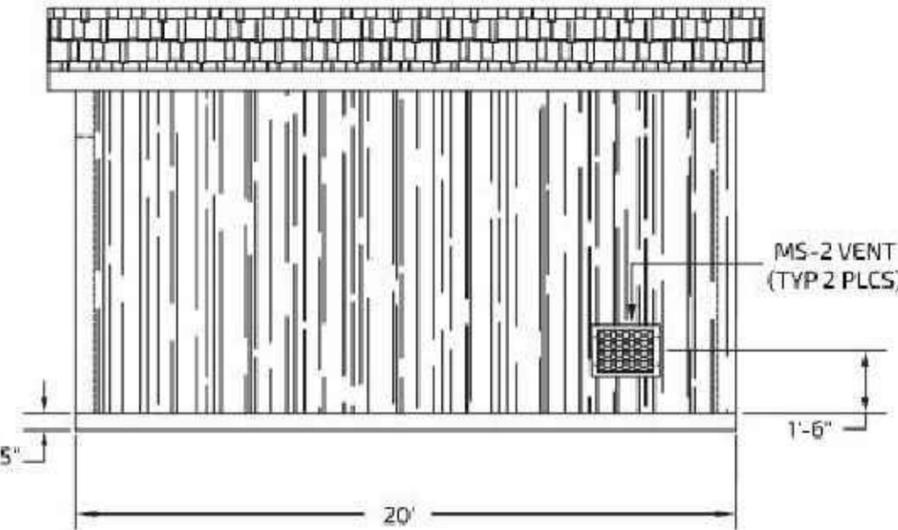
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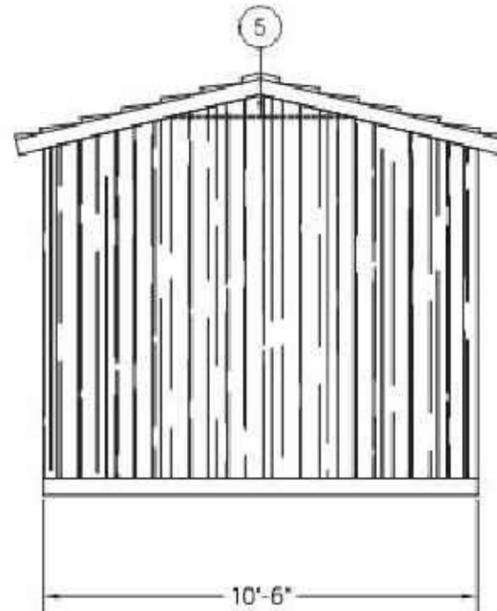
LH SIDE ELEVATION



FRONT ELEVATION



RH SIDE ELEVATION



REAR ELEVATION

DESIGN CRITERIA:

GENERAL NOTES APPLY TO ALL PANELS UNLESS SPECIFICALLY NOTED OTHERWISE

1997 UBC

LOADS:

WIND: 120 MPH EXP D
SEISMIC: ZONE 4
SNOW: 250 PSF ROOF LOAD
FLOOR LIVE LOAD: 400 PSF

MATERIALS:

CONCRETE: F'ci = 2500 PSI
F'C = 5000 PSI

STEEL:

REBAR=ASTM A615 GRADE 60
WELDING NOT ALLOWED
MIN LAP SPLICE IS 40 DIAMETERS
ALL MESH IS 4x4xWBxWB
MIN. MESH LAP IS TWO SQUARES
MESH IS TO BE CENTERED IN PANEL
PLATES & BARS=ASTM A36 Fy=36 KSI

PANEL THICKNESS:

FLOOR = 5"
WALLS = 4"
ROOF = 4 1/2"

COLOR: SEE MI

TEXTURE: WALLS - BARNWOOD
ROOF - CEDAR SHAKE

CASTING TOLERANCES:

| | |
|---------------------------------|------------------------------|
| OVERALL LENGTH OR WIDTH | 10 FT OR UNDER = ± 1/8" |
| | 10 TO 20 FT = +1/8", -3/16" |
| | 20 TO 40 FT = ± 1/4" |
| TOTAL THICKNESS | = -1/8, ± 1/4 |
| VARIATION FROM SQUARE | = ± 1/8 PER 6 FT OF DIAGONAL |
| LOCAL SMOOTHNESS | = 1/4" IN 10 FT |
| SWEEP | = ± 1/4" |
| POSITION OF TENDONS | = ± 1/4" |
| POSITION OF BLOKOUTS | = ± 1/4" |
| SIZE OF BLOKOUTS | = ± 1/4" |
| POSITION OF EMBEDS | = ± 1/4" |
| TIPPING AND FLUSHNESS OF PLATES | = +0, -1/4 |
| BOWING | = LENGTH/360 |
| END SQUARENESS | = ± 1/8" |

| BILL OF MATERIALS | | | |
|-------------------|-----|------------------------------|-------------------|
| ITEM | QTY | DESCRIPTION | |
| 1 | 1 | 3068 DOOR ASSEMBLY | |
| | | PREP FOR DEAD BOLT | |
| | | OPENS OUT | |
| | | AUTOMATIC DOOR BTM | |
| | | 3" THRESHOLD | |
| 2 | 3 | SPRING HINGE 4.5 x 4.5 | |
| 3 | 1 | SCHLAGE DEAD BOLT LOCK | |
| 4 | 1 | CLASS ROOM LEVER | |
| 5 | 3 | FLAT BAR 1/2" x 5/8" x 4'-2" | |
| | | | APPROPRIATE NOTED |



PROJECT TITLE
10.5' x 20' SCHWEITZER
CXT STANDARD BUILDING

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CXT Incorporated

| REV. | DESCRIPTION | APPROVAL | DATE |
|---------|-------------|----------|----------|
| SCALE | 1/4"=1'-0" | DATE | 06-05-06 |
| DRAWN | DBRESSLER | FILE NO. | PD-SW01 |
| CHECKED | | PLLOT | 4B |

BUILDING ELEVATIONS

| | | |
|-----------|-------|------|
| DWG NO. | SHEET | REV. |
| 10.520-01 | | |

PROFESSIONAL ENGINEER STAMP



OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |

CLIENT NAME AND ADDRESS



Ogden City Corporation
Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS



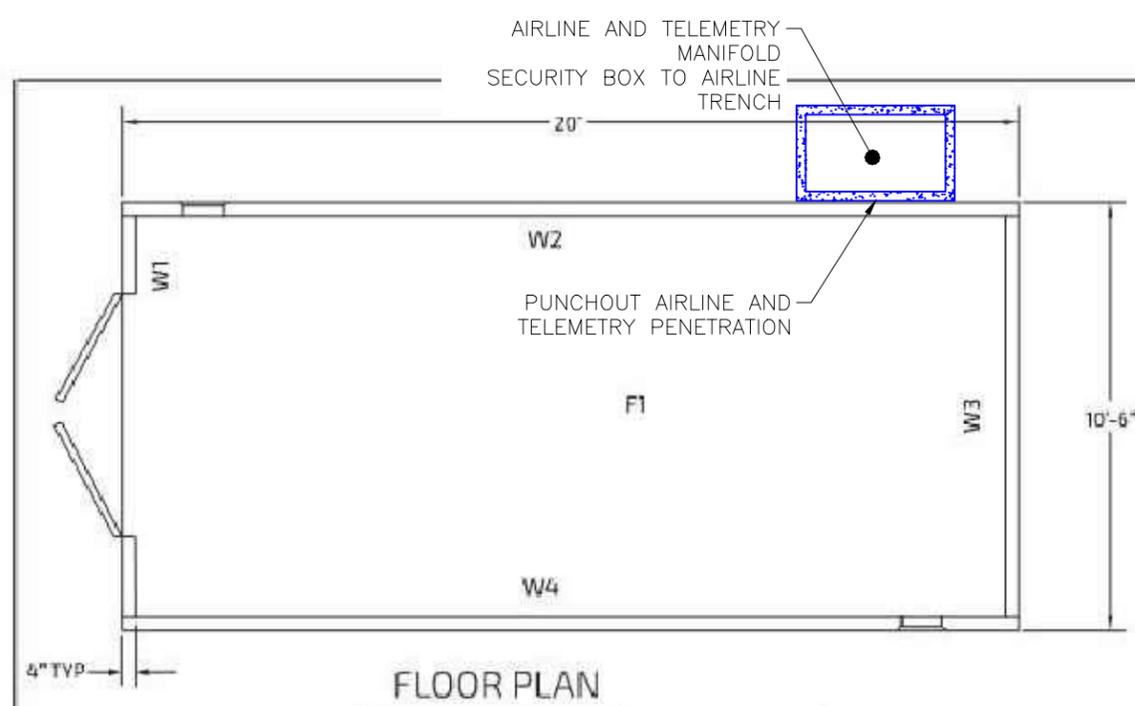
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS

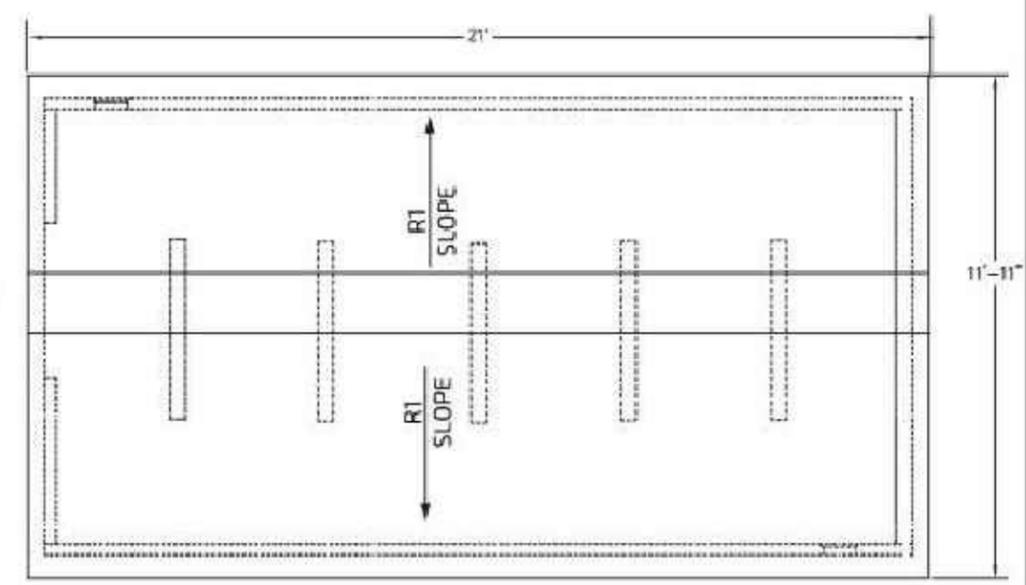
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

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|--------------|-------|
| Project | Sheet |
| 45072 | D10 |
| Date | |
| OCTOBER 2025 | |
| Scale | |
| NTS | |

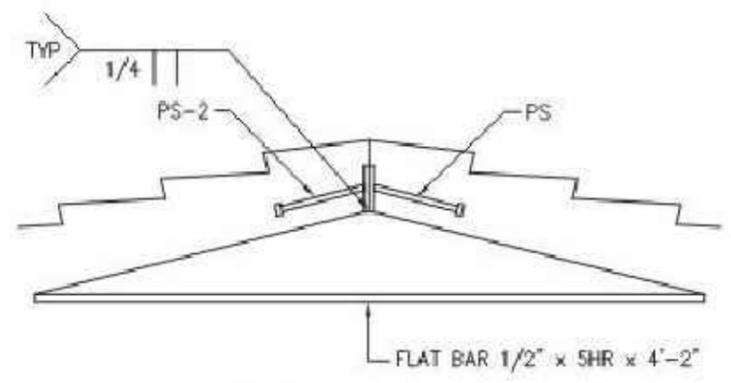
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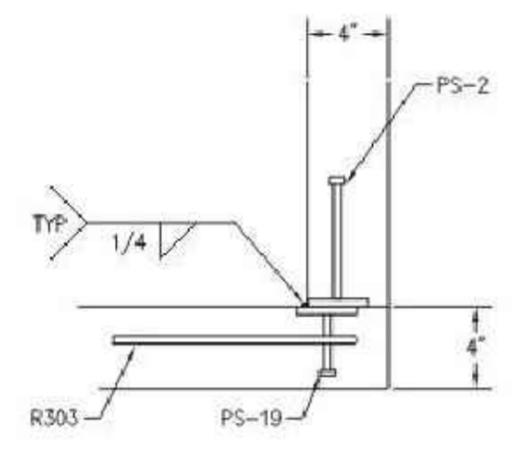
FLOOR PLAN



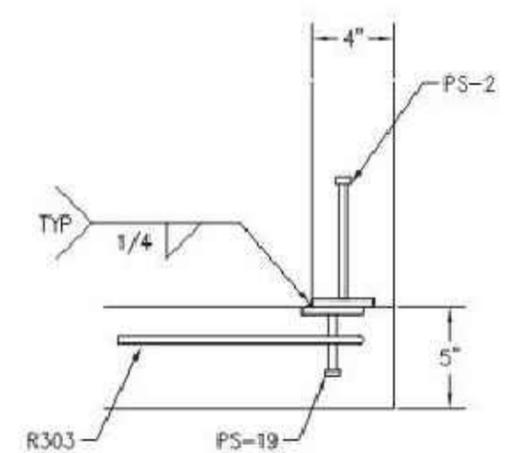
ROOF PLAN



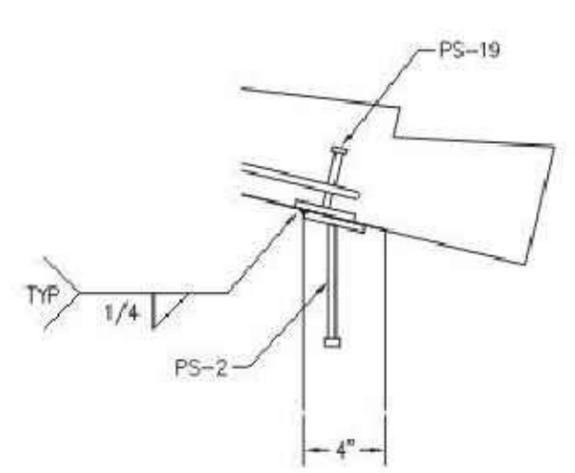
RIDGE CONNECTION



WALL TO WALL CONNECTION



WALL TO FLOOR CONNECTION



WALL TO ROOF CONNECTION



PROJECT TITLE
10.5' x 20' SCHWEITZER
CXT STANDARD BUILDING

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| REV. | DESCRIPTION | APPROVAL | DATE |
|---------|--------------|----------|----------|
| SCALE | 1/4" = 1'-0" | DATE | 06-05-06 |
| DRAWN | DBRESSLER | FILE NO. | PD-SW02 |
| CHECKED | | PLOT | 48 |

PLAN VIEW

| | | |
|-----------|-------|------|
| DWG. NO. | SHEET | REV. |
| 10.520-02 | / | |

OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
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CLIENT NAME AND ADDRESS

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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

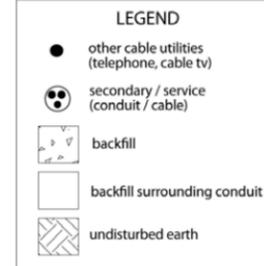
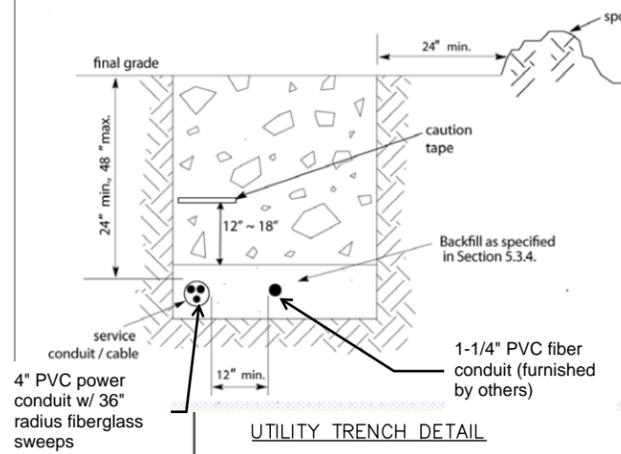
RiverRestoration
P.O. Box 248
Carbondale, CO 81623
www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | |
|--------------|-------|
| Project | Sheet |
| 45072 | D11 |
| Date | |
| OCTOBER 2025 | |
| Scale | |
| NTS | |

BID SET

FOR REFERENCE ONLY



NOTE:

THE "FOUNDATION" FOR THIS STRUCTURE IS ESSENTIALLY THE COMBINATION OF THE COMPACTED SUB-BASE MATERIAL AND THE BUILDING'S REINFORCED SLAB. THE COMBINATION OF THE COMPACTED SUB-BASE MATERIAL AND THE BUILDING'S REINFORCED SLAB NEED TO BE AT LEAST 12" THICK AND THE COMPACTED SUB-BASE MATERIAL SHALL EXTEND BELOW THE LOCAL FROST DEPTH.

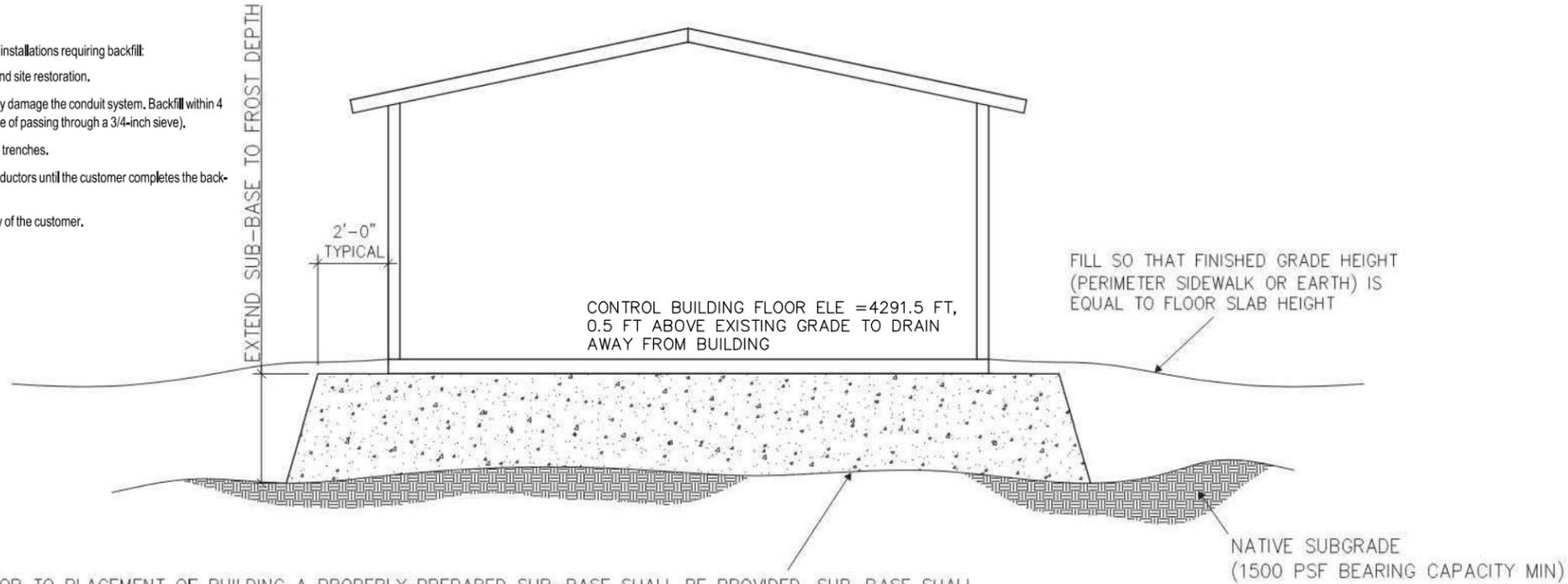
THIS FACTORY ASSEMBLED BUILDING, AS CONSTRUCTED, PROVIDES A RIGID BOX TYPE STRUCTURAL SYSTEM. VERTICAL LOADS ARE TRANSFERRED PRIMARILY THROUGH BEARING WALLS TO THE STRUCTURAL SLAB FLOOR OF THE BUILDING. THE VERTICAL LOADS ARE THEN DISTRIBUTED THROUGH THE REINFORCED CONCRETE FLOOR TO THE PREPARED GRANULAR, NON-FROST SUSCEPTIBLE (NFS) SUB-BASE WHICH DISTRIBUTES THE VERTICAL LOADS IN RELATIVELY UNIFORM FASHION TO THE NATIVE SUB-GRADE. AS WITH MOST CONSTRUCTION, THIS DOES REQUIRE THE NATIVE SUB-GRADE TO BE STRIPPED OF VEGETATION AND TOP SOIL PRIOR TO PLACEMENT OF THE PREPARED GRANULAR SUB-BASE. DUE TO THE INHERENT STIFFNESS OF THE BUILDING, IT WILL REMAIN SAFE AND STRUCTURALLY SOUND IN THE UNLIKELY EVENT OF FREEZING ACTION BELOW THE BUILDING REGARDLESS OF ANTICIPATED NATURAL FREEZE/ THAW CYCLES.

LATERAL LOADS ARE TRANSFERRED TO THE GROUND THROUGH FRICTIONAL RESISTANCE WITHOUT SLIDING OR SHIFTING BETWEEN THE BUILDING FLOOR SLAB AND THE PREPARED SOIL AND GRAVEL SUB-BASE ON WHICH THE BUILDING RESTS. SEISMIC ANALYSES ARE BASED ON LOADS DETERMINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE USING PARAMETERS, WHICH MEET OR EXCEED THE CODE PRESCRIBED REQUIREMENTS FOR THIS INSTALLATION.

THIS BUILDING AS DESIGNED, RESTING ON A PROPERLY PREPARED GRANULAR SUB-BASE WILL BE SAFE AND STRUCTURALLY SOUND FOR VERTICAL AND LATERAL LOADS AS DISCUSSED ABOVE. A FULL DEPTH FOUNDATION WALL AT THE BUILDING PERIMETER AND AN ANCHORAGE SYSTEM, TYPICAL FOR OTHER TYPES OF BUILDING CONSTRUCTION, ARE NOT REQUIRED FOR THIS BUILDING.

5.3.4 Backfill Requirements

- The following list of requirements applies to all installations requiring backfill:
1. The customer shall provide trench backfill and site restoration.
 2. All backfill shall be free of materials that may damage the conduit system. Backfill within 4 inches of the conduit shall be select (capable of passing through a 3/4-inch sieve).
 3. Extra caution should be taken when refilling trenches.
 4. The Power Company may not energize conductors until the customer completes the backfill to Power Company satisfaction.
- The cost to repair a conduit is the responsibility of the customer.



PRIOR TO PLACEMENT OF BUILDING A PROPERLY PREPARED SUB-BASE SHALL BE PROVIDED. SUB-BASE SHALL EXTEND TO FROST DEPTH (36" BELOW GRADE) AND CONSIST OF 3/4" MINUS CRUSHED ROCK (ROAD BASE MATERIAL) COMPACTED TO 95% OF OPTIMUM DENSITY IN ACCORDANCE WITH ASTM D 1557. FINISHED SURFACE OF SUB-BASE SHALL BE FLAT AND LEVEL, WITH A MAXIMUM DEVIATION OF -1/2", +0" FROM A TRUE HORIZONTAL PLANE. (FOUNDATION PREP NOT BY CXT).



6707 E. Flamingo Ave. Bldg 300, Nampa, ID 83687
901 N. Highway 77 Hillsboro, TX 76645
362 Waverly Road Williamstown, WV 26187

PROJECT TITLE
XXXX
BUILDING NUMBER XXXX

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| REV. | DESCRIPTION | APPROVAL | DATE |
|---------|-------------|----------|------|
| SCALE | 1/4"=1'-0" | DATE | - |
| DRAWN | M. TOLMAN | FILE NO. | - |
| CHECKED | N. FENNER | PLOT | 48 |

FOUNDATION DETAIL

| | | | | | |
|---------|---|-------|----|------|---|
| DWG NO. | - | SHEET | 24 | REV. | 0 |
|---------|---|-------|----|------|---|



**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
CXT Precast Products
10.5' x 20' CONTROL BUILDING**

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
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www.RiverRestoration.org

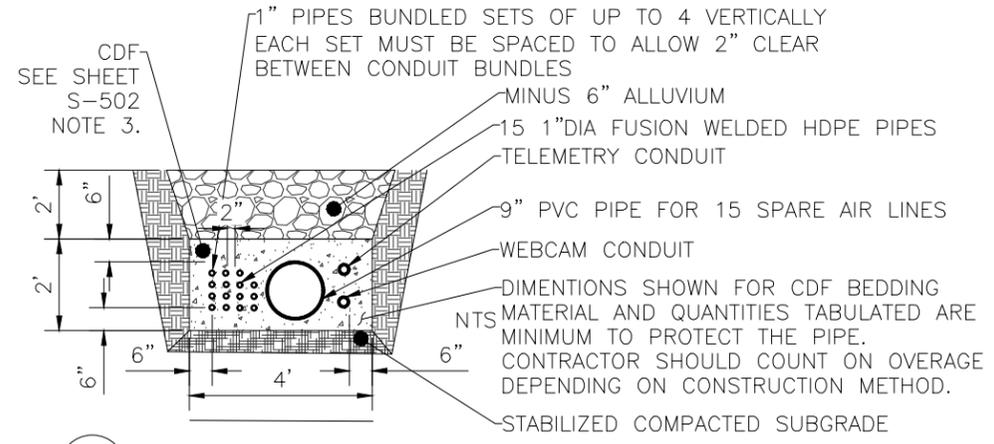
PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

| | | | |
|---------|--------------|-------|-----|
| Project | 45072 | Sheet | D12 |
| Date | OCTOBER 2025 | | |
| Scale | NTS | | |

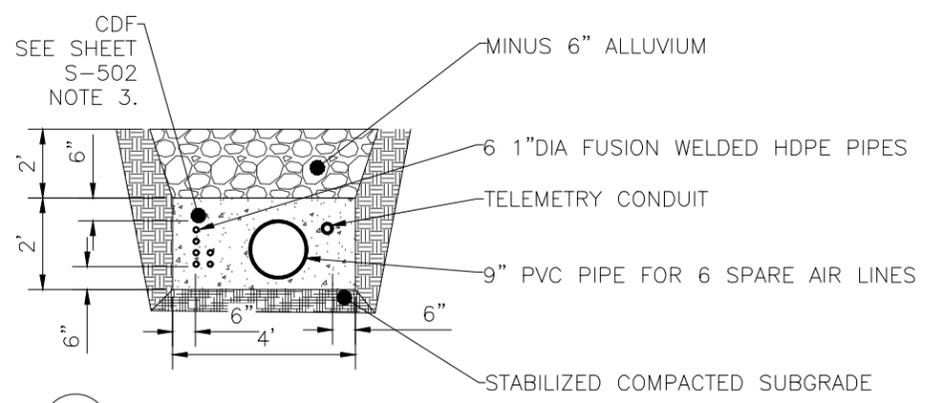
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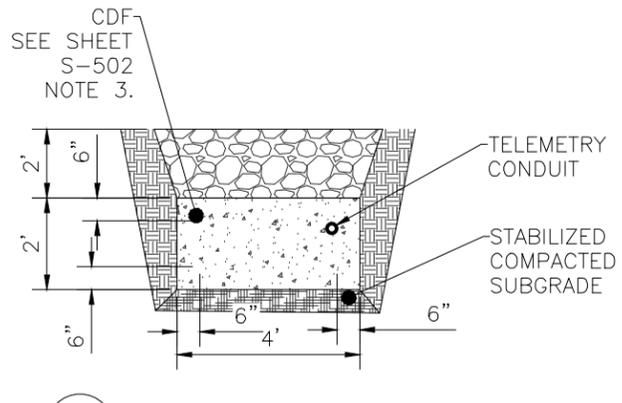
**OGDEN BUSINESS EXCHANGE
SURF WAVE PROJECT
AIR LINE BEDDING DETAIL**



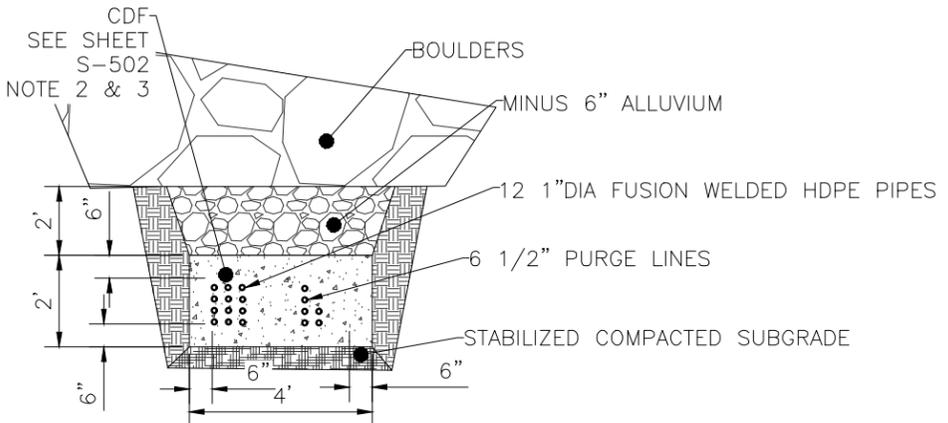
1 AIR LINE BEDDING DETAIL (CB TO MH1)
D13



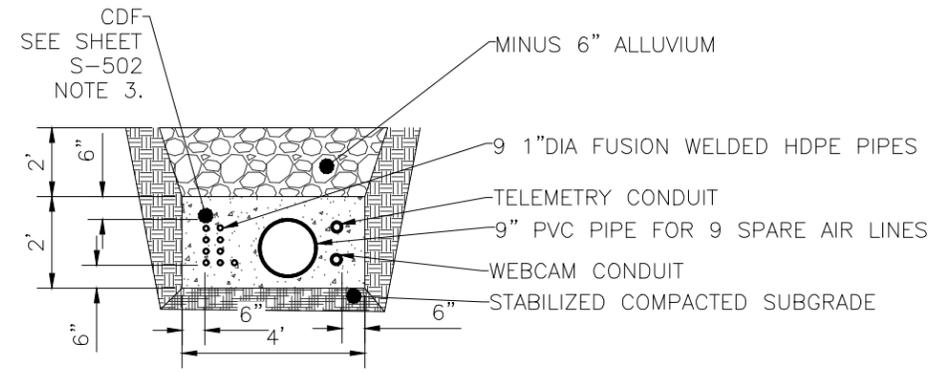
2 AIR LINE BEDDING DETAIL (MH1 TO MH5)
D13 NTS



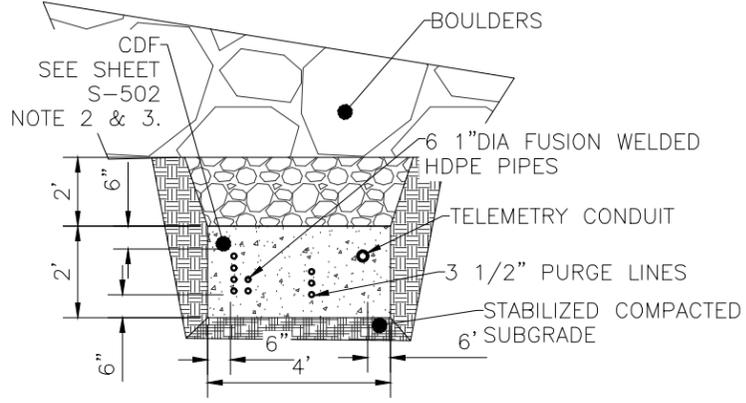
3 AIR LINE BEDDING DETAIL (MH5 TO MH6)
D13 NTS



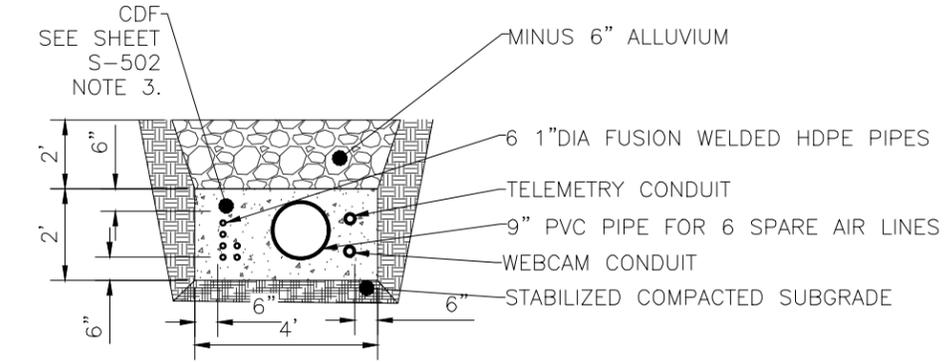
4 AIR LINE BEDDING DETAIL (MH5 TO W4 GATES)
D13 NTS - SEE DETAIL A1 SHEET S-502 NOTE 2 FOR REINFORCED CONCRETE CONDUIT ENCASEMENT WHEN PLACED UNDER CONCRETE STRUCTURES



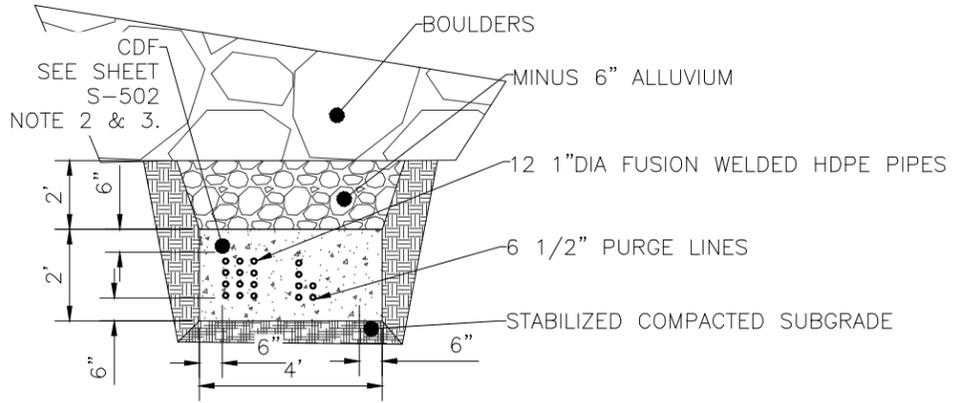
5 AIR LINE BEDDING DETAIL (MH1 TO MH2)
D13 NTS



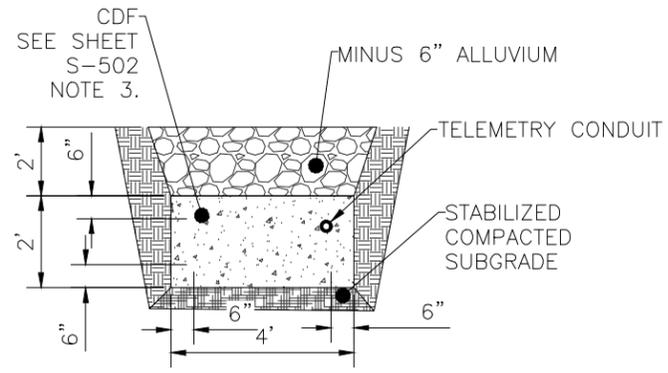
6 AIR LINE BEDDING DETAIL (MH2 TO W1 GATES)
D13 NTS - SEE DETAIL A1 S-502 NOTE 2 FOR REINFORCED CONCRETE CONDUIT ENCASEMENT WHEN PLACED UNDER CONCRETE STRUCTURES



7 AIR LINE BEDDING DETAIL (MH2 TO MH3)
D13 NTS



8 AIR LINE BEDDING DETAIL (MH5 TO W2-W3 GATES)
D13 NTS - SEE DETAIL A1 SHEET S-502 NOTE 2 FOR REINFORCED CONCRETE CONDUIT ENCASEMENT WHEN PLACED UNDER CONCRETE STRUCTURES



9 AIR LINE BEDDING DETAIL (MH5 TO MH6)
D13 NTS

NOTE:

- THE USE OF STRUCTURAL CONCRETE WITH REINFORCEMENT IS REQUIRED FOR ALL CONDUIT ENCASEMENT PASSING UNDER CONCRETE STRUCTURES. SEE STRUCTURAL DETAILS.
- USE CDF FOR ALL OTHER TRENCH LOCATIONS.
- JUNCTION AT MANHOLE,
- CAP AND SWEEP REDUNDANT LINES IN MANHOLE AND AT BLOCK-OUT
- SPACING BETWEEN AIRLINES = 1" PIPES BUNDLED SETS OF UP TO 4 VERTICALLY SPACED AT 2" O.C HORIZONTAL

BID SET

| No. | REVISION/UPDATE | Date |
|-----|-----------------|------|
| | | |
| | | |

CLIENT NAME AND ADDRESS

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Engineering Division
2549 Washington Blvd
Ogden, UT 84401

DESIGN FIRM NAME AND ADDRESS

RiverRestoration
P.O. Box 248
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www.RiverRestoration.org

PROJECT NAME AND ADDRESS
Weber River
Ogden, UT
Ogden Business Exchange Surf Wave

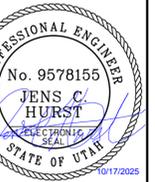
| | |
|----------------------|--------------|
| Project 45072 | Sheet D13 |
| Date OCTOBER 2025 | |
| Scale NTS | |



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1047 South 100 West
Suite 180
Logan, UT 84321
Phone: 435.713.9514
www.jub.com

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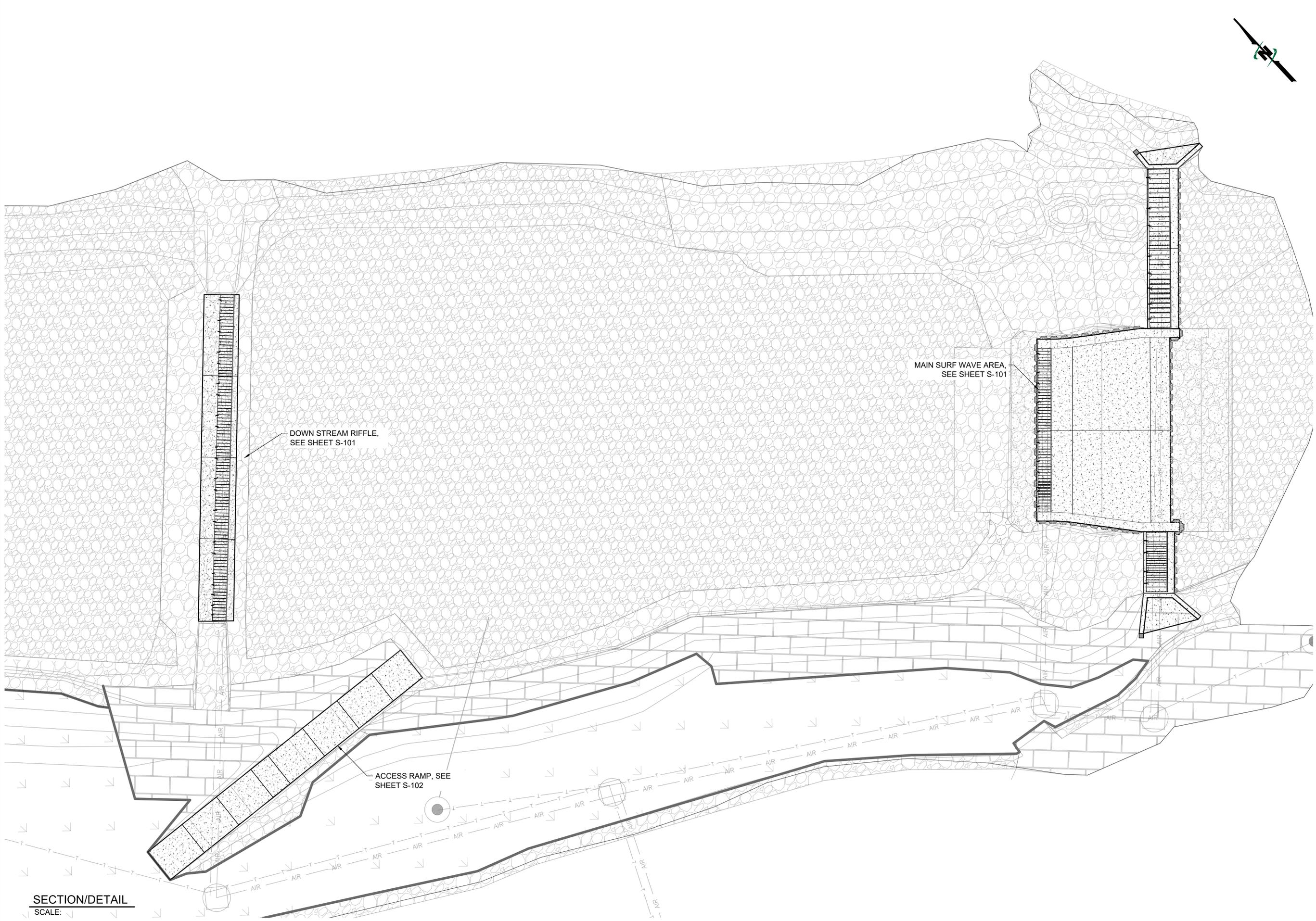


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| NO. | REVISION | DESCRIPTION | BY | DATE |
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FILE: 57-23-033 S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

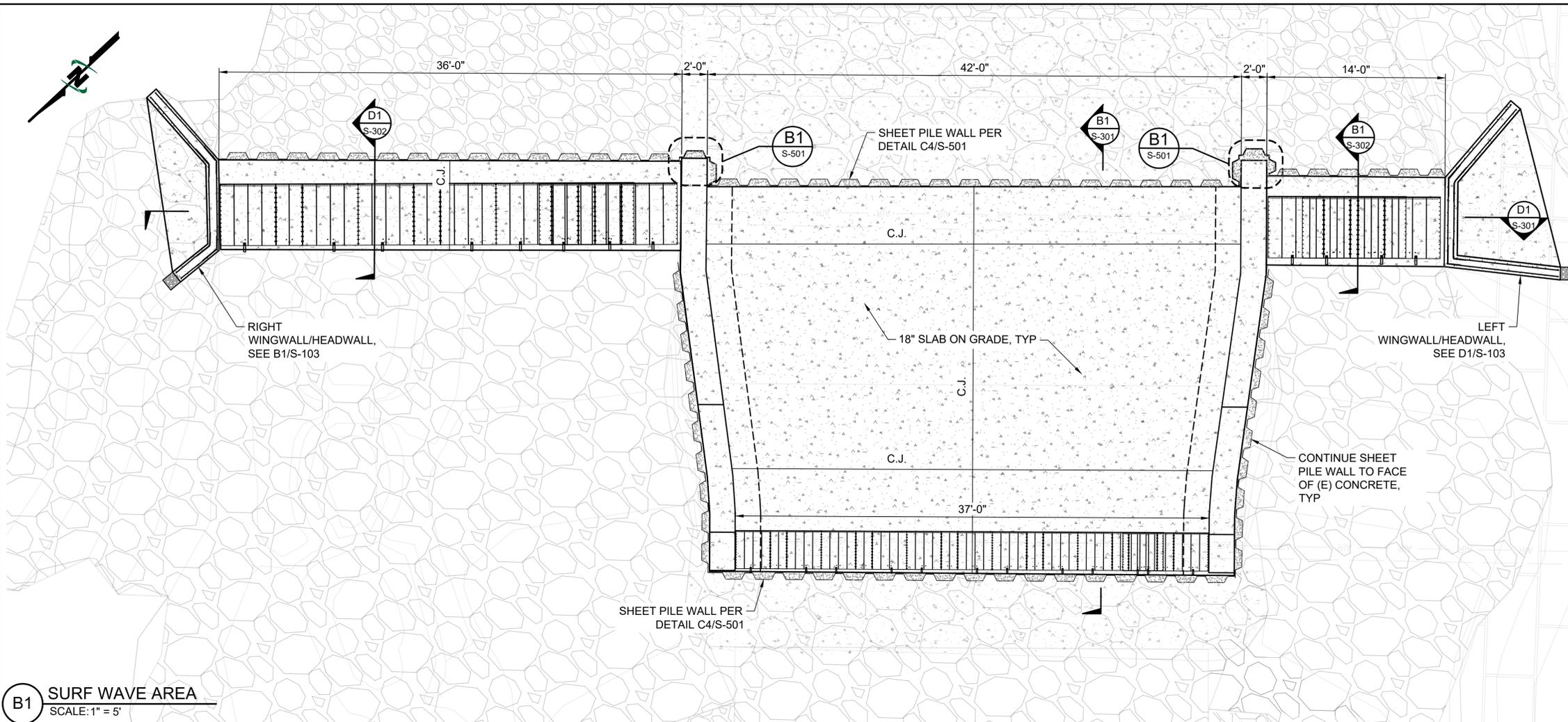
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S-100



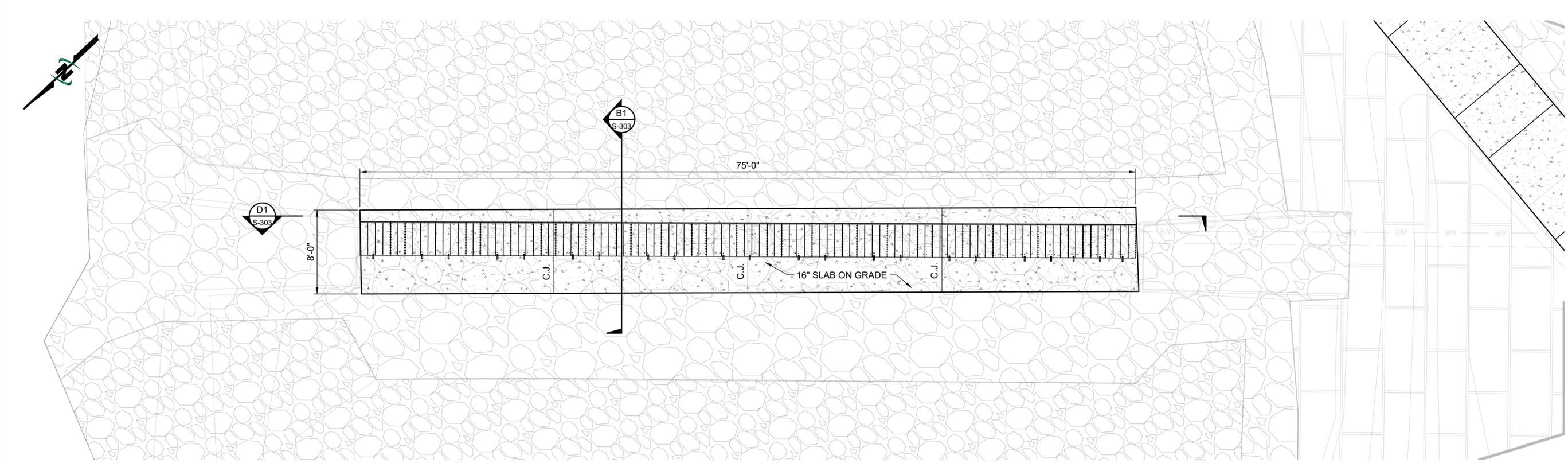
SECTION/DETAIL
SCALE: _____

Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
Date Created: 10/16/2025 5:18 PM JUB: C:\CENTRAL\CLIENT\SUITE\REGISTERED\PROJECTS\57-23-033_OGDEN SURF WAVE DESIGN\CAD\SHEET\57-23-033_S-101X.DWG

OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY
OVERALL PLAN



B1 SURF WAVE AREA
SCALE: 1" = 5'



D1 DOWNSTREAM RIFFLE AREA
SCALE: 1" = 5'

- SHEET NOTES**
- C.J. = CONTROL JOINT OR OPTIONAL CONSTRUCTION JOINT. SEE DETAIL A3/S-901.
 - WHERE APPLICABLE CONCRETE TURNDOWNS SHALL BE POURED USING THE SHEET PILE WALL AS PART OF THE FORMING. REINFORCEMENT SHALL BE PLACED CONTINUOUS WITH 3" MIN CLR BETWEEN THE INNER PILE FACE AND THE BAR.
 - SURF RAMP JOINTS ARE TO LINE UP WITH CHANGE IN SLOPE OF MAIN SURF RAMP PERPENDICULAR TO RIVER FLOW AND CENTERED IN SLAB PARALLEL TO RIVER FLOW.
 - ALL OTHER JOINTS TO BE CENTERED OR EVENLY SPACED AS SHOWN.
 - ALL GATE ANCHORS HAVE BEEN DESIGNED BY AND ARE TO BE SPECIFIED BY THE MANUFACTURER/SUPPLIER.

JUB
J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1047 South 100 West
Suite 180
Logan, UT 84321
Phone: 435.713.9514
www.jub.com

BID SET

PROFESSIONAL ENGINEER
No. 9578155
JENS C. HURST
REGISTERED PROFESSIONAL ENGINEER
STATE OF UTAH
10/17/2025

REUSE OF DRAWINGS
JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND TRADE SECRET RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED WITHOUT JUB'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY

SURF WAVE AREA AND RIFFLE

FILE: 57-23-033 S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH

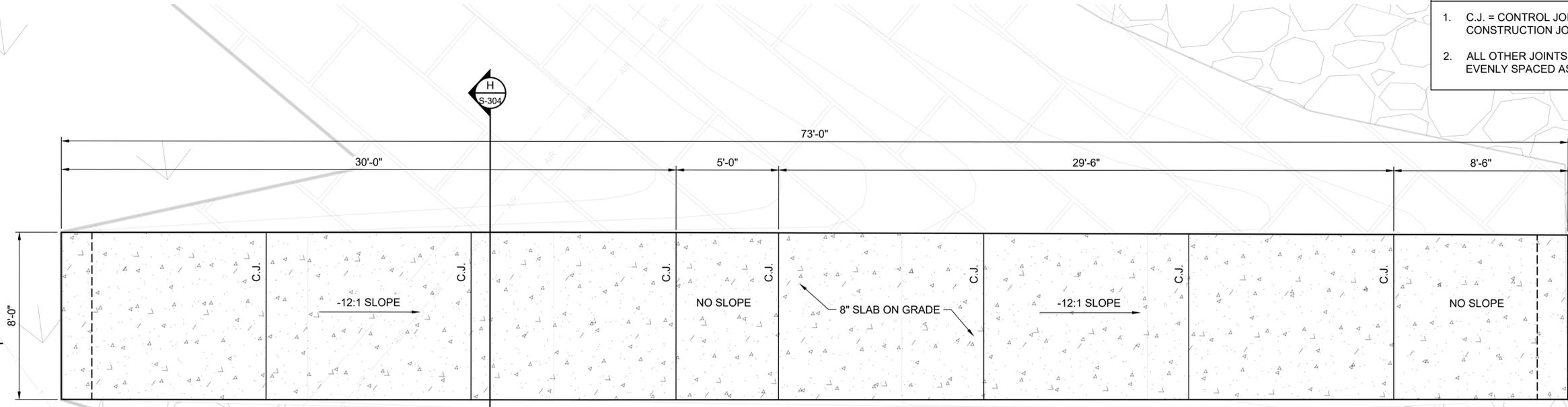
ONE INCH
AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-101

Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
 Date Created: 10/16/2025 5:18 PM Project: OGDEN SURF WAVE DESIGN (CAD) SHEET 57-23-033 S-101X.DWG

Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
 Date Created: 10/16/2025 2:08 PM JUB.COM/CENTRAL/CIENT/SUT/REVERESTORATION/PROJECTS/57-23-033_OGDEN SURF WAVE DESIGN/CAD/SHEETS/57-23-033_S-101X.DWG

B1 ACCESS RAMP
 SCALE: 1" = 3'



- SHEET NOTES**
- C.J. = CONTROL JOINT OR OPTIONAL CONSTRUCTION JOINT. SEE DETAIL A3/S-901.
 - ALL OTHER JOINTS TO BE CENTERED OR EVENLY SPACED AS SHOWN.

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BID SET

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 No. 9578155
JENS C. HURST
 REGISTERED PROFESSIONAL ENGINEER
 STATE OF UTAH
 10/17/2025

REUSE OF DRAWINGS
 JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND PATENT RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF JUB. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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OGDEN BUSINESS EXCHANGE SURF WAVE
 OGDEN CITY

ACCESS RAMP

FILE: 57-23-033_S-101X
 JUB PROJ. #: 57-23-033
 DRAWN BY: EM
 DESIGN BY: KJH
 CHECKED BY: JCH

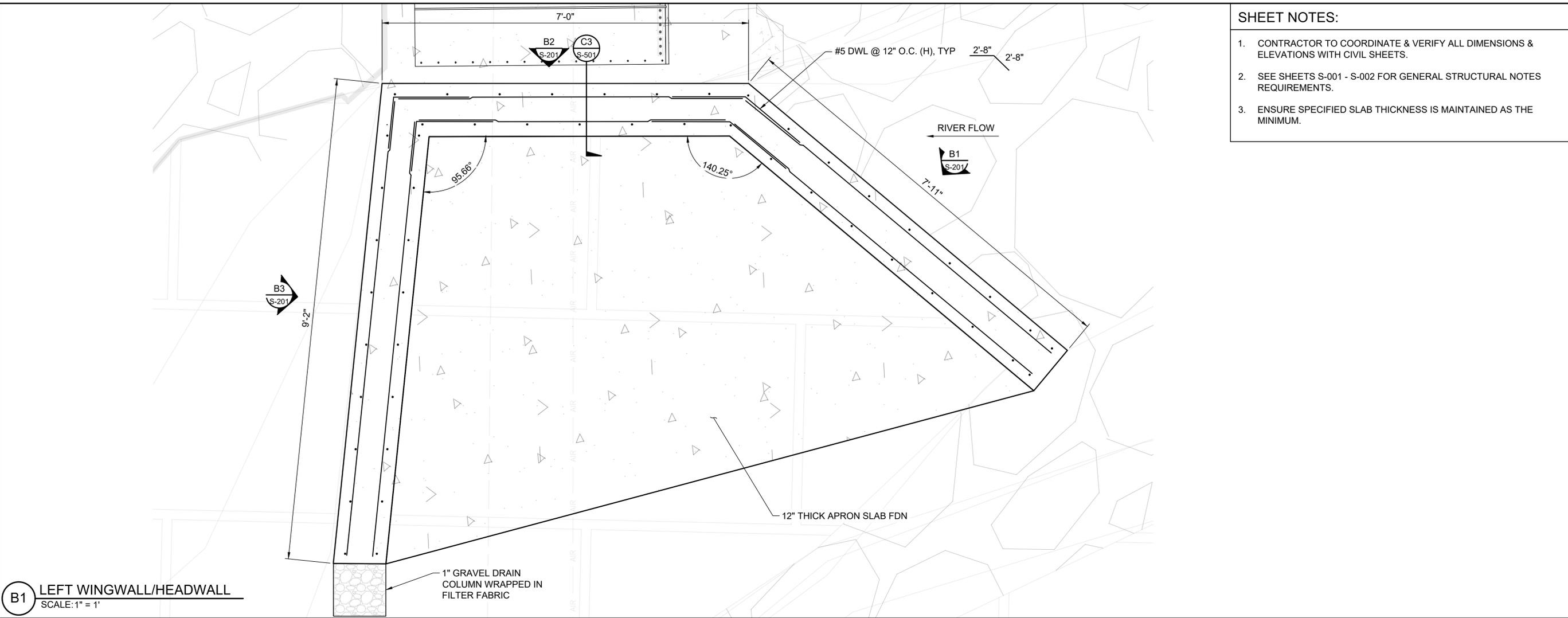
ONE INCH
 AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
 LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-102

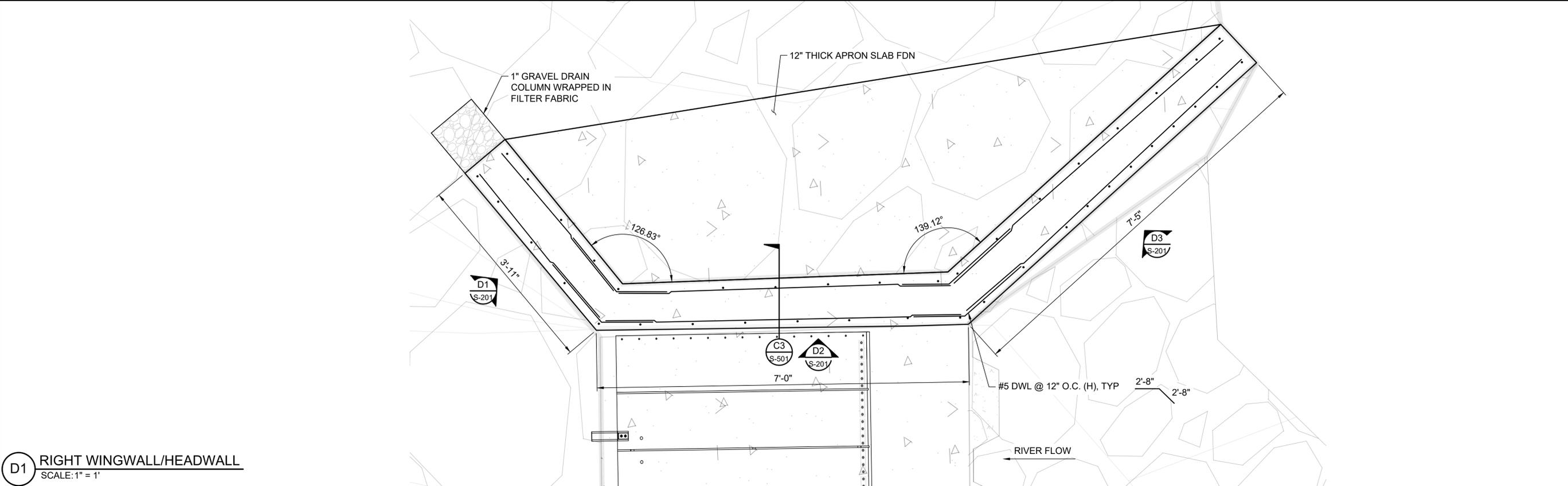
REUSE OF DRAWINGS
JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT AND PATENT RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL NOT BE REUSED WITHOUT JUB'S PRIOR WRITTEN CONSENT. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

| NO. | REVISION | DESCRIPTION | BY | DATE |
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- SHEET NOTES:**
1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
 2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
 3. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.



B1 LEFT WINGWALL/HEADWALL
SCALE: 1" = 1'



D1 RIGHT WINGWALL/HEADWALL
SCALE: 1" = 1'

OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY

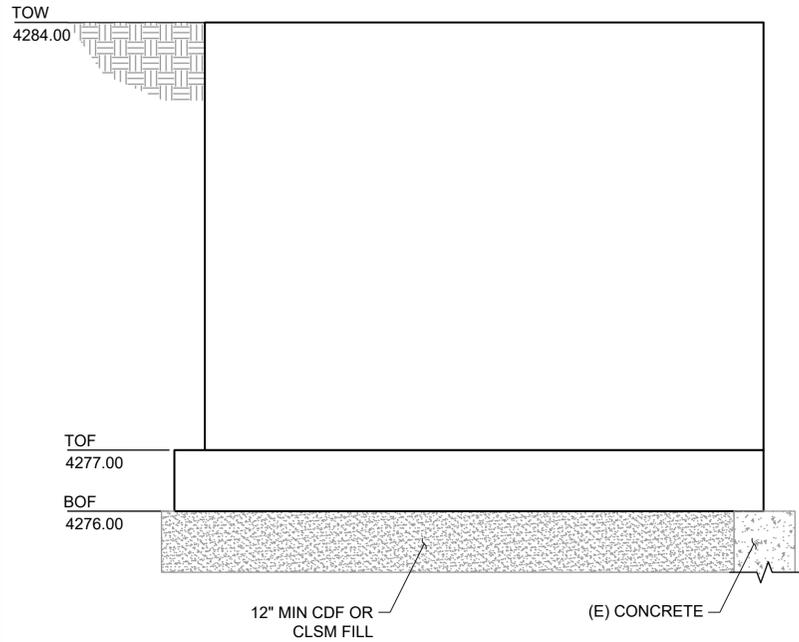
WINGWALL & HEADWALL PLANS

FILE: 57-23-033_S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH

ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

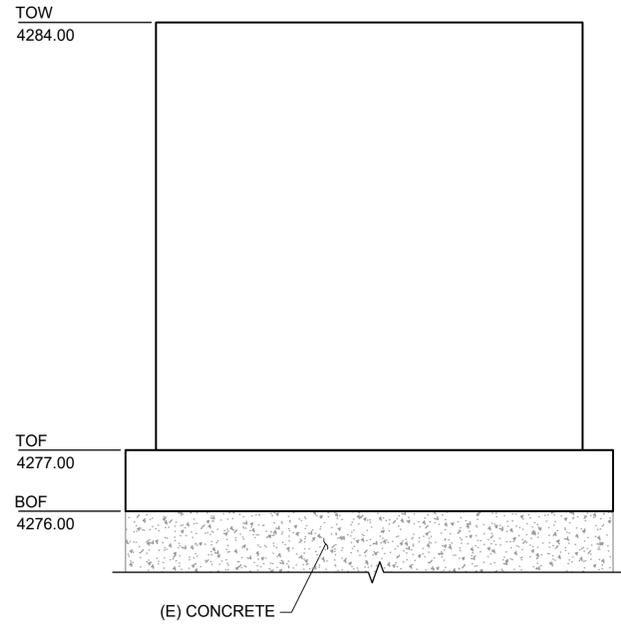
SHEET NUMBER:
S-103

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



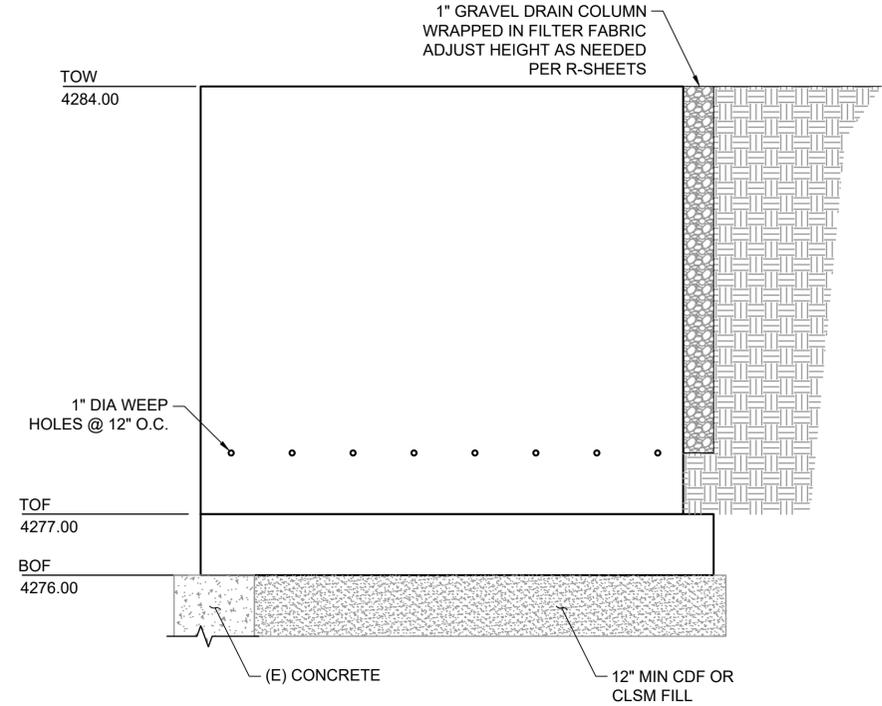
B1 RIVER LEFT UPSTREAM WINGWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



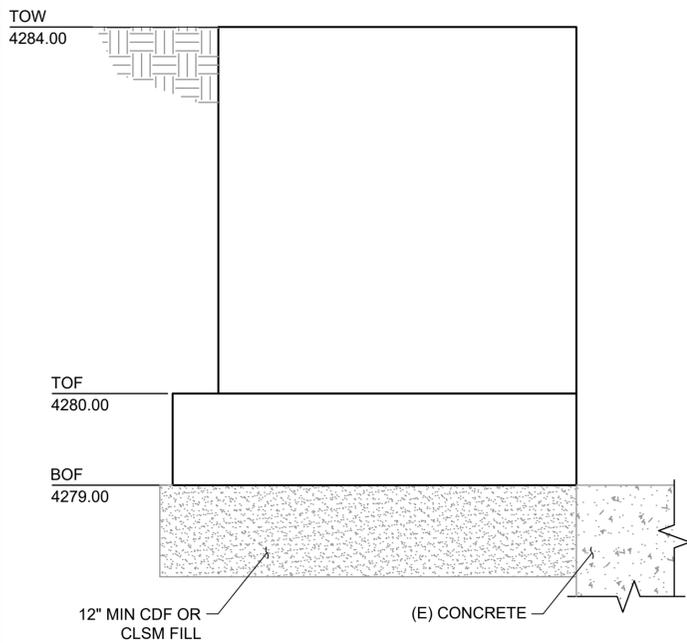
B2 RIVER LEFT HEADWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.

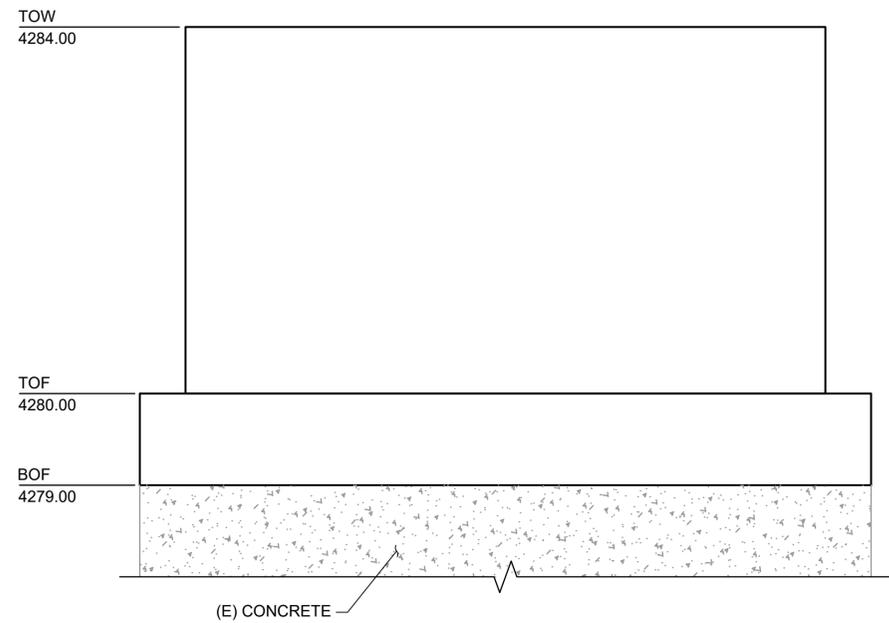


B3 RIVER LEFT DOWNSTREAM WINGWALL
SCALE: 1 1/2" = 1'-0"

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.

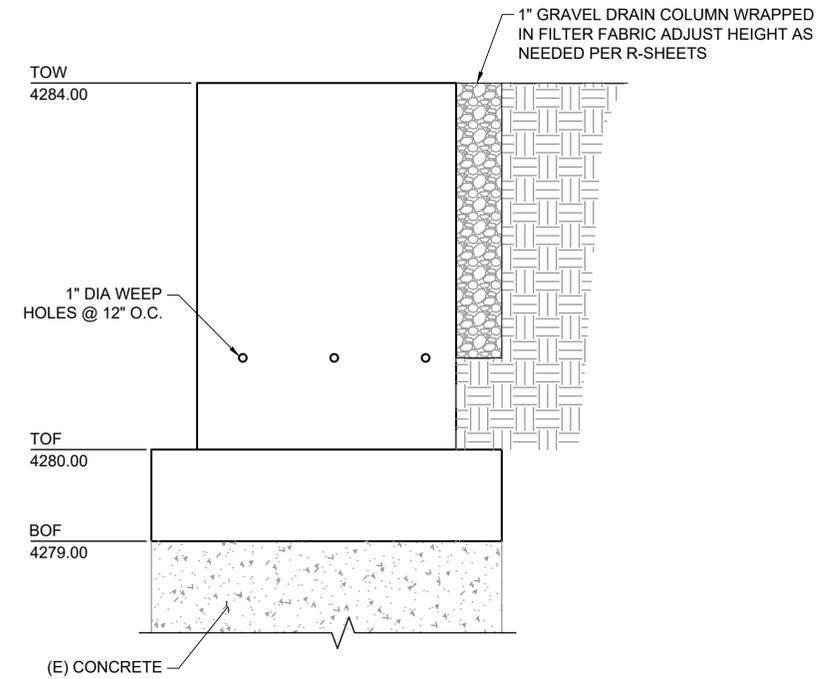


D1 RIVER RIGHT UPSTREAM WINGWALL
SCALE: 1" = 1'



D2 RIVER RIGHT HEADWALL
SCALE: 1" = 1'

NOTE:
PRIOR TO FORMING NEW CONCRETE
FOUNDATION, EXISTING CONCRETE SHALL BE
ROUGHENED TO 1/4" DEPTH FOR BETTER
BONDING OF NEW AND EXISTING CONCRETE.



D3 RIVER RIGHT DOWNSTREAM WINGWALL
SCALE: 1" = 1'



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1047 South 100 West
Suite 180
Logan, UT 84321
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BID SET



REUSE OF DRAWINGS
JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND OTHER RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF JUB. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY
HEADWALL & WINGWALL ELEVATIONS

FILE: 57-23-033_S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH
ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

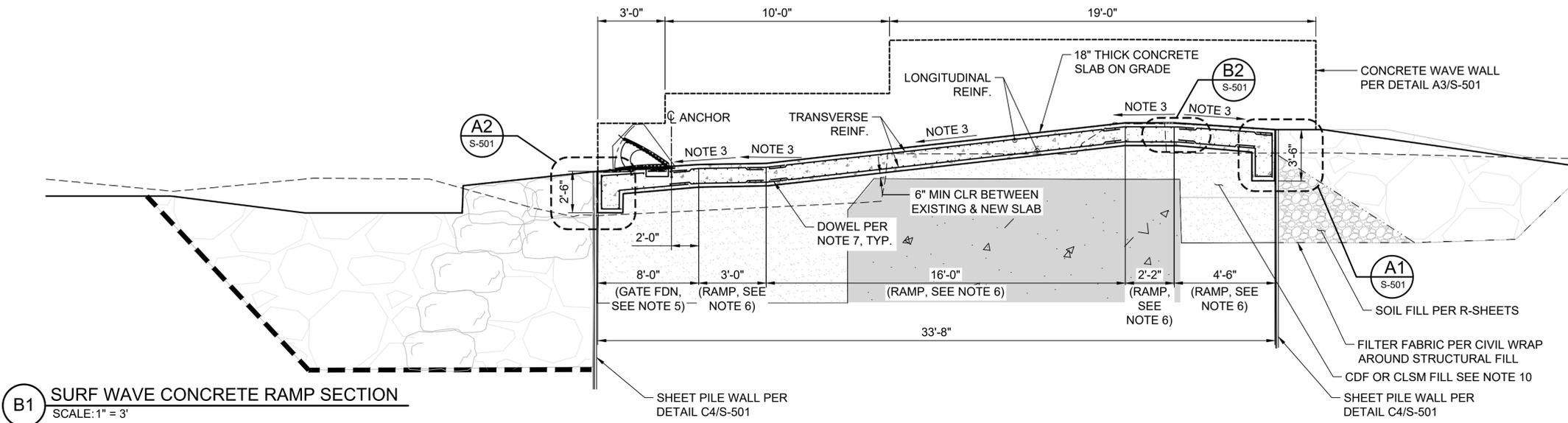
SHEET NUMBER:
S-201

REUSE OF DRAWINGS

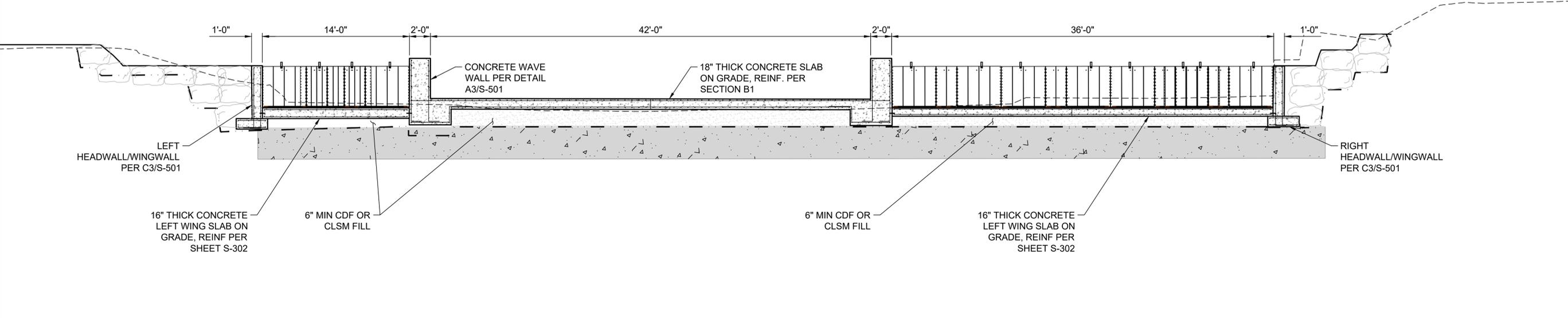
JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND OTHER RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED WITHOUT WRITTEN CONSENT BY JUB. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENTS SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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- SHEET NOTES:**
- CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
 - SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
 - SEE RIVER RESTORATION SHEET R01 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
 - GATE SHOWN IN B1 IS OHI 2FT STEEL GATE, AND GATE(S) SHOWN IN D1 IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS
 - GATE FOUNDATION REINFORCEMENT:
 - LONGITUDINAL BARS: #6 @ 8" O.C., TOP & BOTTOM
 - TRANSVERSE BARS: #6 @ 6" O.C., TOP & BOTTOM
 - RAMP REINFORCEMENT:
 - LONGITUDINAL BARS: #6 @ 6" O.C., TOP & BOTTOM
 - TRANSVERSE BARS: #6 @ 6" O.C., TOP & BOTTOM
 - DOWELS SHALL BE USED WHERE CONCRETE SLOPE CHANGES. ENSURE ALL DOWELS ARE LAPPED WITH CONTINUOUS REINFORCEMENT PER DETAIL A1/S-901.
 - ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.
 - PRIOR TO FORMING NEW CONCRETE FOUNDATION, EXISTING CONCRETE SHALL BE ROUGHENED TO 1/4" DEPTH FOR BETTER BONDING OF NEW AND EXISTING CONCRETE.
 - APPLY FILL OVER & AROUND EXISTING CONCRETE STRUCTURE AND IN AREA BETWEEN SHEET PILE WALLS. EXTEND TO EXCAVATION DEPTH AS RQR'D BY DEMO PLAN.
 - SHEET PILE WALL TO FRAME IN END OF TURNDOWN.



B1 SURF WAVE CONCRETE RAMP SECTION
 SCALE: 1" = 3"



D1 SURF WAVE DROP CREST SECTION
 SCALE: 1" = 5"

OGDEN BUSINESS EXCHANGE SURF WAVE
 OGDEN CITY
 STRUCTURAL SECTIONS

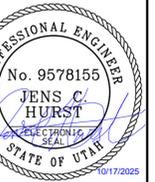
FILE: 57-23-033 S-101X
 JUB PROJ. #: 57-23-033
 DRAWN BY: EM
 DESIGN BY: KJH
 CHECKED BY: JCH
 AT FULL SIZE, IF NOT ONE INCH SCALE ACCORDINGLY
 LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-301

SHEET NOTES:

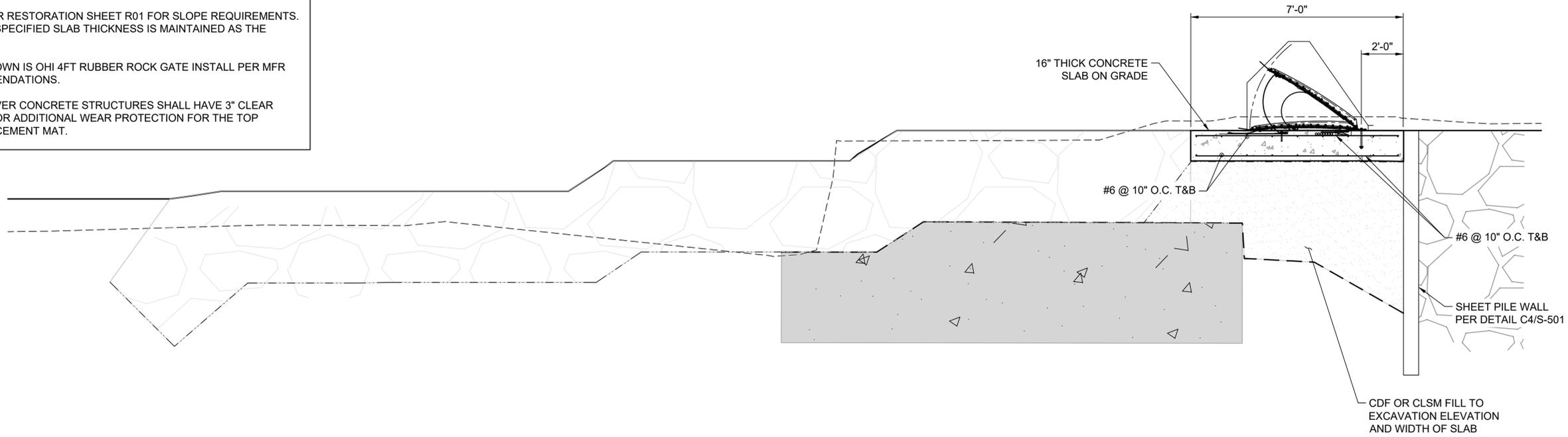
1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
3. SEE RIVER RESTORATION SHEET R01 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
4. GATE SHOWN IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS.
8. ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.

BID SET



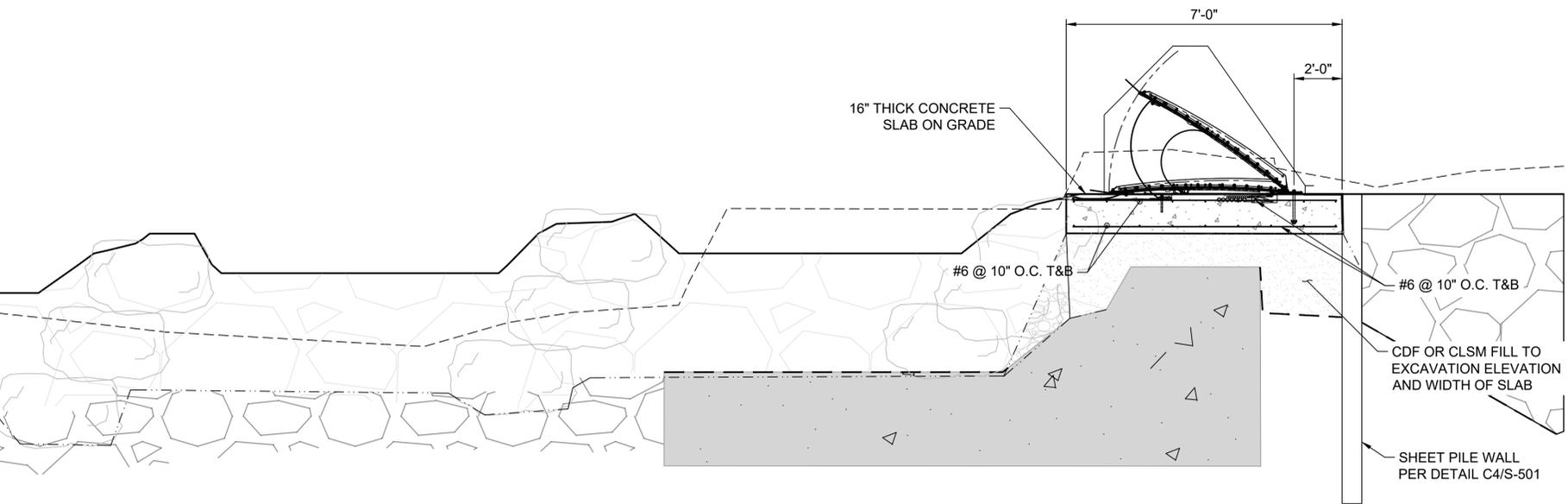
REUSE OF DRAWINGS
 JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND TRADEMARK RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF JUB. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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B1 LEFT WING SECTION
 SCALE: 1" = 2'

Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
 Date Created: 10/16/2025 2:08 PM JUB-COM-CENTRAL CLIENT SUIT RIVER RESTORATION PROJECTS/7-23-033 OGDEN SURF WAVE DESIGN/CAD/SHEETS/7-23-033 S-101X.DWG



D1 RIGHT WING SECTION
 SCALE: 1" = 2'

**OGDEN BUSINESS EXCHANGE SURF WAVE
 OGDEN CITY**

STRUCTURAL SECTIONS

FILE: 7-23-033 S-101X
 JUB PROJ. #: 7-23-033
 DRAWN BY: EM
 DESIGN BY: KJH
 CHECKED BY: JCH

ONE INCH
 AT FULL SIZE, IF NOT ONE
 INCH, SCALE ACCORDINGLY
 LAST UPDATED: 10/16/2025

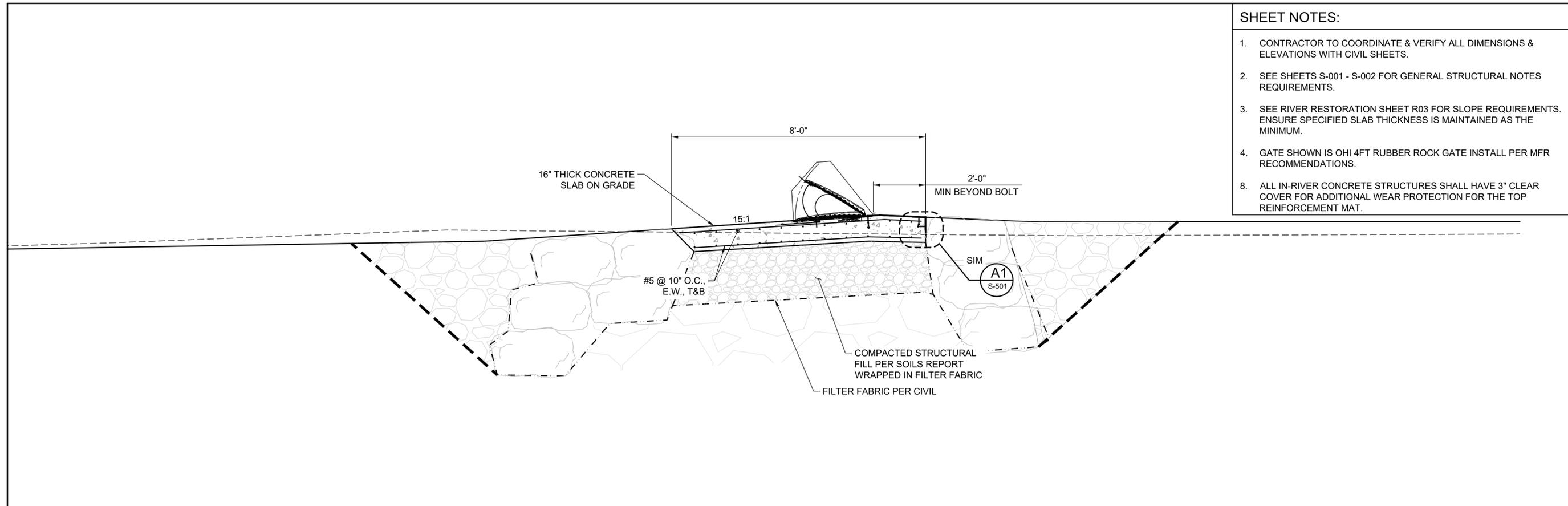
SHEET NUMBER:
S-302



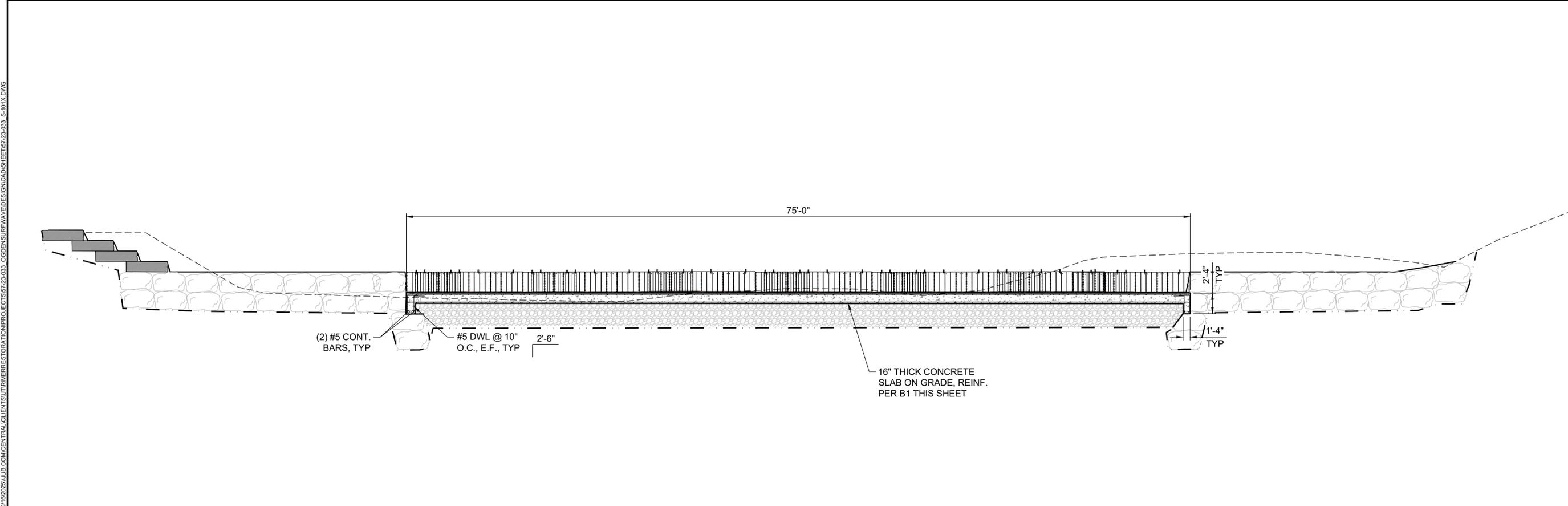
J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1047 South 100 West
Suite 180
Logan, UT 84321
Phone: 435.713.9514
www.jub.com

- SHEET NOTES:**
1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
 2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
 3. SEE RIVER RESTORATION SHEET R03 FOR SLOPE REQUIREMENTS. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.
 4. GATE SHOWN IS OHI 4FT RUBBER ROCK GATE INSTALL PER MFR RECOMMENDATIONS.
 8. ALL IN-RIVER CONCRETE STRUCTURES SHALL HAVE 3" CLEAR COVER FOR ADDITIONAL WEAR PROTECTION FOR THE TOP REINFORCEMENT MAT.



B1 DOWNSTREAM RIFFLE SECTION
SCALE: 1" = 2'



D1 DOWNSTREAM RIFFLE SECTION
SCALE: 1" = 5'

BID SET



REUSE OF DRAWINGS
JUB SHALL RETAIN ALL COMMON LAW, STATUTORY, COPYRIGHT, AND OTHER RIGHTS IN THIS DRAWING. NO PART OF THIS DRAWING SHALL BE REUSED OR REPRODUCED IN ANY MANNER WITHOUT THE WRITTEN CONSENT OF JUB. ANY REUSE WITHOUT WRITTEN CONSENT BY JUB WILL BE AT CLIENT'S SOLE RISK AND WITHOUT LIABILITY OR LEGAL EXPOSURE TO JUB.

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**OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY**
STRUCTURAL SECTIONS

FILE: 57-23-033 S-101X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-303

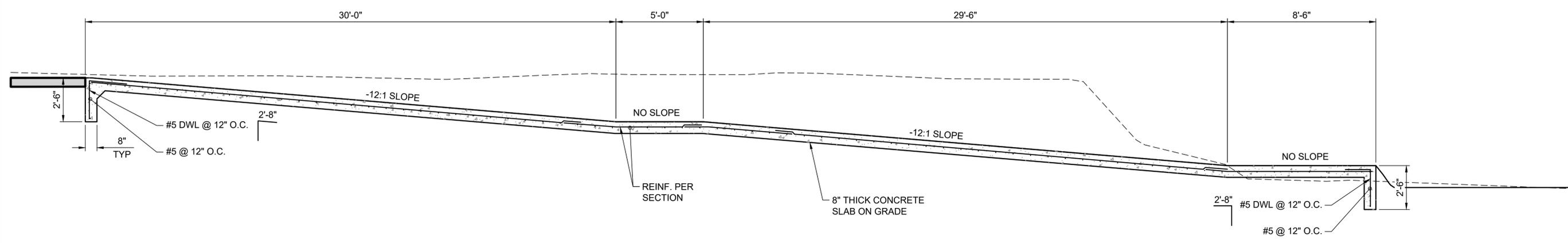
Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
Date Created: 10/16/2025 2:08 PM JUB: COM/CENTRAL/CIVIL/SUR/REVERESTORATION/PROJECTS/57-23-033_OGDEN SURF WAVE DESIGN/CAD/SHEET/57-23-033_S-101X.DWG

- SHEET NOTES:**
1. CONTRACTOR TO COORDINATE & VERIFY ALL DIMENSIONS & ELEVATIONS WITH CIVIL SHEETS.
 2. SEE SHEETS S-001 - S-002 FOR GENERAL STRUCTURAL NOTES REQUIREMENTS.
 3. ENSURE SPECIFIED SLAB THICKNESS IS MAINTAINED AS THE MINIMUM.

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 1047 South 100 West
 Suite 180
 Logan, UT 84321
 Phone: 435.713.9514
 www.jub.com

BID SET

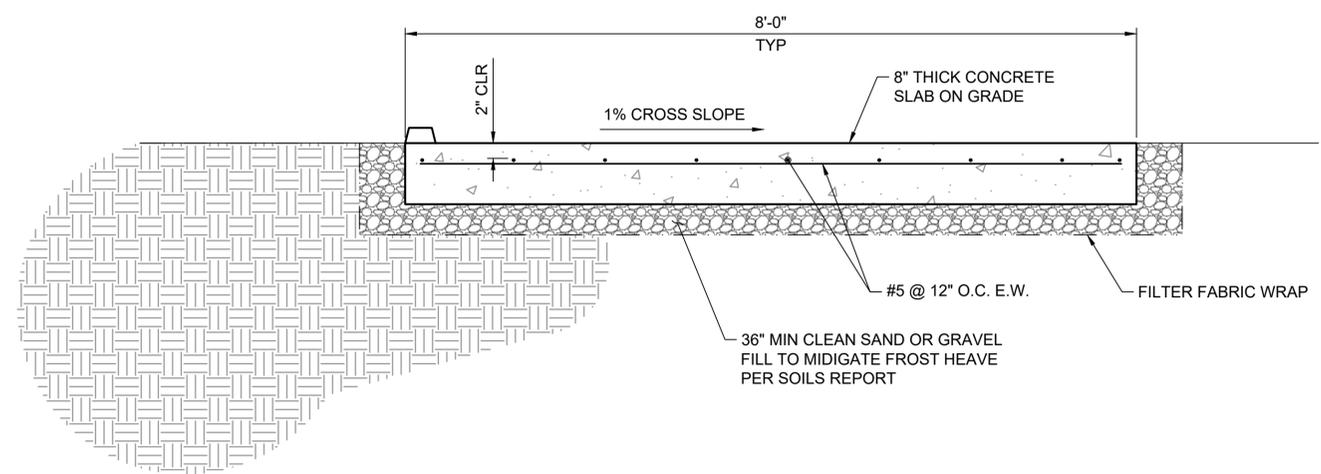
PROFESSIONAL ENGINEER
 No. 9578155
JENS C. HURST
 STATE OF UTAH
 10/17/2025



G ACCESS RAMP SECTION
 SCALE: 1" = 3'

REUSE OF DRAWINGS
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H ACCESS RAMP SECTION
 SCALE: 1" = 1'

OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY
 STRUCTURAL SECTIONS

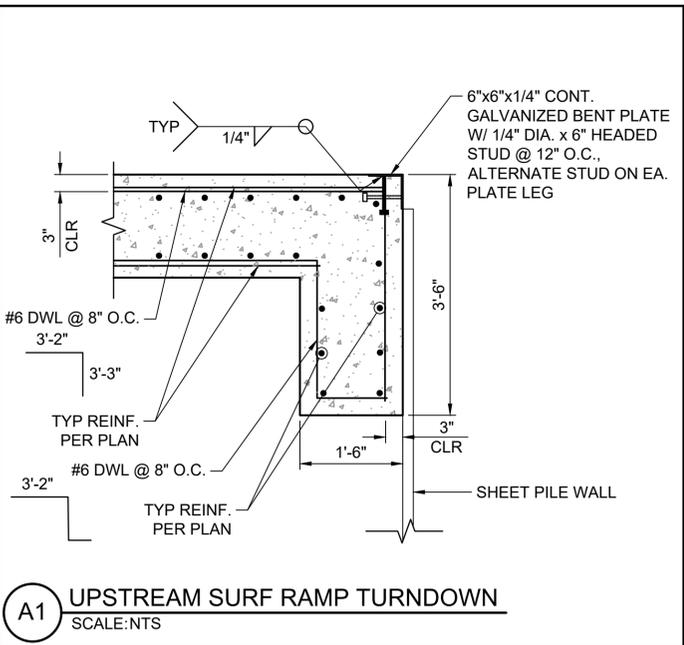
FILE: 57-23-033 S-101X
 JUB PROJ. #: 57-23-033
 DRAWN BY: EM
 DESIGN BY: KJH
 CHECKED BY: JCH
 AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
 LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-304

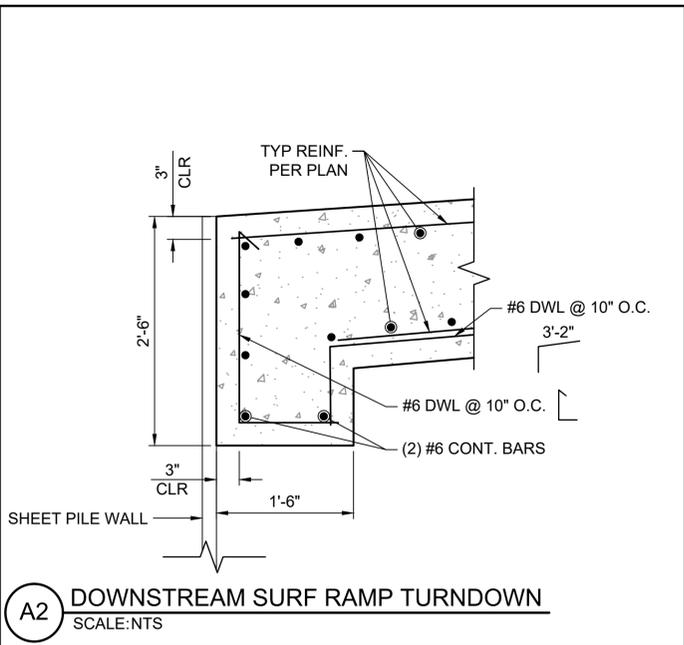
REUSE OF DRAWINGS

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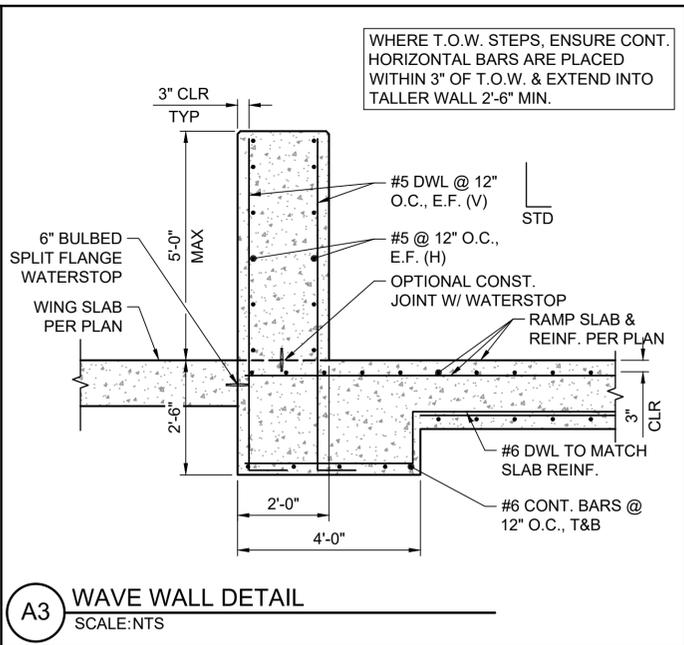
| NO. | REVISION | DESCRIPTION | BY | DATE |
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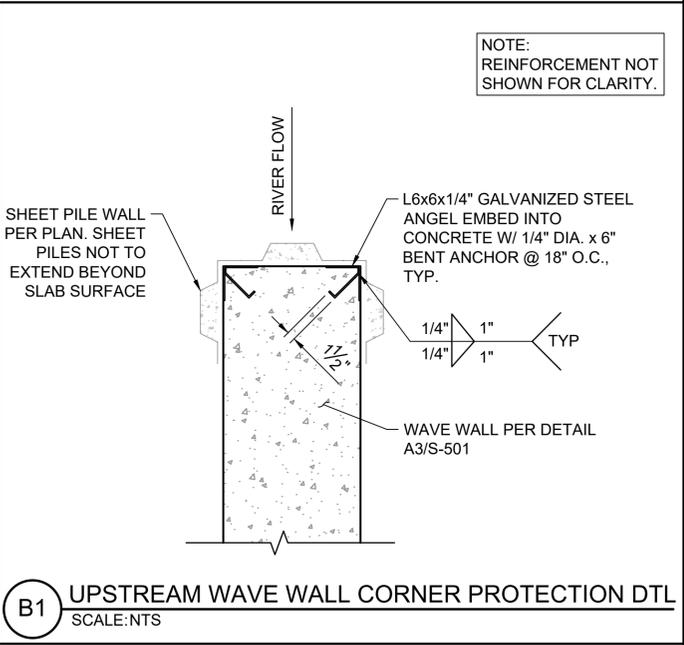
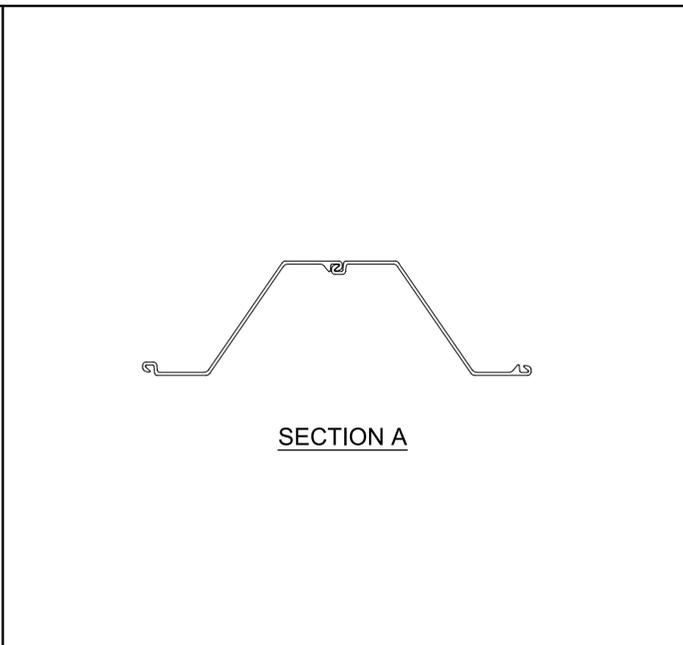
A1 UPSTREAM SURF RAMP TURNDOWN
SCALE:NTS



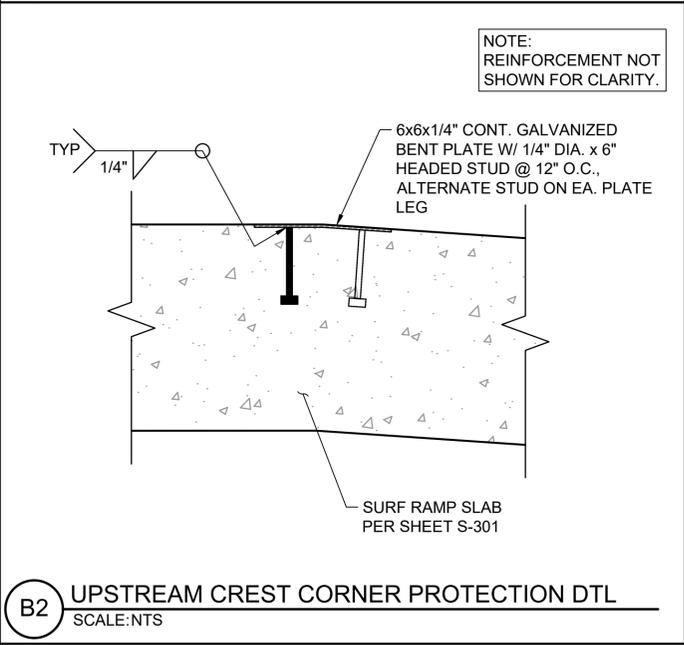
A2 DOWNSTREAM SURF RAMP TURNDOWN
SCALE:NTS



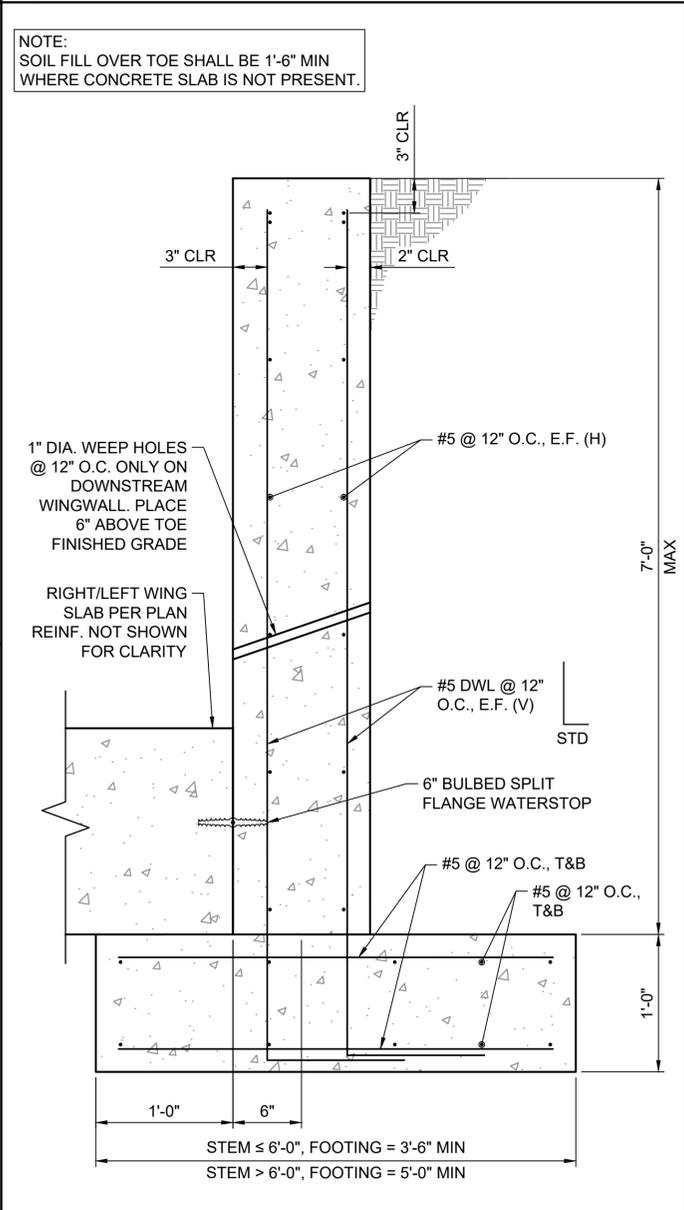
A3 WAVE WALL DETAIL
SCALE:NTS



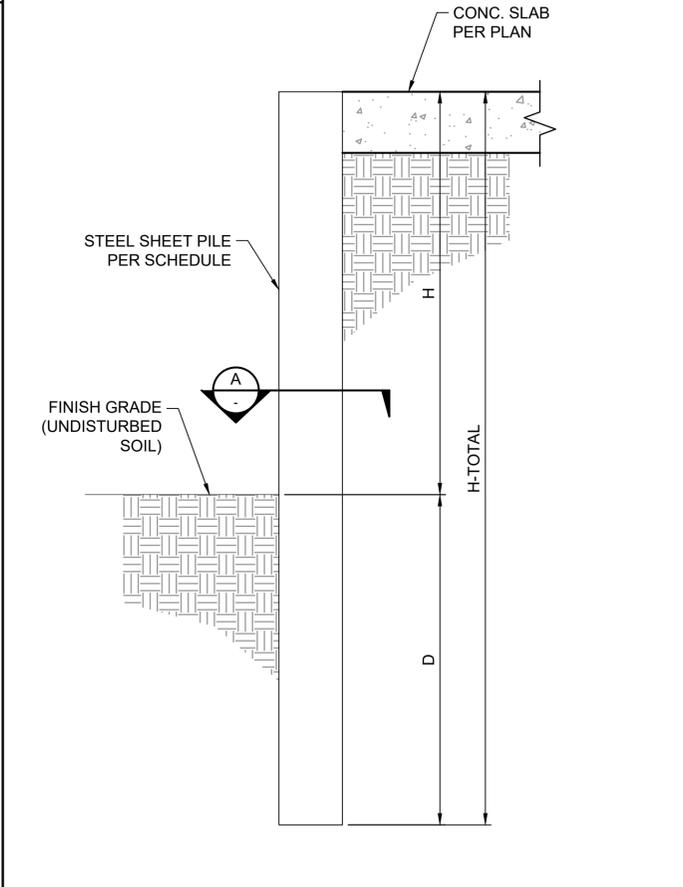
B1 UPSTREAM WAVE WALL CORNER PROTECTION DTL
SCALE:NTS



B2 UPSTREAM CREST CORNER PROTECTION DTL
SCALE:NTS



C3 HEADWALL/WINGWALL DETAIL
SCALE:NTS



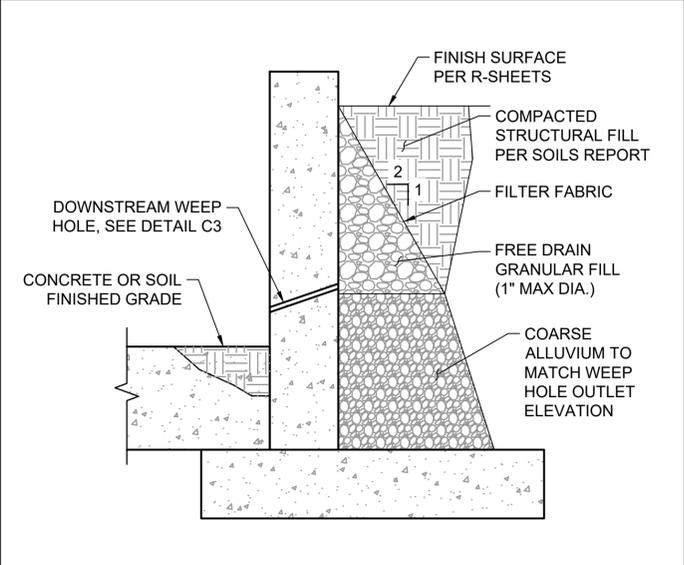
SHEET PILE SCHEDULE

| H | D | H-TOTAL | SECTION MODULOUS (IN ³) | SHEET PILE DESIGNATION |
|-------|--------|---------|-------------------------------------|------------------------|
| 5'-0" | 7'-10" | 12'-10" | 0.54 | *NZ 14 |
| 8'-0" | 12'-6" | 20'-6" | 2.23 | *NZ 14 |

*NUCOR HOT ROLLED STEEL SHEET PILE OR APPROVED EQUAL.

NOTES:
1. SHEET PILE SPECIFICATION & DESIGN ARE DEPENDANT ON DIMENSION "H".
2. DIMENSION "H" IS A MAXIMUM VALUE. WHERE CONDITIONS ARE GREATER THAN WHAT IS PROVIDED IN THE SCHEDULE, CONTRACTOR SHALL CONTACT ENGINEER FOR UPDATED DESIGN OF NEEDED SHEET PILE.

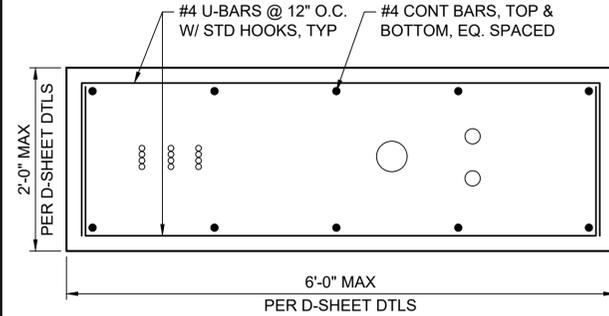
C4 SHEET PILE WALL DETAIL
SCALE:NTS



C2 SOIL BACKFILL AT HEADWALL/WINGWALLS
SCALE:NTS

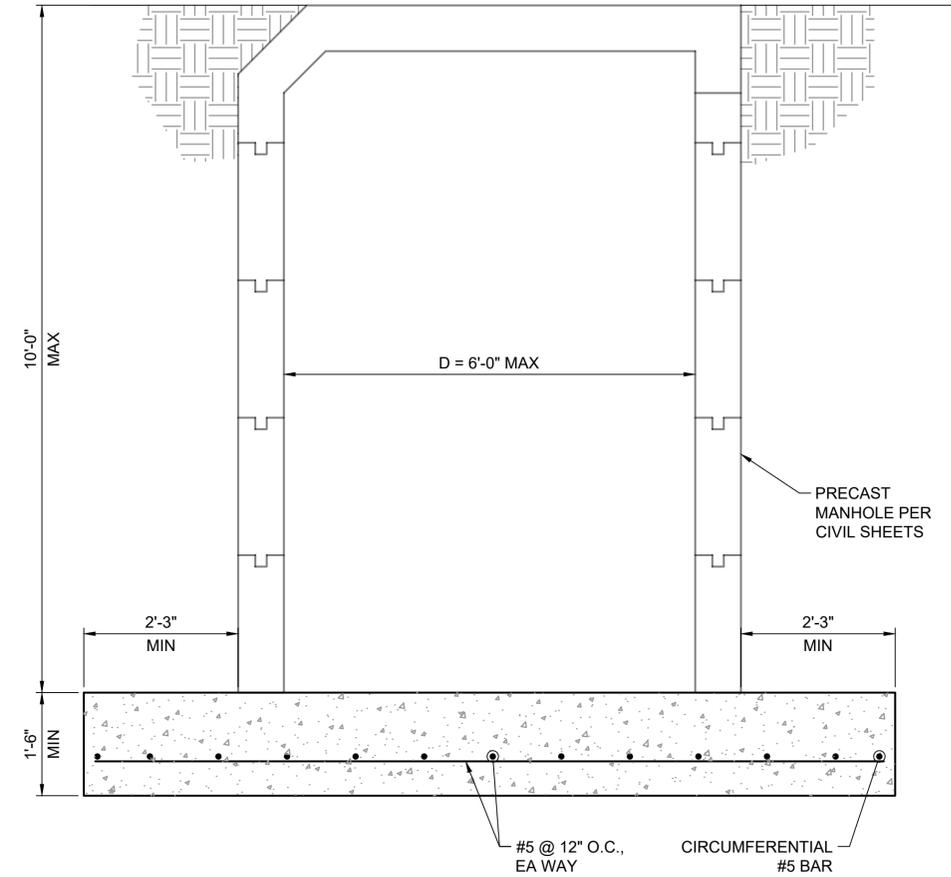
Plot Date: 10/16/2025 5:18 PM Plotted By: Emiliano Morales
Date Created: 10/16/2025 2:05 PM JUB-CENTRAL CLIENT SUIT REVERESTORATION PROJECTS 57-23-033 OGDEN SURF WAVE DESIGN (CA) SHEET 57-23-033 S-901X.DWG

- NOTES:
- LAYOUT OF CONDUIT IS REPRESENTATIVE. REFER TO D-SHEETS FOR ACTUAL LAYOUTS.
 - M-3000-UTL MIX SHALL BE USED WHEN PLACED UNDER CONCRETE STRUCTURES AND SHALL CONTAIN REINFORCEMENT AS DETAILED.
 - M-CDF WITH MAXIMUM COARSE AGGREGATE OF 0.5" SHALL BE USED IN ALL OTHER LOCATIONS. NO REINFORCEMENT REQUIRED.
 - 1" DIA. CONDUIT MAY BE BUNDLED IN STRAIGHT ROWS OF UP TO 4 CONDUITS. EACH SET MUST BE SPACED TO ALLOW FOR 2" CLEAR BETWEEN CONDUIT BUNDLES.



A1 CONDUIT ENCASEMENT DETAIL
SCALE: NTS

NOTE:
USE DESIGNED BASE SLAB TO
SUPPORT MANHOLE AGAINST
BOUYANT FORCES.



A2 PRECAST MANHOLE FOOTING DETAIL
SCALE: NTS



J-U-B ENGINEERS, INC.

J-U-B ENGINEERS, INC.
1047 South 100 West
Suite 180
Logan, UT 84321
Phone: 435.713.9514
www.jub.com

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| NO. | REVISION | DESCRIPTION | BY | DATE |
|-----|----------|-------------|----|------|
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OGDEN BUSINESS EXCHANGE SURF WAVE
OGDEN CITY

STRUCTURAL DETAILS

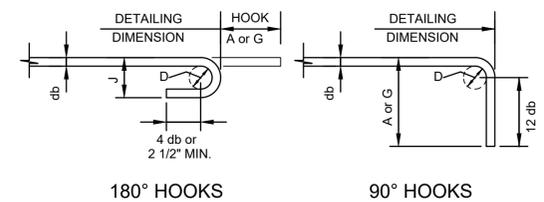
FILE: 57-23-033_S-901X
JUB PROJ. #: 57-23-033
DRAWN BY: EM
DESIGN BY: KJH
CHECKED BY: JCH
ONE INCH
AT FULL SIZE, IF NOT ONE
INCH, SCALE ACCORDINGLY
LAST UPDATED: 10/16/2025

SHEET NUMBER:
S-502

TYPICAL LAP SPLICE LENGTHS IN INCHES, PER ACI 318

| BAR SIZE | LAP CLASS | f _c =3,000 psi | | f _c =4,000 psi | | f _c =4,500 psi | | f _c =5,000 psi | |
|----------|-----------|---------------------------|-------|---------------------------|-------|---------------------------|-------|---------------------------|-------|
| | | CAT.1 | CAT.2 | CAT.1 | CAT.2 | CAT.1 | CAT.2 | CAT.1 | CAT.2 |
| #3 | A | 16 | 25 | 14 | 21 | 14 | 20 | 13 | 19 |
| | B | 21 | 32 | 19 | 28 | 18 | 27 | 17 | 25 |
| #4 | A | 22 | 33 | 19 | 28 | 18 | 27 | 17 | 25 |
| | B | 28 | 43 | 25 | 37 | 24 | 35 | 22 | 33 |
| #5 | A | 27 | 41 | 24 | 36 | 23 | 34 | 21 | 32 |
| | B | 36 | 53 | 31 | 46 | 30 | 44 | 28 | 41 |
| #6 | A | 33 | 49 | 28 | 43 | 27 | 41 | 25 | 38 |
| | B | 43 | 64 | 37 | 55 | 36 | 53 | 33 | 50 |
| #7 | A | 48 | 72 | 42 | 62 | 40 | 59 | 37 | 56 |
| | B | 62 | 93 | 54 | 81 | 51 | 77 | 48 | 72 |
| #8 | A | 55 | 82 | 47 | 71 | 45 | 68 | 42 | 64 |
| | B | 71 | 106 | 61 | 92 | 58 | 88 | 55 | 83 |
| #9 | A | 62 | 92 | 53 | 80 | 51 | 76 | 48 | 72 |
| | B | 80 | 120 | 69 | 104 | 66 | 99 | 62 | 93 |

- NOTES:
- FOR GRADE 60 REINFORCING STEEL BARS.
 - ALL LAP SPLICES SHALL BE CLASS B, UNLESS NOTED OTHERWISE.
 - CATEGORY 1: CLEAR COVER \geq db & CLR. SPACING \geq db, AND STIRRUPS OR TIES THROUGHOUT Ld ARE PROVIDED.
 - CATEGORY 2: CLEAR COVER \geq db & CLR. SPACING \geq 2db.
 - FOR TOP BARS MULTIPLY LAP LENGTH LISTED BY 1.30
 - TOP BARS ARE HORIZONTAL BARS WITH MORE THAN 12" OF CONCRETE CAST BELOW THE BARS.



| BAR SIZE | D | 180° HOOKS | | 90° HOOKS |
|----------|--------|------------|----|-----------|
| | | A or G | J | A or G |
| #3 | 2 1/4" | 5" | 3" | 6" |
| #4 | 3" | 6" | 4" | 8" |
| #5 | 3 3/4" | 7" | 5" | 10" |
| #6 | 4 1/2" | 8" | 6" | 1'-0" |
| #7 | 5 1/4" | 10" | 7" | 1'-2" |
| #8 | 6" | 11" | 8" | 1'-4" |

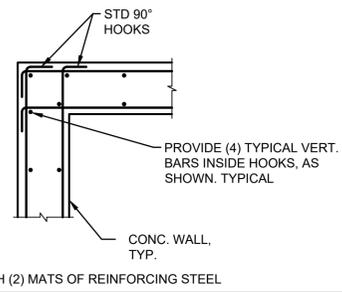
- NOTES:
- db = NOMINAL BAR DIAMETER.
 - D = FINISHED INSIDE BEND DIAMETER.
 - MINIMUM D = 6 db FOR #3 TO #8 BARS
 - MINIMUM D = 8 db FOR #9 TO #11 BARS
 - MINIMUM D = 10 db FOR #14 AND #18 BARS
 - TYPICAL MINIMUM END HOOKS, ALL GRADES OF STEEL.

A1 TYP REBAR LAP SPLICE SCHEDULE
SCALE: NTS

A2 TYPICAL REBAR HOOKS
SCALE: NTS

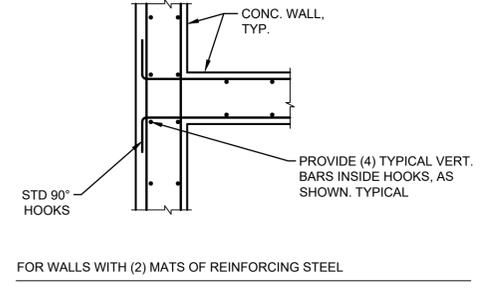
A3 TYP SLAB ON GRADE CONTROL/CONSTRUCTION JOINT
SCALE: NTS

A4 TYPICAL SEALED NOTCH
SCALE: NTS



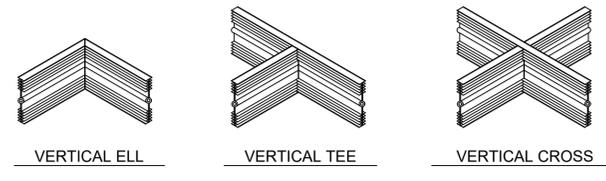
- NOTES:
- CORNER AND INTERSECTION BARS TO MATCH SIZE & SPACING OF HORIZ. BARS.
 - REFER TO OTHER SECTIONS & DETAILS FOR REQUIRED BAR SIZE AND SPACING.
 - NOT ALL VERTICAL BARS ARE SHOWN FOR CLARITY, REFER TO OTHER DETAILS.
 - TYPICAL DETAIL FOR WATER OR NON-WATER RETAINING CONCRETE WALLS.
 - LOCATIONS OF HORIZONTAL BAR LAP SPLICES IN WATER-RETAINING WALLS SHALL BE STAGGERED PER OTHER TYPICAL DETAILS

B1 TYPICAL CONCRETE WALL CORNER
SCALE: NTS



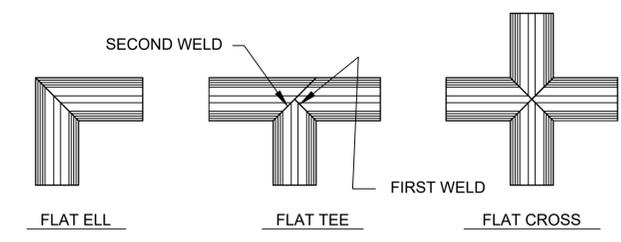
- NOTES:
- CORNER AND INTERSECTION BARS TO MATCH SIZE & SPACING OF HORIZ. BARS.
 - REFER TO OTHER SECTIONS & DETAILS FOR REQUIRED BAR SIZE AND SPACING.
 - NOT ALL VERTICAL BARS ARE SHOWN FOR CLARITY, REFER TO OTHER DETAILS.
 - TYPICAL DETAIL FOR WATER OR NON-WATER RETAINING CONCRETE WALLS.
 - LOCATIONS OF HORIZONTAL BAR LAP SPLICES IN WATER-RETAINING WALLS SHALL BE STAGGERED PER OTHER TYPICAL DETAILS

B2 TYPICAL CONCRETE WALL INTERSECTION
SCALE: NTS



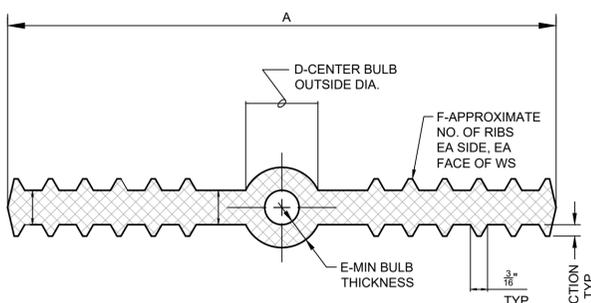
- NOTES:
- PROVIDE FACTORY MADE WATERSTOP FABRICATIONS FOR ALL VERTICAL INTERSECTIONS & CORNERS.
 - INSTALL AND SEAL FABRICATIONS IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.
 - FABRICATIONS SHALL BE MADE FROM THE SAME MATERIAL AS THE WATERSTOP CONNECTED.

C3 TYPICAL WELDED WATERSTOP INTERSECTIONS
SCALE: NTS



- NOTES:
- PROVIDE TEFLON COATED THERMOSTATICALLY CONTROLLED WATERSTOP SPLICING IRONS FOR ALL FIELD BUTT SPLICES.
 - FIELD BUTT SPLICES SHALL BE FULLY HEAT FUSED FOLLOWING THE MANUFACTURER'S RECOMMENDATIONS
 - LAPPING OF WATERSTOP, USE OF ADHESIVES, OR SOLVENTS SHALL NOT BE ALLOWED

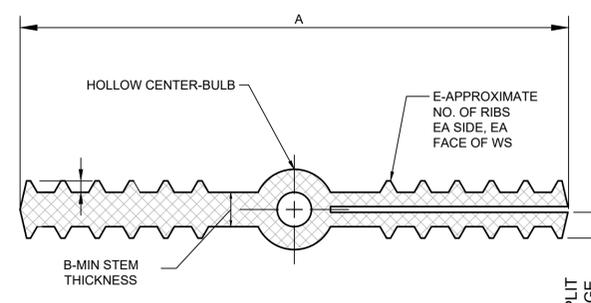
C3 TYPICAL WELDED WATERSTOP INTERSECTIONS
SCALE: NTS



| SIZE | A | B | C | D | E | F |
|---------|----|------|------|------|------|---|
| 4"x3/8" | 4" | 3/8" | 3/8" | 7/8" | 1/4" | 4 |
| 6"x3/8" | 6" | 3/8" | 3/8" | 7/8" | 1/4" | 6 |

- NOTES:
- WATER-STOP SHALL BE PVC AND SHALL CONFORM TO ASTM D570, ASTM D746, ASTM D1149 AND CRD-C572.
 - WHEN AVAILABLE PROVIDE PRE-FABRICATED INTERSECTION SECTIONS AT ALL WATERSTOP INTERSECTIONS.

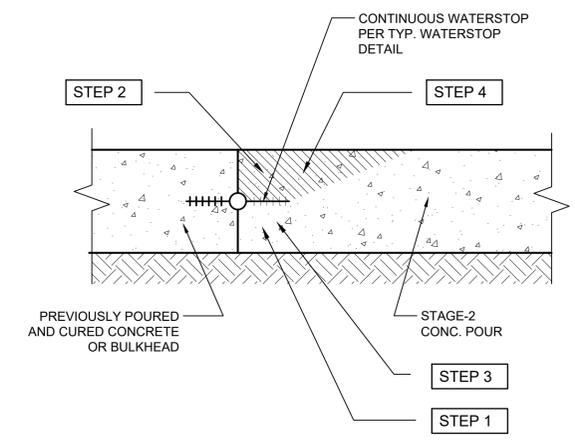
C1 TYPICAL WATERSTOP TYPE
SCALE: NTS



| SIZE | GREENSTREAK STYLE | A | B | C | D | E |
|------|-------------------|----|------|------|------|-----|
| 4" | CAT. ITEM 721 | 4" | 3/8" | 3/8" | 3/4" | (5) |
| 6" | CAT. ITEM 724 | 6" | 3/8" | 3/8" | 3/4" | (8) |

- NOTES:
- WATER-STOP SHALL BE PVC AND SHALL CONFORM TO ASTM D570, ASTM D746, ASTM D1149 AND CRD-C572.
 - WHEN AVAILABLE PROVIDE PRE-FABRICATED INTERSECTION SECTIONS AT ALL WATERSTOP INTERSECTIONS.

C2 TYPICAL SPLIT WATERSTOP TYPE
SCALE: NTS



- STEP 1: PLACE CONCRETE BELOW WATERSTOP FIRST. REMOVE ALL AIR VOIDS BY VIBRATING THOROUGHLY.
- STEP 2: TO CONFIRM THERE ARE NO AIR VOIDS, LIFT WATERSTOP. A CONTINUOUS IMPRESSION OF THE WATERSTOP, INCLUDING EDGE OF BULB, SHOULD BE VISIBLE IN THE FRESH CONCRETE. CONTINUE THIS PROCEDURE ALONG THE ENTIRE POURED JOINT, END TO END. IF A CONTINUOUS IMPRESSION IS CONFIRMED, PROCEED WITH STEP 4. IF A VOID LARGER THAN 1/4 INCH IN DIAMETER IS PRESENT ANYWHERE IN THE WATERSTOP IMPRESSION, PROCEED WITH STEP 3.
- STEP 3: IF A VOID LARGER THAN 1/4 INCH IN DIAMETER IS PRESENT IN THE WATERSTOP IMPRESSION, ADDITIONAL CONCRETE SHALL BE PLACED UNDER THE WATERSTOP, VIBRATED, AND STEP 2 REPEATED.
- STEP 4: FINISH PLACING CONCRETE ABOVE THE WATERSTOP TO TOP OF SLAB.

C4 TYPICAL SLAB WATERSTOP INSTALLATION
SCALE: NTS

APPENDIX B Geotechnical Report

Geotechnical Evaluation Ogden Business Exchange Wave Near Stockman Way and Exchange Road Ogden, Utah

River Restoration

PO Box 248 | Carbondale, Colorado 81623

January 10, 2025 | Project No. 800429001



Geotechnical | Environmental | Construction Inspection & Testing | Forensic Engineering & Expert Witness

Geophysics | Engineering Geology | Laboratory Testing | Industrial Hygiene | Occupational Safety | Air Quality | GIS

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

Geotechnical Evaluation Ogden Business Exchange Wave Near Stockman Way and Exchange Road Ogden, Utah

Mr. Quinn Donnelly, PE
River Restoration
PO Box 248 | Carbondale, Colorado 81623

January 10, 2025 | Project No. 800429001



Robert E. Gambrell, PE
Senior Engineer

REG/BLO/kgg



Brad L. Olsen, PE
Principal Engineer

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1 INTRODUCTION

In accordance with your request, Ninyo & Moore has performed a geotechnical evaluation for the Ogden Business Exchange Wave project to be constructed along the Weber River near Stockman Way and Exchange Road in Ogden, Utah. The approximate location of the site is indicated on Figure 1. The purposes of our geotechnical study were to evaluate subsurface soil conditions at the project site and to provide design and construction recommendations regarding geotechnical aspects of the project. This report presents the findings of our subsurface exploration, results of laboratory testing, conclusions regarding subsurface conditions at the project site, and geotechnical recommendations for design and construction of this project.

2 SCOPE OF SERVICES

The scope of our services included the following:

- Review of pertinent background information, including in-house geotechnical data, aerial photographs, and published regional and local geologic maps and soils data.
- Coordination and mobilization for subsurface exploration. Mark-out of existing utilities was conducted through Blue Stakes of Utah.
- Excavating, logging, and sampling of two exploratory test pits to depths up to approximately 10 feet. The purpose of the test pits was to evaluate the subsurface soil and groundwater conditions, including obtaining soil samples for laboratory testing.
- Performance of laboratory tests to evaluate the geotechnical characteristics of the subsurface soils, including gradation, Atterberg limits (plasticity), and chemical (corrosivity) considerations, including pH, electrical resistivity, water-soluble sulfate content, water-soluble chloride content, and total dissolved solids (solubility).
- Compilation and analysis of the field and laboratory data.
- Preparation of this report presenting our findings, conclusions, and recommendations.

3 PROJECT DESCRIPTION

The project will include design and construction of a new standing whitewater surf wave, which will be located in the Weber River at approximately 41.2277 degrees north latitude and -111.9878 degrees west longitude. The wave will be created by an inflatable apparatus supported on a shallow foundation extending perpendicular across the Weber River. A second structure will be constructed just downriver from the standing wave to slow the flow of water and to create a pool below the standing wave. In addition, a paved access path will extend from the top of the south bank, diagonal to the river, to the approximate location of the proposed second structure downstream of the standing wave. It is anticipated the project will also include additional in-channel and bank improvements in and along the Weber River, such as concrete flatwork, low-height retaining walls, and various utilities. The standing wave will be constructed approximately ¼-mile downstream of the existing Ogden Kayak Park. The proposed project is anticipated to

have a total project alignment length of approximately 340 feet. The alignment currently includes a portion of a historic concrete grade-control structure that extends across the river in the approximate location of the proposed standing wave. The existing grade-control structure may be incorporated into the structure that will create the standing wave. The project site is shown on Figure 2.

4 GENERAL SITE CONDITIONS

At the time of our field activities, the project site was generally undeveloped on the south side of the river and primarily covered in native plants, vegetation and trees. On the north side of the river, the bank was built-up with boulders, apparent fill soils, remnant of previous structures, and a paved walking path. The two-tiered foundation associated with the existing historic concrete grade-control structure extends perpendicular across the Weber River. The Weber River generally flows to the northwest with approximately 2 to 4 feet of water. The site is located in the western portion of Ogden, Utah, to the east of Interstate 15. Adjacent properties include commercial businesses with parking areas to the south and southwest, and a railroad to the north and east. The topography at the site slopes gently down to the northwest with a total relief of approximately 5 feet. Indications of underground utilities were not observed, but may be present at or near the site.

5 GEOLOGY

Based on our field observations, subsurface exploration, and review of referenced geologic and soils data, the project site is underlain primarily by Quaternary-age alluvial soil deposits (native soil) consisting sand, silt, clay, and gravel deposits. Ninyo & Moore's findings regarding the geologic setting, potential geologic hazards, ground motions, and liquefaction potential at the project site are provided in the following sections.

5.1 Geologic Setting

The project site is located in the Wasatch Front Region along the western base of the Wasatch Range. The Wasatch Front is located on the eastern edge of the Great Basin, which is made up of many naturally formed structural basins resulting from block faulting, which is a fundamental characteristic of the Basin and Range physiographic province.

The Wasatch Front Region extends in a north-south direction and generally drains toward the west through rivers and washes. The referenced geologic map titled *Interim geologic map of the Ogden 30' x 60' quadrangle, Box Elder, Cache, Davis, Morgan, Rich, and Summit Counties, Utah, and Uinta County, Wyoming* (Coogan, J.C., and King, J.K., 2016) indicates that the project area

is underlain primarily by Quaternary-age alluvial deposits that are composed of moderately sorted, unconsolidated sand, silt, clay and gravel that locally includes organic overbank and oxbow lake deposits. These sediments were emplaced during the Holocene, where lower levels of the Great Salt Lake induced downcutting by the Weber River, leading to the accumulation of alluvium along recent and currently active floodplains.

The project site was also within the bounds of the ancestral Lake Bonneville, a glacial lake associated with the last Ice Age, during the late Pleistocene. Deposits associated with this environment include alluvial fan sediments where the Weber River entered the lake, coarser-grained materials in shallow water, and finer-grained materials in deep water.

5.2 Potential Geologic Hazards

Ninyo & Moore’s geotechnical study included an evaluation of the possible presence of geologic hazards, such as faults and ground fissures, in the site area. This evaluation included visual observation of the site for indications of adverse geologic features and review of published geologic and soils maps and literature, and other data listed in the references section of this report.

Based on our review of referenced data, no faults traverse the project site. Surficial disturbance associated with active faulting was not observed at the site during our field evaluation. Review of referenced geologic data indicates that the nearest active fault (i.e., a fault that has experienced ground surface rupture within the past 10,000 years) to the site is the Weber segment of the Wasatch Fault Zone. Table 1 lists the principal, known active faults that may affect the project site along with approximate fault-to-site distances and anticipated maximum moment magnitudes (M_{max}). The approximate fault-to-site distances, M_{max} values, and activity levels were obtained using the referenced USGS web-based programs (USGS, 2014; USGS, 2025).

| Fault Name (Activity Level) | Approximate Distance From Project Site to Fault (miles) | Maximum Moment Magnitude (M_{max}) |
|---|--|--|
| Wasatch Fault Zone, Weber Segment (Active) | 3.2 | 7.1 |
| Wasatch Fault Zone, Bingham City Segment (Active) | 7.6 | 7.0 |
| Great Salt Lake Fault Zone, Fremont Island Segment (Active) | 21.0 | 6.8 |

Review of the referenced geologic data does not indicate the presence of ground fissures at the project site and no ground fissures were observed during our field activities. Additionally, our

review indicates that the site is not located in a *Surface Fault Rupture Hazard Special Study Zone* (UGS, 2008b).

5.3 Ground Motions

Using the American Society of Civil Engineers (ASCE) Hazard Tool (<https://ascehazardtool.org>), estimated maximum considered earthquake spectral response accelerations for short (0.2 second) and long (1.0 second) periods were obtained for the project site, which is located at approximately 41.2278 degrees north latitude and -111.9880 degrees west longitude. Based on the results of our field exploration, ASCE Standard 7-16 (ASCE, 2016), and a review of available geologic information, Seismic Site Class D – Default is appropriate for the project site. The parameters presented in the following table are characteristic of the site for design purposes.

| Table 2 – Seismic Design Criteria | |
|---|-------------|
| Site Coefficients and Spectral Response Acceleration Parameters | Values |
| Site Class | D – Default |
| Site Coefficient at 0.2-second Period, F_a | 1.2 |
| Site Coefficient at 1.0-second Period, F_v | 1.708 |
| Mapped Spectral Response Acceleration at 0.2-second Period, S_s | 1.356g |
| Mapped Spectral Response Acceleration at 1.0-second Period, S_1 | 0.492g |
| Spectral Response Acceleration at 0.2-second Period Adjusted for Site Class, S_{MS} | 1.628g |
| Spectral Response Acceleration at 1.0-second Period Adjusted for Site Class, S_{M1} | 0.840g |
| Design Spectral Response Acceleration at 0.2-second Period, S_{DS} | 1.085g |
| Design Spectral Response Acceleration at 1.0-second Period, S_{D1} | 0.560g |
| Site Amplification Factor, F_{PGA} | 1.2 |
| Peak Ground Acceleration, PGA | 0.612g |
| Modified Peak Ground Acceleration, PGA_M | 0.734g |

5.4 Liquefaction Potential

Liquefaction is a phenomenon in which loose, saturated soils lose shear strength under short-term (dynamic) loading conditions. Ground shaking of sufficient duration results in the loss of grain-to-grain contact in potentially liquefiable soils due to a rapid increase in pore water pressure, causing the soil to behave as a fluid for a short period of time.

To be potentially liquefiable, a soil is typically cohesionless with a grain-size distribution generally consisting of sand and silt. It is generally loose to medium dense and has relatively high moisture content, which is typical near or below groundwater level. The potential for liquefaction decreases with increasing clay and gravel content, but increases as the ground acceleration and duration of

shaking increase. Potentially liquefiable soils need to be subjected to sufficient magnitude and duration of ground shaking for liquefaction to occur.

An in-depth evaluation of the potential for liquefaction at the site was outside the scope of this geotechnical evaluation. Review of the referenced geologic data indicates that the project site is mapped in a zone with a high liquefaction potential. However, based on the nature of the proposed construction, liquefaction is not a design concern.

6 FIELD EXPLORATION AND SUBSURFACE CONDITIONS

Ninyo & Moore's subsurface exploration at the project site was performed on November 11, 2024. This exploration consisted of excavating, logging, and sampling of two exploratory test pits (TP-1 and TP-2). The test pits were excavated with a track-mounted CAT 311F L excavator. The test pits were excavated to depths up to approximately 10 feet. The purpose of the test pits was to evaluate subsurface conditions at the project site and to collect soil samples for laboratory testing. The elevations of the test pits, based on Mean Sea Level (MSL), were estimated from Google Earth (Google Earth Website, 2025) data. Accordingly, the ground elevations that are recorded on the test pit logs in Appendix A should be considered approximate. The approximate locations of the test pits are shown on Figure 2.

Laboratory tests were performed on representative soil samples collected from the test pits to evaluate the gradation, Atterberg limits (plasticity), and chemical (corrosivity) considerations, including pH, electrical resistivity, water-soluble sulfate content, water-soluble chloride content, and total dissolved solids (solubility). The laboratory test results and descriptions of testing procedures utilized are presented in Appendix B and Appendix C.

6.1 Subsurface Soil Encountered

Generalized descriptions of the subsurface soils encountered in the exploratory test pits are provided in the following sections.

6.1.1 Native Soil

The encountered native soils consisted primarily of loose to dense, well-graded gravel with silt and sand; and loose, well-graded sand with silt and varying amounts of gravel and cobbles. The encountered native soils were generally moist to wet. Test Pits TP-1 and TP-2 were terminated at depths of 8.5 and 10 feet, respectively, due to collapsing sidewalls and unstable excavation conditions.

6.2 Groundwater

Groundwater was encountered in our test pits at depths of approximately 7 and 9.5 feet at the time of excavation. Groundwater levels are influenced by seasonal factors, variations in ground surface topography, precipitation, irrigation practices, soil/rock types, groundwater pumping, and other factors and are subject to fluctuations. Evaluation of factors associated with groundwater fluctuations was beyond the scope of this study.

6.3 Laboratory Testing

Laboratory tests were performed on representative samples of soil obtained from the exploratory test pits. Results of these tests are summarized in the following table and presented in Appendix B and Appendix C.

| Table 3 – Summary of Laboratory Test Results | | |
|--|-------------------|--|
| Test Type | Test Results | Remarks |
| Atterberg Limits | | |
| Liquid Limit | NP | |
| Plastic Limit | NP | |
| Plasticity Index | NP | Non-plastic. |
| pH | 7.4 | -- |
| Electrical Resistivity | 31 Ohm-m | Moderate corrosion potential to normal grade steel. |
| Water-Soluble Sulfate | 34 mg/kg (ppm) | Sulfate Exposure Class S0 – Low corrosion potential to concrete. |
| Water-Soluble Chloride | 36 mg/kg (ppm) | Low corrosion potential to normal grade steel. |
| Total Dissolved Solids (Solubility) | 2,690 mg/kg (ppm) | Low solubility potential. |

The laboratory tests performed for this evaluation were performed in accordance with the current applicable ASTM standards.

7 FINDINGS AND CONCLUSIONS

Based on the findings of this study, it is our opinion that there are no known geotechnical or geologic conditions that would preclude construction of the proposed project, provided the recommendations presented herein are implemented and appropriate construction practices are followed. Geotechnical design and construction considerations for the proposed project include the following:

- **Structural Fill and Backfill:** The findings of our study indicate that the soils encountered in our exploratory test pits generally should be suitable for use as structural fill and backfill

material for the project. The excavated on-site soils may be used as structural fill and backfill provided they comply with the recommendations presented in Section 8.1.3.

- **Over-sized Material:** Cobbles and boulders were occasionally encountered within our test pits. Accordingly, rock excavation techniques, including rock chipping, should be anticipated. Additionally, any on site soils to be reused as structural fill will likely need to be screened to remove over-sized materials.
- **Subgrade Support:** Structure foundations and other project improvements should be supported on medium dense to very dense native granular soils, on stiff to hard native fine-grained soils, or on properly placed and compacted structural fill (reworked soils or import soils). Structural fill should extend to competent native soils, as described above.
- **Groundwater:** Groundwater was encountered in our exploratory test pits at depths of approximately 7.0 and 9.5 feet. Groundwater will be encountered during excavation operations. Dewatering and subgrade stabilization should be anticipated.
- **Subgrade Stabilization:** Relatively moist to wet conditions will be encountered during excavation and earthwork operations. Therefore, potentially unstable and pumping subgrade conditions should be anticipated in excavation bottoms. In addition, contractors for this project should anticipate that construction dewatering will be needed for the project to aid in stabilizing trench walls and trench bottoms, and to aid in placement and compaction of fills. Unstable and pumping subgrade conditions should be expected during earthwork operations.
- **Seismic Parameters:** In accordance with the referenced ASCE 7-16 (ASCE, 2016) standard, the seismic parameters provided in Table 2 are characteristic of the site and should be considered, where appropriate, in design of the proposed structures.
- **Liquefaction:** The project site is mapped in a zone with a high liquefaction potential. However, based on the proposed construction, liquefaction is not a design concern.
- **Geologic Hazards:** Review of published geologic data and our field observations do not indicate the presence of adverse on-site geologic hazards, such as faults and ground fissures, which may affect proposed site development.
- **Corrosion Potential:** Chemical test results indicate that the tested soils have a low to moderate corrosion potential to metal and a low corrosion potential to concrete.
- **Underground Utilities:** Indications of underground utilities were not observed at the site during our field activities. Existing utilities at the site may be present and should be located and marked prior to earthwork operations, and should be removed from proposed structure and other site improvement areas or abandoned in-place.

8 RECOMMENDATIONS

The following sections provide geotechnical recommendations for design and construction of proposed project improvements.

8.1 Earthwork

The following subsections provide recommendations for earthwork, including site grading, subgrade stabilization, structural fill and backfill, import soil, excavations and dewatering, and temporary excavations and shoring.

8.1.1 Site Grading

Prior to grading, areas of proposed structures and improvements should be cleared of any surface obstructions, structures, foundations, pavement, debris, concrete, topsoil, vegetation, undocumented fill (if encountered), and other deleterious material. Previous developments have occurred at this site. As a result, remnants of existing foundations are anticipated. Considering the historic past-uses of the site, there may be additional buried concrete remnants, areas of deeper fills, or other unobserved features present below the ground surface. If encountered, these materials should be removed and replaced with properly compacted structural fill. Additional recommendations specific to the site conditions encountered may be provided at the time of construction. The project budget should include additional cost associated with the removal and replacement of additional fill material.

If encountered, existing fill materials should be considered undocumented/non-engineered and unsuitable for support of structures and improvements in the present condition. The term undocumented fill refers to fill placed without engineering control and documentation. Such materials generated from clearing operations should be removed and disposed of in non-structural areas or at a legal landfill. Fill soils may be left in place where documentation can be provided showing that the soils were engineered. Findings of our study indicate that the soils encountered in our exploratory test pits generally should be suitable for use as structural fill and backfill material for the project. Soils excavated in areas of proposed project improvements may be re-used as structural fill and backfill provided they conform to recommendations provided in Section 8.1.3.

After the removals described above have been made, the exposed native soils should be scarified to approximately 6 inches, moisture-conditioned to approximately optimum moisture content, and compacted to 95 percent or more relative compaction, as evaluated by ASTM International (ASTM) Standard D1557. The project's geotechnical consultant should observe excavation bottoms and areas to receive fill at the time of grading to assess the suitability of the exposed material and to evaluate if removals down to more competent soils are needed.

Surface preparations should extend 5 feet or more beyond the exterior edges of planned structure foundations and 2 feet or more beyond planned exterior concrete flatwork, pavement areas, and retaining/screen walls, where practicable.

Based on the density/consistency of the existing native soils at the site, some shrinkage should be anticipated when these soils are excavated, processed, and compacted. For

planning purposes, an estimated shrinkage factor of approximately 20 percent may be used for on-site soils encountered in the upper 5 feet.

It is anticipated that the existing grade-control structure may be incorporated into the structure that will create the standing wave. Placement of new foundations, slabs, pavement, and/or exterior flatwork on the existing foundation in the river will result in additional loading to the existing foundation, which could result in additional compression of the subgrade materials or movement of the existing foundation. Therefore, if the existing foundation is left in place in the current state, it would provide a risk to the owner of settlement and/or distress of those elements supported on the existing foundation, as well as elements downstream of the existing foundation. This risk cannot be eliminated without removal and replacement of the existing foundation. It should be noted that the risks described above do not take into account potential environmental concerns relating to the existing foundation.

The exposed subgrade materials should be medium dense to very dense and unyielding prior to fill placement. Proof-rolling of subgrade should be performed following the remedial grading and prior to fill placement. The extent of and depths of removal should be evaluated by our representative during the excavation work based on observation of the soils exposed. Additional excavations may be recommended at the time of construction to remove debris (if encountered) within the fill.

The geotechnical consultant should be retained to observe the remedial excavations, and the elevations of the excavation bottoms should be surveyed by the project civil engineer.

Cobbles and boulders were observed on the ground surface at the project site and encountered in our test pits. Accordingly, rock excavation techniques, including rock chipping, should be anticipated. Additionally, any on-site soils to be reused as structural fill will likely need to be screened to remove over-sized materials, including cobbles and boulders.

8.1.2 Subgrade Stabilization

As previously indicated, moist to wet surficial soils and relatively shallow groundwater levels were noted at the site during our field activities. Due to these moist to wet subgrade conditions, pumping subgrade should be anticipated during excavation and earthwork operations. Subgrade stabilization will be needed where pumping subgrade conditions are encountered. Pumping conditions may occur where excavations extend near to or below groundwater levels and where moisture content of in-situ soils is relatively high.

Stabilization methods should be provided by the grading contractor, as needed, and may include the use of a geogrid, such as Tensar TX160, or a woven geotextile fabric, such as Mirafi 600X, placed on unstable subgrade and overlain by 12 inches of crushed rock (Untreated Base Course). Pushing oversized angular rock, up to approximately 6 inches in nominal diameter, into exposed unstable subgrade soils may also be an appropriate stabilization alternative. The volume of rock needed will vary based on factors including the moisture content of the native soil, soil type, depth to groundwater, and total affected area. Placement of angular rock should continue until the area exhibits a relatively non-yielding behavior as observed or tested by the geotechnical consultant.

If conditions are observed that indicate additional stabilization efforts may be needed (e.g., excavations extending below groundwater), a combination of over-excavation, rock fill, and geogrid placement should be considered. Dewatering and use of relatively light or tracked earthwork equipment may also be needed. The geotechnical consultant/engineer during construction should evaluate proposed subgrade stabilization methods prior to their implementation.

8.1.3 Structural Fill and Backfill

The following sections include recommendations regarding soil suitability, placement, and compaction of structural fill and backfill.

8.1.3.1 Soil Suitability

Based on the findings of our subsurface evaluation and laboratory test results, the soils encountered during our exploration below the upper organic-rich soils should generally be suitable for use as structural fill and backfill material. The excavated on-site soils may be used as structural fill and backfill provided they comply with the recommendations presented in this section.

Structural fill and backfill soil should not contain organic matter, debris, other deleterious matter, or rocks or hard chunks larger than approximately 6 inches in nominal diameter. These soils should have a low solubility potential of 1.0 percent or less, as evaluated by SM2540C at an extraction ratio of 1:5 (soil to water) and corrected for dilution, and a very low to low expansion potential/plasticity index (Expansion Index, EI, less than 50, as evaluated by ASTM D4829; or Plasticity Index, PI, less than 15, as evaluated by ASTM D4318).

8.1.3.2 Placement and Compaction

Soils used as structural fill and backfill should be moisture-conditioned to approximately optimum moisture content and placed and compacted in uniform horizontal lifts to a relative compaction of 95 percent, as evaluated by the ASTM D1557. The optimal lift thickness of fill will depend on the type of soil and compaction equipment used, but should generally not exceed approximately 8 inches in loose thickness. Placement and compaction of structural fill should be performed in accordance with applicable building codes.

Structural fill should extend to competent native soils, consisting of medium dense to very dense granular soils or stiff to hard fine-grained soils.

Earthwork operations should be observed and compaction of structural fill and backfill materials should be tested by the project's geotechnical consultant. Typically, one field test should be performed per lift for each approximately 2,500 square feet of fill placement in structural areas. Additional field tests may also be performed in structural and non-structural areas at the discretion of the geotechnical consultant.

Due to the relatively shallow groundwater, use of controlled low-strength material (CLSM) should be considered in lieu of compacted fill for areas with low tolerances for surface settlements, for excavations that extend below the groundwater table, or in areas with difficult access for compaction equipment. CLSM should be placed in lifts of 5 feet or less with a 24-hour or more curing period between each lift.

8.1.4 Import Soil

Import soil should consist of coarse-grained material (50 percent or more retained on the No. 200 sieve). Import soil should have a low solubility potential of 1.0 percent or less, as evaluated by SM2540C at an extraction ratio of 1:5 (soil to water) and corrected for dilution, a low sulfate content (less than 0.1 percent), and a very low to low expansion potential/plasticity index (Expansion Index, EI, less than 50, as evaluated by ASTM D4829; or Plasticity Index, PI, less than 15, as evaluated by ASTM D4318). Import soil should not contain organic matter, debris, other deleterious matter, or rocks or hard chunks larger than approximately 4 inches in nominal diameter. We further recommend that proposed import material be evaluated by the project's geotechnical consultant at the borrow source for its suitability prior to being imported to the project site. Import soil should be moisture-conditioned, placed, and compacted in accordance with the recommendations set forth in the previous section.

8.1.5 Excavations and Dewatering

Excavations will encounter loose and/or wet conditions. Accordingly, dewatering techniques will be needed. The design, construction, and implementation of construction dewatering are the responsibility of the contractor, and should be performed by a qualified expert. Upon request, Ninyo & Moore can perform in-place hydro-geologic testing and/or full-scale pump testing at this site to further evaluate these parameters. Dewatering should be performed with care so as not to cause harmful settlement of nearby foundations, utilities, pavements, or other improvements. Discharge of water from the excavations to storm water collection systems will require a construction dewatering permit. Groundwater characterization will be needed as part of the permit application.

Where encountered, drying or over-excavation of any wet or saturated soils is recommended. If the subgrade becomes disturbed, it should be compacted or removed and replaced before placing additional backfill material. Groundwater should be anticipated in utility trenches, elevator pits, or other excavations. Structures and improvements should be properly waterproofed and designed to resist buoyancy forces due to shallow groundwater. Groundwater levels will fluctuate due to seasonal variations associated with precipitation, irrigation, groundwater withdrawal or injection, and other factors.

8.1.6 Temporary Excavations and Shoring

Temporary slope configurations should be consistent with the requirements provided in the referenced Occupational Safety and Health Administration (OSHA) regulations (OSHA, 2024) document. Temporary slope surfaces should be kept moist to retard raveling and sloughing. Water should not be allowed to flow over the top of excavations in an uncontrolled manner. Stockpiled material and/or equipment should be kept back from the top of excavations a distance equivalent to the depth of the excavation or more. Workers should be protected from falling debris, sloughing, and raveling in accordance with OSHA regulations (OSHA, 2024). Temporary excavations should be observed by the project's geotechnical consultant so that appropriate additional recommendations may be provided based on the actual field conditions. Temporary excavations are time sensitive and failures are possible.

Shoring systems should be designed for the contractor by a professional engineer registered in the State of Utah. In addition to lateral earth pressures, shoring design should include surcharge loads exerted by adjacent existing roadways, structure foundations, construction equipment, construction traffic, material stockpiles, etc. located within a 1:1 (H:V) plane extending upward from the toe of the excavation. Shoring design should discuss the anticipated top deflection of the shoring components. Depending on the anticipated top

deflection of the shoring components, settlement of buildings, buried utility lines, exterior flatwork, and other improvements located within close proximity (approximately 10 feet or more) of the temporary shoring should be considered.

8.2 Utility Installation

The contractor should take particular care to achieve and maintain adequate compaction of the backfill soils around manholes, valve risers, and other vertical pipeline elements where settlements are commonly observed. Use of controlled low strength material (CLSM) or a similar material should be considered in lieu of compacted soil backfill in areas with low tolerances for surface settlement. This may also reduce permeability of the utility trench backfill.

Pipe bedding materials, placement, and compaction should meet the specifications of the pipe manufacturer and applicable municipal standards. Materials proposed for use as pipe bedding should be tested for suitability prior to use.

Special care should be exercised to avoid damaging the pipe or other structures during the compaction of the backfill. In addition, the underside (or haunches) of the buried pipe should be supported on bedding material that is compacted as described above. This may need to be performed with placement by hand or small-scale compaction equipment.

Surface drainage should be designed to divert surface water away from utility trenches. Where topography, site constraints, or other factors limit or preclude adequate surface drainage, granular bedding materials should be surrounded by a non-woven geotextile fabric (e.g., TenCate Mirafi® 140N or equivalent) to reduce the migration of fines into bedding material, which can result in severe, isolated settlements.

Development of site grading plans should consider subsurface transfer of water in utility trench backfill and the pipe bedding materials. Sandy pipe bedding materials can function as efficient conduits that convey natural and applied waters in the subsurface. Cut-off walls in utility trenches or other water-stopping measures should be implemented to reduce the rates and volumes of water transmitted along utility alignments and toward buildings, pavements, and other structures where excessive wetting of the underlying soils will be damaging. Incorporation of water cut-offs and/or outlet mechanisms for saturated bedding materials into development plans could be beneficial to the project. These measures also will reduce the risk of settlement due to loss of fine-grained backfill soils into the bedding material.

8.3 Structure Foundations

We anticipate the structures will be supported on conventional spread foundations or mat foundations. The allowable bearing capacities, which were developed considering a factor of safety of 2.5, may be increased by one-third for short duration loads, such as wind or seismic. Additionally, shallow foundations should have an embedment depth of 30 inches or more below adjacent finished grade (for frost protection), and a width of 12 inches or more. Foundations in the river should be evaluated for scour and embedded appropriately. Seismic parameters for design of structures at the site are provided in Table 2 in Section 5.3.

Foundations should be designed in accordance with structural considerations and the following recommendations. In addition, requirements of the appropriate governing jurisdictions and applicable building codes should be considered in design of the structures.

8.3.1 Conventional Spread Footings

Lightly loaded structures may be supported by conventional spread foundations utilizing a net allowable bearing capacity of 1,200 pounds per square foot (psf). Spread footings should be founded on medium dense to very dense native granular soils, on stiff to hard native fine-grained soils, or on properly placed and compacted structural fill (reworked soils or import soils). Structural fill should extend to competent native soils, as described above.

From a geotechnical standpoint, we recommend that footings be reinforced with two No. 4 or larger reinforcing bars, one placed near the top and one near the bottom of the footings. Additional reinforcement may be recommended by the structural engineer. Lateral resistance for footings is presented in Section 8.5.

8.3.2 Mat Foundations

Mat foundations should be established on at least 6 inches of Untreated Base Course placed on exposed native subgrade soils scarified and re-compacted to at least 95 percent as evaluated by ASTM D1557, or on adequately placed and compacted structural fill (reworked soils or import soils). Structural fill should extend to competent native soils. Mat foundations established as recommended above may be designed for a net allowable bearing capacity of 1,800 psf.

Bending of the mat foundation from imposed foundation loads and resulting stresses within the mat foundation should be estimated using the subgrade modulus. The recommended vertical modulus of subgrade reaction, k_v1 , for use in design of a flexible mat foundation is

100 pounds per cubic inch (pci) applicable for a 12-inch-square loaded area. For actual mat foundation sizes, the subgrade modulus should be reduced using the following formula:

$$K_v = K_{v1}(B+1)/2B \text{ (Equation 1)}$$

Where, for a uniformly loaded mat:

K_v = vertical modulus of subgrade reaction for actual mat foundation width

K_{v1} = vertical modulus of subgrade reaction for 1-foot-square loaded area in pci

B = mat foundation width in feet

For point loads on the mat, the vertical modulus of subgrade reaction need not be reduced using the formula above for the entire width of the mat or slab but rather some equivalent width which is related to the flexural stiffness of the mat relative to the underlying soil subgrade stiffness and may be estimated using the following formula:

$$B' = 14T \text{ (Equation 2)}$$

Where:

B' = equivalent foundation width in feet to be used in Equation 1 for B

T = thickness of mat in feet

8.4 Settlement

Based on our evaluation of spread footing bearing capacity, we anticipate that static settlement of foundations will be on the order of 1 inch or less. We estimate static footing differential settlement of about ½-inch over a horizontal span of about 40 feet.

8.5 Lateral Earth Pressures

Lateral earth pressures may be estimated using the values provided below. These values are based on our observation of the on-site soils, considered no groundwater, and assume that the ground surface is horizontal for a distance of 10 feet, or three times the height generating the passive pressure, whichever is more. These values also assume that retaining walls will have a height of approximately 6 feet or less.

For passive resistance to lateral loads, we recommend a passive lateral earth pressure of 330 psf per foot of depth up to a value of 1,500 psf. We recommend that the upper 12 inches of soil not protected by pavement or a concrete slab be neglected when calculating passive resistance. The passive lateral earth pressure may be increased by one-third when considering loads of short duration such as wind or seismic forces. For active and at-rest lateral earth pressures, we

recommend equivalent fluid pressures of 36 pcf and 54 pcf, respectively. In addition, for seismic active lateral earth pressures, an additional equivalent fluid pressure of 17 pcf should be added to the static active equivalent fluid pressure provided herein.

For frictional resistance to lateral loads, we recommend that a coefficient of friction of 0.57 be used between soil/soil contacts. A coefficient of friction of 0.38 may be used between soil and concrete contacts. Passive and frictional resistances may be used in combination, provided the passive resistance does not exceed one-half of the total allowable resistance.

Measures should be taken so that hydrostatic pressure does not build up behind retaining walls. Drainage measures should include free-draining granular backfill material and perforated drain pipes, or weep holes lined with polyvinyl chloride (PVC) pipe. Drain pipes should outlet away from structures and retaining walls should be waterproofed in accordance with the recommendations of a qualified civil engineer.

8.6 Exterior Concrete Flatwork

Ground-supported concrete flatwork may be subject to soil-related movements resulting from frost heave/settlement. Thus, where these types of elements abut rigid building foundations or isolated/suspended structures, differential movements should be anticipated. We recommend that flexible joints be provided in this situation to allow for differential movement.

Exterior concrete flatwork, such as walkways, should be founded on 6 inches of Untreated Base Course overlying medium dense to very dense native granular soils, stiff to hard native fine-grained soils, or properly placed and compacted structural fill (reworked soils or import soils). Structural fill should extend to competent native soils, as described above. Untreated Base Course should be compacted to 95 percent or more relative compaction, as evaluated by ASTM D1557.

To reduce the potential for shrinkage cracks, the flatwork should be constructed with control joints spaced approximately 5 feet apart for walkways and approximately 10 feet on-center each way for larger slabs. Crack control joint spacing should be in accordance with recommendations of a qualified structural engineer. Reduced joint spacing may be recommended by the structural engineer.

Formation of shrinkage cracks in concrete slabs, and other cracks due to minor soil movement, may be further reduced by utilizing steel reinforcement, such as welded wire mesh. However, due to the inherent difficulty in positioning welded wire mesh in the middle of concrete flatwork, other crack control methods should be considered, such as placement in the concrete of No. 3 steel

reinforcing bars at approximately 24 inches on-center each way. Reinforcement of the flatwork should be placed at approximately mid-height in the concrete utilizing “chairs.”

Exterior concrete flatwork, curbs, and gutters should be constructed in accordance with the recommendations of the project’s civil or structural engineer and governing agency requirements. Recommendations regarding concrete utilized in construction of proposed improvements are provided in Section 8.9.

8.7 Construction in Cold or Wet Weather

During construction, the site should be graded such that surface water can drain readily away from the structure and improvement areas. It is important to avoid ponding of water in or near excavations. Water that accumulates in excavations should be promptly pumped out or otherwise removed and these areas should be allowed to dry out before resuming construction. Berms, ditches, and similar means may be used to decrease stormwater entering the work area and to efficiently convey it to appropriate outlets off site.

Earthwork activities undertaken during the cold weather season may be difficult and should be done by an experienced contractor. Fill should not be placed on top of frozen soils. The frozen soils should be removed prior to placement of new engineered fill or other construction material. Frozen soil should not be used as structural fill or backfill. The frozen soil may be reused (provided it meets the selection criteria) once it has thawed completely. In addition, compaction of the soils may be more difficult due to the viscosity change in water at lower temperatures.

If construction proceeds during cold weather, foundations, slabs, or other concrete elements should not be placed on frozen subgrade soil. Frozen soil should either be removed from beneath concrete elements, or thawed and re-compacted. To limit the potential for soil freezing, the time between excavation and construction should be minimized. Blankets, straw, soil cover, or heating may be used to decrease the potential of soil freezing.

8.8 Frost Heave

Site soils are susceptible to frost heave if allowed to become saturated and exposed to freezing temperatures and repeated freeze/thaw cycling. The formation of ice in the underlying soils can result in 2 or more inches of heave of pavements, flatwork, and other hardscaping in sustained cold weather. A portion of this movement may be recovered when the soils thaw, but due to loss of soil density, some degree of displacement will remain. Frost heave of hardscaping could also result in areas of fine-grained subgrade soils.

In areas where hardscape movements are a design concern, replacement of the subgrade soils with 3 or more feet of clean, coarse sand or gravel, or supporting the element on foundations similar to the building, or spanning over a void should be considered. Detailed recommendations in this regard can be provided upon request.

8.9 Concrete and Corrosion Considerations

The corrosion potential of on-site soils to concrete and metal was evaluated in the laboratory using representative samples obtained from the exploratory test pits. Results of these tests are presented in Appendix C. Recommendations regarding concrete to be utilized in construction of proposed improvements and for metal in contact with on-site soils are provided in the following sections.

8.9.1 Concrete

Chemical tests performed on selected samples of on-site soils indicated a sulfate content of 34 mg/kg (ppm). Based on review of the referenced International Building Code (ICC, 2018) and American Concrete Institute manual (ACI, 2019), the tested soils are considered to have a sulfate exposure class of S0. Additionally, concrete in contact with on-site soil is anticipated to have a freeze/thaw exposure class of F2. Accordingly, we recommend that concrete in contact with on-site soils, along with subsurface walls up to 12 inches above finished grade have a design compressive strength of 4,500 psi or more, a water-cement ratio of 0.45 percent or less by weight, contain Type II cement, and contain 5.5 to 7.5 percent air-entrainment, as specified by ACI 318-19 (ACI, 2019). It is recommended that reinforcing bars in cast-against-grade concrete be covered by approximately 3 inches or more of concrete. Concrete should be placed with an approximate 4-inch slump and good densification procedures should be used during placement to reduce the potential for honeycombing. Concrete samples should be obtained, as indicated by ACI manual Section 318 (ACI, 2019), and the slump should be tested at the site by the project's geotechnical consultant. Structural concrete should be placed in accordance with American Concrete Institute (ACI, 2019) and project specifications.

8.9.2 Metal in Contact with On-Site Soils

Chemical tests performed on selected samples of on-site soils indicated low to moderate corrosion potential to normal grade steel. Accordingly, Ninyo & Moore recommends that corrosion reduction methods be implemented for this project for metal in contact with soil. These corrosion reduction methods may include utilization of protective coatings, pipe sleeving, and/or appropriate cathodic protection as recommended by a qualified corrosion

engineer. Where permitted by jurisdictional building codes, the use of plastic pipes for buried utilities should also be considered.

8.10 Observation and Testing

The geotechnical consultant should perform appropriate observation and testing services during fill placement, grading, and construction operations. These services should include observation of removal of soft, loose, undocumented fill, or otherwise unsuitable soils, evaluation of subgrade conditions where soil removals are performed, and performance of observation and testing services during placement and compaction of structural fill and backfill soils. The geotechnical consultant should also perform observation and testing services during placement of concrete, mortar, grout, asphalt concrete, and steel reinforcement.

The recommendations provided in this report are based on the assumption that Ninyo & Moore will provide geotechnical observation, testing, and inspection services during grading and construction. In the event that it is decided not to utilize the services of Ninyo & Moore during construction, we request that the selected consultant provide the client with a letter (with a copy sent to Ninyo & Moore) indicating that they fully understand Ninyo & Moore's recommendations, and that they are in full agreement with the design parameters and recommendations contained in this report.

8.11 Plan Review

The recommendations presented in this report are based on preliminary design information for the proposed project, as provided to Ninyo & Moore, and on the findings of our geotechnical evaluation. When finished, project plans and specifications should be reviewed by the geotechnical consultant prior to submitting the plans and specifications for bid. Additional field exploration and laboratory testing may be needed upon review of the project design plans.

8.12 Pre-Construction Meeting

We recommend that a pre-construction meeting be held. The owner or the owner's representative, the architect, the civil engineer, the contractor, and the geotechnical consultant should be in attendance to discuss the plans and the project.

9 LIMITATIONS

The field evaluation, laboratory testing, and geotechnical analyses presented in this geotechnical report have been conducted in general accordance with current practice and the standard of care exercised by geotechnical consultants performing similar tasks in the project area. No warranty,

expressed or implied, is made regarding the conclusions, recommendations, and opinions presented in this report. There is no evaluation detailed enough to reveal every subsurface condition. Variations may exist and conditions not observed or described in this report may be encountered during construction. Uncertainties relative to subsurface conditions can be reduced through additional subsurface exploration. Additional subsurface evaluation will be performed upon request. Our evaluation was limited to assessment of the geotechnical aspects of the project, and did not include evaluation of structural issues, environmental concerns, or the presence of hazardous materials.

This document is intended to be used only in its entirety. No portion of the document, by itself, is designed to completely represent any aspect of the project described herein. Ninyo & Moore should be contacted if the reader requires additional information or has questions regarding the content, interpretations presented, or completeness of this document.

This report is intended for design purposes only. It does not provide sufficient data to prepare an accurate bid by contractors. It is suggested that the bidders and their geotechnical consultant perform an independent evaluation of the subsurface conditions in the project areas. The independent evaluations may include, but not be limited to, review of other geotechnical reports prepared for the adjacent areas, site reconnaissance, and additional exploration and laboratory testing.

Our conclusions, recommendations, and opinions are based on an analysis of the observed site conditions. If geotechnical conditions different from those described in this report are encountered, our office should be notified and additional recommendations, if warranted, will be provided upon request. The conditions of a site could change with time as a result of natural processes or the activities of man at the subject site or nearby sites. Changes to the applicable laws, regulations, codes, and standards of practice may occur due to government action or the broadening of knowledge. The findings of this report may, therefore, be invalidated over time, in part or in whole, by changes over which Ninyo & Moore has no control.

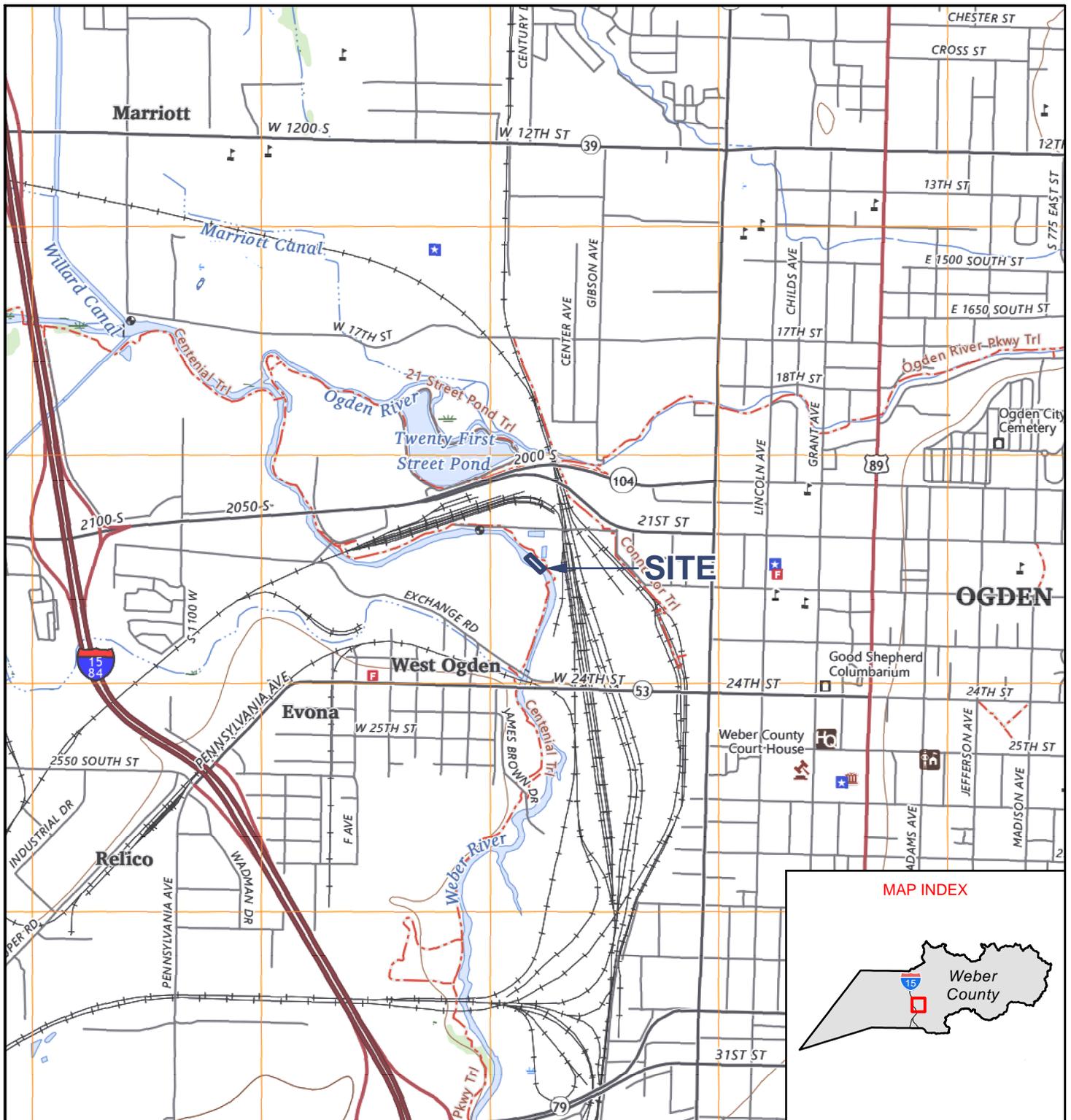
This report is intended exclusively for use by the client. Any use or reuse of the findings, conclusions, and/or recommendations of this report by parties other than the client is undertaken at said parties' sole risk.

10 REFERENCES

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FIGURES



P800429001.aprx 1/7/2025 JDL

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: USGS, 2025

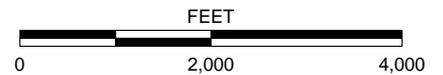


FIGURE 1

SITE LOCATION

OGDEN BUSINESS EXCHANGE WAVE
NEAR STOCKMAN WAY AND EXCHANGE ROAD
OGDEN, UTAH

800429001 | 1/25



Geotechnical & Environmental Sciences Consultants

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LEGEND

-  **TP-2** TEST PIT
TD=10.0 TD=TOTAL DEPTH IN FEET
-  SITE BOUNDARY

NOTE: DIRECTIONS, DIMENSIONS AND LOCATIONS ARE APPROXIMATE. | SOURCE: GOOGLE EARTH, 2025

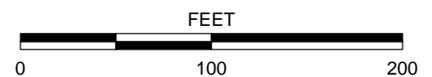


FIGURE 2

EXPLORATION LOCATIONS

OGDEN BUSINESS EXCHANGE WAVE
NEAR STOCKMAN WAY AND EXCHANGE ROAD
OGDEN, UTAH



APPENDIX A

Test Pit Logs

APPENDIX A

TEST PIT LOGS

Field Procedure for the Collection of Disturbed Soil Samples

Disturbed soil samples were obtained in the field using the following methods.

Bulk Soil Samples

Bulk samples of representative earth materials were obtained from the exploratory test pits. The samples were bagged and transported to the laboratory for testing.

The Standard Penetration Test (SPT) Sampler

Disturbed drive samples of earth materials were obtained by means of a Standard Penetration Test sampler. The sampler is composed of a split barrel with an external diameter of 2 inches and an unlined internal diameter of 1-3/8 inches. In general accordance with ASTM D1586, the sampler was driven into the ground with a 140-pound hammer free-falling from a height of 30 inches and the number of blows recorded on the test pit logs as an index to the relative resistance of the materials sampled. Soil samples were observed and removed from the sampler, bagged, sealed, and transported to the laboratory for testing.

Field Procedure for the Collection of Relatively Undisturbed Samples

Relatively undisturbed soil samples were obtained in the field using a modified split barrel drive sampler. The sampler, with an external diameter of 3.0 inches, was lined with 1-inch-long, thin, brass rings with an inside diameter of 2.4 inches. In general accordance with ASTM D3550, the sampler was driven into the ground with a 140-pound hammer free-falling from a height of 30 inches and the number of blows recorded on the test pit logs as an index to the relative resistance of the materials sampled. The samples were removed from the sample barrel in the brass rings, sealed, and transported to the laboratory for testing.

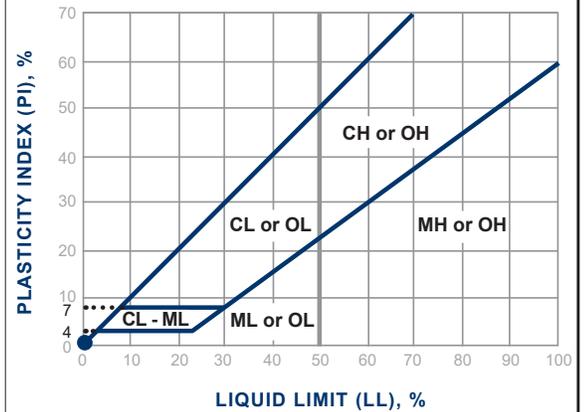
Soil Classification Chart Per ASTM D 2488

| Primary Divisions | | Secondary Divisions | | |
|--|---|---|---------------------------------|--------------------------------|
| | | Group Symbol | Group Name | |
| COARSE-GRAINED SOILS more than 50% retained on No. 200 sieve | GRAVEL more than 50% of coarse fraction retained on No. 4 sieve | CLEAN GRAVEL less than 5% fines | GW | well-graded GRAVEL |
| | | | GP | poorly graded GRAVEL |
| | | GRAVEL with DUAL CLASSIFICATIONS 5% to 12% fines | GW-GM | well-graded GRAVEL with silt |
| | | | GP-GM | poorly graded GRAVEL with silt |
| | | | GW-GC | well-graded GRAVEL with clay |
| | | | GP-GC | poorly graded GRAVEL with clay |
| | | GRAVEL with FINES more than 12% fines | GM | silty GRAVEL |
| | | | GC | clayey GRAVEL |
| | | | GC-GM | silty, clayey GRAVEL |
| | | | | |
| | SAND 50% or more of coarse fraction passes No. 4 sieve | CLEAN SAND less than 5% fines | SW | well-graded SAND |
| | | | SP | poorly graded SAND |
| | | SAND with DUAL CLASSIFICATIONS 5% to 12% fines | SW-SM | well-graded SAND with silt |
| | | | SP-SM | poorly graded SAND with silt |
| | | | SW-SC | well-graded SAND with clay |
| | | | SP-SC | poorly graded SAND with clay |
| | | SAND with FINES more than 12% fines | SM | silty SAND |
| | | | SC | clayey SAND |
| | | | SC-SM | silty, clayey SAND |
| | | | | |
| FINE-GRAINED SOILS 50% or more passes No. 200 sieve | SILT and CLAY liquid limit less than 50% | INORGANIC | CL | lean CLAY |
| | | | ML | SILT |
| | | | CL-ML | silty CLAY |
| | | ORGANIC | OL (PI > 4) | organic CLAY |
| | | | OL (PI < 4) | organic SILT |
| | | | | |
| | SILT and CLAY liquid limit 50% or more | INORGANIC | CH | fat CLAY |
| | | | MH | elastic SILT |
| | | | OH (plots on or above "A"-line) | organic CLAY |
| | | ORGANIC | OH (plots below "A"-line) | organic SILT |
| | | | | |
| | | | | |
| Highly Organic Soils | | PT | Peat | |

Grain Size

| Description | Sieve Size | Grain Size | Approximate Size |
|-------------|--------------|------------|--------------------------------|
| Boulders | > 12" | > 12" | Larger than basketball-sized |
| Cobbles | 3 - 12" | 3 - 12" | Fist-sized to basketball-sized |
| Gravel | Coarse | 3/4 - 3" | Thumb-sized to fist-sized |
| | Fine | #4 - 3/4" | Pea-sized to thumb-sized |
| Sand | Coarse | #10 - #4 | Rock-salt-sized to pea-sized |
| | Medium | #40 - #10 | Sugar-sized to rock-salt-sized |
| | Fine | #200 - #40 | Flour-sized to sugar-sized |
| Fines | Passing #200 | < 0.0029" | Flour-sized and smaller |

Plasticity Chart



Apparent Density - Coarse-Grained Soil

| Apparent Density | Spooling Cable or Cathead | | Automatic Trip Hammer | |
|------------------|---------------------------|------------------------------------|-----------------------|------------------------------------|
| | SPT (blows/foot) | Modified Split Barrel (blows/foot) | SPT (blows/foot) | Modified Split Barrel (blows/foot) |
| Very Loose | ≤ 4 | ≤ 8 | ≤ 3 | ≤ 5 |
| Loose | 5 - 10 | 9 - 21 | 4 - 7 | 6 - 14 |
| Medium Dense | 11 - 30 | 22 - 63 | 8 - 20 | 15 - 42 |
| Dense | 31 - 50 | 64 - 105 | 21 - 33 | 43 - 70 |
| Very Dense | > 50 | > 105 | > 33 | > 70 |

Consistency - Fine-Grained Soil

| Consistency | Spooling Cable or Cathead | | Automatic Trip Hammer | |
|-------------|---------------------------|------------------------------------|-----------------------|------------------------------------|
| | SPT (blows/foot) | Modified Split Barrel (blows/foot) | SPT (blows/foot) | Modified Split Barrel (blows/foot) |
| Very Soft | < 2 | < 3 | < 1 | < 2 |
| Soft | 2 - 4 | 3 - 5 | 1 - 3 | 2 - 3 |
| Firm | 5 - 8 | 6 - 10 | 4 - 5 | 4 - 6 |
| Stiff | 9 - 15 | 11 - 20 | 6 - 10 | 7 - 13 |
| Very Stiff | 16 - 30 | 21 - 39 | 11 - 20 | 14 - 26 |
| Hard | > 30 | > 39 | > 20 | > 26 |

BORING LOG EXPLANATION SHEET

| DEPTH (feet) | SAMPLES | | BLOWS/FOOT | MOISTURE (%) | DRY DENSITY (PCF) | SYMBOL | CLASSIFICATION U.S.C.S. | |
|--------------|---------|--------|------------|--|-------------------|---|----------------------------|---|
| | Bulk | Driven | | | | | | |
| 0 | XX/XX | | | | | | | Bulk sample. Modified split-barrel drive sampler. No recovery with modified split-barrel drive sampler. Sample retained by others. Standard Penetration Test (SPT). No recovery with a SPT. Shelby tube sample. Distance pushed in inches/length of sample recovered in inches. No recovery with Shelby tube sampler. Continuous Push Sample. Seepage. Groundwater encountered during drilling. Groundwater measured after drilling. |
| 5 | | | | | | | | |
| 10 | | | |  | | | | |
| 15 | | | | | |  | SM | <u>MAJOR MATERIAL TYPE (SOIL):</u> Solid line denotes unit change. |
| 15 | | | | | |  | CL | Dashed line denotes material change. Attitudes: Strike/Dip b: Bedding c: Contact j: Joint f: Fracture F: Fault cs: Clay Seam s: Shear bss: Basal Slide Surface sf: Shear Fracture sz: Shear Zone sbs: Shear Bedding Surface |
| 20 | | | | | | | | The total depth line is a solid line that is drawn at the bottom of the boring. |

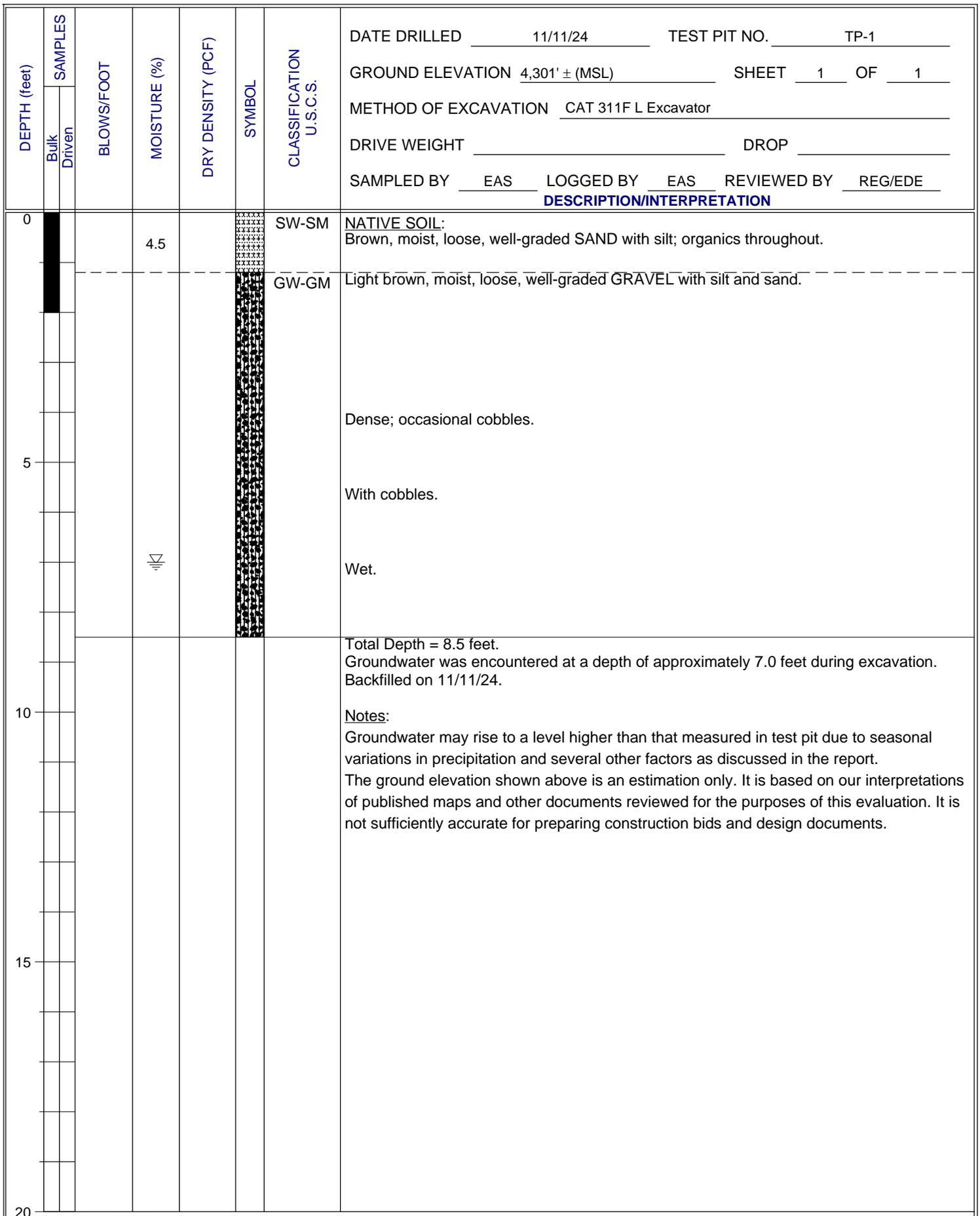


FIGURE A-1

| DEPTH (feet) | SAMPLES | | BLOWS/FOOT | MOISTURE (%) | DRY DENSITY (PCF) | SYMBOL | CLASSIFICATION U.S.C.S. | DATE DRILLED <u>11/11/24</u> TEST PIT NO. <u>TP-2</u> | |
|-----------------------------------|---------|--------|------------|--------------|-------------------|----------------|----------------------------|--|----------------------------|
| | Bulk | Driven | | | | | | GROUND ELEVATION <u>4,300' ± (MSL)</u> | SHEET <u>1</u> OF <u>1</u> |
| | | | | | | | | METHOD OF EXCAVATION <u>CAT 311F L Excavator</u> | |
| | | | | | | | | DRIVE WEIGHT _____ DROP _____ | |
| | | | | | | | | SAMPLED BY <u>EAS</u> LOGGED BY <u>EAS</u> REVIEWED BY <u>REG/EDE</u> | |
| DESCRIPTION/INTERPRETATION | | | | | | | | | |
| 0 | | | | | | [SW-SM Symbol] | SW-SM | NATIVE SOIL: Dark brown, moist, loose, well-graded SAND with silt. Brown; organics throughout. | |
| 5 | | | | 2.5 | | [GW-GM Symbol] | GW-GM | Light brown, moist, medium dense, well-graded GRAVEL with silt and sand; occasional cobbles. With cobbles. Wet; occasional boulders. | |
| 10 | | | | | | | | Total Depth = 10.0 feet. Groundwater was encountered at a depth of approximately 9.5 feet during excavation. Backfilled on 11/11/24. <u>Notes:</u> Groundwater may rise to a level higher than that measured in test pit due to seasonal variations in precipitation and several other factors as discussed in the report. The ground elevation shown above is an estimation only. It is based on our interpretations of published maps and other documents reviewed for the purposes of this evaluation. It is not sufficiently accurate for preparing construction bids and design documents. | |
| 15 | | | | | | | | | |
| 20 | | | | | | | | | |

FIGURE A-2



APPENDIX B

Laboratory Test Results

APPENDIX B

LABORATORY TEST RESULTS

Classification

Soils were visually and texturally classified in accordance with the Unified Soil Classification System (USCS) in general accordance with ASTM D2488. Soil classifications are indicated on the logs of the exploratory test pits in Appendix A.

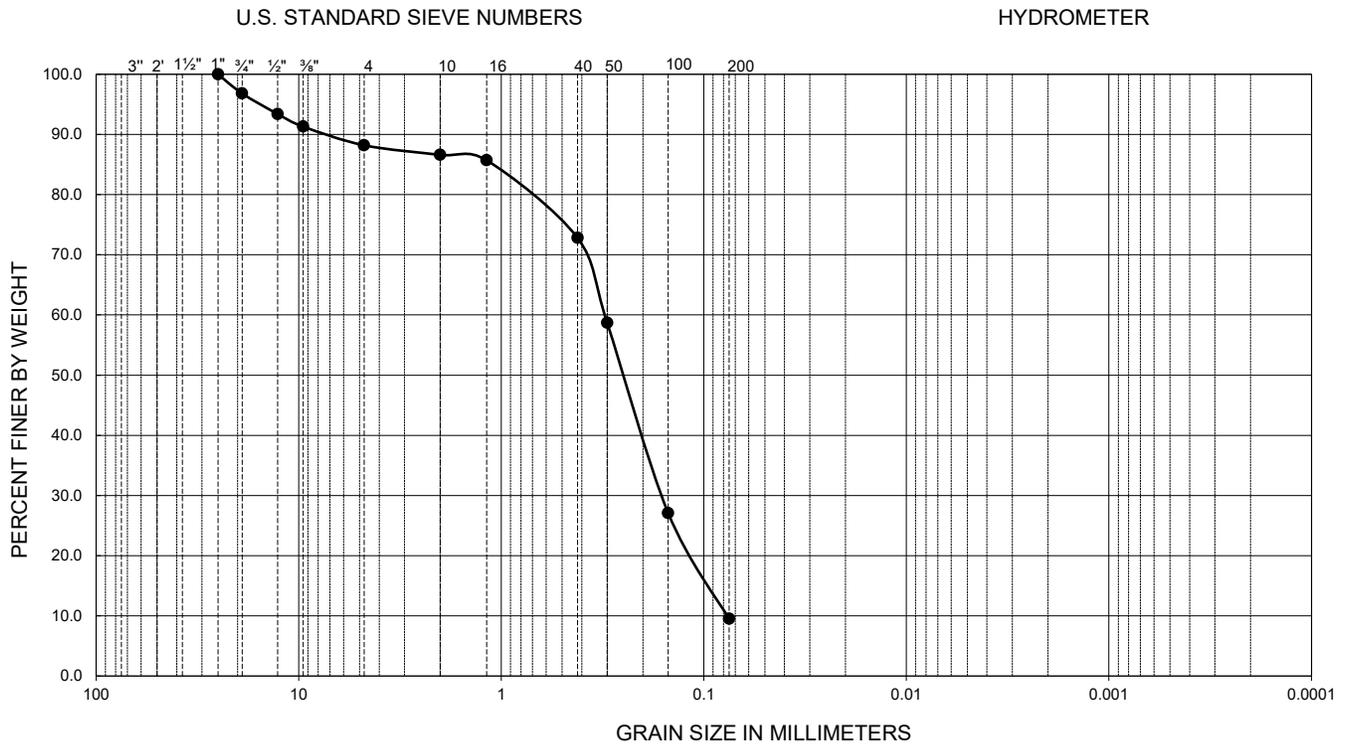
Gradation Analysis

Gradation analysis tests were performed on selected representative soil samples in general accordance with ASTM D7928, C117, and C136. These test results were utilized in evaluating the soil classifications in accordance with the USCS. The grain-size distribution curves are shown on Figure B-1 and Figure B-2.

Atterberg Limits

Tests were performed on selected representative soil samples to evaluate the liquid limit, plastic limit, and plasticity index in general accordance with ASTM D4318. These test results were utilized to evaluate soil classification in accordance with the USCS. The test results and classifications are shown on Figure B-3.

| | | | | | | |
|--------|------|--------|--------|------|-------|------|
| GRAVEL | | SAND | | | FINES | |
| Coarse | Fine | Coarse | Medium | Fine | SILT | CLAY |



| Symbol | Sample Location | Depth (ft) | Liquid Limit | Plastic Limit | Plasticity Index | D ₁₀ | D ₃₀ | D ₆₀ | C _u | C _c | Passing No. 200 (%) | USCS |
|--------|-----------------|------------|--------------|---------------|------------------|-----------------|-----------------|-----------------|----------------|----------------|---------------------|-------|
| ● | TP-1 | 0.0-1.2 | NP | NP | NP | 0.08 | 0.16 | 0.31 | 4.0 | 1.1 | 9.5 | SW-SM |

| Material Percent by Weight | | | Soil Type | |
|----------------------------|------|-------|----------------------------|--|
| Gravel | Sand | Fines | Well-graded SAND with silt | |
| 11.8 | 78.7 | 9.5 | | |
| | | | Moisture Content | |
| | | | 4.5% | |

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D7928, C136, and C117
 "NP" INDICATES NON-PLASTIC

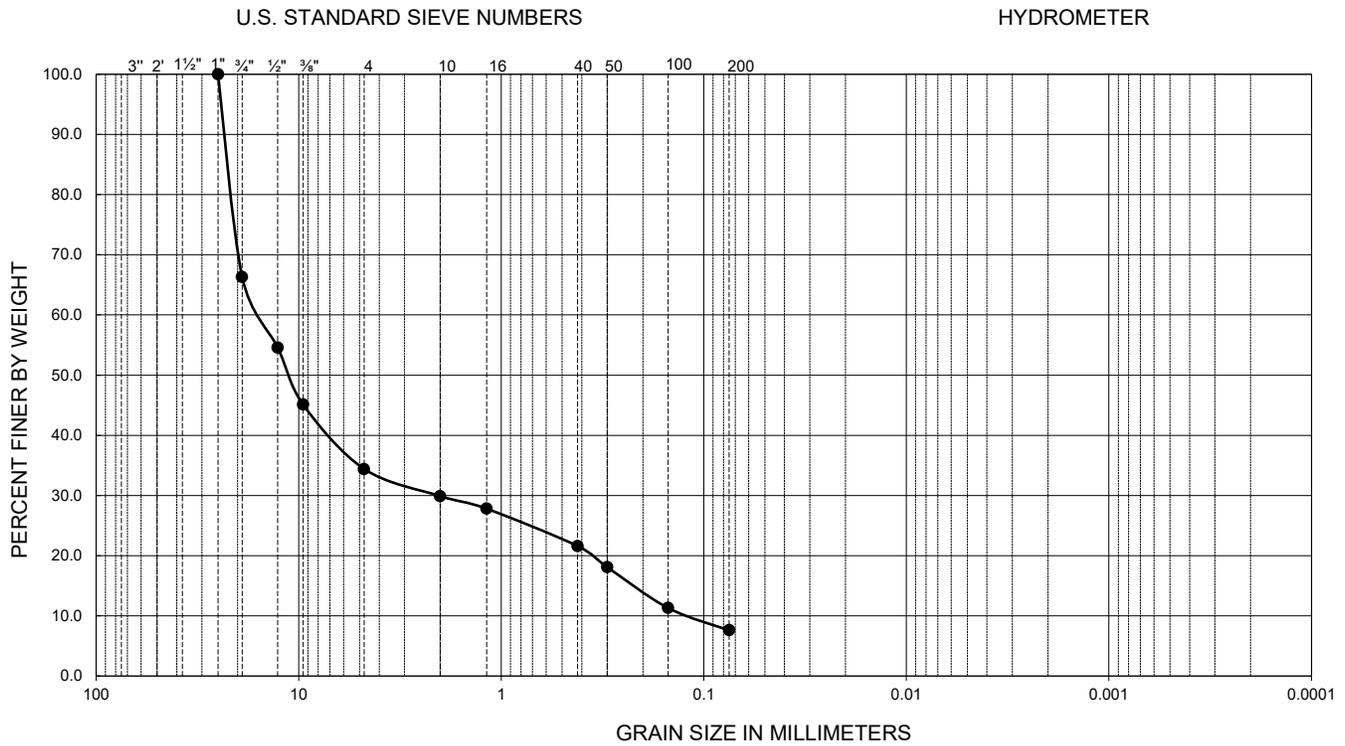
FIGURE B-1

GRADATION TEST RESULTS

OGDEN BUSINESS EXCHANGE WAVE
 NEAR STOCKMAN WAY AND EXCHANGE ROAD, OGDEN, UTAH



| | | | | | | |
|--------|------|--------|--------|------|-------|------|
| GRAVEL | | SAND | | | FINES | |
| Coarse | Fine | Coarse | Medium | Fine | SILT | CLAY |



| Symbol | Sample Location | Depth (ft) | Liquid Limit | Plastic Limit | Plasticity Index | D ₁₀ | D ₃₀ | D ₆₀ | C _u | C _c | Passing No. 200 (%) | USCS |
|--------|-----------------|------------|--------------|---------------|------------------|-----------------|-----------------|-----------------|----------------|----------------|---------------------|-------|
| ● | TP-2 | 4.0-5.0 | NP | NP | NP | 0.12 | 2.04 | 15.30 | 130.1 | 2.3 | 7.6 | GW-GM |

| Material Percent by Weight | | | Soil Type | |
|----------------------------|------|-------|---------------------------------------|--|
| Gravel | Sand | Fines | Well-graded GRAVEL with silt and sand | |
| 65.6 | 26.8 | 7.6 | | |
| | | | Moisture Content | |
| | | | 2.5% | |

PERFORMED IN GENERAL ACCORDANCE WITH ASTM D7928, C136, and C117
 "NP" INDICATES NON-PLASTIC

FIGURE B-2

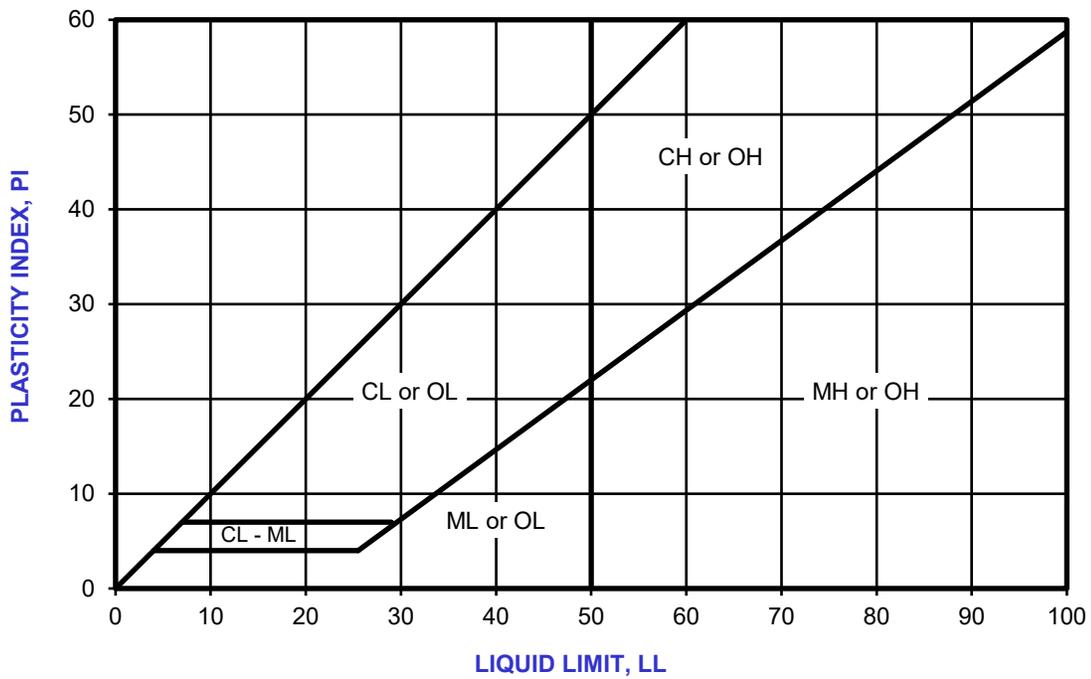
GRADATION TEST RESULTS

OGDEN BUSINESS EXCHANGE WAVE
 NEAR STOCKMAN WAY AND EXCHANGE ROAD, OGDEN, UTAH



| SYMBOL | LOCATION | DEPTH (ft) | LIQUID LIMIT | PLASTIC LIMIT | PLASTICITY INDEX | USCS CLASSIFICATION (Fraction Finer Than No. 40 Sieve) | USCS |
|--------|----------|------------|--------------|---------------|------------------|---|-------|
| | TP-1 | 0.0-1.2 | NP | NP | NP | ML | SW-SM |
| | TP-2 | 4.0-5.0 | NP | NP | NP | ML | GW-GM |

NP - INDICATES NON-PLASTIC



PERFORMED IN GENERAL ACCORDANCE WITH D4318

FIGURE B-3



ATTERBERG LIMITS TEST RESULTS

OGDEN BUSINESS EXCHANGE WAVE
NEAR STOCKMAN WAY AND EXCHANGE ROAD, UTAH



APPENDIX C

Chemical Test Results

APPENDIX C

CHEMICAL TEST RESULTS

The results of the chemical tests are provided in this appendix.



Chemtech-Ford Laboratories

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Sandy, UT 84070
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www.ChemtechFord.com



Certificate of Analysis

Ninyo and Moore
Edgar Salinas
871 Robinson Drive
North Salt Lake, UT 84054

PO#: **800429001**
Receipt: **12/5/24 16:04 @ 22.7 °C**
Date Reported: 12/18/2024
Project Name: **800429001**

Sample ID: **TP-2 @ 0.0-1.0**

Matrix: **Solid**

Lab ID: **24L0557-01**

Date Sampled: **11/11/24 8:30**

Sampled By: **Edgar Salinas**

| | <u>Result</u> | <u>Units</u> | <u>Minimum Reporting Limit</u> | <u>Method</u> | <u>Preparation Date/Time</u> | <u>Analysis Date/Time</u> | <u>Flag(s)</u> |
|---------------------------------|---------------|--------------|--------------------------------|---------------|------------------------------|---------------------------|----------------|
| Inorganic | | | | | | | |
| Chloride, Soluble (IC) | 36 | mg/kg dry | 10 | EPA 300.0 | 12/6/24 | 12/10/24 | |
| pH | 7.4 | pH Units | 0.1 | EPA 9045D | 12/6/24 13:53 | 12/6/24 18:00 | |
| Resistivity | 31.0 | ohm m | 1.0 | SSSA 10-3.3 | 12/6/24 | 12/6/24 | |
| Sulfate, Soluble (IC) | 34 | mg/kg dry | 10 | EPA 300.0 | 12/10/24 | 12/10/24 | |
| Total Dissolved Solids, Soluble | 2690 | mg/kg dry | 500 | SM 2540 C | 12/6/24 | 12/6/24 | |
| Total Solids | 96.7 | % | 0.1 | CTF8000 | 12/6/24 | 12/6/24 | SPH |



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www.ChemtechFord.com



Certificate of Analysis

Ninyo and Moore
Edgar Salinas
871 Robinson Drive
North Salt Lake, UT 84054

PO#: **800429001**
Receipt: **12/5/24 16:04 @ 22.7 °C**
Date Reported: 12/18/2024
Project Name: **800429001**

Report Footnotes

Abbreviations

ND = Not detected at the corresponding Minimum Reporting Limit (MRL).

1 mg/L = one milligram per liter or 1 mg/kg = one milligram per kilogram = 1 part per million.

1 ug/L = one microgram per liter or 1 ug/kg = one microgram per kilogram = 1 part per billion.

1 ng/L = one nanogram per liter or 1 ng/kg = one nanogram per kilogram = 1 part per trillion.

On calculated parameters, there may be a slight difference between summing the rounded values shown on the report vs the unrounded values used in the calculation.

Flag Descriptions

SPH = Sample submitted past method specified holding time.



871 Robinson Drive, North Salt Lake, UT 84054 | p. 801.973.2500

ARIZONA | CALIFORNIA | COLORADO | NEVADA | TEXAS | UTAH

ninyoandmoore.com

Ninyo & Moore
Geotechnical & Environmental Sciences Consultants

APPENDIX C Union Pacific Agreement

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT
WITH UNION PACIFIC FOR PROJECT 0803248

IMPORTANT CORRESPONDANCE EMAIL FOR SCHEDULING

Project: 0803248

To the Contractor:

Before Union Pacific Railroad Company can permit you to perform work on its right of way, it will be necessary to return an original of the enclosed Contractor Right of Entry Agreement as follows:

1. Fill in the complete legal name of the contractor in the space provided on Page 1 of the Contractor's Right of Entry Agreement.
2. Fill in the name of the contractor in the space provided in the signature block at the end of the Contractor's Right of Entry Agreement. If the contractor is a corporation, the person signing on its behalf must be an elected corporate officer.
3. Please execute on your behalf and return the document via EMAIL.
4. Payment, **with Project No. 0803248 referenced**, to the Union Pacific Railroad Company in the amount of **One Thousand Dollars (\$1,000.00)**. If you require formal billing, you may consider this letter as a formal bill. In compliance with the Internal Revenue Service's new policy regarding their Form 1099, I certify that 946001323 is the Railroad Company's correct Federal Taxpayer Identification Number and that UNION PACIFIC RAILROAD COMPANY is doing business as a corporation.

Send ACH payments to:

Name: Bank of America, Dallas, TX

Account = 3752021457

Routing = 1110-0001-2

Reference = Project Number **0803248**

Send Check to:

Union Pacific Railroad Company

12567 Collection Center Drive

Chicago, IL 60693

Reference = Project Number **0803248**

UP does not currently offer a credit card option.

After approval of the Contractor Right of Entry Agreement, one fully-executed counterpart of the Agreement will be returned to you via email. In no event should you begin work until you have received your counterpart of the fully-executed Agreement.

Sincerely,

Kris Jones
Manager II Real Estate - Contracts

Rev 081806

CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

THIS AGREEMENT is made and entered into as of the _____ day of _____, 20 ____, by and between UNION PACIFIC RAILROAD COMPANY, a Delaware corporation, ("Railroad") and _____, a _____ corporation ("Contractor"), to be addressed at _____.

RECITALS:

The Contractor has been hired by the **OGDEN CITY CORPORATION** for the construction of a drainage facility (the "work"), with all or a portion of such work to be performed on property of Railroad at Mile Post 993.0, on the Evanston Subdivision at or near Ogden, Weber County, Utah pursuant to a Drainage and Waterway Agreement between Railroad and **OGDEN CITY CORPORATION** with an effective date of August 28, 2025 at such location as shown on the print marked **Exhibit A** attached hereto and hereby made a part hereof.

Railroad is willing to permit Contractor to perform the work described above at the location describe above subject to the terms and conditions contained in this Agreement.

AGREEMENT:

NOW, THEREFORE, it is mutually agreed by and between the Railroad and Contractor, as follows:

Article I. DEFINITION OF CONTRACTOR.

For purposes of this Agreement, all references in this Agreement to the Contractor shall include Contractor's contractors, subcontractors, officers, agents and employees, and others acting under its or their authority.

Article II. RIGHT GRANTED; PURPOSE.

Railroad hereby grants to Contractor the right, during the term hereinafter stated and upon and subject to each and all of the terms, provisions and conditions herein contained, to enter upon and have ingress to and egress from the property described in the Recitals for the purpose of performing any work described in the Recitals above. The right herein granted to Contractor is limited to those portions of Railroad's property specifically described herein, or as designated by the Railroad Representative named in Article IV.

Article III. TERMS AND CONDITIONS CONTAINED IN EXHIBITS B, C AND D.

The terms and conditions contained in **Exhibit B, C and D**, attached hereto, are hereby made a part of this Agreement.

Article IV. ALL EXPENSES TO BE BORNE BY CONTRACTOR; RAILROAD REPRESENTATIVE.

A. Contractor shall bear any and all costs and expenses associated with any work performed by Contractor, or any costs or expenses incurred by Railroad relating to this Agreement.

B. Contractor shall coordinate all of its work with the following Railroad representative or his or her duly authorized representative (the "Railroad Representative"):

| | |
|---|---|
| http://www.up.com/flagging | Curtis Hill Manager I Signal Maintenance Phone: 801-626-8207 Email: clhill2@up.com |
|---|---|

C. Contractor, at its own expense, shall adequately police and supervise all work to be performed by Contractor and shall ensure that such work is performed in a safe manner as set forth in Section 7 of **Exhibit B**. The responsibility of Contractor for safe conduct and adequate policing and supervision of Contractor's work shall not be lessened or otherwise affected by Railroad's approval of plans and specifications involving the work, or by Railroad's collaboration in performance of any work, or by the presence at the work site of a Railroad Representative, or by compliance by Contractor with any requests or recommendations made by Railroad Representative.

Article V. TERM; TERMINATION.

A. The grant of right herein made to Contractor shall commence on the date of this Agreement and continue until August 28, 2026, unless sooner terminated as herein provided, or at such time as Contractor has completed its work on Railroad's property, whichever is earlier. Contractor agrees to notify the Railroad Representative in writing when it has completed its work on Railroad's property.

B. This Agreement may be terminated by either party on ten (10) days written notice to the other party.

Article VI. CERTIFICATE OF INSURANCE.

A. Before commencing any work, Contractor will provide Railroad with the insurance binders, policies, certificates and/or endorsements set forth in **Exhibit C** of this Agreement.

B. All insurance correspondence, binders, policies, certificates and/or endorsements shall be sent to:

Project No. 0803248
Union Pacific Railroad Company
1400 Douglas Street STOP 1690
Omaha, Nebraska 68179-1690

Article VII. CHOICE OF FORUM.

Litigation arising out of or connected with this Agreement may be instituted and maintained in the courts of the States of Nebraska and Utah only, and the parties consent to jurisdiction over their person and over the subject matter of any such litigation, in those courts, and consent to service of process issued by such courts.

Article VIII. DISMISSAL OF CONTRACTOR's EMPLOYEE.

At the request of Railroad, Contractor shall remove from Railroad's property any employee of Contractor who fails to conform to the instructions of the Railroad Representative in connection with the work on Railroad's property, and any right of Contractor shall be suspended until such removal has occurred. Contractor shall indemnify Railroad against any claims arising from the removal of any such employee from Railroad's property.

Article IX. ADMINISTRATIVE FEE.

Upon the execution and delivery of this Agreement, Contractor shall pay to Railroad One Thousand Dollars (\$1,000.00) as reimbursement for clerical, administrative and handling expenses in connection with the processing of this Agreement.

Article X. CROSSINGS.

No additional vehicular crossings (including temporary haul roads) or pedestrian crossings over Railroad's trackage shall be installed or used by Contractor without the prior written permission of Railroad.

Article XI. EXPLOSIVES.

Explosives or other highly flammable substances shall not be stored on Railroad's property without the prior written approval of Railroad.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be executed as of the date first herein written.

UNION PACIFIC RAILROAD COMPANY

By _____
Kris Jones
Manager II Real Estate - Contracts

(Contractor Name)

By _____
Name: _____
Title: _____
Telephone: _____
Email: _____



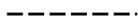
WEBER RIVER

255

4,700 SQ. FT. DRAINAGE AREA
INSTALLATION OF SURF WAVE AND DOWNSTREAM
GRADE CONTROL

LEGEND:

DRAINAGE AREA 

UPRRCO. R/W OUTLINED 

NOTE: BEFORE YOU BEGIN ANY WORK, SEE AGREEMENT FOR FIBER OPTIC PROVISIONS.

EXHIBIT "A"

UNION PACIFIC RAILROAD COMPANY

OGDEN, WEBER COUNTY, UT

EVANSTON SUB M.P. 993

MAP UCRY/V-1/1

SCALE: 1" = 100'

OFFICE OF REAL ESTATE
OMAHA, NEBRASKA DATE: 8/5/2025

JBC FILE: 0803248

| | |
|---------------|---------|
| CADD FILENAME | 0803248 |
|---------------|---------|

| | |
|---------------|---|
| SCAN FILENAME | X |
|---------------|---|

EXHIBIT B
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

Section 1. NOTICE OF COMMENCEMENT OF WORK - FLAGGING.

A. Contractor agrees to notify the Railroad Representative at least ten (10) working days in advance of Contractor commencing its work and at least ten (10) working days in advance of proposed performance of any work by Contractor in which any person or equipment will be within twenty-five (25) feet of any track, or will be near enough to any track that any equipment extension (such as, but not limited to, a crane boom) will reach to within twenty-five (25) feet of any track. No work of any kind shall be performed, and no person, equipment, machinery, tool(s), material(s), vehicle(s), or thing(s) shall be located, operated, placed, or stored within twenty-five (25) feet of any of Railroad's track(s) at any time, for any reason, unless and until a Railroad flagman is provided to watch for trains. Upon receipt of such ten (10)-day notice, the Railroad Representative will determine and inform Contractor whether a flagman need be present and whether Contractor needs to implement any special protective or safety measures. If flagging or other special protective or safety measures are performed by Railroad, Railroad will bill Contractor for such expenses incurred by Railroad, unless Railroad and a federal, state or local governmental entity have agreed that Railroad is to bill such expenses to the federal, state or local governmental entity. If Railroad will be sending the bills to Contractor, Contractor shall pay such bills within thirty (30) days of Contractor's receipt of billing. If Railroad performs any flagging, or other special protective or safety measures are performed by Railroad, Contractor agrees that Contractor is not relieved of any of its responsibilities or liabilities set forth in this Agreement.

B. The rate of pay per hour for each flagman will be the prevailing hourly rate in effect for an eight-hour day for the class of flagmen used during regularly assigned hours and overtime in accordance with Labor Agreements and Schedules in effect at the time the work is performed. In addition to the cost of such labor, a composite charge for vacation, holiday, health and welfare, supplemental sickness, Railroad Retirement and unemployment compensation, supplemental pension, Employees Liability and Property Damage and Administration will be included, computed on actual payroll. The composite charge will be the prevailing composite charge in effect at the time the work is performed. One and one-half times the current hourly rate is paid for overtime, Saturdays and Sundays, and two and one-half times current hourly rate for holidays. Wage rates are subject to change, at any time, by law or by agreement between Railroad and its employees, and may be retroactive as a result of negotiations or a ruling of an authorized governmental agency. Additional charges on labor are also subject to change. If the wage rate or additional charges are changed, Contractor (or the governmental entity, as applicable) shall pay on the basis of the new rates and charges.

C. Reimbursement to Railroad will be required covering the full eight-hour day during which any flagman is furnished, unless the flagman can be assigned to other Railroad work during a portion of such day, in which event reimbursement will not be required for the portion of the day during which the flagman is engaged in other Railroad work. Reimbursement will also be required for any day not actually worked by the flagman following the flagman's assignment to work on the project for which Railroad is required to pay the flagman and which could not reasonably be avoided by Railroad by assignment of such flagman to other work, even though Contractor may not be working during such time. When it becomes necessary for Railroad to bulletin and assign an employee to a flagging position in compliance with union collective bargaining agreements, Contractor must provide Railroad a minimum of five (5) days notice prior to the cessation of the need for a flagman. If five (5) days notice of cessation is not given, Contractor will still be required to pay flagging charges for the five (5) day notice period required by union agreement to

be given to the employee, even though flagging is not required for that period. An additional ten (10) days notice must then be given to Railroad if flagging services are needed again after such five day cessation notice has been given to Railroad.

Section 2. LIMITATION AND SUBORDINATION OF RIGHTS GRANTED

A. The foregoing grant of right is subject and subordinate to the prior and continuing right and obligation of the Railroad to use and maintain its entire property including the right and power of Railroad to construct, maintain, repair, renew, use, operate, change, modify or relocate railroad tracks, roadways, signal, communication, fiber optics, or other wirelines, pipelines and other facilities upon, along or across any or all parts of its property, all or any of which may be freely done at any time or times by Railroad without liability to Contractor or to any other party for compensation or damages.

B. The foregoing grant is also subject to all outstanding superior rights (including those in favor of licensees and lessees of Railroad's property, and others) and the right of Railroad to renew and extend the same, and is made without covenant of title or for quiet enjoyment.

Section 3. NO INTERFERENCE WITH OPERATIONS OF RAILROAD AND ITS TENANTS.

A. Contractor shall conduct its operations so as not to interfere with the continuous and uninterrupted use and operation of the railroad tracks and property of Railroad, including without limitation, the operations of Railroad's lessees, licensees or others, unless specifically authorized in advance by the Railroad Representative. Nothing shall be done or permitted to be done by Contractor at any time that would in any manner impair the safety of such operations. When not in use, Contractor's machinery and materials shall be kept at least fifty (50) feet from the centerline of Railroad's nearest track, and there shall be no vehicular crossings of Railroads tracks except at existing open public crossings.

B. Operations of Railroad and work performed by Railroad personnel and delays in the work to be performed by Contractor caused by such railroad operations and work are expected by Contractor, and Contractor agrees that Railroad shall have no liability to Contractor, or any other person or entity for any such delays. The Contractor shall coordinate its activities with those of Railroad and third parties so as to avoid interference with railroad operations. The safe operation of Railroad train movements and other activities by Railroad takes precedence over any work to be performed by Contractor.

Section 4. LIENS.

Contractor shall pay in full all persons who perform labor or provide materials for the work to be performed by Contractor. Contractor shall not create, permit or suffer any mechanic's or materialmen's liens of any kind or nature to be created or enforced against any property of Railroad for any such work performed. Contractor shall indemnify and hold harmless Railroad from and against any and all liens, claims, demands, costs or expenses of whatsoever nature in any way connected with or growing out of such work done, labor performed, or materials furnished. If Contractor fails to promptly cause any lien to be released of record, Railroad may, at its election, discharge the lien or claim of lien at Contractor's expense.

Section 5. PROTECTION OF FIBER OPTIC CABLE SYSTEMS.

A. Fiber optic cable systems may be buried on Railroad's property. Protection of the fiber optic cable systems is of extreme importance since any break could disrupt service to users resulting in business interruption and loss of revenue and profits. Contractor shall complete the required form at up.com/CBUD to determine if fiber optic cable is buried anywhere on Railroad Property to be used by Contractor. If it is, Contractor will telephone the telecommunications company(ies) involved, make

arrangements for a cable locator and, if applicable, for relocation or other protection of the fiber optic cable. Contractor shall not commence any work until all such protection or relocation (if applicable) has been accomplished.

B. In addition to other indemnity provisions in this Agreement, Contractor shall indemnify, defend and hold Railroad harmless from and against all costs, liability and expense whatsoever (including, without limitation, attorneys' fees, court costs and expenses) arising out of any act or omission of Contractor, its agents and/or employees, that causes or contributes to (1) any damage to or destruction of any telecommunications system on Railroad's property, and/or (2) any injury to or death of any person employed by or on behalf of any telecommunications company, and/or its contractor, agents and/or employees, on Railroad's property. Contractor shall not have or seek recourse against Railroad for any claim or cause of action for alleged loss of profits or revenue or loss of service or other consequential damage to a telecommunication company using Railroad's property or a customer or user of services of the fiber optic cable on Railroad's property.

Section 6. PERMITS - COMPLIANCE WITH LAWS.

In the prosecution of the work covered by this Agreement, Contractor shall secure any and all necessary permits and shall comply with all applicable federal, state and local laws, regulations and enactments affecting the work including, without limitation, all applicable Federal Railroad Administration regulations.

Section 7. SAFETY.

A. Safety of personnel, property, rail operations and the public is of paramount importance in the prosecution of the work performed by Contractor. Contractor shall be responsible for initiating, maintaining and supervising all safety, operations and programs in connection with the work. Contractor shall at a minimum comply with Railroad's safety standards listed in **Exhibit D**, hereto attached, to ensure uniformity with the safety standards followed by Railroad's own forces. As a part of Contractor's safety responsibilities, Contractor shall notify Railroad if Contractor determines that any of Railroad's safety standards are contrary to good safety practices. Contractor shall furnish copies of **Exhibit D** to each of its employees before they enter the job site.

B. Without limitation of the provisions of paragraph A above, Contractor shall keep the job site free from safety and health hazards and ensure that its employees are competent and adequately trained in all safety and health aspects of the job.

C. Contractor shall have proper first aid supplies available on the job site so that prompt first aid services may be provided to any person injured on the job site. Contractor shall promptly notify Railroad of any U.S. Occupational Safety and Health Administration reportable injuries. Contractor shall have a nondelegable duty to control its employees while they are on the job site or any other property of Railroad, and to be certain they do not use, be under the influence of, or have in their possession any alcoholic beverage, drug or other substance that may inhibit the safe performance of any work.

D. If and when requested by Railroad, Contractor shall deliver to Railroad a copy of Contractor's safety plan for conducting the work (the "Safety Plan"). Railroad shall have the right, but not the obligation, to require Contractor to correct any deficiencies in the Safety Plan. The terms of this Agreement shall control if there are any inconsistencies between this Agreement and the Safety Plan.

Section 8. INDEMNITY.

A. To the extent not prohibited by applicable statute, Contractor shall indemnify, defend and hold harmless Railroad, its affiliates, and its and their officers, agents and employees ("Indemnified Parties") from and against any and all loss, damage, injury, liability, claim, demand, cost or expense (including, without limitation, attorney's, consultant's and expert's fees, and court costs), fine or penalty (collectively, "Loss") incurred by any person (including, without limitation, any Indemnified Party, Contractor, or any employee of Contractor or of any Indemnified Party) arising out of or in any manner connected with (i) any work performed by Contractor, or (ii) any act or omission of Contractor, its officers, agents or employees, or (iii) any breach of this agreement by Contractor.

B. The right to indemnity under this Section 8 shall accrue upon occurrence of the event giving rise to the Loss, and shall apply regardless of any negligence or strict liability of any Indemnified Party, except where the Loss is caused by the sole active negligence of an Indemnified Party as established by the final judgment of a court of competent jurisdiction. The sole active negligence of any Indemnified Party shall not bar the recovery of any other Indemnified Party.

C. Contractor expressly and specifically assumes potential liability under this Section 8 for claims or actions brought by Contractor's own employees. Contractor waives any immunity it may have under worker's compensation or industrial insurance acts to indemnify Railroad under this Section 8. Contractor acknowledges that this waiver was mutually negotiated by the parties hereto.

D. No court or jury findings in any employee's suit pursuant to any worker's compensation act or the Federal Employers' Liability Act against a party to this Agreement may be relied upon or used by Contractor in any attempt to assert liability against Railroad.

E. The provisions of this Section 8 shall survive the completion of any work performed by Contractor or the termination or expiration of this Agreement. In no event shall this Section 8 or any other provision of this Agreement be deemed to limit any liability Contractor may have to any Indemnified Party by statute or under common law.

Section 9. RESTORATION OF PROPERTY.

In the event Railroad authorizes Contractor to take down any fence of Railroad or in any manner move or disturb any of the other property of Railroad in connection with the work to be performed by Contractor, then in that event Contractor shall, as soon as possible and at Contractor's sole expense, restore such fence and other property to the same condition as the same were in before such fence was taken down or such other property was moved or disturbed. Contractor shall remove all of Contractor's tools, equipment, rubbish and other materials from Railroad's property promptly upon completion of the work, restoring Railroad's property to the same state and condition as when Contractor entered thereon.

Section 10. WAIVER OF DEFAULT.

Waiver by Railroad of any breach or default of any condition, covenant or agreement herein contained to be kept, observed and performed by Contractor shall in no way impair the right of Railroad to avail itself of any remedy for any subsequent breach or default.

Section 11. MODIFICATION - ENTIRE AGREEMENT.

No modification of this Agreement shall be effective unless made in writing and signed by Contractor and Railroad. This Agreement and the exhibits attached hereto and made a part hereof constitute

the entire understanding between Contractor and Railroad and cancel and supersede any prior negotiations, understandings or agreements, whether written or oral, with respect to the work to be performed by Contractor.

Section 12. ASSIGNMENT - SUBCONTRACTING.

Contractor shall not assign or subcontract this Agreement, or any interest therein, without the written consent of the Railroad. Contractor shall be responsible for the acts and omissions of all subcontractors, and shall require all subcontractors to maintain the insurance coverage required to be maintained by Contractor as provided in this Agreement, and to indemnify Contractor and Railroad to the same extent as Railroad is indemnified by Contractor under this Agreement.

EXHIBIT C

Union Pacific Railroad Company Insurance Provisions For Contractor's Right of Entry Agreement

Contractor shall, at its sole cost and expense, procure and maintain during the course of the Project and until all Project work on Railroad's property has been completed and the Contractor has removed all equipment and materials from the Railroad's property and has cleaned and restored Railroad's property to Railroad's satisfaction, the following insurance coverage:

A. Commercial General Liability insurance. Commercial general liability (CGL) with a limit of not less than \$2,000,000 each occurrence and an aggregate limit of not less than \$4,000,000. CGL insurance must be written on ISO occurrence form CG 00 01 12 04 (or a substitute form providing equivalent coverage).

The policy must also contain the following endorsement, which must be stated on the certificate of insurance:

- Contractual Liability Railroads ISO form CG 24 17 10 01 (or a substitute form providing equivalent coverage) showing "Union Pacific Railroad Company Property" as the Designated Job Site.

B. Business Automobile Coverage insurance. Business auto coverage written on ISO form CA 00 01 (or a substitute form providing equivalent liability coverage) with a combined single limit of not less \$2,000,000 for each accident.

The policy must contain the following endorsements, which must be stated on the certificate of insurance:

- Coverage For Certain Operations In Connection With Railroads ISO form CA 20 70 10 01 (or substitute form providing equivalent coverage) showing "Union Pacific Property" as the Designated Job Site.
- Motor Carrier Act Endorsement – Hazardous materials clean up (MCS-90) if required by law.

C. Workers Compensation and Employers Liability insurance. Coverage must include but not be limited to:

- Contractor's statutory liability under the workers' compensation laws of the state(s) affected by this Agreement.
- Employers' Liability (Part B) with limits of at least \$500,000 each accident, \$500,000 disease policy limit \$500,000 each employee.

If Contractor is self-insured, evidence of state approval and excel workers compensation coverage must be provided. Coverage must include liability arising out of the U.S. Longshoremen's and Harbor Workers' Act, the Jones Act, and the Outer Continental Shelf Land Act, if applicable.

The policy must contain the following endorsement, which must be stated on the certificate of insurance:

- Alternate Employer endorsement ISO form WC 00 03 01 A (or a substitute form providing equivalent coverage) showing Railroad in the schedule as the alternate employer (or a substitute form providing equivalent coverage).

D. Railroad Protective Liability insurance. Contractor must maintain Railroad Protective Liability insurance written on ISO occurrence form CG 00 35 12 04 (or a substitute form providing equivalent coverage) on behalf of Railroad as named insured, with a limit of not less than \$2,000,000 per occurrence and an aggregate of \$6,000,000. A binder stating the policy is in place must be submitted to Railroad before the work may be commenced and until the original policy is forwarded to Railroad.

E. Umbrella or Excess insurance. If Contractor utilizes umbrella or excess policies, these policies must “follow form” and afford no less coverage than the primary policy.

F. Pollution Liability insurance. Pollution Liability coverage must be included when the scope of the work as defined in the Agreement includes installation, temporary storage, or disposal of any “hazardous” material that is injurious in or upon land, the atmosphere, or any watercourses; or may cause bodily injury at any time.

Pollution liability coverage must be written on ISO form Pollution Liability Coverage Form Designated Sites CG 00 39 12 04 (or a substitute form providing equivalent liability coverage), with limits of at least \$5,000,000 per occurrence and an aggregate limit of \$10,000,000.

If the scope of work as defined in this Agreement includes the disposal of any hazardous or non-hazardous materials from the job site, Contractor must furnish to Railroad evidence of pollution legal liability insurance maintained by the disposal site operator for losses arising from the insured facility accepting the materials, with coverage in minimum amounts of \$1,000,000 per loss, and an annual aggregate of \$2,000,000.

Other Requirements

G. All policy(ies) required above (except worker’s compensation and employers liability) must include Railroad as “Additional Insured” using ISO Additional Insured Endorsements CG 20 26, and CA 20 48 (or substitute forms providing equivalent coverage). The coverage provided to Railroad as additional insured shall, to the extent provided under ISO Additional Insured Endorsement CG 20 26, and CA 20 48 provide coverage for Railroad’s negligence whether sole or partial, active or passive, and shall not be limited by Contractor’s liability under the indemnity provisions of this Agreement.

H. Punitive damages exclusion, if any, must be deleted (and the deletion indicated on the certificate of insurance), unless the law governing this Agreement prohibits all punitive damages that might arise under this Agreement.

I. Contractor waives all rights of recovery, and its insurers also waive all rights of subrogation of damages against Railroad and its agents, officers, directors and employees. This waiver must be stated on the certificate of insurance.

J. Prior to commencing the work, Contractor shall furnish Railroad with a certificate(s) of insurance, executed by a duly authorized representative of each insurer, showing compliance with the insurance requirements in this Agreement.

K. All insurance policies must be written by a reputable insurance company acceptable to Railroad or with a current Best’s Insurance Guide Rating of A- and Class VII or better, and authorized to do business in the state(s) in which the work is to be performed.

L. The fact that insurance is obtained by Contractor or by Railroad on behalf of Contractor will not be deemed to release or diminish the liability of Contractor, including, without limitation, liability under the indemnity provisions of this Agreement. Damages recoverable by Railroad from Contractor or any third party will not be limited by the amount of the required insurance coverage.

**EXHIBIT D
TO
CONTRACTOR'S RIGHT OF ENTRY AGREEMENT

MINIMUM SAFETY REQUIREMENTS**

The term "employees" as used herein refer to all employees of Contractor as well as all employees of any subcontractor or agent of Contractor.

I. Clothing

- A. All employees of Contractor will be suitably dressed to perform their duties safely and in a manner that will not interfere with their vision, hearing, or free use of their hands or feet.

Specifically, Contractor's employees must wear:

- (i) Waist-length shirts with sleeves.
- (ii) Trousers that cover the entire leg. If flare-legged trousers are worn, the trouser bottoms must be tied to prevent catching.
- (iii) Footwear that covers their ankles and has a defined heel. Employees working on bridges are required to wear safety-toed footwear that conforms to the American National Standards Institute (ANSI) and FRA footwear requirements.

Employees must not wear loose or ragged clothing, neckties, finger rings, or other loose jewelry while operating or working on machinery.

II. Personal Protective Equipment

Contractor shall require its employees to wear personal protective equipment as specified by Railroad rules, regulations, or recommended or requested by the Railroad Representative.

- (i) Hard hat that meets the American National Standard (ANSI) Z89.1 – latest revision. Hard hats should be affixed with Contractor's company logo or name.
- (ii) Eye protection that meets American National Standard (ANSI) for occupational and educational eye and face protection, Z87.1 – latest revision. Additional eye protection must be provided to meet specific job situations such as welding, grinding, etc.
- (iii) Hearing protection, which affords enough attenuation to give protection from noise levels that will be occurring on the job site. Hearing protection, in the form of plugs or muffs, must be worn when employees are within:

100 feet of a locomotive or roadway/work equipment

15 feet of power operated tools

150 feet of jet blowers or pile drivers

150 feet of retarders in use (when within 10 feet, employees must wear dual ear protection – plugs and muffs)

- (iv) Other types of personal protective equipment, such as respirators, fall protection equipment, and face shields, must be worn as recommended or requested by the Railroad Representative.

III. On Track Safety

Contractor is responsible for compliance with the Federal Railroad Administration's Roadway Worker Protection regulations – 49CFR214, Subpart C and Railroad's On-Track Safety rules. Under 49CFR214, Subpart C, railroad contractors are responsible for the training of their employees on such regulations. In addition to the instructions contained in Roadway Worker Protection regulations, all employees must:

- (i) Maintain a distance of twenty-five (25) feet to any track unless the Railroad Representative is present to authorize movements.
- (ii) Wear an orange, reflectorized workwear approved by the Railroad Representative.
- (iii) Participate in a job briefing that will specify the type of On-Track Safety for the type of work being performed. Contractor must take special note of limits of track authority, which tracks may or may not be fouled, and clearing the track. Contractor will also receive special instructions relating to the work zone around machines and minimum distances between machines while working or traveling.

IV. Equipment

- A. It is the responsibility of Contractor to ensure that all equipment is in a safe condition to operate. If, in the opinion of the Railroad Representative, any of Contractor's equipment is unsafe for use, Contractor shall remove such equipment from Railroad's property. In addition, Contractor must ensure that the operators of all equipment are properly trained and competent in the safe operation of the equipment. In addition, operators must be:

Familiar and comply with Railroad's rules on lockout/tagout of equipment.

Trained in and comply with the applicable operating rules if operating any hy-rail equipment on-track.

Trained in and comply with the applicable air brake rules if operating any equipment that moves rail cars or any other railbound equipment.

- B. All self-propelled equipment must be equipped with a first-aid kit, fire extinguisher, and audible back-up warning device.
- C. Unless otherwise authorized by the Railroad Representative, all equipment must be parked a minimum of twenty-five (25) feet from any track. Before leaving any equipment unattended, the operator must stop the engine and properly secure the equipment against movement.
- D. Cranes must be equipped with three orange cones that will be used to mark the working area of the crane and the minimum clearances to overhead powerlines.

V. General Safety Requirements

- A. Contractor shall ensure that all waste is properly disposed of in accordance with applicable federal and state regulations.
- B. Contractor shall ensure that all employees participate in and comply with a job briefing conducted by the Railroad Representative, if applicable. During this briefing, the Railroad Representative will specify safe work procedures, (including On-Track Safety) and the potential hazards of the job. If any employee has any questions or concerns about the work,

the employee must voice them during the job briefing. Additional job briefings will be conducted during the work as conditions, work procedures, or personnel change.

- C. All track work performed by Contractor meets the minimum safety requirements established by the Federal Railroad Administration's Track Safety Standards 49CFR213.
- D. All employees comply with the following safety procedures when working around any railroad track:
 - (i) Always be on the alert for moving equipment. Employees must always expect movement on any track, at any time, in either direction.
 - (ii) Do not step or walk on the top of the rail, frog, switches, guard rails, or other track components.
 - (iii) In passing around the ends of standing cars, engines, roadway machines or work equipment, leave at least 20 feet between yourself and the end of the equipment. Do not go between pieces of equipment if the opening is less than one car length (50 feet).
 - (iv) Avoid walking or standing on a track unless so authorized by the employee in charge.
 - (v) Before stepping over or crossing tracks, look in both directions first.
 - (vi) Do not sit on, lie under, or cross between cars except as required in the performance of your duties and only when track and equipment have been protected against movement.
- E. All employees must comply with all federal and state regulations concerning workplace safety.

Francois Escorihuela

From: Kris Jones <ksjones@up.com>
Sent: Tuesday, October 7, 2025 4:28 PM
To: Suiter, Phil
Cc: Francois Escorihuela
Subject: RE: [External] 0803248 - Drainage Agreement - Ogden, Weber, UT
Attachments: 0803248 Drainage Agreement (08-28-2025).pdf

Good afternoon,

**INCLUDE THIS EMAIL WHEN PROVIDING EXECUTED AGREEMENT TO LICENSEE OR CONTRACTORS.
THIS IS IMPORTANT INFORMATION ABOUT SCHEDULING THE WORK.**

Attached is your original copy of our Agreement, fully executed on behalf of the Railroad Company. When you or your representative enters the Railroad Company's property, a copy of this fully executed document must be available at the site to be shown on request to any Railroad employee or official.

In accordance with the terms of the Agreement, you are required to notify a Railroad approved flagger provided at the link below, complete a locate ticket on the UPRR Telecommunications ("Call Before You Dig") website at the link below and also make notification to the Manager of Signal Maintenance for locating of UPRR signal infrastructure at least 10 days in advance of the date you plan on entering the right of way. **YOU SHOULD NOT CONTACT THE MANAGER OF SIGNAL MAINTENANCE BELOW FOR ANY FLAGGING SERVICES.**

Third Party Flagging Link: www.up.com/real_estate/third-party-flagging/index.htm

MANAGER OF SIGNAL MAINTENANCE: Curtis Hill
Manager I Signal Maintenance
Phone: 801-626-8207
Email: clhill2@up.com

Call Before You Dig: www.up.com/aboutup/community/telecom/groups/index.htm

As an additional note, the top of the casing must be a minimum of two feet below any existing fiber optic cable. Any open excavation required within five feet of the fiber optic cable must be dug by hand.

Should you have any questions or concerns, feel free to reach out to me.

Thank you,



Kris Jones
(She/her/hers)
Manager II Real Estate – Contracts

*Washington, Oregon, Iowa,
Missouri, Arkansas, Tennessee, Minnesota,
California (Counties: Del Norte, Siskiyou,
Modoc, Lassen, Shasta, Trinity, Humboldt, Mendocino,
Tehama, Glenn, Butte, Plumas Sonoma, Lake, Colusa,
Yuba, Sierra, Nevada, Placer, Sutter, Yolo,
Napa, Marin, San Francisco, Santa Clara, Solano.*

Attached is an original of an agreement covering your use of the Railroad Company's right of way. UPRR is now accepting digital signatures and scans of signed agreements. Reply to this email with your partially executed document attached if you do not want to mail hard copies.

If mailing the agreement, please print one copy, execute, and return to 1400 Douglas Street, Omaha, NE 68179-1690
Attn: Kris Jones, Manager II Real Estate - Contracts.

Send ACH payments to:

- Name: Bank of America, Dallas, TX
- Account = 3752021457
- Routing = 1110-0001-2
- Reference = Invoice Number (if applicable) or Project/Folder Number

Send Check to:

Union Pacific Railroad Company
P.O. Box 7412567
Chicago, IL 60674-2568

- Reference = Invoice Number (if applicable) or Project/Folder Number
- **PARTIALLY EXECUTED AGREEMENTS SENT TO CHICAGO WILL NOT BE PROCESSED**

UP does not currently offer a credit card option.

Thank you,



Kris Jones

(She/her/hers)

Manager II Real Estate – Contracts

*Washington, Oregon, Idaho, Utah, Iowa,
Missouri, Arkansas, Tennessee, Minnesota,
Northern California (Counties: Del Norte, Siskiyou,
Modoc, Lassen, Shasta, Trinity, Humboldt,
Mendocino, Tehama, Glenn, Butte, Plumas) Washington, Oregon,
Idaho, Utah, Iowa, Missouri, Arkansas, Tennessee,
Minnesota, California (Counties: Del Norte, Siskiyou,
Modoc, Lassen, Shasta, Trinity, Humboldt, Mendocino,
Tehama, Glenn, Butte, Plumas) Sonoma, Lake, Colusa,
Yuba, Sierra, Nevada, Placer, Sutter, Yolo,
Napa, Marin, Contra Costa, Sacramento, El Dorado,
San Francisco, San Mateo, Santa Clara, Alameda, Solano.*

Email: ksjones@up.com
1400 Douglas Street, Stop 1690
Omaha, NE 68179
www.up.com



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SECTION 01 14 00 WORK RESTRICTIONS

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Administrative information for special construction requirements.

1.2 EXISTING CONDITIONS

A. Work in channel and on river banks of the Weber River about ¼ mile downstream of the Exchange Rd Bridge

B. Existing concrete weir

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 31 13 COORDINATION

This specification changes a portion of the current 2025 Manual of Standard Specifications by the Utah Chapter of the American Public Works Association Section 01 31 13. All other provisions of the Section remain in full force and effect.

Add the following paragraph to Article 1.5

1.5 COORDINATION WITH ADJACENT PROPERTY OWNER

A. Once each week hand deliver a written **"Construction Status Update Notice"** to all residents, businesses, schools and property owners adjacent to and affected by the work. Notice shall be on Contractor's company letter head paper and be secured to door knob should occupants not be home. Obtain Engineer's review of notice prior to distribution. As a minimum the notice shall contain the following:

1. name and phone number of Contractor's representative for the project;
2. work anticipated for the next seven (7) days including work locations and work by subcontractors and utility companies;
3. rough estimate of construction schedule through end of project;
4. anticipated driveway approach closures;
5. anticipated water, sewer or power outages;
6. anticipated vehicular traffic impacts, rerouting or lane closures;
7. anticipated pedestrian impacts and sidewalk closures;
8. changes to public transportation bus routes; and
9. any other construction or work items which will impact or restrict the normal use of streets and amenities.

Failure to comply with this contract provision is considered grounds for project suspension per Article 15.1 of the General Conditions (APWA Document 00 72 00).

Add the following Article to Part 1.

1.8 PUBLIC AGENCIES PERSONNEL TO CONTACT

A. Utility Companies: Utility companies generally require a 48 hour notice (minimum) if their utility requires location, relocation or protection. Contact the following OWNERS to coordinate.

1. Questar Gas Company: phone (801) 395-6754. Call two (2) weeks prior to requiring Questar work on gas mains and 1 week on service lines to property owners. A Questar representative must be present at the pre-construction meeting and when working around high pressure gas mains.
2. PacifiCorp (Utah Power Company): phone (801) 629-4426.
3. US West: (Blue Stakes): phone 1 (800) 662-4111.
4. Ogden City Water Utility: phone (801) 629-8363.
5. AT&T: Repair Service Center, phone 1 (800) 222-3000.

6. Sprint Communications: phone 1 (800) 877-4646.
7. UTA: phone (801) 627-3500.
8. Utah Department of Transportation: phone (801) 620-1660.
9. Ogden City Urban Forester: Damien Reeves, (801) 629-8369, a minimum of 48 hours prior to removing trees.
10. Ogden City Public Storm Sewer Utility: Bill Simpson, (801) 629-8331.
11. Ogden City Public Sanitary Sewer Utility: Bill Simpson, (801) 629-8331.
12. Ogden City Public Safety Division: Notify 48 hours prior to street closure or water main work.
 - a. Fire: phone (801)629-8314.
 - b. Police: phone (801) 629-8221.
13. Pine View Water Users Association: phone (801) 621-6555
14. Weber Basin Water Conservancy District: phone (801) 771-1677
15. Central Weber Sewer District: phone (801) 731-3011
16. Bona Vista Water: phone (801) 621-0474
17. Lynn Irrigation: phone (801) 392-2695
18. Other Companies:

END OF SECTION

SECTION 01 31 14

RAILROAD COORDINATION

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Administrative requirements and procedures for coordinating with railroad company.

1.2 WORK ON RAILROAD RIGHT-OF-WAY

- A. Do not start work within railroad right-of-way until Engineer receives a copy of the executed (and attached) "Contractor's Right-of-Entry Agreement" and the appropriate insurance certificates.

1.3 NOTICE TO RAILROAD COMPANY

- A. Before beginning any construction work upon the right-of-way of the railroad Company, give at least 10 days written notice to the Superintendent of the Los Angeles and Salt Lake Railroad Company and its Lessee, Union Pacific Railroad Company at Salt Lake City.
- B. Give verbal notice at least 48 hours to the Railroad's Superintendent, for Ogden City before beginning any site work.

1.4 PROTECTION OF RAILROAD PROPERTY

- A. Because of close proximity to the tracks, communication lines and other facilities of the railroad company, take extraordinary precautions in connection with construction. Do not store or place any materials or equipment upon the railroad company's property or interfere with the operations of trains or the maintenance of the roadbed and tracks. Notify the railroad company of any contemplated blasting. Provide flagging protection or other safeguards required Railroad Company. Protect the tracks and properties of the railroad company and the traffic moving over such tracks. Protect the wires, signals and other properties of the railroad company, its tenants or licensees.
 - 1. Provide flaggers or watchers for each and every place designated by the railroad company. The railroad company shall be the sole judge as to the necessity for flagmen and/or watchmen, the place or places where they are to be stationed, and the number of such flagmen and/or watchmen necessary to protect the trains, tracks, communications and signal lines, and other facilities of the Railroad Company, and the wire lines of its tenant companies.
 - 2. The Railroad Company, in its discretion will provide an engineering inspector at such times as it may deem necessary during the construction work for the protection and safety of its property and operations, and for compliance with contract provisions. The expense of furnishing such inspector shall be borne by Ogden City Corporation's Contractor.
 - 3. Whenever the work of construction of said project is liable to affect the safety of trains or the personnel of the Railroad Company, the method of procedure must be

submitted to and approved by the inspector furnished by the Railroad Company before such work shall be commenced or prosecuted.

1.5 CLEANUP OF RAILROAD RIGHT-OF-WAY DURING CONSTRUCTION

- A. Reimburse the railroad company for expenses incurred by the railroad company in connection with the cleaning of its ditches and other waterways and the cleaning and restoration of any ballast of its tracks which is disturbed or becomes fouled by dirt or debris and damage to track or structures as a result of Contractor's construction operations, including the cost to the Railroad Company of rental and operating charges of emergency equipment maintained by the Railroad Company adjacent to the construction site for the purpose of clearing its tracks so as to enable the safe and expeditious passage of railroad traffic.
 - 1. Contractor agrees that upon the completion of the work, it will promptly remove from the premises of railroad company all tools, implements, and other materials, whether brought upon said work by itself, or any subcontractor, employee or agent of itself, or of any subcontractor, and that he will leave the premises clean.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

END OF SECTION

SECTION 01 32 16 PROGRESS SCHEDULE

This specification changes a portion of APWA Standard Specification Section 01 32 16. All other provisions of the Section remain in full force and effect.

1.2 TYPE OF SCHEDULE

- A. Activity Bar Chart (Gantt) Schedule required.

END OF SECTION

SECTION 01 33 00 SUBMITTAL PROCEDURE

This specification replaces APWA Standard Specification Section 01 33 00 in its entirety.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal register requirements.
- B. Transmittal form requirements.
- C. Important submittal due dates.

1.2 SUBMITTALS

- A. Use the attached Transmittal Form (Form 01 33 50-1) when making submittals.

1.3 SUBMITTAL REGISTER PROCEDURE

- A. Use the Contract Documents to identify product data, samples and materials which require submission for information only. See Article 1.5.
- B. For submittals requiring Engineer's review or action, see Article 1.4.
- C. Determine appropriate review due dates for the submittals.
- D. Prepare register and transmit it to the Engineer.

1.4 SUBMITTALS REQUIRING REVIEW OR ACTION

- A. The following table lists submittals which require Engineer's review or action. Transmit these submittals to the Engineer, at 2549 Washington Boulevard, suite 761, Ogden, Utah 84401.

Table 1 - SUBMITTALS REQUIRING REVIEW OR ACTION

| No. | Submittal | Section Reference | When Due |
|-----|--|-------------------|---|
| 1 | Submittal Register | 01 33 50 | Pre-construction conference |
| 2 | Preliminary Progress Schedule | 00 72 00 | Pre-construction conference |
| 3 | Mobilization Plan, Staging plan | 01 71 13 | Pre-construction conference |
| 4 | Quality Control Program | 01 45 00 | Pre-construction conference |
| 5 | Access road plan and tree removal plan | | Pre-construction conference |
| 6 | Testing Agency Name, Address, Telephone No., Manager Name, Licenses and certificates | 01 45 00 | Pre-construction conference |
| 7 | Permits for Work | 00 80 10 | Prior to Starting Work |
| 8 | Traffic Control Plan | 01 55 26 | 72 Hours Prior to Starting Work |
| 9 | Construction Land Surveyor Name, Address, Registration No. | 01 71 34 | 72 Hours Prior to Starting Work |
| 10 | Progress Schedule | 01 32 16 | Every two weeks, and with each pay application. |
| 11 | 8oz no-woven filter fabric | | Prior to ordering |
| 12 | Erosion control blanket type 1 | | Prior to ordering |
| 13 | Boulders and slabstone steps | | Prior to ordering |
| 14 | Alluvial backfill, structured fill, CDF or CLSM Fill | | Prior to ordering |

| No. | Submittal | Section Reference | When Due |
|--|---|----------------------------------|--|
| 15 | Topsoil supplier and source data | | Prior to ordering |
| 16 | Seed mix | | Prior to ordering |
| 17 | Hydromulch | | Prior to ordering |
| 18 | Clean sand and gravel | | Prior to ordering |
| 19 | Concrete and reinforcement | | Prior to ordering |
| 20 | Steel plate protection | | Prior to ordering |
| 21 | Sheet Pile | | Prior to ordering |
| 22 | Grout | | Prior to ordering |
| 23 | Pneumatic Gate System | | Prior to ordering |
| 24 | Precast concrete manholes | | Prior to ordering |
| 25 | Air and telemetry lines | | Prior to ordering |
| 26 | Web camera poles | | Prior to ordering |
| 27 | Portland Cement Concrete Quality Control Test Reports | 03 30 04 03 30 05 03 30 10 | Daily as applicable |
| 28 | Portland Cement Concrete Batch Delivery Ticket | 03 30 10 | Upon Delivery to Site |
| 29 | Portland Cement Concrete Curing Compound Source, Type, and Data | 03 39 00 | 7 Days Prior to 1st Concrete Placement |
| 30 | Certification of Compliance and Request for Final Inspection | 01 75 50 | 7 Days Prior to Substantial Completion |
| 31 | Land Survey Closeout Documentation | 01 71 23 01 71 34 31 05 10 | Prior to Final Payment |
| 32 | Evidence of Payment to Suppliers and Subcontractors | 01 78 50 00 72 00 | Prior to Final Payment |
| 33 | Redlines | 01 78 39 | Prior to Final Payment |
| 34 | O&M Manuals | 01 78 23 | Prior to Final Payment |
| 35 | Submittal Reports | 01 45 00 | Prior to Final Payment |
| NOTES: | | | |
| 1. Section references listed in this table but not found in the Contract Documents may be found in the APWA Standard Specifications. | | | |

1.5 SUBMITTALS FOR INFORMATION ONLY

A. Submittals identified in the Standard Specifications or in the Contract Documents, which are not identified in this section are for information only and do not require review or action by Engineer or resident project representative. Such submittals, however, will be monitored and spot checked. When spot checks indicate non-compliance, Contractor will be notified.

1.6 ENGINEER'S STAMP

A. Form of the Engineer's stamp is as follows:

| | |
|---|-----------------------------------|
| <u>SUBMITTAL REVIEW</u> | |
| <input type="checkbox"/> NO EXCEPTIONS TAKEN | <input type="checkbox"/> REJECTED |

| | |
|---|--|
| <input type="checkbox"/> MAKE CORRECTIONS NOTED | <input type="checkbox"/> RESUBMIT |
| <input type="checkbox"/> SUBMIT SPECIFIED ITEM | <input type="checkbox"/> DO NOT RESUBMIT |
| This review is for general conformance with the design concepts of the work and general compliance with the Contract Documents and does not constitute an approval or variance. Corrections or comments, or the failure to make them, on this review does not relieve the Contractor from full contract compliance. | |
| The Contractor is responsible for compliance with all contract provisions, dimensions, sizes, capacities, fabrication and construction techniques, installation, coordinating work with others, and performing the work in a safe and satisfactory manner. | |
| Date: _____ By: _____ | |
| OGDEN CITY ENGINEERING | |

B. Meaning of Engineer's stamp:

1. No Exceptions Taken: Submittals which have been reviewed without requested correction.
2. Make Corrections Noted: Submittals which have only minor discrepancies. Resubmission will not be required unless the stamp is marked "Resubmit".
3. Submit Specified Item: Submittals which are incomplete or require more than minor corrections will be annotated to indicate necessary corrections. Resubmit the part of the submittal showing the corrections.
4. Rejected: Submittals which are fundamentally in error, cover wrong equipment or construction, or require extensive corrections.
5. Resubmit: Submittals which require resubmission. Make corrections required, note any changes by dating the revisions to correspond with the change require date, and resubmit the corrected material.
6. Do Not Resubmit: Submittals which are not necessary to resubmit.

PART 2 PRODUCTS Not Used

PART 3 EXECUTION Not Used

INSTRUCTIONS FOR SUBMITTAL REGISTER

GENERAL

1. Contractor to Complete Form: Review the Contract Documents to insure completeness. Expand general category listings. Show individual entries on this form for each item.
 - a. As an example, a general category would be "Plumbing Fixtures" which the Contractor is to breakdown into individual entries such as "Toilet P-1, Lavatory P-2, etc." Complete the Submittal Register, attach it to Form 01 33 50-1 and submit it to Engineer.
2. Resubmittals: If a submittal is returned for correction, provide a new Submittal Identification Number. Identify the number on the submittal register and resubmit the information for review. Do not amend the data already contained on the submittal register.

SUBMITTAL REGISTER

1. Scheduled Activity: If an activity on the Progress Schedule is assigned to the submittal, place the schedule activity number in the "Scheduled Activity" column.
2. Submittal Item No.: Assign to each entry on the Submittal Register a sequential number in the "Submittal Identification (Item Number)" column.
3. Review Action: The "Review Action" column identifies technical review responsibility of submittal. Review of all products and materials is the Contractor's responsibility; however, certain specified submittals will also require Engineer's review.
 - a. If "Review Action" Column is Blank: Identified submittal shall be approved by the Contractor and then submitted to the Engineer for information.
 - b. If the Engineer is identified in the "Review Action" Column: Identified submittals shall be first approved by the Contractor and then submitted to the Engineer for review.
4. Engineer Action Dates: This column is for Engineer's use to record date submittal was received and the action code assigned in the submittal review process.

END OF SECTION

SECTION 01 33 50 TRANSMITTALS

This specification is an addition APWA Standard Specification, Section 01 33 50.

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal register requirements.
- B. Transmittal form requirements.
- C. Important submittal due dates.

1.2 TRANSMITTALS

- A. Use the attached Transmittal Form (Form 01 33 50-1) when making submittals.

1.3 TRANSMITTAL OF SUBMITTAL REGISTER

- A. Use the Contract Documents to identify product data, samples and materials which require submission for information only. See Article 1.5.
- B. For submittals requiring Engineer's review or action, see Article 1.4.
- C. Determine appropriate review due dates for the submittals.
- D. Prepare register and transmit it to the Engineer.
- E. Transmit these submittals to the Engineer, at 2549 Washington Boulevard, suite 761, Ogden, Utah 84401.

| TRANSMITTAL FORM | | | | DATE | | <input type="checkbox"/> NEW SUBMITTAL <input type="checkbox"/> RESUBMITTAL | |
|--|--|--|------------------------------|--|----------------------------|--|---|
| Section I | REQUEST FOR APPROVAL OF THE FOLLOWING ITEMS (This section will be initiated by the CONTRACTOR) | | | | | | |
| TO | | | FROM | | | TRANSMITTAL No. | |
| | | | | | | PREVIOUS TRANSMITTAL No. | |
| SPECIFICATION SECTION NUMBER (See instructions) | | | CONTRACT TITLE | | | CONTRACT No. | |
| SUBMITTAL ITEM No. a. | DESCRIPTION OF ITEM SUBMITTED (Type, size, model number, etc.) b. | SAMPLE OR CER- TIFICATE (See instructions) c. | NO. OF COPIES d. | CONTRACT REFERENCE DO- CUMENT | | VARIATION (See instruc- tions) g. | ENGINEER REVIEW CODE (See instruc- tions) h. |
| | | | | SPEC. PARA. No. e. | DRAWING SHEET No. f. | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| | | | | | | | |
| REMARKS | | | | I certify that the above submitted items have been reviewed in detail and are correct and conform with the contract Drawings and specifications except as otherwise noted. | | | |
| | | | | <hr style="width: 80%; margin: 0 auto;"/> NAME AND SIGNATURE OF CONTRACTOR | | | |
| Section II | OWNER'S ACTION This section will be completed by the ENGINEER) | | | | | | |
| ENCLOSURES RETURNED (List by Item No.) | | | SIGNATURE OF REVIEWING AGENT | | | DATE | |

FORM 0133 50-1 (Read Instructions on the next page prior to initiating this form)

INSTRUCTIONS

GENERAL

1. Form is self-transmittal. Letter of transmittal is not required.
2. Submittals requiring expeditious handling will be submitted individually on this Form.
3. Engineer's review of submittals does not release or relieve Contractor from complying with all requirements of the Contract Documents.

SECTION I

1. Transmittal No.: Number each transmittal consecutively in the space entitled "Transmittal No." This number will identify each submittal.
2. Previous Transmittal No.: Mark the box for re-submittal and insert the transmittal number of last submission as well as the new submittal number in the spaces provided. Each re-submittal will become a new transmittal.
3. Specification Section No.: Cover only one specification section with each transmittal.
4. Column "a": For each entry on this form, the "Submittal Item No." will be the same as the Submittal Item No. indicated on the Submittal Register (Form 01330-1).
5. Column "c": When a sample of material or Manufacturer's Certificate of Compliance is transmitted, indicate "Sample" or "Certificate".
6. Column "g": Contractor will place a check mark in the "Variation" column when a submittal is not in accordance with the plans and specifications - also, a written statement to that effect shall be included in the space provided for "Remarks" or on a separate page.
7. Column "h": For each item reviewed, Engineer shall assign action codes as follows:
 - A. No Exceptions Taken
 - B. Make Corrections Noted. Re-submission not required.
 - C. Submit Specified Item.
 - D. Rejected.
 - E. Resubmit
 - F. Do not resubmit. Receipt acknowledged.
 - G. Will be returned by separate correspondence.
 - H. Other (specify).

END OF SECTION

SECTION 01 45 00 QUALITY CONTROL

This specification changes a portion of Section 01 45 00. All other provisions of the Section remain in full force and effect.

Add the following Article to Part 1.

1.7 QUALITY CONTROL PROGRAM

- A. Quality Control Program: Provide a quality control program which includes procedures and organization so equipment, workmanship, fabrication, construction, operations, and inspections comply with the Contract Documents.
- B. Quality Control Program Manager Qualifications:
 - 1. Not Contractor's work or site superintendent.
 - 2. Quality control experience with projects of similar type and magnitude.
 - 3. Authorized as Contractor's representative for all quality control and quality assurance matters.
- C. Quality Control Program Manager Responsibilities:
 - 1. Manage and supervise quality control plan and quality control surveillance personnel.
 - 2. Verify that testing procedures comply with contract requirements.
 - 3. Verify that facilities and testing equipment are available and comply with testing standards.
 - 4. Check test instrument calibration data against certified standards.
 - 5. Verify that recording forms, including all the documentation requirements, have been prepared.
 - 6. Prepare copies of each test result with all necessary data recorded and with documentation and computations compiled.
 - 7. Provide more testing, if, in Engineer's opinion, work is not being adequately controlled.
 - 8. Immediately report any non-compliance of materials and mixes to Engineer and Contractor.
 - 9. When an out-of-tolerance condition exists, perform additional control testing until tolerance is attained.
 - 10. Correlate Contractor's quality assurance testing program (Section 01 43 00) with Engineer's acceptance testing program (Section 01 46 00).

END OF SECTION

SECTION 01 55 26 TRAFFIC CONTROL – B

This specification changes a portion of **APWA Standard Specification Section 01 55 26**. All other provisions of the Section remain in full force and effect.

Add the following articles to Part 3.

3.3 SPECIAL TRAFFIC CONTROL PROVISIONS

A. In General:

1. Provide, maintain and control all traffic information signs and traffic control devices as indicated in the current edition of the Manual of Uniform Traffic Control Devices.
2. Regulate traffic as indicated in Manual of Uniform Traffic Control Devices.
3. Sandbag all temporary traffic control signs and barricades.
4. Operate large equipment on major streets only during off-peak hours. Peak hours are normally 7:00 A.M. to 9:00 A.M. and 4:00 P.M. to 6:00 P.M.
5. Provide and maintain one 12 feet wide traffic lane for each direction of travel at all times.
6. Provide a trail closure and detour plan for pedestrians

B. Traffic Control Plan:

1. Submit a Traffic Control Plan which satisfies requirements in Manual of Uniform Traffic Control Devices and those of the Ogden City Transportation Engineer.

C. Traffic Control Devices:

1. Install traffic control devices before work activities start.
2. Maintain devices to ensure proper function.
3. Wash devices weekly unless conditions warrant more frequent cleaning.
4. Replace any device missing any part of the message or background.
5. Remove devices when no longer required.

D. Access:

1. Provide access to all affected properties *[except for durations of less than 24 hours]*. In all cases:
 - a. Provide alternate access whenever normal access is blocked and an alternate access method is possible.
 - b. Notify property owners 48 hours in advance of change or loss of access and the anticipated duration.
2. Keep open for travel at all times each section of roadway or sidewalk being worked on or provide alternate vehicular and pedestrian passage ways. Follow provisions of the current Manual of Uniform Traffic Control Devices (MUTCD) for walkway signing and barricading.
3. Construct temporary ramps over concrete curb, gutter and sidewalk and other construction to each business entrance as required for uninterrupted access.

E. Parking Restrictions:

1. Post "No Parking" signs every 50 feet 24 hours in advance of need.

3.4 LOST OR DAMAGED TRAFFIC FIXTURES

- A. Replace lost or damaged traffic regulation signs and traffic information signs at no additional cost to Owner.

END OF SECTION

SECTION 01 78 50 CLOSEOUT PROCEDURES

This specification changes a portion of **APWA Standard Specification Section 01 78 50**. All other provisions of the Section remain in full force and effect.

Add paragraph 1.4E to read as follows.

1.5 CLOSEOUT SUBMITTALS

- E. **Form 01 78 50-1**: Certificate of Compliance and request for final inspection. (See copy on the page following this one).

Add the following article to Part 1.

1.6 CLOSEOUT SCHEDULE

- A. As defined in APWA Standard Plan No. 110.

END OF SECTION

**CONTRACTOR'S
CERTIFICATION OF COMPLIANCE**

(and request for Final Inspection)

Certification of Compliance and Punch List of Uncompleted items must be submitted with final request for payment.

DATE _____

PROJECT NAME AND NUMBER

PORTION OF WORK COMPLETE

All of the work as per the contract has been completed and approved.

CERTIFICATION

I certify that I, _____ (name) am
an authorized official of _____ (company)
working in the capacity of _____ and have
been duly authorized by said company to make the following statements.

1. As the CONTRACTOR's representative, I do hereby certify by personal knowledge that all Work or portion of the Work described above has been performed in every particular in accordance with and conformance to the Contract Documents and that the Work or portion of the Work is ready for Final Inspection.
2. It is understood that neither the determination of the ENGINEER that the Work is Substantially Complete, nor the acceptance thereof, shall operate to bar claims against the CONTRACTOR for non-compliance with the Contract Documents.
3. As the CONTRACTOR's representative, I do hereby certify by personal knowledge that all payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the OWNER or the OWNER's property might be responsible or encumbered, have been paid or otherwise satisfied.

I hereby request the ENGINEER accept the Work as being Substantially Complete and schedule the Final Inspection.

Signature

PUNCH LIST FOR PROJECT COMPLETION/APPROVAL

This list contains both generic and project-specific items that will need to be completed before final payment can be made on this project. These items will be discussed at the post-construction meeting.

1. Final Inspection was completed.
2. All items as bid have been completed.
3. Example (The change order, was completed and approved to replace the curb and inlet box).
4. _____
5. _____
6. _____
7. _____

This project has been completed to the satisfaction of the Project Inspector and the Project Engineer/Manager and final payment to contractor is requested.

Signature of Engineer

Date

END OF DOCUMENT