

BID ADVERTISEMENT

MARANACOOK LAKE OUTLET DAM MODIFICATIONS TOWNS OF READFIELD AND WINTHROP, MAINE

The Towns of Readfield and Winthrop, acting by and through the Maranacook Lake Outlet Dam Committee, are seeking bids for the “Maranacook Lake Outlet Dam Modifications”. Sealed Bids for the Work will be received from General Contractors for the “Maranacook Lake Outlet Dam Modifications” at the Winthrop Town Offices, 17 Highland Avenue, Winthrop, Maine 04364 until **3:00 PM local time on Friday, June 29, 2018**, and at that time and place, the bids will be publicly opened and read aloud.

A mandatory Pre-Bid Conference will be held at the Winthrop Town Offices at 10:30 AM on Thursday, June 14, 2018 and will be immediately followed by a site visit to the dam.

The work generally includes installing a temporary cofferdam and bypass system, constructing site improvements, including 1) selective demolition, 2) soil excavation, 3) rock excavation, and 4) channel and streambank protection, modifying the existing concrete dam, sill, and appurtenances, installing a new Obermeyer gate, gate operator, gate controls, gate house, utilities, and appurtenances, and performing site restoration. **Work is generally expected to be completed during the 2019 construction season (June 1 - October 31), with exceptions.**

The bid documents, consisting of drawings, specifications, and the bid form, will be available online, including the Town of Readfield’s website www.readfield.govoffice.com, or may be obtained in hard copy or electronically from Eric Dyer, Readfield Town Manager. To request a copy of the bid documents, send an email to: readfield.tmgr@roadrunner.com with the subject “MLODM – Request for Bid Documents” and provide the following information in the body of the email. Requests that do not contain all the required information will not be fulfilled.

- Company Name
- Mailing Address
- Point of Contact name, telephone number, and email Address

The bidding and award of this Contract will be under the provisions of the applicable public bidding laws in the State of Maine. Complete instructions for filing Bids are included in the Instructions to Bidders section of the Bid Documents.

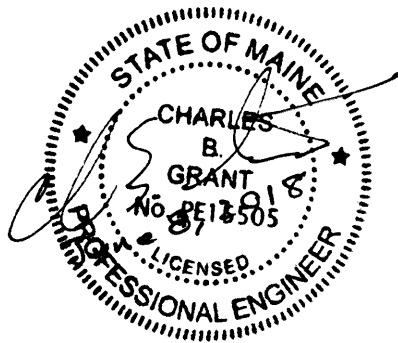
No Bidder may withdraw their Bid for a period of sixty (60) days, excluding Saturdays, Sundays, and legal holidays after the actual date of the opening of the General Bids. This advertisement does not obligate the Owner for any costs associated with preparing or submitting bids.

To be considered a responsive Bidder, the Contractor shall have obtained at least one electronic set of Bid Documents from the Town of Readfield and have attended the mandatory Pre-Bid Conference

The contract will be awarded to the bidder deemed by the awarding authority to be the lowest responsible, qualified, and eligible bidder. The Towns of Readfield and Winthrop reserve the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the Towns.

Towns of Readfield and Winthrop, Maine

**Towns of Readfield and Winthrop, Maine
c/o Readfield Town Manager
8 Old Kents Hill Rd, Readfield, ME 04355
Phone: (207) 685-4939**



Charles B. Grant, P.E.

**INVITATION FOR BID
MARANACOOK LAKE OUTLET DAM MODIFICATIONS
ISSUED JUNE 8, 2018**

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SECTION 00020

INVITATION FOR BIDS

Sealed bids for the Maranacook Lake Outlet Dam Modifications will be received at the Winthrop Town Office until June 29, 2018 at 3:00 p.m., local time. The bids will be publicly opened and read aloud at the time specified below:

<u>PROJECT NAME</u>	<u>BID OPENING</u>
Maranacook Lake Outlet Dam Modifications	June 29, 2018 at 3:00 p.m.

The bid documents, consisting of drawings, specifications, and the bid form, will be available on the Town of Readfield’s website www.readfield.govoffice.com, or may be obtained in hard copy or electronically from Eric Dyer, Readfield Town Manager. To request a copy of the bid documents, send an email to: readfield.tmgr@roadrunner.com with the subject “MLODM – Request for Bid Documents” and provide the following information in the body of the email. Requests that do not contain all the required information will not be fulfilled.

- Company Name
- Mailing Address
- Point of Contact name, telephone number, and email Address

Bids will be opened at the Winthrop Town Offices at the date and time specified above.

A mandatory Pre-Bid Conference and Site Visit will be held Thursday, June 14, 2018 at 10:30 a.m. The Pre-Bid Conference will be held at the Winthrop Town Offices and will be followed by a Site Visit to the dam.

All bids for this project are subject to applicable public bidding laws in the State of Maine.

The contract will be awarded to the bidder deemed by the awarding authority to be the lowest responsible, qualified, and eligible bidder.

The bidder agrees that its bid shall be good and may not be withdrawn for a period of 60 days, Saturdays, Sundays and legal holidays excluded, after the opening of the bids.

The Towns of Readfield and Winthrop reserve the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the Towns.

The complete package of Bid Documents includes the following items:

- Bidding and Contract Requirements, seven (7) sections, plus Attachments A through D
- Maranacook Dam Modification Drawings (2018), Rev. 0, nine (9) sheets

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- Maranacook Dam Modification (2018) Technical Specifications Rev. 0, twelve (12) sections
- Obermeyer Hydro Inc. Drawings 16-1664, six (6) sheets
- Obermeyer Hydro Inc. Standard Details, five (5) sheets

The Towns of Readfield and Winthrop, Maine

SECTION 00100

INSTRUCTIONS TO BIDDERS

1. Receipt and Opening of Bids

The Towns of Readfield and Winthrop, Maine, herein called the Owner, acting by and through the Maranacook Lake Outlet Dam Committee, will receive sealed Bids for the project known as

Maranacook Lake Outlet Dam Modifications

General bids shall be addressed to the Winthrop Town Manager, 17 Highland Ave, Winthrop, ME 04364 and endorsed "Bid for Construction of Maranacook Lake Outlet Dam Modifications". Bids will be received at the Winthrop Town Office until 3:00 p.m. local time, on Friday, June 29, 2018, immediately after which, all bids will be publicly opened and read aloud.

Any bid may be withdrawn prior to the above scheduled time for the opening of bids or authorized postponement thereof. Any bid received after the time and date specified will not be considered. The bidder agrees that its bid shall be good and may not be withdrawn for a period of 60 days, Saturdays, Sundays, and legal holidays excluded, after the opening of bids.

2. Copies of Bid Documents

Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

3. Qualifications of Bidders

To demonstrate Bidder's qualifications to perform the Work, within 5 days of Owner's request, Bidder shall submit written evidence such as financial data, previous experience, present commitments, and such other data as may be called for below.

- A. Evidence of Bidder's authority to do business in the state where the Project is located.
- B. Bidder's state contractor license number, if applicable.
- C. Proof of Worker's Compensation Insurance.

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Non-Resident Contractors

The successful bidder, if a corporation established under laws other than the State of Maine, shall file, at the time of the execution of the Contractor, with the Owner, notice of the name of its resident attorney, appointed as required by the laws of the State of Maine.

The successful bidder, if not a resident of Maine, and not a corporation, shall file, at the time of execution of the contract, with the owner a written appointment of a resident of the State of Maine, having an office or place of business therein, to be his true and lawful attorney upon whom all lawful processes in any actions or proceedings against him may be served; and in such writing, which shall set forth said attorney's place of residence, shall agree that any lawful process against him which is served on said attorney shall be of the same legal force and validity as if served on him and that the authority shall continue in force so long as any liability remains outstanding against him in Maine. The power of attorney shall be filed in the office of the Secretary of State if required, and copies certified by the Secretary shall be sufficient evidence thereof. Such appointment shall continue in force until revoked by an instrument in writing, designating in a like manner some other person upon whom such processes may be served, which instrument shall be filed in the manner provided herein for the original appointment.

A non-resident contractor shall be deemed to be:

- a. A person who is not a resident of the State of Maine;
- b. Any partnership that has no member thereof resident of the State of Maine;
- c. Any corporation established under laws other than those of the State of Maine.

Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

4. Site Location and Work to be Done

The Work consists of civil and structural improvements to the Maranacook Lake Outlet Dam, a historic concrete dam located at the southeast end of Maranacook Lake and along Mill Stream in the Town of Winthrop.

The location, general characteristics, and principal details of the Work are indicated on plans entitled: **Maranacook Lake Outlet Dam Modifications.** Easements for permanent structures or permanent changes in existing facilities are to be obtained and paid for by Owner unless otherwise provided in the Bidding Documents. The Owner has obtained an access agreement from the private property owner to the north of the Site (Tax Parcel 31.39) and has a Right-Of-Way on the parcel to the south of the Site (Tax Parcel 31.40). Details of the access agreement and Right-Of-Way will be provided in a future addendum. All additional lands and access thereto required for temporary

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construction facilities, construction equipment, or storage of materials and equipment to be incorporated in the Work are to be obtained and paid for by Contractor.

Additional drawings showing details in accordance with which the Work is to be done may be furnished by addendum from time to time during the bidding period by the Owner or its Architect/Engineer, and shall then become a part of the Contract Documents.

The Contractor shall furnish all labor, services, materials, equipment, plant, machinery, apparatus, appliances, tools, supplies, and all other things necessary to do all work required for the completion of each item of the Work and as herein specified.

The Work to be done and paid for under any item shall not be limited to the exact extent mentioned or described but shall include all incidental work necessary or customarily done for the completion of that item.

This project is subject to all applicable State and Federal Safety and Health Regulations.

5. Examination of Bidding Documents, Other Related Data and Site

Subsurface and Physical Conditions

The Supplementary Conditions identify:

- Those reports known to Owner of explorations and tests of subsurface conditions at or contiguous to the Site.
- Those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).

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

Underground Facilities

Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site is based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.

Hazardous Environmental Conditions

No hazardous environmental conditions are known to exist at the Site.

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

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

- Examine and carefully study the Bidding Documents, and the other related data identified in the Bidding Documents;
- Visit the Site and become familiar with and satisfy Bidder as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- Become familiar with and satisfy Bidder as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work;
- Carefully study all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in Paragraph 4.02 of the Supplementary Conditions, and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in the Paragraph 4.06 of the Supplementary Conditions;
- Consider the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs;
- Agree at the time of submitting its Bid that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for

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- performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- Become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
 - Promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder; and
 - Determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work.

The submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid is premised upon performing and furnishing the Work required by the Bidding Documents and applying any specific means, methods, techniques, sequences, and procedures of construction that may be shown or indicated or expressly required by the Bidding Documents, that Bidder has given Engineer written notice of all conflicts, errors, ambiguities, and discrepancies that Bidder has discovered in the Bidding Documents and the written resolutions thereof by Engineer are acceptable to Bidder, and that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performing and furnishing the Work.

6. Pre-Bid Conference

A mandatory Pre-Bid Conference will be held at 10:30 a.m. local time on Thursday, June 14, 2018 at The Winthrop Town Offices. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are required to attend and participate in the conference. Engineer will transmit to all prospective Bidders a record of attendees and minutes from the Pre-Bid Conference for items that the Engineer considers necessary in response to questions or discussions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

Bids from Bidders that do not attend the pre-bid conference will be disqualified. Attendance at the Pre-Bid conference will be judged by completion of all fields on the attendance sheet that will be circulated at the start of the conference.

7. Addenda and Interpretations

All questions about the meaning or intent of the Bidding Documents are to be submitted to Owner in writing. Questions are due to the Owner by Wednesday, June 20, 2018 at 4:00 p.m., local time. Questions received after this date and time will not be answered. Interpretations or clarifications considered necessary by Owner or Engineer in response to such questions will be issued by Addenda electronically delivered to all parties

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recorded by Owner as having received the Bidding Documents. Responses to the questions will be provided no later than Monday, June 25, 2018.

Request for such interpretation should be in writing on company letterhead addressed to Winthrop Town Manager, 17 Highland Ave, Winthrop, ME 04364. In addition, an electronic copy of the questions may also be submitted in pdf format via email to: readfield.tmgr@roadrunner.com. Include "Maranacook Lake Outlet Dam Questions" in the subject line.

Any and all such interpretations and any supplemental instructions will be in the form of written addenda to the Contract Documents which, when issued, will be electronically delivered, with confirmation of receipt requested, to all prospective bidders (at the respective email address furnished by them for such purposes). Addenda may be issued to clarify, correct, or change the Bidding Documents as deemed advisable by Owner or Engineer.

No interpretation of the meaning of the plans, specifications or other pre-bid documents will be made to any bidder orally. All information given to bidders other than by means of the plans, specifications, or by addenda, as described below, is given informally and shall not be used as the basis of a claim against the Owner. Questions received after Wednesday, June 20, 2018 at 4:00 p.m., local time will not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.

Failure of any bidder to receive any such addendum or interpretation shall not relieve such bidder from any obligation under his bid as submitted. All addenda so issued shall become part of the Contract Documents.

8. Bonds and Securities

Bid, performance, and payment bonds are not required for this bid or for the Work. However, provisions for lien waivers and liquidated damages do apply and are described in the General Conditions.

9. Preparation of Bid

Each bid must be submitted on the prescribed form, which is included with the Bidding Documents. Additional copies may be obtained upon request from the Owner. All blanks on the Bid Form shall be completed in ink or typewritten, in both words and figures, and the Bid Form shall be signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each Bid item listed therein.

A Bid by a corporation shall be executed in the corporate name by the president or a vice-president or other corporate officer accompanied by evidence of authority to sign. The

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corporate seal shall be affixed and attested by the secretary or an assistant secretary. The corporate address and state of incorporation shall be shown.

A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership shall be shown.

A Bid by a limited liability company shall be executed in the name of the firm by a member and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.

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

A Bid by a joint venture shall be executed by each entity in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.

All names shall be printed in ink below the signatures.

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

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

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

10. Substitute and "Or-Equal" Items

The Contract, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration of possible substitute or "or-equal" items. Whenever it is specified or described in the Bidding Documents that a substitute or "or-equal" item of material or equipment may be furnished or used by Contractor if acceptable to Engineer, application for such acceptance will not be considered by Engineer until after the Effective Date of the Agreement.

11. Subcontractors, Suppliers, and Others

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

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experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, individual, or entity if requested by Owner. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit a substitute, without an increase in the Bid.

If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, individuals, or entities. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to revocation of such acceptance after the Effective Date of the Agreement as provided in Paragraph 6.06 of the General Conditions.

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

12. Submittal of Bid

With each copy of the Bidding Documents, a Bidder is furnished an electronic copy of the Bid Form. The unbound copy of the Bid Form and other necessary documentation is to be printed single sided on plain, white, letter-size paper, completed, and submitted with all other necessary documentation.

A Bid shall be submitted no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by all other required documents.

Each bid must be submitted in a sealed envelope bearing on the outside the name of the bidder, his address, and endorsed with the name of the project as specified in Bid Opening Procedure.

If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to the Winthrop Town Manager, 17 Highland Ave, Winthrop, ME 04364.

13. Modification and Withdrawal of Bid

A Bid may be modified or withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids.

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If, within 24 hours after Bids are opened, any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

14. Bid Opening Procedure

The following list of requirements shall apply to each filed bid.

Bids not meeting all the requirements for timeliness will be rejected; bids not meeting signature and addenda requirements will be rejected prior to checking of bid amounts.

Bids shall be filed at the place and before the time specified in Receipt and Opening of Bids, above.

Bid signatures will be checked.

All addenda will be sent electronically to all prospective bidders. The bidders list will be generated based on a review of the known plan holders list and the attendance sheet from the mandatory pre-bid meeting. All bidders shall include with their bids the written acknowledgment form provided in Section 00410, BID FORM.

Bids will be opened at the time and place indicated in the Advertisement or Invitation to Bid and, unless obviously non-responsive, read aloud publicly.

The Towns of Readfield and Winthrop reserve the right to waive any informalities, to accept or reject, in whole or in part any or all bids, or take whatever other action may be deemed to be in the best interest of the Towns.

15. Bids to Remain Subject to Acceptance

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

16. Basis of Bids; Comparison of Bids

Bidders shall submit a Bid on a unit price basis for each item of Work listed in the Bid schedule. The total of all estimated prices will be the sum of the products of the estimated quantity of each item and the corresponding unit price. The final quantities and Contract Price will be determined in accordance with Paragraph 11.03 of the General Conditions. Bids will be compared on the basis of prices set forth in the bid forms.

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

sum. In the event that there is a discrepancy between the lump sum or unit prices written in words and figures, the prices written in words will govern.

17. Evaluation of Bids

Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner further reserves the right to reject the Bid of any Bidder whom it finds, after reasonable inquiry and evaluation, to not be responsible. Owner may also reject the Bid of any Bidder if Owner believes that it would not be in the best interest of the Project to make an award to that Bidder. Owner also reserves the right to waive all informalities not involving price, time, or changes in the Work and to negotiate contract terms with the Successful Bidder.

More than one Bid for the same Work from an individual or entity under the same or different names will not be considered. Reasonable grounds for believing that any Bidder has an interest in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder has an interest.

In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.

In evaluating Bidders, Owner will consider the qualifications of Bidders and may consider the qualifications and experience of Subcontractors, Suppliers, and other individuals or entities proposed for those portions of the Work for which the identity of Subcontractors, Suppliers, and other individuals or entities must be submitted as provided in the Supplementary Conditions.

Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, individuals, or entities proposed for those portions of the Work in accordance with the Contract Documents.

18. Award of Contract

The Contract will be awarded to the lowest responsible, qualified, and eligible bidder pursuant to the General Laws of the State of Maine and the total value of the bid compared to the eligible funding. Such a bidder shall possess the skill, ability and integrity necessary for the faithful performance of the work, shall be able to furnish labor that can work in harmony with all other elements of labor employed, or to be employed, in the work, and shall otherwise comply with all applicable provisions of law. Contract award shall be subject to availability of an appropriation for funding.

When Owner issues a Notice of Award to the Successful Bidder, it shall be accompanied by the required number of unsigned counterparts of the Agreement along with the other Contract Documents which are identified in the Agreement as attached thereto. Within 15

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days thereafter, Successful Bidder shall sign and deliver the required number of counterparts of the Agreement and attached documents to Owner. Within ten days thereafter, Owner shall deliver one fully signed counterpart to Successful Bidder with a complete set of the Drawings with appropriate identification.

19. Ability and Experience of Bidder

No award will be made to any bidder who cannot satisfy the Owner that he has sufficient ability and experience in this class of work and sufficient capital and plant to enable him to prosecute and complete the work successfully within the time named. The Owner's decision or judgment on these matters will be final, conclusive, and binding.

The Owner may make such investigations as it deems necessary, and the bidder shall furnish to the Owner, under oath if so required, all such information and data for this purpose as the Owner may request.

20. Conditions of Work

Each bidder must familiarize himself fully with the conditions relating to the construction of the project and the employment of labor thereon. Failure to do so will not relieve a successful bidder of his obligation to furnish all material and labor necessary to carry out the provisions of his contract. Insofar as possible the Contractor, in carrying out his work, must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

21. Laws and Regulations

The bidder's attention is directed to the fact that all applicable State laws, municipal ordinances or bylaws, and the rules and regulations of all authorities having jurisdiction over construction of the project shall apply to the contract throughout, and they will be deemed to be included in the Contract the same as though written out in full. Attention is directed to Section 00850 and to other applicable sections of the Contract Documents.

22. Obligation of Bidder

At the time of the opening of bids, each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the Contract Documents (including all addenda). The failure or omission of any bidder to examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect of his bid.

23. Information Not Guaranteed

All information given in the Contract Documents relating to subsurface and other conditions, natural phenomena, existing pipes, and other structures is from the best sources at present available to the Owner. All such information is furnished only for the

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information and convenience of bidders and is not guaranteed.

It is agreed and understood that the Owner does not warrant or guarantee that the subsurface or other conditions, natural phenomena, existing pipes, or other structures encountered during construction will be the same as those indicated in the Contract Documents.

If it is further agreed and understood that no bidder or Contractor shall use or be entitled to use any of the information made available to him or obtained in any examination made by him in any manner as a basis of or ground for any claim or demand against the Owner or the Architect/Engineer, arising from or by reason of any variance which may exist between the information made available and the actual subsurface or other structures actually encountered during the construction work, except as may otherwise be expressly provided for in the Contract Documents.

24. Time for Completion

The successful general bidder must agree to commence work according to acceptable headwater levels and other requirements provided in Section 01 50 00, Paragraph 1.2 of the Technical Specifications. Work shall be substantially complete by September 30, 2019, unless mutually agreed upon by all parties, and the Contract shall expire 180 days after Notice to Proceed.

25. Statutes Regulating Competitive Bidding

Any bid which does not comply with the provisions of Maine State Laws, Revised Statutes, Title 5, Chapter 153, Section 1743, need not be accepted and the Owner may reject every such bid.

26. Insurance

The Contractor and all subcontractors shall carry and continuously maintain until completion of the Contract, insurance as specified in the General Conditions and in such form as shall protect him performing work covered by this Contract, and the Towns of Readfield and Winthrop and its employees, agents and officials, from all claims and liability for damages for bodily injury, including accidental death, and for property damage, which may arise from operations under this Contract.

The Towns of Readfield and Winthrop shall be named as an additional insured. The Contractor covenants and agrees to hold the Towns of Readfield and Winthrop and its employees, agents and officials harmless from loss or damage due to claims for bodily injury or death and/or property damage arising from, or in connection with, operations under this Contract.

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27. Construction/Project Manager

In addition to a project Architect/Engineer, the Owner may utilize the services of a Construction/Project Manager, whose duties shall be as set forth in the Agreement between the Owner and the Construction/Project Manager. The Towns of Readfield and Winthrop will appoint a Construction/Project Manager prior to the start of construction.

SECTION 00410

BID FORM

Maranacook Lake Outlet Dam Modifications

Bid of _____ (hereinafter called "Bidder")

a corporation, organized and existing under the laws of the State of

a partnership

a joint venture

an individual

Doing Business As _____

To the Towns of Readfield and Winthrop, Maine (hereinafter called "Owner").

Gentlemen:

The undersigned Bidder, in compliance with your invitation for bids for the project known as Maranacook Lake Outlet Dam Modifications, having examined the plans and specifications and related documents and the site of the proposed work, and being familiar with all of the conditions surrounding the construction of the proposed project including the availability of materials and labor, hereby proposes to furnish all labor, materials, and supplies, and to construct the project in accordance with the contract documents and the plans and specifications within the time set forth below, and at the prices stated below. These prices are to cover all expenses incurred in performing the work required under the contract documents, of which this bid is a part.

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to:

The Towns of Readfield and Winthrop, Maine

1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

A. Bidder has examined and carefully studied the Bidding Documents, other related data identified in the Bidding Documents, and the following Addenda, receipt of which is hereby acknowledged:

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

B. Bidder has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.

C. Bidder is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.

D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) that have been identified in SC-4.02 as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in SC-4.06 as containing reliable "technical data."

E. Bidder has considered the information known to Bidder; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports

- and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder, including applying the specific means, methods, techniques, sequences, and procedures of construction expressly required by the Bidding Documents; and (3) Bidder's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 3.01.E above, Bidder does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price(s) bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
 - G. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
 - H. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and the written resolution thereof by Engineer is acceptable to Bidder.
 - I. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance of the Work for which this Bid is submitted.

ARTICLE 4 – BIDDER'S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process;
 - 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;

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3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

5.01 Bidder will complete the Work in accordance with the Contract Documents for the unit prices identified in the Bid Sheet which is included as Attachment A. The total value of all bid prices, based on the quantities and unit prices identified in the bid form is:

BIDDER NAME: _____

<i>Figures</i>	\$
<i>Words</i>	

Unit Prices have been computed in accordance with Paragraph 11.03.B of the General Conditions. Bidder acknowledges that estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete on or before September 30, 2019, and will be completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before October 31, 2019.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
 - A. List of Proposed Subcontractors;
 - B. List of Proposed Suppliers;
 - C. List of Project References, including

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Towns of Readfield and Winthrop, Maine

1. Project Name
2. Completion Date
3. Owner Name
4. Engineer/Designer Name
5. Contract Amount
6. Final Contract Sum
7. Reference Contact Information
 - a. Name
 - b. Telephone Number
 - c. Email Address;
- D. Bank Reference;
- E. Evidence of authority to do business in the state of the Project; or a written covenant to obtain such license within the time for acceptance of Bids;
- F. Contractor's License No.: _____ or Evidence of Bidder's ability to obtain a State Contractor's License and a covenant by Bidder to obtain said license within the time for acceptance of Bids;
- G. Required Bidder Qualification Statement with Supporting Data; and

ARTICLE 8 – DEFINED TERMS

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

ARTICLE 9 – BID SUBMITTAL

9.01 This Bid is submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

By: _____
(Individual's signature)

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Doing business as: _____

A Partnership

Partnership Name: _____

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

Name (typed or printed): _____

A Corporation

Corporation Name: _____

(SEAL)

State of Incorporation: _____

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

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

Name (typed or printed): _____

Title: _____
(CORPORATE SEAL)

Attest _____

Date of Qualification to do business in the State of Maine is ____/____/____.

A Joint Venture

Name of Joint Venture: _____

First Joint Venturer Name: _____

(SEAL)

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

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Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____

(SEAL)

By: _____

(Signature of second joint venture partner -- attach evidence of authority to sign)

Name (typed or printed): _____

Title: _____

(Each joint venturer must sign. The manner of signing for each individual, partnership, and corporation that is a party to the joint venture should be in the manner indicated above.)

Bidder's Business Address _____

Phone No. _____ Fax No. _____

E-mail _____

SUBMITTED on _____, 20____.

State Contractor License No. _____.

SECTION 00510
NOTICE OF AWARD

Notice of Award

Date:

Project: Maranacook Lake Outlet Dam Modifications

Owner: Towns of Readfield and Winthrop, Maine

Owner's Contract No.:

Contract:

Engineer's Project No.:

Bidder:

Bidder's Address: *[send Notice of Award Certified Mail, Return Receipt Requested]*

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

[Indicate total Work, alternates, or sections of Work awarded.]

The Contract Price of your Contract is _____ Dollars (\$_____).

[Insert appropriate unit prices data]

_____ copies of the proposed Contract Documents (except Drawings) accompany this Notice of Award.

_____ sets of the Drawings will be delivered separately or otherwise made available to you immediately.

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

1. Deliver to the Owner [_____] fully executed counterparts of the Contract Documents.
2. Other conditions precedent:

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

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

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Owner
Authorized Signature
Title
Owner
Authorized Signature
Title

Copy:
Wendy Dennis – Cobbossee Water District
Larry Perkins – Maranacook Lake Outlet Dam Committee
Charles Grant – GEI Consultants, Inc.

SECTION 00520

AGREEMENT

THIS AGREEMENT is by and between _____ (“Owner”) and
_____ (“Contractor”).

Owner and Contractor hereby agree as follows:

WORK

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

- Temporary cofferdam and bypass
- Site improvements, including:
 - Selective demolition
 - Excavation, including rock excavation
 - Channel and streambank protection
- Structural modifications to the existing concrete dam, sill, and appurtenances
- Installation of new gate, operator, gate house, utilities, and appurtenances

THE PROJECT

The Project for which the Work under the Contract Documents may be the whole or only a part is generally described as follows:

Construction of modifications to the existing Maranacook Lake Outlet Dam and appurtenances to allow for improved headwater control through the use of a new gate and operator, and the associated improvements to the existing structure and appurtenances.

ENGINEER

The Project has been designed by GEI Consultants, Inc. (Engineer), who shall have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

Towns may elect to assign any and all responsibilities of Engineer to Owner’s Representative.

OWNER’S REPRESENTATIVE

The Owner may appoint a representative (also identified as the Resident Project Representative) to perform all duties and functions specified in the Contract Documents on behalf of the Owner, including any duties and responsibilities not retained by the Engineer.

CONTRACT TIMES

4.01 *Time of the Essence*

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

4.02 *Dates for Substantial Completion and Final Payment*

- A. The Work will be substantially completed on or before September 30, 2019, and completed and ready for final payment in accordance with Paragraph 14.07 of the General Conditions on or before October 31, 2019.

4.03 *Liquidated Damages*

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial loss if the Work is not completed within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with Article 12 of the General Conditions. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty), Contractor shall pay Owner \$500 for each day that expires after the time specified in Paragraph 4.02 above for Substantial Completion until the Work is substantially complete. After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time or any proper extension thereof granted by Owner, Contractor shall pay Owner \$500 for each day that expires after the time specified in Paragraph 4.02 above for completion and readiness for final payment until the Work is completed and ready for final payment.

ARTICLE 5 – CONTRACT PRICE

- 5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents an amount in current funds equal to the sum of the amounts determined pursuant to Paragraphs 5.01.A, below:

- A. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

The Bid prices for Unit Price Work set forth as of the Effective Date of the Agreement are based on estimated quantities. As provided in Paragraph 11.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer as provided in Paragraph 9.07 of the General Conditions.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 *Submittal and Processing of Payments*

- A. Contractor shall submit Applications for Payment in accordance with Article 14 of the General Conditions. Applications for Payment will be processed by Owner's Representative as provided in the General Conditions.

6.02 *Progress Payments; Retainage*

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment in conjunction with their regular payment and financial warrant schedule during performance of the Work as provided in Paragraph 6.02.A.1 below. All such payments will be measured by the schedule of values established as provided in Paragraph 2.07.A of the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no schedule of values, as provided in the General Requirements.

1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Engineer may determine or Owner may withhold, including but not limited to liquidated damages, in accordance with Paragraph 14.02 of the General Conditions.

- a. 90 percent of Work completed (with the balance being retainage). If the Work has been 50 percent completed as determined by Engineer, and if the character and progress of the Work have been satisfactory to Owner and Engineer, then as long as the character and progress of the Work remain satisfactory to Owner and Engineer, there will be no additional retainage; and
- b. 90 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).

- B. Contractor's payment request is due to Owner's representative by first Friday of the month. Owner's representative (and Engineer) review invoice for accuracy and 1) if accurate, send to Owner for processing with any recommendations or 2) discuss errors or changes with the Contractor and request revisions. If initial payment request is accurate, Owner will receive it by the second Friday of the month. Based on the completed units or percent complete (for lump sum items), an invoice subtotal will be calculated. Retainage will be deducted from the subtotal and an "amount due this invoice" will be calculated. The amount due and retainage amounts will be split based on the percentage of financial responsibility for each Town. Currently, these values are:

1. Readfield – 53.3%
2. Winthrop – 46.7%

- C. Upon Substantial Completion, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts as Engineer shall determine in accordance with Paragraph 14.02.B.5 of the General Conditions and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the tentative list of items to be completed or corrected attached to the certificate of Substantial Completion or 5% of the total retainage, whichever is greater.
- D. Invoices will be paid within 45 days.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 14.07 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 14.07.

ARTICLE 7 – INTEREST

- 7.01 All moneys not paid when due as provided in Article 14 of the General Conditions shall bear interest at the rate of 0.1 percent per annum.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Agreement, Contractor makes the following representations:
 - A. Contractor has examined and carefully studied the Contract Documents and the other related data identified in the Bidding Documents.
 - B. Contractor has visited the Site and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all federal, state, and local Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or contiguous to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities), if any, that have been identified in Paragraph SC-4.02 of the Supplementary Conditions as containing reliable "technical data," and (2) reports and drawings of Hazardous Environmental Conditions, if any, at the Site that have been identified in Paragraph SC-4.06 of the Supplementary Conditions as containing reliable "technical data."
 - E. Contractor has considered the information known to Contractor; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of

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- construction to be employed by Contractor, including any specific means, methods, techniques, sequences, and procedures of construction expressly required by the Contract Documents; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in Paragraph 8.01.E above, Contractor does not consider that further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract Documents.
- G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
- H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
- I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 *Contents*

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to __, inclusive).
 2. General Conditions (pages ____ to ____, inclusive).
 3. Supplementary Conditions (pages ____ to ____, inclusive).
 4. Specifications as listed in the table of contents.
 5. Drawings consisting of ____ sheets with each sheet bearing the following general title: ____ [or] the Drawings listed on attached sheet index.
 6. Addenda (numbers ____ to ____, inclusive).
 7. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ____ to ____, inclusive).
 - b. Documentation submitted by Contractor prior to Notice of Award (pages ____ to ____, inclusive).
 8. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:

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- a. Notice to Proceed (pages _____ to _____, inclusive).
 - b. Work Change Directives.
 - c. Change Orders.
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in Paragraph 3.04 of the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 *Terms*

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

10.02 *Assignment of Contract*

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

10.03 *Successors and Assigns*

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

10.04 *Severability*

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

10.05 *Contractor's Certifications*

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- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

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1. IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement. Counterparts have been delivered to Owner and Contractor. All portions of the Contract Documents have been signed or have been identified by Owner and Contractor or on their behalf.

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

OWNER:

CONTRACTOR

By: _____

By: _____

Title: _____

Title: _____

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

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____

(Where applicable)

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

Agent for service of process:

SECTION 00550

NOTICE TO PROCEED

Notice to Proceed

Date: _____

Project: _____

Owner: _____	Owner's Contract No.: _____
Contract: _____	Engineer's Project No.: _____

Contractor: _____

Contractor's Address: *[send Certified Mail, Return Receipt Requested]*

You are notified that the Contract Times under the above Contract will commence to run on _____. On or before that date, you are to start performing your obligations under the Contract Documents. In accordance with Article 4 of the Agreement, the date of Substantial Completion is _____, and the date of readiness for final payment is _____ [(or) the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before you may start any Work at the Site, Paragraph 2.01.B of the General Conditions provides that you and Owner must each deliver to the other (with copies to Engineer and other identified additional insureds and loss payees) certificates of insurance which each is required to purchase and maintain in accordance with the Contract Documents.

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Owner

Given by:

Authorized Signature

Title

Date

Owner

Given by:

Authorized Signature

Title

Date

Copy:
Wendy Dennis – Cobbossee Water District
Larry Perkins – Maranacook Lake Outlet Dam Committee
Charles Grant – GEI Consultants, Inc.

SECTION 00700

GENERAL CONDITIONS

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Asbestos*—Any material that contains more than one percent asbestos and is friable or is releasing asbestos fibers into the air above current action levels established by the United States Occupational Safety and Health Administration.
 5. *Bid*—The offer or proposal of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 6. *Bidder*—The individual or entity who submits a Bid directly to Owner.
 7. *Bidding Documents*—The Bidding Requirements and the proposed Contract Documents (including all Addenda).
 8. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid security of acceptable form, if any, and the Bid Form with any supplements.
 9. *Change Order*—A document recommended by Engineer which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, issued on or after the Effective Date of the Agreement.
 10. *Claim*—A demand or assertion by Owner or Contractor seeking an adjustment of Contract Price or Contract Times, or both, or other relief with respect to the terms of the Contract. A demand for money or services by a third party is not a Claim.

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11. *Contract*—The entire and integrated written agreement between the Owner and Contractor concerning the Work. The Contract supersedes prior negotiations, representations, or agreements, whether written or oral.
12. *Contract Documents*—Those items so designated in the Agreement. Only printed or hard copies of the items listed in the Agreement are Contract Documents. Approved Shop Drawings, other Contractor submittals, and the reports and drawings of subsurface and physical conditions are not Contract Documents.
13. *Contract Price*—The moneys payable by Owner to Contractor for completion of the Work in accordance with the Contract Documents as stated in the Agreement (subject to the provisions of Paragraph 11.03 in the case of Unit Price Work).
14. *Contract Times*—The number of days or the dates stated in the Agreement to: (i) achieve Milestones, if any; (ii) achieve Substantial Completion; and (iii) complete the Work so that it is ready for final payment as evidenced by Engineer’s written recommendation of final payment.
15. *Contractor*—The individual or entity with whom Owner has entered into the Agreement.
16. *Cost of the Work*—See Paragraph 11.01 for definition.
17. *Drawings*—That part of the Contract Documents prepared or approved by Engineer which graphically shows the scope, extent, and character of the Work to be performed by Contractor. Shop Drawings and other Contractor submittals are not Drawings as so defined.
18. *Effective Date of the Agreement*—The date indicated in the Agreement on which it becomes effective, but if no such date is indicated, it means the date on which the Agreement is signed and delivered by the last of the two parties to sign and deliver.
19. *Engineer*—The individual or entity named as such in the Agreement.
20. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but which does not involve a change in the Contract Price or the Contract Times.
21. *General Requirements*—Sections of Division 1 of the Specifications.
22. *Hazardous Environmental Condition*—The presence at the Site of Asbestos, PCBs, Petroleum, Hazardous Waste, or Radioactive Material in such quantities or circumstances that may present a substantial danger to persons or property exposed thereto.
23. *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.

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24. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
25. *Liens*—Charges, security interests, or encumbrances upon Project funds, real property, or personal property.
26. *Milestone*—A principal event specified in the Contract Documents relating to an intermediate completion date or time prior to Substantial Completion of all the Work.
27. *Notice of Award*—The written notice by Owner to the Successful Bidder stating that upon timely compliance by the Successful Bidder with the conditions precedent listed therein, Owner will sign and deliver the Agreement.
28. *Notice to Proceed*—A written notice given by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work under the Contract Documents.
29. *Owner*—The individual or entity with whom Contractor has entered into the Agreement and for whom the Work is to be performed.
30. *Owner's Representative*— The individual or entity (also identified as the Resident Project Representative) with whom the Owner has selected to perform all duties and functions specified in the Contract Documents on behalf of the Owner, including and duties and responsibilities not retained by the Engineer.
31. *PCBs*—Polychlorinated biphenyls.
32. *Petroleum*—Petroleum, including crude oil or any fraction thereof which is liquid at standard conditions of temperature and pressure (60 degrees Fahrenheit and 14.7 pounds per square inch absolute), such as oil, petroleum, fuel oil, oil sludge, oil refuse, gasoline, kerosene, and oil mixed with other non-Hazardous Waste and crude oils.
33. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor's plan to accomplish the Work within the Contract Times.
34. *Project*—The total construction of which the Work to be performed under the Contract Documents may be the whole, or a part.
35. *Project Manual*—The bound documentary information prepared for bidding and constructing the Work. A listing of the contents of the Project Manual, which may be bound in one or more volumes, is contained in the table(s) of contents.
36. *Radioactive Material*—Source, special nuclear, or byproduct material as defined by the Atomic Energy Act of 1954 (42 USC Section 2011 et seq.) as amended from time to time.

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37. *Resident Project Representative*—The authorized representative of Engineer who may be assigned to the Site or any part thereof.
38. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and which establish the standards by which such portion of the Work will be judged.
39. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements to support scheduled performance of related construction activities.
40. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
41. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information which are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work.
42. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements for access thereto, and such other lands furnished by Owner which are designated for the use of Contractor.
43. *Specifications*—That part of the Contract Documents consisting of written requirements for materials, equipment, systems, standards and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable thereto.
44. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work at the Site.
45. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
46. *Successful Bidder*—The Bidder submitting a responsive Bid to whom Owner makes an award.
47. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or Subcontractor.

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48. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
49. *Unit Price Work*—Work to be paid for on the basis of unit prices.
50. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.
51. *Work Change Directive*—A written statement to Contractor issued on or after the Effective Date of the Agreement and signed by Owner and recommended by Engineer ordering an addition, deletion, or revision in the Work, or responding to differing or unforeseen subsurface or physical conditions under which the Work is to be performed or to emergencies. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the change ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order following negotiations by the parties as to its effect, if any, on the Contract Price or Contract Times.

1.02 *Terminology*

- A. The words and terms discussed in Paragraph 1.02.B through F are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. Intent of Certain Terms or Adjectives:
 1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

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C. Day:

1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.

D. Defective:

1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

E. Furnish, Install, Perform, Provide:

1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. When “furnish,” “install,” “perform,” or “provide” is not used in connection with services, materials, or equipment in a context clearly requiring an obligation of Contractor, “provide” is implied.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.

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

2.02 *Copies of Documents*

- A. Owner will not furnish Contractor with hard copies of the Contract Documents. Electronic copies will be distributed and the Contractor is responsible for reproduction and distribution to their project team.

2.03 *Commencement of Contract Times; Notice to Proceed*

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

2.04 *Starting the Work*

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

2.05 *Before Starting Construction*

- A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:
1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract Documents;
 2. a preliminary Schedule of Submittals; and
 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.06 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding

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among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit instructions, receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.07 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference attended by Contractor, Engineer, and others as appropriate will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.05.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

ARTICLE 3 – CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
1. In the event of a conflict, language in the technical specifications supersedes language shown or implied from the drawings.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents. Any labor, documentation, services, materials, or equipment that reasonably may be inferred from the Contract Documents or from prevailing custom or trade usage as being required to produce the indicated result will be provided whether or not specifically called for, at no additional cost to Owner.

- C. Clarifications and interpretations of the Contract Documents shall be issued by Engineer as provided in Article 9.

3.02 *Reference Standards*

A. Standards, Specifications, Codes, Laws, and Regulations

1. Reference to standards, specifications, manuals, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard, specification, manual, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Agreement if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
2. No provision of any such standard, specification, manual, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the Contract Documents. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the Contract Documents.

3.03 *Reporting and Resolving Discrepancies*

A. Reporting Discrepancies:

1. *Contractor's Review of Contract Documents Before Starting Work:* Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor discovers, or has actual knowledge of, and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.
2. *Contractor's Review of Contract Documents During Performance of Work:* If, during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) any standard, specification, manual, or code, or (c) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 6.16.A) until an amendment or supplement to the Contract Documents has been issued by one of the methods indicated in Paragraph 3.04.

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3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.

B. Resolving Discrepancies:

1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the Contract Documents shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between the provisions of the Contract Documents and:
 - a. the provisions of any standard, specification, manual, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference in the Contract Documents); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended to provide for additions, deletions, and revisions in the Work or to modify the terms and conditions thereof by either a Change Order or a Work Change Directive.
- B. The requirements of the Contract Documents may be supplemented, and minor variations and deviations in the Work may be authorized, by one or more of the following ways:
 1. A Field Order;
 2. Engineer's approval of a Shop Drawing or Sample (subject to the provisions of Paragraph 6.17.D.3); or
 3. Engineer's written interpretation or clarification.

3.05 *Reuse of Documents*

- A. Contractor and any Subcontractor or Supplier shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions; or
 2. reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer.

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- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

3.06 *Electronic Data*

- A. The Contract Documents will be provided electronically in .pdf format. These documents will be obtained directly from the Town of Readfield. Upon award, the Engineer will provide the Contractor with one full size hardcopy set of the Conformed Documents. These documents will be considered the record copy and shall be relied upon for the Work. All other electronic files are furnished only for the convenience of the receiving party. Any conclusion or information obtained or derived from such electronic files will be at the user's sole risk. If there is a discrepancy between the electronic files provided for convenience and the Conformed Documents, the Conformed Documents govern.
- B. Because data stored in electronic media format can deteriorate or be modified inadvertently or otherwise without authorization of the data's creator, the party receiving electronic files agrees that it will perform acceptance tests or procedures within 60 days, after which the receiving party shall be deemed to have accepted the data thus transferred. Any errors detected within the 60-day acceptance period will be corrected by the transferring party.
- C. When transferring documents in electronic media format, the transferring party makes no representations as to long term compatibility, usability, or readability of documents resulting from the use of software application packages, operating systems, or computer hardware differing from those used by the data's creator.

ARTICLE 4 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS; REFERENCE POINTS

4.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work. Owner will obtain in a timely manner and pay for easements for permanent structures or permanent changes in existing facilities. If Contractor and Owner are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of any delay in Owner's furnishing the Site or a part thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which the Work is to be performed and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

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

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings*

1. The following reports of explorations and tests of subsurface conditions at or contiguous to the Site are known to Owner:

a. None

2. The following reports of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) are known to Owner:

a. Report dated January 21, 2016, prepared by GEI Consultants, Inc., Woburn, MA and Northstar Hydro, Inc., Winthrop, ME, entitled: "Maranacook Lake Outlet Dam Preliminary Engineering Study, Winthrop, ME", consisting of 62 pages.

b. Report dated February 2015, prepared by Northstar Hydro, Inc., Winthrop, ME., entitled: "Maranacook Dam Hydrologic Study Report", consisting of 104 pages..

1. None of the contents of such reports is "technical data" on which Contractor may rely.

3. The reports and drawings identified above are not part of the Contract Documents, but the "technical data" contained therein upon which Contractor may rely, as expressly identified and established above, are incorporated in the Contract Documents by reference. Contractor is not entitled to rely upon any other information and data known to or identified by Owner or Engineer.

4. Copies of reports identified herein that are not included with the Bidding Documents may be examined at the Winthrop Town Office during regular business hours.

B. *Limited Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the "technical data" contained in such reports and drawings, but such reports and drawings are not Contract Documents. Such "technical data," if any, is identified above. Except for such reliance on such "technical data," Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and

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procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or

2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
3. any Contractor interpretation of or conclusion drawn from any “technical data” or any such other data, interpretations, opinions, or information.

4.03 *Differing Subsurface or Physical Conditions*

A. *Notice:* If Contractor believes that any subsurface or physical condition that is uncovered or revealed either:

1. is of such a nature as to establish that any “technical data” on which Contractor is entitled to rely as provided in Paragraph 4.02 is materially inaccurate; or
2. is of such a nature as to require a change in the Contract Documents; or
3. differs materially from that shown or indicated in the Contract Documents; or
4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

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

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

C. *Possible Price and Times Adjustments:*

1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in Contractor’s cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must meet any one or more of the categories described in Paragraph 4.03.A; and
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraphs 9.07 and 11.03.

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2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:
 - a. Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
 - b. the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or
 - c. Contractor failed to give the written notice as required by Paragraph 4.03.A.
3. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefor as provided in Paragraph 10.05. However, neither Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others.
1. Owner and Engineer shall not be responsible for the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all such information and data;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents;
 - c. coordination of the Work with the owners of such Underground Facilities, including Owner, during construction; and
 - d. the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.

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B. Not Shown or Indicated:

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated, or not shown or indicated with reasonable accuracy in the Contract Documents, Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer. Engineer will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the Underground Facility. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
2. If Engineer concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground Facility that was not shown or indicated or not shown or indicated with reasonable accuracy in the Contract Documents and that Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, Owner or Contractor may make a Claim therefor as provided in Paragraph 10.05.

4.05 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.06 *Hazardous Environmental Condition at Site*

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.
- B. Not Used
- C. Contractor shall not be responsible for any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in Drawings or

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Specifications or identified in the Contract Documents to be within the scope of the Work. Contractor shall be responsible for a Hazardous Environmental Condition created with any materials brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible.

- D. If Contractor encounters a Hazardous Environmental Condition or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, Contractor shall immediately: (i) secure or otherwise isolate such condition; (ii) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 6.16.A); and (iii) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 4.06.E.
- E. Contractor shall not be required to resume Work in connection with such condition or in any affected area until after Owner has obtained any required permits related thereto and delivered written notice to Contractor: (i) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work; or (ii) specifying any special conditions under which such Work may be resumed safely. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, either party may make a Claim therefor as provided in Paragraph 10.05.
- F. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of an adjustment in Contract Price or Contract Times as a result of deleting such portion of the Work, then either party may make a Claim therefor as provided in Paragraph 10.05. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 7.
- G. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition: (i) was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be included within the scope of the Work, and (ii) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.G shall obligate Owner to indemnify any

individual or entity from and against the consequences of that individual's or entity's own negligence.

- H. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 4.06.H shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- I. The provisions of Paragraphs 4.02, 4.03, and 4.04 do not apply to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 5 – BONDS AND INSURANCE

5.01 Performance, Payment, and Other Bonds

- A. Contractor shall furnish performance and payment bonds, each in an amount at least equal to the Contract Price as security for the faithful performance and payment of all of Contractor's obligations under the Contract Documents. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 13.07, whichever is later, except as provided otherwise by Laws or Regulations or by the Contract Documents. Contractor shall also furnish such other bonds as are required by the Contract Documents.
- B. All bonds shall be in the form prescribed by the Contract Documents except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in the list of "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (amended) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. All bonds signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed each bond.
- C. If the surety on any bond furnished by Contractor is declared bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of Paragraph 5.01.B, Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the requirements of Paragraphs 5.01.B and 5.02.

5.02 *Licensed Sureties and Insurers*

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

5.03 *Certificates of Insurance*

- A. Contractor shall deliver to Owner, with copies to each additional insured and loss payee identified in the Contract Documents, certificates of insurance (and other evidence of insurance requested by Owner or any other additional insured) which Contractor is required to purchase and maintain.
- B. Owner shall deliver to Contractor, with copies to each additional insured and loss payee identified in the Contract Documents, certificates of insurance (and other evidence of insurance requested by Contractor or any other additional insured) which Owner is required to purchase and maintain.
- C. Failure of Owner to demand such certificates or other evidence of Contractor's full compliance with these insurance requirements or failure of Owner to identify a deficiency in compliance from the evidence provided shall not be construed as a waiver of Contractor's obligation to maintain such insurance.
- D. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor.
- E. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner in the Contract Documents.

5.04 *Contractor's Insurance*

- A. Contractor shall purchase and maintain such insurance as is appropriate for the Work being performed and as will provide protection from claims set forth below which may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts;
 - 2. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees;

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3. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees;
 4. claims for damages insured by reasonably available personal injury liability coverage which are sustained:
 - a. by any person as a result of an offense directly or indirectly related to the employment of such person by Contractor, or
 - b. by any other person for any other reason;
 5. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom; and
 6. claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance or use of any motor vehicle.
- B. The policies of insurance required by this Paragraph 5.04 shall:
1. with respect to insurance required by Paragraphs 5.04.A.3 through 5.04.A.6 inclusive, be written on an occurrence basis, include as additional insureds (subject to any customary exclusion regarding professional liability) Owner and Engineer, and any other individuals or entities identified in the Contract Documents, all of whom shall be listed as additional insureds, and include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds, and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby;
 2. include at least the specific coverages and be written for not less than the limits of liability provided in the Contract Documents or required by Laws or Regulations, whichever is greater;
 3. include contractual liability insurance covering Contractor's indemnity obligations under Paragraphs 6.11 and 6.20;
 4. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other additional insured identified in the Contract Documents to whom a certificate of insurance has been issued (and the certificates of insurance furnished by the Contractor pursuant to Paragraph 5.03 will so provide);
 5. remain in effect at least until final payment and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work in accordance with Paragraph 13.07; and
 6. include completed operations coverage:

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- a. Such insurance shall remain in effect for two years after final payment.
 - b. Contractor shall furnish Owner and each other additional insured identified in the Contract Documents, to whom a certificate of insurance has been issued, evidence satisfactory to Owner and any such additional insured of continuation of such insurance at final payment and one year thereafter.
- C. The limits of liability for the insurance required by Paragraph 5.04 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
- 1. Workers' Compensation, and related coverages under Paragraphs 5.04.A.1 and A.2 of the General Conditions:
 - a. State: Statutory
 - b. Applicable Federal (e.g., Longshoreman's): Statutory
 - c. Employer's Liability:
 - 1. Each Accident \$2,000,000
 - 2. Aggregate (disease) \$2,000,000
 - 2. Contractor's General Liability under Paragraphs 5.04.A.3 through A.6 of the General Conditions which shall include completed operations and product liability coverages and eliminate the exclusion with respect to property under the care, custody and control of Contractor:
 - a. General Aggregate \$1,000,000
 - b. Products/Completed Operations Aggregate \$1,000,000
 - c. Personal and Advertising Injury (Per Occurrence) \$1,000,000
 - d. Bodily Injury and Property Damage
 - 1. Each Occurrence \$1,000,000
 - 2. Aggregate \$3,000,000
 - e. Property Damage liability insurance will provide Explosion, Collapse, and Under-ground coverages where applicable.
 - f. Excess or Umbrella Liability
 - 1. General Aggregate N/A
 - 2. Each Occurrence \$5,000,000

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3. Automobile Liability under Paragraph 5.04.A.6 of the General Conditions:
 - a. Combined Single Limit \$500,000
4. The Contractual Liability coverage required by Paragraph 5.04.B.4 of the General Conditions shall provide coverage for not less than the General Liability amounts listed above.
5. The following parties shall be named as additional insured
 1. Town of Readfield
 2. Town of Winthrop
 3. Thomas and Patricia Heiss
 4. TBD

5.05 *Owner's Liability Insurance*

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

5.06 *Property Insurance*

- A. Contractor shall purchase and maintain property insurance upon the Work at the Site in the amount of the full replacement cost thereof. Contractor shall be responsible for any deductible or self-insured retention. This insurance shall:
 1. include the interests of Owner, Contractor, Subcontractors, Engineer, and the officers, directors, partners, employees, agents and other consultants and subcontractors of any of them, each of whom is deemed to have an insurable interest and shall be listed as an insured or loss payee;
 2. be written on a Builder's Risk "all-risk" policy form that shall at least include insurance for physical loss and damage to the Work, temporary buildings, falsework, and materials and equipment in transit and shall insure against at least the following perils or causes of loss: fire, lightning, extended coverage, theft, vandalism and malicious mischief, earthquake, collapse, debris removal, demolition occasioned by enforcement of Laws and Regulations, water damage (other than that caused by flood), and such other perils or causes of loss as may be specifically required by these Contract Documents.
 3. include expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects);

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4. cover materials and equipment stored at the Site or at another location that was agreed to in writing by Owner prior to being incorporated in the Work, provided that such materials and equipment have been included in an Application for Payment recommended by Engineer;
 5. allow for partial utilization of the Work by Owner;
 6. include testing and startup;
 7. be maintained in effect until final payment is made unless otherwise agreed to in writing by Owner, Contractor, and Engineer with 30 days written notice to each other loss payee to whom a certificate of insurance has been issued; and
 8. comply with the requirements of Paragraph 5.06.C of the General Conditions.
- B. Contractor shall purchase and maintain any other additional property insurance required by Laws and Regulations, which insurance will include the interest of Owner, Contractor, Subcontractors, and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them, each of whom is deemed to have an insurable interest and shall be listed as a loss payee.
- C. All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this Paragraph 5.06 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 30 days prior written notice has been given to Owner and Contractor and to each other loss payee to whom a certificate of insurance has been issued and will contain waiver provisions in accordance with Paragraph 5.07.
- D. Owner shall not be responsible for purchasing and maintaining any property insurance specified in this Paragraph 5.06 to protect the interests of Contractor, Subcontractors, or others in the Work to the extent of any deductible amounts that are identified in the Contract Documents. The risk of loss within such identified deductible amount will be borne by Contractor, Subcontractors, or others suffering any such loss, and if any of them wishes property insurance coverage within the limits of such amounts, each may purchase and maintain it at the purchaser's own expense.
- E. If Contractor requests in writing that other special insurance be included in the property insurance policies provided under this Paragraph 5.06, Owner shall, if possible, include such insurance, and the cost thereof will be charged to Contractor by appropriate Change Order. Prior to commencement of the Work at the Site, Owner shall in writing advise Contractor whether or not such other insurance has been procured by Owner.

5.07 *Waiver of Rights*

- A. Owner and Contractor intend that all policies purchased in accordance with Paragraph 5.06 will protect Owner, Contractor, Subcontractors, and Engineer, and all other individuals or entities identified in the Contract Documents as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and

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- subcontractors of each and any of them) in such policies and will provide primary coverage for all losses and damages caused by the perils or causes of loss covered thereby. All such policies shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any of the insureds or loss payees thereunder. Owner and Contractor waive all rights against each other and their respective officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for all losses and damages caused by, arising out of or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Subcontractors and Engineer, and all other individuals or entities identified in the Contract Documents as loss payees (and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them) under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner as trustee or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them for:
1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other perils whether or not insured by Owner; and
 2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial utilization pursuant to Paragraph 14.05, after Substantial Completion pursuant to Paragraph 14.04, or after final payment pursuant to Paragraph 14.07.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 5.07.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them.

5.08 *Receipt and Application of Insurance Proceeds*

- A. Any insured loss under the policies of insurance required by Paragraph 5.06 will be adjusted with Owner and made payable to Owner as fiduciary for the loss payees, as their interests may appear, subject to the requirements of any applicable mortgage clause and of Paragraph 5.08.B. Owner shall deposit in a separate account any money so received and shall distribute it in accordance with such agreement as the parties in interest may reach. If no other special agreement is reached, the damaged Work shall be

repaired or replaced, the moneys so received applied on account thereof, and the Work and the cost thereof covered by an appropriate Change Order.

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

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

- A. If either Owner or Contractor has any objection to the coverage afforded by or other provisions of the bonds or insurance required to be purchased and maintained by the other party in accordance with Article 5 on the basis of non-conformance with the Contract Documents, the objecting party shall so notify the other party in writing within 10 days after receipt of the certificates (or other evidence requested) required by Paragraph 2.01.B. Owner and Contractor shall each provide to the other such additional information in respect of insurance provided as the other may reasonably request. If either party does not purchase or maintain all of the bonds and insurance required of such party by the Contract Documents, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage. Without prejudice to any other right or remedy, the other party may elect to obtain equivalent bonds or insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and a Change Order shall be issued to adjust the Contract Price accordingly.

5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

ARTICLE 6 – CONTRACTOR'S RESPONSIBILITIES

6.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor

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shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction. Contractor shall not be responsible for the negligence of Owner or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents.

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

6.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours. Contractor will not permit the performance of Work on a Saturday, Sunday, or any legal holiday without Owner's written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

6.03 *Services, Materials, and Equipment*

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

6.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.07 as it may be adjusted from time to time as provided below.

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1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.07) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times. Such adjustments will comply with any provisions of the General Requirements applicable thereto.
2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 12. Adjustments in Contract Times may only be made by a Change Order.

6.05 *Substitutes and "Or-Equals"*

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

1. *"Or-Equal" Items:* If in Engineer's sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer's sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this Paragraph 6.05.A.1, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole; and
 - 3) it has a proven record of performance and availability of responsive service.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.

2. Substitute Items:

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- a. If in Engineer's sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under Paragraph 6.05.A.1, it will be considered a proposed substitute item.
- b. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefor.
- c. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.
- d. The requirements for review by Engineer will be as set forth in Paragraph 6.05.A.2.d, as supplemented by the General Requirements, and as Engineer may decide is appropriate under the circumstances.
- e. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - 1) shall certify that the proposed substitute item will:
 1. perform adequately the functions and achieve the results called for by the general design,
 2. be similar in substance to that specified, and
 3. be suited to the same use as that specified;
 - 2) will state:
 1. the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time,
 2. whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 3. whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty;
 - 3) will identify:
 1. all variations of the proposed substitute item from that specified, and
 2. available engineering, sales, maintenance, repair, and replacement services; and

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- 4) shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change.
- B. *Substitute Construction Methods or Procedures:* If a specific means, method, technique, sequence, or procedure of construction is expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The requirements for review by Engineer will be similar to those provided in Paragraph 6.05.A.2.
- C. *Engineer's Evaluation:* Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to Paragraphs 6.05.A and 6.05.B. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No "or equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by a Change Order in the case of a substitute and an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.
- D. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- E. *Engineer's Cost Reimbursement:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor pursuant to Paragraphs 6.05.A.2 and 6.05.B. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
- F. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

6.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor shall not employ any Subcontractor, Supplier, or other individual or entity (including those acceptable to Owner as indicated in Paragraph 6.06.B), whether initially or as a replacement, against whom Owner may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.
- B. If the Contract Documents require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Owner in advance for acceptance by

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- Owner by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Contract Documents, Owner's acceptance (either in writing or by failing to make written objection thereto by the date indicated for acceptance or objection in the Bidding Documents or the Contract Documents) of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Owner or Engineer to reject defective Work.
- C. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents:
1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier or other individual or entity; nor
 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.
- D. Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.
- E. Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.
- F. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- G. All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as a loss payee on the property insurance provided in Paragraph 5.06, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Owner, Contractor, Engineer, and all other individuals or entities identified in the Contract Documents to be listed as insureds or loss payees (and the officers, directors, members, partners, employees, agents,

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consultants, and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

6.07 *Patent Fees and Royalties*

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.
- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

6.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of opening of Bids, or, if there are no Bids, on the Effective Date of the Agreement. Owner shall pay all charges of utility owners for connections for providing permanent service to the Work.

6.09 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work. However, it shall not be Contractor's responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work shall be the subject of an adjustment in Contract Price or Contract Times. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

6.10 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.
- B. Owner is exempt from payment of sales and compensating use taxes of the State of Maine and of cities and counties thereof on all materials to be incorporated into the Work.
 - 1. Owner will furnish the required certificates of tax exemption to Contractor for use in the purchase of supplies and materials to be incorporated into the Work.
 - 2. Owner's exemption does not apply to construction tools, machinery, equipment, or other property purchased by or leased by Contractor, or to supplies or materials not incorporated into the Work.

6.11 *Use of Site and Other Areas*

- A. Limitation on Use of Site and Other Areas:
 - 1. Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other

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areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

2. Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.
 3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work Contractor shall keep the Site and other areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.
- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property or structures to stresses, vibration, or pressures that will cause settlement, cracking, or otherwise endanger them. Contractor shall be responsible for full cost of repairs to any structure destroyed, cracked, settled, displaced, heaved, or otherwise damaged by Contractor's activities.

6.12 *Record Documents*

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

6.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
1. all persons on the Site or who may be affected by the Work;
 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 14.07.B that the Work is

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acceptable (except as otherwise expressly provided in connection with Substantial Completion).

6.14 *Safety Representative*

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

6.15 *Hazard Communication Programs*

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

6.16 *Emergencies*

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

6.17 *Shop Drawings and Samples*

- A. Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals (as required by Paragraph 2.07). Each submittal will be identified as Engineer may require.

1. Shop Drawings:

- a. Submit number of copies specified in the General Requirements.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 6.17.D.

2. Samples:

- a. Submit number of Samples specified in the Specifications.
- b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may

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require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

B. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.

C. Submittal Procedures:

1. Before submitting each Shop Drawing or Sample, Contractor shall have:

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

2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review and approval of that submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be both a written communication separate from the Shop Drawings or Sample submittal; and, in addition, by a specific notation made on each Shop Drawing or Sample submitted to Engineer for review and approval of each such variation.

D. Engineer's Review:

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

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2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

E. Resubmittal Procedures:

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

6.18 *Continuing the Work*

- A. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted by Paragraph 15.04 or as Owner and Contractor may otherwise agree in writing.

6.19 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on representation of Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release

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of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
2. recommendation by Engineer or payment by Owner of any progress or final payment;
3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
4. use or occupancy of the Work or any part thereof by Owner;
5. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;
6. any inspection, test, or approval by others; or
7. any correction of defective Work by Owner.

6.20 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable .
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 6.20.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

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- C. The indemnification obligations of Contractor under Paragraph 6.20.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

6.21 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable law.
- B. If professional design services or certifications by a design professional related to systems, materials or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy and completeness of the services, certifications or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this Paragraph 6.21, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 6.17.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria required by the Contract Documents.

ARTICLE 7 – OTHER WORK AT THE SITE

7.01 *Related Work at Site*

- A. Owner may perform other work related to the Project at the Site with Owner's employees, or through other direct contracts therefor, or have other work performed by utility owners. If such other work is not noted in the Contract Documents, then:
1. written notice thereof will be given to Contractor prior to starting any such other work; and
 2. if Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times that should be allowed as a result of such other work, a Claim may be made therefor as provided in Paragraph 10.05.
- B. Contractor shall afford each other contractor who is a party to such a direct contract, each utility owner, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work, and properly coordinate the Work with theirs. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected. The duties and responsibilities of Contractor under this Paragraph are for the benefit of such utility owners and other contractors to the extent that there are comparable provisions for the benefit of Contractor in said direct contracts between Owner and such utility owners and other contractors.
- C. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 7, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

7.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work on the Project at the Site, the following will be set forth in Contract Documents:
1. the individual or entity who will have authority and responsibility for coordination of the activities among the various contractors will be identified;

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2. the specific matters to be covered by such authority and responsibility will be itemized; and
 3. the extent of such authority and responsibilities will be provided.
- B. Unless otherwise provided in the Contract Documents, Owner shall have sole authority and responsibility for such coordination.

7.03 *Legal Relationships*

- A. Paragraphs 7.01.A and 7.02 are not applicable for utilities not under the control of Owner.
- B. Each other direct contract of Owner under Paragraph 7.01.A shall provide that the other contractor is liable to Owner and Contractor for the reasonable direct delay and disruption costs incurred by Contractor as a result of the other contractor's wrongful actions or inactions.
- C. Contractor shall be liable to Owner and any other contractor under direct contract to Owner for the reasonable direct delay and disruption costs incurred by such other contractor as a result of Contractor's wrongful action or inactions.

ARTICLE 8 – OWNER'S RESPONSIBILITIES

8.01 *Communications to Contractor*

- A. Except as otherwise provided in the General Conditions, Owner may issue communications directly to the Contractor, through the Construction/Project Manager, or through the Engineer.

8.02 *Replacement of Engineer*

- A. In case of termination of the employment of Engineer, Owner shall appoint an engineer to whom Contractor makes no reasonable objection, whose status under the Contract Documents shall be that of the former Engineer.

8.03 *Furnish Data*

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

8.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in Paragraphs 14.02.C and 14.07.C.

8.05 *Lands and Easements; Reports and Tests*

- A. Owner's duties with respect to providing lands and easements and providing engineering surveys to establish reference points are set forth in Paragraphs 4.01 and 4.05. Paragraph 4.02 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of subsurface conditions and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

8.06 *Insurance*

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

8.07 *Change Orders*

- A. Owner is obligated to execute Change Orders as indicated in Paragraph 10.03.

8.08 *Inspections, Tests, and Approvals*

- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 13.03.B.

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 4.06.

8.11 *Evidence of Financial Arrangements*

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

8.12 *Compliance with Safety Program*

- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed pursuant to Paragraph 6.13.D.

ARTICLE 9 – ENGINEER’S STATUS DURING CONSTRUCTION

9.01 *Owner’s Representative*

- A. Engineer and Construction/Project Manager will act as the Owner’s Representative(s) during the construction period. The duties and responsibility and the limitation of authority for firms or individuals acting as the Owner’s Representative are set forth in the Contract Documents.

9.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor’s executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer’s efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer’s visits and observations are subject to all the limitations on Engineer’s authority and responsibility set forth in Paragraph 9.09. Particularly, but without limitation, during or as a result of Engineer’s visits or observations of Contractor’s Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor’s means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

9.03 *Project Representative*

- A. If Owner and Engineer agree, Engineer will furnish a Resident Project Representative to assist Engineer in providing more extensive observation of the Work. The authority and responsibilities of any such Resident Project Representative and assistants will be as provided in the Contract Documents, and limitations on the responsibilities thereof will be as provided in Paragraph 9.09. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer’s consultant, agent or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Contract Documents.
- B. The Resident Project Representative (RPR) will be appointed by the Towns of Readfield and Winthrop and will act as directed by and under the supervision of the Towns of Readfield and Winthrop. RPR's dealings in matters pertaining to the Work in

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general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall be through or with the full knowledge and approval of Contractor. The RPR shall:

1. *Schedules:* Review the progress schedule, schedule of Shop Drawing and Sample submittals, and schedule of values prepared by Contractor and consult with Engineer concerning acceptability.
2. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences and other project-related meetings, and prepare and circulate copies of minutes thereof.
3. *Liaison:*
 - a. Serve as Owner's and Engineer's liaison with Contractor, working principally through Contractor's authorized representative, assist in providing information regarding the intent of the Contract Documents.
 - b. Serve as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining additional details or information from Owner or Engineer, when required for proper execution of the Work.
4. *Interpretation of Contract Documents:* Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
5. *Shop Drawings and Samples:*
 - a. Record date of receipt of Samples and approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
6. *Modifications:* Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
7. *Review of Work and Rejection of Defective Work:*
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress will not produce a completed Project that conforms generally to the Contract Documents or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract

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Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.

8. *Inspections, Tests, and System Startups:*

- a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
- b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

9. *Records:*

- a. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- b. Maintain records for use in preparing Project documentation.

10. *Reports:*

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the progress schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, damage to property by fire or other causes, or the discovery of any Hazardous Environmental Condition.

11. *Payment Requests:* Review Applications for Payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the schedule of values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

12. *Certificates, Operation and Maintenance Manuals:* During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Specifications to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

13. *Completion:*

- a. Participate in a Substantial Completion inspection, assist in the determination of Substantial Completion and the preparation of lists of items to be completed or corrected.
- b. Participate in a final inspection in the company of Engineer, Owner, and Contractor and prepare a final list of items to be completed and deficiencies to be remedied.
- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the Notice of Acceptability of the Work.

C. The RPR shall not:

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

9.04 *Authorized Variations in Work*

- A. Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Owner and also on Contractor, who shall perform the Work involved promptly. If Owner or Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, and

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the parties are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefor as provided in Paragraph 10.05.

9.05 *Rejecting Defective Work*

- A. Engineer will have 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 will also have authority to require special inspection or testing of the Work as provided in Paragraph 13.04, whether or not the Work is fabricated, installed, or completed.

9.06 *Shop Drawings, Change Orders and Payments*

- A. In connection with Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, see Paragraph 6.17.
- B. In connection with Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, see Paragraph 6.21.
- C. In connection with Engineer's authority as to Change Orders, see Articles 10, 11, and 12.
- D. In connection with Engineer's authority as to Applications for Payment, see Article 14.

9.07 *Determinations for Unit Price Work*

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

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

- A. Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. All matters in question and other matters between Owner and Contractor arising prior to the date final payment is due relating to the acceptability of the Work, and the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, will be referred initially to Engineer in writing within 30 days of the event giving rise to the question.
- B. Engineer will, with reasonable promptness, render a written decision on the issue referred. If Owner or Contractor believes that any such decision entitles them to an adjustment in the Contract Price or Contract Times or both, a Claim may be made

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under Paragraph 10.05. The date of Engineer's decision shall be the date of the event giving rise to the issues referenced for the purposes of Paragraph 10.05.B.

- C. Engineer's written decision on the issue referred will be final and binding on Owner and Contractor, subject to the provisions of Paragraph 10.05.
- D. When functioning as interpreter and judge under this Paragraph 9.08, Engineer will not show partiality to Owner or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity.

9.09 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 9 or under any other provision of the Contract Documents nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 14.07.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 9.09 shall also apply to the Resident Project Representative, if any, and assistants, if any.

9.10 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Engineer has been informed pursuant to Paragraph 6.13.D.

ARTICLE 10 – CHANGES IN THE WORK; CLAIMS

10.01 Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved which will be performed under the applicable conditions of the Contract Documents (except as otherwise specifically provided).
- B. If Owner and Contractor are unable to agree on entitlement to, or on the amount or extent, if any, of an adjustment in the Contract Price or Contract Times, or both, that should be allowed as a result of a Work Change Directive, a Claim may be made therefor as provided in Paragraph 10.05.

10.02 Unauthorized Changes in the Work

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

10.03 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders recommended by Engineer covering:
 - 1. changes in the Work which are: (i) ordered by Owner pursuant to Paragraph 10.01.A, (ii) required because of acceptance of defective Work under Paragraph 13.08.A or Owner's correction of defective Work under Paragraph 13.09, or (iii) agreed to by the parties;
 - 2. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive; and
 - 3. changes in the Contract Price or Contract Times which embody the substance of any written decision rendered by Engineer pursuant to Paragraph 10.05; provided that, in lieu of executing any such Change Order, an appeal may be taken from any such decision in accordance with the provisions of the Contract Documents and applicable Laws and Regulations, but during any such appeal, Contractor shall carry on the Work and adhere to the Progress Schedule as provided in Paragraph 6.18.A.

10.04 *Notification to Surety*

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

10.05 *Claims*

- A. *Engineer's Decision Required:* All Claims, except those waived pursuant to Paragraph 14.09, shall be referred to the Engineer for decision. A decision by Engineer shall be required as a condition precedent to any exercise by Owner or Contractor of any rights or remedies either may otherwise have under the Contract Documents or by Laws and Regulations in respect of such Claims.
- B. *Notice:* Written notice stating the general nature of each Claim shall be delivered by the claimant to Engineer and the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto. The responsibility to substantiate a Claim shall rest with the party making the Claim. Notice of the amount or extent of the Claim, with supporting data shall be delivered to the Engineer and the other party to the Contract within 60 days after the start of such event (unless Engineer allows additional time for claimant to submit additional or more accurate data in support of such Claim). A Claim for an adjustment in Contract Price shall be prepared in accordance with the provisions of Paragraph 12.01.B. A Claim for an adjustment in Contract Times shall be prepared in accordance with the provisions of Paragraph 12.02.B. Each Claim shall be accompanied by claimant's written statement that the adjustment claimed is the entire adjustment to which the claimant believes it is entitled as a result of said event. The opposing party shall submit any response to Engineer and the claimant within 30 days after receipt of the claimant's last submittal (unless Engineer allows additional time).
- C. *Engineer's Action:* Engineer will review each Claim and, within 30 days after receipt of the last submittal of the claimant or the last submittal of the opposing party, if any, take one of the following actions in writing:
1. deny the Claim in whole or in part;
 2. approve the Claim; or
 3. notify the parties that the Engineer is unable to resolve the Claim if, in the Engineer's sole discretion, it would be inappropriate for the Engineer to do so. For purposes of further resolution of the Claim, such notice shall be deemed a denial.
- D. In the event that Engineer does not take action on a Claim within said 30 days, the Claim shall be deemed denied.

- E. Engineer's written action under Paragraph 10.05.C or denial pursuant to Paragraphs 10.05.C.3 or 10.05.D will be final and binding upon Owner and Contractor, unless Owner or Contractor invoke the dispute resolution procedure set forth in Article 16 within 30 days of such action or denial.
- F. No Claim for an adjustment in Contract Price or Contract Times will be valid if not submitted in accordance with this Paragraph 10.05.

ARTICLE 11 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

11.01 Cost of the Work

- A. *Costs Included:* The term Cost of the Work means the sum of all costs, except those excluded in Paragraph 11.01.B, necessarily incurred and paid by Contractor in the proper performance of the Work. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, the costs to be reimbursed to Contractor will be only those additional or incremental costs required because of the change in the Work or because of the event giving rise to the Claim. Except as otherwise may be agreed to in writing by Owner, such costs shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 11.01.B, and shall include only the following items:
 - 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 - 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 - 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any,

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will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 11.01.

4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 5.06.D), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

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- g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as telegrams, long distance telephone calls, telephone service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance Contractor is required by the Contract Documents to purchase and maintain.
- B. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:
- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 11.01.A.1 or specifically covered by Paragraph 11.01.A.4, all of which are to be considered administrative costs covered by the Contractor's fee.
 - 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 - 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 - 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 - 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraphs 11.01.A.
- C. *Contractor's Fee:* When all the Work is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order or when a Claim for an adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 12.01.C.
- D. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to Paragraphs 11.01.A and 11.01.B, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

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11.02 *Allowances*

- A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.
- B. Cash Allowances:
 - 1. Contractor agrees that:
 - a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - b. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. Contingency Allowance:
 - 1. Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

11.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:

1. if the Bid price of a particular item of Unit Price Work amounts to 5 percent or more of the Contract Price and the variation in the quantity of that particular item of Unit Price Work performed by Contractor differs by more than 20 percent from the estimated quantity of such item indicated in the Agreement; and
2. if there is no corresponding adjustment with respect to any other item of Work; and
3. if Contractor believes that Contractor has incurred additional expense as a result thereof or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, either Owner or Contractor may make a Claim for an adjustment in the Contract Price in accordance with Article 10 if the parties are unable to agree as to the effect of any such variations in the quantity of Unit Price Work performed.

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

12.01 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Claim for an adjustment in the Contract Price shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. The value of any Work covered by a Change Order or of any Claim for an adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 11.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 12.01.C.2); or
 3. where the Work involved is not covered by unit prices contained in the Contract Documents and agreement to a lump sum is not reached under Paragraph 12.01.B.2, on the basis of the Cost of the Work (determined as provided in Paragraph 11.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 12.01.C).
- C. *Contractor's Fee:* The Contractor's fee for overhead and profit shall be determined as follows:
 1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:

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- a. for costs incurred under Paragraphs 11.01.A.1 and 11.01.A.2, the Contractor's fee shall be 15 percent;
- b. for costs incurred under Paragraph 11.01.A.3, the Contractor's fee shall be five percent;
- c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 12.01.C.2.a and 12.01.C.2.b is that the Subcontractor who actually performs the Work, at whatever tier, will be paid a fee of 15 percent of the costs incurred by such Subcontractor under Paragraphs 11.01.A.1 and 11.01.A.2 and that any higher tier Subcontractor and Contractor will each be paid a fee of five percent of the amount paid to the next lower tier Subcontractor;
- d. no fee shall be payable on the basis of costs itemized under Paragraphs 11.01.A.4, 11.01.A.5, and 11.01.B;
- e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
- f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 12.01.C.2.a through 12.01.C.2.e, inclusive.

12.02 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Claim for an adjustment in the Contract Times shall be based on written notice submitted by the party making the Claim to the Engineer and the other party to the Contract in accordance with the provisions of Paragraph 10.05.
- B. Any adjustment of the Contract Times covered by a Change Order or any Claim for an adjustment in the Contract Times will be determined in accordance with the provisions of this Article 12.

12.03 *Delays*

- A. Where Contractor is prevented from completing any part of the Work within the Contract Times due to delay beyond the control of Contractor, the Contract Times will be extended in an amount equal to the time lost due to such delay if a Claim is made therefor as provided in Paragraph 12.02.A. Delays beyond the control of Contractor shall include, but not be limited to, acts or neglect by Owner, acts or neglect of utility owners or other contractors performing other work as contemplated by Article 7, fires, floods, epidemics, abnormal weather conditions, or acts of God.

- B. If Owner, Engineer, or other contractors or utility owners performing other work for Owner as contemplated by Article 7, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- C. If Contractor is delayed in the performance or progress of the Work by fire, flood, epidemic, abnormal weather conditions, acts of God, acts or failures to act of utility owners not under the control of Owner, or other causes not the fault of and beyond control of Owner and Contractor, then Contractor shall be entitled to an equitable adjustment in Contract Times, if such adjustment is essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays described in this Paragraph 12.03.C.
- D. Owner, Engineer, and their officers, directors, members, partners, employees, agents, consultants, or subcontractors shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.
- E. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delays within the control of Contractor. Delays attributable to and within the control of a Subcontractor or Supplier shall be deemed to be delays within the control of Contractor.

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

13.01 Notice of Defects

- A. Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor. Defective Work may be rejected, corrected, or accepted as provided in this Article 13.

13.02 Access to Work

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

13.03 *Tests and Inspections*

- A. Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.
- B. Owner shall employ and pay for the services of an independent testing laboratory to perform all inspections, tests, or approvals required by the Contract Documents except:
 - 1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
 - 2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in Paragraph 13.04.C; and
 - 3. as otherwise specifically provided in the Contract Documents.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Owner and Engineer.
- E. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation.
- F. Uncovering Work as provided in Paragraph 13.03.E shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

13.04 *Uncovering Work*

- A. If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.
- B. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as

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Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment.

- C. If it is found that the uncovered Work is defective, Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount thereof, Owner may make a Claim therefor as provided in Paragraph 10.05.
- D. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefor as provided in Paragraph 10.05.

13.05 *Owner May Stop the Work*

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

13.06 *Correction or Removal of Defective Work*

- A. Promptly after receipt of written notice, Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).
- B. When correcting defective Work under the terms of this Paragraph 13.06 or Paragraph 13.07, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.

13.07 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents) or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Owner or permitted by Laws and Regulations as contemplated in Paragraph 6.11.A is found to be defective, Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
1. repair such defective land or areas; or
 2. correct such defective Work; or
 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this Paragraph 13.07, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this Paragraph 13.07 are in addition to any other obligation or warranty. The provisions of this Paragraph 13.07 shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

13.08 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner (and, prior to Engineer's recommendation of final payment, Engineer) prefers to

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

13.09 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer in accordance with Paragraph 13.06.A, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Owner may, after seven days written notice to Contractor, correct, or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.
- C. All claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 13.09 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Owner shall be entitled to an appropriate decrease in the Contract Price. If the parties are unable to agree as to the amount of the adjustment, Owner may make a Claim therefor as provided in Paragraph 10.05. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

ARTICLE 14 – PAYMENTS TO CONTRACTOR AND COMPLETION

14.01 Schedule of Values

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

14.02 Progress Payments

A. Applications for Payments:

1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

B. Review of Applications:

1. Engineer will, within 10 days after receipt of each Application for Payment, either indicate in writing a recommendation of payment and present the Application to Owner or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on

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Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:

- a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 9.07, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
- a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
- a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.

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5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 14.02.B.2. Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, or completed Work has been damaged, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work or complete Work in accordance with Paragraph 13.09; or
 - d. Engineer has actual knowledge of the occurrence of any of the events enumerated in Paragraph 15.02.A.

C. Payment Becomes Due:

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

D. Reduction in Payment:

1. Owner may refuse to make payment of the full amount recommended by Engineer because:
 - a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
 - b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - c. there are other items entitling Owner to a set-off against the amount recommended; or
 - d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.
2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay

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Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor remedies the reasons for such action.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 14.02.C.1 and subject to interest as provided in the Agreement.

14.03 *Contractor's Warranty of Title*

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

14.04 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the tentative certificate to Owner, notify Contractor in writing, stating the reasons therefor. If, after consideration of Owner's objections, Engineer considers the Work substantially complete, Engineer will, within said 14 days, execute and deliver to Owner and Contractor a definitive certificate of Substantial Completion (with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of delivery of the tentative certificate of Substantial Completion, Engineer will deliver to Owner and Contractor a written recommendation as to division of responsibilities pending final payment between Owner and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Owner and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the

definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Owner and Contractor until final payment.

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

14.05 *Partial Utilization*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 - 1. Owner at any time may request Contractor in writing to permit Owner to use or occupy any such part of the Work which Owner believes to be ready for its intended use and substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 14.04.A through D for that part of the Work.
 - 2. Contractor at any time may notify Owner and Engineer in writing that Contractor considers any such part of the Work ready for its intended use and substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 - 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 - 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

14.06 *Final Inspection*

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

14.07 *Final Payment*

A. Application for Payment:

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required by Paragraph 5.04.B.6;
 - b. consent of the surety, if any, to final payment;
 - c. a list of all Claims against Owner that Contractor believes are unsettled; and
 - d. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of or Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

B. Engineer's Review of Application and Acceptance:

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor,

indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

C. Payment Becomes Due:

1. Thirty days after the presentation to Owner of the Application for Payment and accompanying documentation, the amount recommended by Engineer, less any sum Owner is entitled to set off against Engineer's recommendation, including but not limited to liquidated damages, will become due and will be paid by Owner to Contractor.

14.08 *Final Completion Delayed*

- A. If, through no fault of Contractor, final completion of the Work is significantly delayed, and if Engineer so confirms, Owner shall, upon receipt of Contractor's final Application for Payment (for Work fully completed and accepted) and recommendation of 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 to be held by Owner for Work not fully completed or corrected is less than the retainage stipulated in the Agreement, and if bonds have been furnished as required in Paragraph 5.01, the written consent of the surety to the payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by Contractor to Engineer with the Application for such payment. Such payment shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
 1. a waiver of all Claims by Owner against Contractor, except Claims arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 14.06, from failure to comply with the Contract Documents or the terms of any special guarantees specified therein, or from Contractor's continuing obligations under the Contract Documents; and
 2. a waiver of all Claims by Contractor against Owner other than those previously made in accordance with the requirements herein and expressly acknowledged by Owner in writing as still unsettled.

ARTICLE 15 – SUSPENSION OF WORK AND TERMINATION

15.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by notice in writing to Contractor and Engineer which will fix the date on which Work will be resumed. Contractor shall

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resume the Work on the date so fixed. Contractor shall be granted an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension if Contractor makes a Claim therefor as provided in Paragraph 10.05.

15.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will justify termination for cause:
1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);
 2. Contractor's disregard of Laws or Regulations of any public body having jurisdiction;
 3. Contractor's repeated disregard of the authority of Engineer; or
 4. Contractor's violation in any substantial way of any provisions of the Contract Documents.
- B. If one or more of the events identified in Paragraph 15.02.A occur, Owner may, after giving Contractor (and surety) seven days written notice of its intent to terminate the services of Contractor:
1. exclude Contractor from the Site, and take possession of the Work and of all Contractor's tools, appliances, construction equipment, and machinery at the Site, and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion);
 2. 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
 3. complete the Work as Owner may deem expedient.
- C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies

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under this Paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- D. Notwithstanding Paragraphs 15.02.B and 15.02.C, Contractor's services will not be terminated if Contractor begins within seven days of receipt of notice of intent to terminate to correct its failure to perform and proceeds diligently to cure such failure within no more than 30 days of receipt of said notice.
- E. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.
- F. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 5.01.A, the termination procedures of that bond shall supersede the provisions of Paragraphs 15.02.B and 15.02.C.

15.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses;
 - 3. all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred in settlement of terminated contracts with Subcontractors, Suppliers, and others; and
 - 4. reasonable expenses directly attributable to termination.
- B. Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

15.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (i) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (ii) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (iii) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer,

and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the Contract and recover from Owner payment on the same terms as provided in Paragraph 15.03.

- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

ARTICLE 16 – DISPUTE RESOLUTION

16.01 *Methods and Procedures*

- A. Either Owner or Contractor may request mediation of any Claim submitted to Engineer for a decision under Paragraph 10.05 before such decision becomes final and binding. The mediation will be governed by the Construction Industry Mediation Rules of the American Arbitration Association in effect as of the Effective Date of the Agreement. The request for mediation shall be submitted in writing to the American Arbitration Association and the other party to the Contract. Timely submission of the request shall stay the effect of Paragraph 10.05.E.
- B. Owner and Contractor shall participate in the mediation process in good faith. The process shall be concluded within 60 days of filing of the request. The date of termination of the mediation shall be determined by application of the mediation rules referenced above.
- C. If the Claim is not resolved by mediation, Engineer's action under Paragraph 10.05.C or a denial pursuant to Paragraphs 10.05.C.3 or 10.05.D shall become final and binding 30 days after termination of the mediation unless, within that time period, Owner or Contractor:
1. elects in writing to demand arbitration of the Claim, pursuant to Paragraph 6.02; or
 2. agrees with the other party to submit the Claim to another dispute resolution process.

16.02 *Arbitration*

- A. All Claims or counterclaims, disputes, or other matters in question between Owner and Contractor arising out of or relating to the Contract Documents or the breach thereof (except for Claims which have been waived by the making or acceptance of final payment as provided by Paragraph 14.09) including but not limited to those not resolved under the provisions of Paragraphs 16.01A and 16.01.B will be decided by

- arbitration in accordance with the rules of the Maine Labor relations Board, subject to the conditions and limitations of this Paragraph 16.02. This agreement to arbitrate and any other agreement or consent to arbitrate entered into will be specifically enforceable under the prevailing law of any court having jurisdiction.
- B. The demand for arbitration will be filed in writing with the other party to the Contract and with the selected arbitrator or arbitration provider, and a copy will be sent to Engineer for information. The demand for arbitration will be made within the 30 day period specified in Paragraph 16.01.C, and in all other cases within a reasonable time after the Claim or counterclaim, 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 or other dispute or matter in question would be barred by the applicable statute of limitations.
- C. No arbitration arising out of or relating to the Contract Documents shall include by consolidation, joinder, or in any other manner any other individual or entity (including Engineer, and Engineer's consultants and the officers, directors, partners, agents, employees or consultants of any of them) who is not a party to this Contract unless:
1. the inclusion of such other individual or entity is necessary if complete relief is to be afforded among those who are already parties to the arbitration; and
 2. such other individual or entity is substantially involved in a question of law or fact which is common to those who are already parties to the arbitration and which will arise in such proceedings.
- D. The award rendered by the arbitrator(s) shall be consistent with the agreement of the parties, in writing, and include: (i) a concise breakdown of the award; (ii) a written explanation of the award specifically citing the Contract Document provisions deemed applicable and relied on in making the award.
- E. The award will be final. Judgment may be entered upon it in any court having jurisdiction thereof, and it will not be subject to modification or appeal, subject to provisions of the Controlling Law relating to vacating or modifying an arbitral award.
- F. The fees and expenses of the arbitrators and any arbitration service shall be shared equally by Owner and Contractor.

ARTICLE 17 – MISCELLANEOUS

17.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. 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

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2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

17.02 *Computation of Times*

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

17.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents. The provisions of this Paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

17.04 *Survival of Obligations*

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

17.05 *Controlling Law*

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

17.06 *Headings*

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

Maranacook Lake Outlet Dam Modifications
Towns of Readfield and Winthrop, Maine

Attachment A – Bid Sheet

BID PROPOSAL

Item No.	Description	Est. Qty.	Units	Unit Price	Estimated Total Price
1	Mobilization and Demobilization, plus all other materials and work not included in any other Items that are required to complete the Work as described in the Contract Documents.	1	Lump Sum	\$	\$
2	Temporary Facilities and Controls, except Cofferdam(s)	1	Lump Sum	\$	\$
3	Cofferdam(s) - Design, Construction, Maintenance, and Removal	1	Lump Sum	\$	\$
4	Clearing and Grubbing of vegetated areas, including controlled removal of trees and off-site disposal of debris	1	Lump Sum	\$	\$
5	Demolition of existing structures and Removal of designated items, including off-site disposal or delivery to Owner of designated items	1	Lump Sum	\$	\$
6	Common Excavation, including off-site disposal of excavated material	20	Cubic Yards	\$	\$
7	Rock Excavation (by Mechanical Means only), including off-site disposal of excavated material	10	Cubic Yards	\$	\$
8	Cement-Grouted Stainless Steel Main Gate Anchors, procured, drilled, and grouted in place	20	Each Anchor	\$	\$
9	Cement-Grouted No. 8 Rock Anchors, procured, drilled, and grouted in place	30	Each Anchor	\$	\$
10	Cement-Grouted No. 5 Rock Dowels, procured, drilled, and grouted in place	20	Each Dowel	\$	\$

Maranacook Lake Outlet Dam Modifications
Towns of Readfield and Winthrop, Maine

Bidder: _____

Item No.	Description	Est. Qty.	Units	Unit Price	Estimated Total Price
11	Structural Concrete for New Gate Sill Structure, Piers, Columns, and Gate House Slab; including steel reinforcement; formed, delivered, placed, finished, and cured	30	Cubic Yards	\$	\$
12	Structural Concrete for Existing Gate Infill; including steel reinforcement; formed, delivered, placed, finished, and cured; including Epoxy-Grouted No. 5 Dowels, procured, drilled, and grouted in place	14	Cubic Yards	\$	\$
13	Dam Gate (Obermeyer Hydro 16-1664), procured, delivered, installed, and commissioned; including all plumbing and wiring from Gate House	1	Lump Sum	\$	\$
14	Stick-built Gate House, procured or constructed, delivered, and installed; including wiring and lighting for Gate House and railing for Gate House Slab	1	Lump Sum	\$	\$
15	Electrical Service from Bowdoin Street; complete including underground conduit, cables, grounding, trenching, and connection to Gate House panel	1	Lump Sum	\$	\$
16	Streambank Protection, procured, delivered, and placed; including 90 CY of Rip-Rap and 10 CY of Bedding Material	100	Cubic Yards	\$	\$
17	Plunge Pool Fill; procured, delivered, and placed	32	Cubic Yards	\$	\$
18	ALTERNATE Pre-fabricated Metal Gate House, procured or constructed, delivered, and installed; including wiring and lighting for Gate House and railing for Gate House Slab	1	Lump Sum	\$	\$

Maranacook Lake Outlet Dam Modifications
Towns of Readfield and Winthrop, Maine

Bidder: _____

Total Bid Price for Bid Items 1 through 17, according to Estimated Quantities:

(figures): \$ _____ . _____

(words): _____

Total Bid Price for Bid Item 18, according to Estimated Quantities:

(figures): \$ _____ . _____

(words): _____

The intention of this bid is to furnish a complete and finished piece of work, including all labor, materials, equipment, utilities, and transportation necessary for the proper execution of the work. Anything not listed as a bid item, but required to complete the work per plans and specifications and law and regulations, shall be considered as included in the cost paid for the various items of work. All Items shall be paid based on Actual Quantities provided under this Contract.

The Bidder agrees that this Proposal Bid shall be valid for one hundred and eighty (180) calendar days after the bid opening date.

Attachment B – Sample Forms

Contractor’s Application for Payment

Change Order

Field Order

Certificate of Substantial Completion

Contractor's Application for Payment No.

	Application Period:	Application Date:
To (Owner):	From (Contractor):	Via (Engineer):
Project:	Contract:	
Owner's Contract No.:	Contractor's Project No.:	Engineer's Project No.:

**Application For Payment
 Change Order Summary**

Approved Change Orders		
Number	Additions	Deductions
TOTALS		
NET CHANGE BY CHANGE ORDERS		

- 1. ORIGINAL CONTRACT PRICE..... \$ _____
- 2. Net change by Change Orders..... \$ _____
- 3. Current Contract Price (Line 1 ± 2)..... \$ _____
- 4. TOTAL COMPLETED AND STORED TO DATE
(Column F on Progress Estimate)..... \$ _____
- 5. RETAINAGE:
 - a. X _____ Work Completed..... \$ _____
 - b. X _____ Stored Material..... \$ _____
 - c. Total Retainage (Line 5a + Line 5b)..... \$ _____
 - d. Readfield Retainage (Line 5c x 0.533) \$ _____
 - e. Winthrop Retainage (Line 5c x 0.467) \$ _____
- 6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c)..... \$ _____
- 7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... \$ _____
- 8. AMOUNT DUE THIS APPLICATION..... \$ _____
- 8a. AMOUNT DUE - READFIELD (Line 8 x 0.533) \$ _____
- 8b. AMOUNT DUE - WINTHROP (Line 8 x 0.467) \$ _____
- 9. BALANCE TO FINISH, PLUS RETAINAGE
(Column G on Progress Estimate + Line 5 above)..... \$ _____

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

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

is recommended by: _____ (Engineer) _____ (Date)

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

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

Approved by: _____ (Date)
 Funding Agency (if applicable)

Change Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

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

Description:

Attachments (list documents supporting change):

CHANGE IN CONTRACT PRICE:

CHANGE IN CONTRACT TIMES:

Original Contract Price:

Original Contract Times: Working Calendar days

\$ _____

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____

[Increase] [Decrease] from previously approved Change Orders No. _____ to No. _____:

\$ _____

Substantial completion (days): _____

Ready for final payment (days): _____

Contract Price prior to this Change Order:

Contract Times prior to this Change Order:

\$ _____

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

[Increase] [Decrease] of this Change Order:

[Increase] [Decrease] of this Change Order:

\$ _____

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

Contract Price incorporating this Change

Contract Times with all approved Change Orders:

\$ _____

Substantial completion (days or date): _____

Ready for final payment (days or date): _____

RECOMMENDED:

ACCEPTED:

ACCEPTED:

By: _____
Engineer (Authorized Signature)

By: _____
Owner (Authorized Signature)

By: _____
Contractor (Authorized Signature)

Date: _____

Date: _____

Date: _____

Approved by Funding Agency (if applicable):

Date: _____

Change Order Instructions

A. GENERAL INFORMATION

This document was developed to provide a uniform format for handling contract changes that affect Contract Price or Contract Times. Changes that have been initiated by a Work Change Directive must be incorporated into a subsequent Change Order if they affect Price or Times.

Changes that affect Contract Price or Contract Times should be promptly covered by a Change Order. The practice of accumulating Change Orders to reduce the administrative burden may lead to unnecessary disputes.

If Milestones have been listed in the Agreement, any effect of a Change Order thereon should be addressed.

For supplemental instructions and minor changes not involving a change in the Contract Price or Contract Times, a Field Order should be used.

B. COMPLETING THE CHANGE ORDER FORM

Engineer normally initiates the form, including a description of the changes involved and attachments based upon documents and proposals submitted by Contractor, or requests from Owner, or both.

Once Engineer has completed and signed the form, all copies should be sent to Owner or Contractor for approval, depending on whether the Change Order is a true order to the Contractor or the formalization of a negotiated agreement for a previously performed change. After approval by one contracting party, all copies should be sent to the other party for approval. Engineer should make distribution of executed copies after approval by both parties.

If a change only applies to price or to times, cross out the part of the tabulation that does not apply.

Field Order

No. _____

Date of Issuance: _____ Effective Date: _____

Project:	Owner:	Owner's Contract No.:
Contract:		Date of Contract:
Contractor:		Engineer's Project No.:

Attention:

You are hereby directed to promptly execute this Field Order issued in accordance with General Conditions Paragraph 9.04.A, for minor changes in the Work without changes in Contract Price or Contract Times. If you consider that a change in Contract Price or Contract Times is required, please notify the Engineer immediately and before proceeding with this Work.

Reference: _____
(Specification Section(s)) (Drawing(s) / Detail(s))

Description:

Attachments:

Engineer:

Receipt Acknowledged by Contractor: _____ Date: _____

Copy to Owner

Certificate of Substantial Completion

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

This [tentative] [definitive] Certificate of Substantial Completion applies to:

- All Work under the Contract Documents: The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Project or portion thereof designated above is hereby declared and is also the date of commencement of applicable warranties required by the Contract Documents, except as stated below.

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

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as provided in the Contract Documents except as amended as follows:

- Amended Responsibilities Not Amended

Owner's Amended Responsibilities:

Contractor's Amended Responsibilities:

Attachment C – Access Agreements

North Bank - Easement (Heiss)

South Bank - Right-of-Way



EASEMENT AGREEMENT

THIS EASEMENT AGREEMENT (this "Agreement") is made and entered into as of this 24 day of October 2017, by and among **THOMAS L. HEISS AND PATRICIA M. HEISS**, individuals having a mailing address of 97 Bowdoin Street, Winthrop, ME 04364 (together, "Heiss"); the **TOWN OF WINTHROP**, a Maine municipal corporation and body politic having a mailing address of 17 Highland Avenue, Winthrop, ME 04364 (the "Town of Winthrop"); and **TOWN OF READFIELD**, a Maine municipal corporation and body politic having a mailing address of 8 Old Kents Hill Road, Readfield, ME 04355 (the "Town of Readfield") (the Town of Winthrop and the Town of Readfield are sometimes hereinafter collectively referred to as the "Towns").

RECITALS

WHEREAS, Heiss is the owner of that certain real property, together with the improvements thereon, situated adjacent to Mill Stream at 97 Bowdoin Street in the Town of Winthrop, County of Kennebec, State of Maine, being Lot 39 on Tax Map 31 on file with the Assessor's Office of the Town of Winthrop and more particularly described in deed dated April 17, 1996 and recorded in the Kennebec County Registry of Deeds in Book 5109, Page 1 (the "Heiss Land"); and

WHEREAS, the Town of Winthrop and the Town of Readfield are co-owners of the Maranacook Lake Outlet Dam (the "Dam") situated at the outlet of Maranacook Lake; and

WHEREAS, the Towns wish to undertake certain efforts to stabilize the stream embankment and repair or replace the Dam; and

WHEREAS, Heiss has agreed to grant to the Towns certain rights and easements in, to, on, over and across the Heiss Land in connection with the foregoing efforts, subject to the terms and conditions set forth herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements contained herein, and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Heiss and the Towns hereby agree as follows:

AGREEMENT

1. Grant of Easements.

(a) Heiss grants to each of the Town of Winthrop and the Town of Readfield, their successors and assigns, a temporary easement in, to, on, over and across the Heiss Land for the purpose of improving, altering, repairing, replacing, excavating and filling those portions of the stream embankment that have washed out and destabilized, or are at risk of washing out and destabilizing (the "Stabilization Work"), all as outlined on page 11 of that certain bid document entitled "2017 Maranacook Lake Outlet Dam Streambank Stabilization Bid" attached hereto as Exhibit A and to which reference is hereby made for a more particular description of the Stabilization Work permitted hereunder; together with the right to enter upon the Heiss Land with contractors, personnel, vehicles, materials and equipment from time to time for the foregoing purposes, all to such extent as the either of the Town of Winthrop or the Town of Readfield, or their agents, deem

reasonably necessary and appropriate (the "Temporary Easement"). The Temporary Easement and the rights of the Town of Winthrop and the Town of Readfield thereunder shall automatically terminate upon written notice from the Towns to Heiss that the Stabilization Work has been completed.

(b) Heiss grants to each of the Town of Winthrop and the Town of Readfield, their successors and assigns, a permanent easement in, to, on, over and across the Heiss Land for the purpose of repairing, maintaining and replacing the Dam and related infrastructure and carrying out future stream embankment stabilization and related efforts; together with the right, during periods of construction, repair, maintenance, replacement or emergency response relating to the Dam or the stream embankment, to enter upon the Heiss Land with contractors, personnel, vehicles, materials and equipment from time to time for the foregoing purposes, all to such extent as the either of the Town of Winthrop or the Town of Readfield, or their agents, deem reasonably necessary and appropriate (the "Permanent Easement").

(c) Except in the case of emergency when no advance notice shall be required, upon reasonable advance notice the Towns shall have the reasonable right enter the Heiss Land for all of the foregoing purposes. In carrying out their rights under the Temporary Easement and Permanent Easement, the Towns and their agents shall use reasonable care not to damage or destroy the buildings, structures and other improvements now or hereafter existing on the Heiss Land. The Towns and their agents shall, after any entry, leave the Heiss Land in a reasonably neat and clean condition and as close to original condition as possible.

(d) Heiss hereby reserves the full and free use and enjoyment of the Heiss Land for all purposes not inconsistent the rights herein granted.

2. Maine Tort Claims Act. Nothing in this Agreement shall be construed as a waiver of either of the Town of Winthrop's or the Town of Readfield's right to assert any and all defenses in response to claims made against the Towns, their officers, agents, or employees pursuant to the Maine Tort Claims Act (14 M.R.S. Sec. 8101 et seq.) or any other privileges or immunities as may be provided by law.

3. Amendment. The provisions of this Agreement may be abrogated, modified, rescinded or amended in whole or in part only with the consent of the parties hereto, their heirs, successors and assigns, in a written instrument duly executed, delivered and recorded.

4. Governing Law. This Agreement shall be governed by, interpreted under, and construed and enforced exclusively in accordance with the provisions hereof and the laws of the State of Maine.

5. Binding Effect. The rights, easements, obligations and restrictions created hereby shall be rights, easements, obligations and restrictions running with the land and shall be binding upon and inure to the benefit of Heiss, the Town of Winthrop and the Town of Readfield, and their respective successors and assigns, and shall be appurtenant to the Dam.

6. Counterparts. This Agreement may be executed in multiple counterpart copies, each of which shall constitute an original and which, when taken together, shall constitute one and the same instrument. Signature pages may be detached from the counterparts and attached to a single copy of this document to form one document.

IN WITNESS WHEREOF, the undersigned have executed and delivered this Agreement as of the date first above written.

WITNESS:

Mark Assen

Thomas L. Heiss

Patricia M. Heiss

Patricia M. Heiss
Patricia M. Heiss

STATE OF MAINE
COUNTY OF KENNEBEC, ss.

October 24, 2017

PERSONALLY APPEARED before me the above-named Thomas L. Heiss and Patricia M. Heiss and acknowledged the foregoing instrument to be their free act and deed.

Before me,

Diane Ouellette

Print Name:

Notary Public

Commission Expires:



DIANE M. OUELLETTE
Notary Public, State of Maine
My Commission Expires 2/23/2021

WITNESS:

[Handwritten Signature]

TOWN OF WINTHROP

By: [Handwritten Signature]
Ryan Frost
Its Town Manager

STATE OF MAINE
COUNTY OF KENNEBEC, ss.

October 24, 2017

PERSONALLY APPEARED before me the above-named Ryan Frost, Town Manager of the Town of Winthrop, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the Town of Winthrop.

Before me,

[Handwritten Signature]

Print Name:
Notary Public
Commission Expires:



DIANE M. OUELLETTE
Notary Public, State of Maine
My Commission Expires 2/23/2021

WITNESS:

[Handwritten Signature]

TOWN OF READFIELD

By: [Handwritten Signature]
Eric Dyer
Its Town Manager

STATE OF MAINE
COUNTY OF KENNEBEC, ss.

October 24, 2017

PERSONALLY APPEARED before me the above-named Eric Dyer, Town Manager of the Town of Readfield, as aforesaid, and acknowledged the foregoing instrument to be his free act and deed in his said capacity and the free act and deed of the Town of Readfield.

Before me,

[Handwritten Signature]
Print Name: **Kristin Parks**
Notary Public: **Notary Public, Maine**
Notary Public: **PO Box 335, Readfield, ME 04355**
Commission Expires: **Expires: 10/28/2022**



EXHIBIT A

**[Stabilization Work]
See attached Bid**



TOWN OF READFIELD

8 OLD KENTS HILL ROAD • READFIELD, MAINE 04355

Tel. (207) 685-4939 • Fax (207) 685-3420

Email: Readfield.tmgr@roadrunner.com

BID NOTICE - as amended 10/17/2017

Maranacook Lake Outlet Dam Streambank Stabilization:

The Towns of Readfield and Winthrop (hereinafter “the Towns”), acting by and through the Maranacook Lake Outlet Dam Committee, are seeking bids for the “Maranacook Lake Outlet Dam Streambank Stabilization”.

The work generally includes clearing vegetated areas to receive rip-rap streambank protection; excavating material in areas to receive rip-rap protection to establish suitable foundation for rip-rap; machine placement of rock from the top of a steep bank and hand laying of rock for rip-rap on prepared bedding material according to technical specifications developed for the project; installing in-stream erosion control measures.

A mandatory Pre-Bid Site Visit will be held on Thursday, September 28th at 10:00 a.m., at 97 Bowdoin Street, Winthrop, Maine.

The bid documents, consisting of drawings, specifications, and the bid form, will be available online, including the Town of Readfield’s website www.readfield.govoffice.com, or may be obtained in hard copy or electronically from Eric Dyer, Readfield Town Manager. To request a copy of the bid documents, send an email to: readfield.tmgr@roadrunner.com.

Sealed bids for the work will be received from General Contractors in envelopes clearly marked **“Maranacook Lake Outlet Dam Streambank Stabilization - Do Not Open” at the Readfield Town Offices, 8 Old Kents Hill Road, Readfield, Maine 04355 until 3:00 PM local time on Tuesday October 24th, 2017.** At that time and place, the bids will be publicly opened and read aloud. The Towns reserve the right to accept any or reject any or all bids for any reason.

STANDARD INSTRUCTIONS TO BIDDERS - as amended 10/17/2017

Maranacook Lake Outlet Dam Streambank Stabilization:

1. The complete package of bid documents includes the following items:
 - Bid Notice
 - Standard Instructions to Bidders
 - Work Specifications
 - Work Proposal Form
 - Services Agreement
 - Maranacook Lake Outlet Dam Streambank Stabilization Plans - 2 sheets
2. The attached bid is to be signed by the bidder, with full knowledge of and agreement with, the general specifications, conditions and requirements of this bid as presented by the towns of Readfield and Winthrop (hereinafter “the Towns”). The conditions set forth in this bid are to be considered minimum proposal specifications. Any variance or deviation from the specifications, terms and conditions, no matter how slight must be noted on an attachment labeled “Variances”. Failure to document such variances or deviations may, at the Towns sole discretion, disqualify the proposal from consideration.
3. **A mandatory Pre-Bid Site Visit will be held on Thursday, September 28th at 10:00 a.m., at 97 Bowdoin Street, Winthrop, Maine.** To be considered a responsive Bidder, the Contractor shall have attended the mandatory Pre-Bid Site Visit.
4. Sealed bids for the work will be received in envelopes clearly marked **“Maranacook Lake Outlet Dam Streambank Stabilization - Do Not Open” at the Readfield Town Offices, 8 Old Kents Hill Road, Readfield, Maine 04355 until 3:00 PM local time on Tuesday October 24th, 2017.**
5. Bidders are required to attach to their bid an outline of their qualifications, including a list of equipment that will be used to fulfill the terms of this contract, a listing of proposed subcontractors, and a listing of municipal or governmental entities that they may have contracted with in recent years.
6. Contractors and any subcontractor must agree to provide proof of liability insurance in an amount not less than the amount established by the Maine Tort Claims Act (currently \$400,000.00) that names the Towns as additional insured. Proof of additional insurance is required, but not limited to, workers compensation and liability insurance for vehicle and equipment. Certificates of insurance must be on file with the Towns prior to the commencement of any work. Bidders will follow any Town policies on political activity, harassment, and workplace violence while providing services.
7. All bids for this project are subject to the applicable public bidding laws in the State of Maine. In accordance with the provisions of 36 M.R.S.A. sec. 1760 et. Seq., the Towns are exempt from the payment of State sales and use tax and such tax or taxes shall not be included in the proposal prices.
8. Work schedule and completion date will be negotiated with the successful bidder, but in no case will the completion date be after December 15, 2017 unless mutually agreed upon by both parties.

9. No Bidder may withdraw their bid for a period of thirty (30) days, excluding Saturdays, Sundays, and legal holidays after the actual date of the opening of the bids. This advertisement does not obligate the Towns for any costs associated with preparing or submitting bids.
10. The Towns reserve the right to negotiate increases or decreases in the scope and quantities of work performed with the selected bidder.
11. It is the intent of the Towns to award a binding contract to the selected bidder. The Towns specifically reserve the right to accept any or reject any and all proposals, wholly or in part; to waive technical defects or procedural requirements; and to make awards deemed to be in the best interest of the Towns.
12. Questions regarding this RFP should be referred to **Eric Dyer, Town Manager at 207-685-4939 or readfield.tmgr@roadrunner.com**.

WORK SPECIFICATIONS - as amended 10/17/2017
Maranacook Lake Outlet Dam Streambank Stabilization:

1. The bidder will be required to meet all laws, rules and regulations of the State of Maine during the course of this project. The Towns shall be responsible for all State and Local permits. “Dig Safe” notification and requirements shall be the responsibility of the bidder unless delegated to the Town in writing by mutual agreement.
2. Streambank stabilization work must be performed by a contractor or subcontractor certified by MEDEP. Erosion control shall be the responsibility of the bidder.
3. See attached Clearing & Grubbing Specifications.
4. See attached Rip-Rap Streambank Protection Specifications.
5. See attached Supplemental Earth Work Specifications.

CLEARING & GRUBBING SPECIFICATIONS
FOR MARANACOOK LAKE OUTLET DAM

1. GENERAL

1.1. REGULATORY REQUIREMENTS

- A. Conform to applicable code for environmental requirements, disposal of debris, and erosion and sediment control.
- B. Coordinate clearing work with utility companies.
- C. Limits of clearing shall not exceed those shown on the drawings and authorized by the applicable permits.

1.2 REFERENCES

- A. State of Maine Department of Transportation (MaineDOT) Standard Specifications, November 2014 Edition.

2. PRODUCTS: NOT USED

3. EXECUTION

3.1 PREPARATION

- A. Inspect the work area.
- B. Verify that existing plant life designated to remain is tagged or identified by the Owner/Owner's Representative prior to work.
- C. Establish a schedule for removal of debris from the site.
- D. Establish required sediment and erosion control measures prior to Work. Establish the limits of work and all measures required for pollution protection.
- E. Coordinate work with the Owner/Owner's Representative and other utilities.

3.2 PROTECTION OF UTILITIES

- A. Locate, identify, and protect utilities designed to remain.
- B. Protect existing structures from damage or displacement.
- C. Keep Work within limits established on the Drawings.

3.3 PROTECTION OF TREES AND LANDSCAPING

- A. Protect trees, plant growth, and features designated to remain, as final landscaping. Protected landscaping includes all trees, shrubbery, and landscaping that are not specifically required to be removed, or fall outside the limits of work or limits of clearing specified on the drawings.
- B. Provide protective barriers or other means required to prevent damage to remaining landscaping from construction equipment and operations.
- C. Remove and replace any injured trees or shrubs that cannot be repaired or treated, at no additional cost to the Owner. Replace trees or shrubs early in the next planting season.

3.4 CLEARING

- A. Clear vegetation on streambank area to be rip-rapped.
- B. Fell trees in a controlled manner. Cut in sections as necessary. Some tree stumps may be required to remain, as determined by permits or by Owner. Otherwise, remove stumps, main root ball, and all roots with a diameter greater than 2 inches.
- C. Minimize soil disturbance when clearing any trees, shrubs, undergrowth, and deadwood.
- D. Backfill any root holes immediately after removal of roots with 2-inch minus fill meeting MaineDOT Standard Specifications for Common Borrow (§703.18) or other material acceptable to Owner/Owner's Representative. Compact in 6-inch loose lifts.

3.5 REMOVAL

- A. Remove cleared debris, rock, extracted plant life, and any other cleared material or debris from site before project completion.
- B. Leave the area in a clean and neat condition.

RIP-RAP STREAMBANK PROTECTION SPECIFICATIONS
FOR MARANACOOK LAKE OUTLET DAM

1. GENERAL

1.1 REFERENCES

- A. State of Maine Department of Transportation (MaineDOT) Standard Specifications, November 2014 Edition.

1.2. SUBMITTALS

- A. Product data for rip-rap.
- B. Product data for rip-rap bedding material.

2. PRODUCTS

- A. Rip-Rap: Provide material conforming to MaineDOT Standard Specifications for Stone Fill (§703.25), except that the minimum stone size shall be 9 inches (50 lbs).
- B. Bedding Material: Rip-Rap: Provide material conforming to MaineDOT Standard Specifications for Crushed Stone (§703.31).

3. EXECUTION

3.1 PREPARATION

- A. Clear and grub vegetated areas to receive rip-rap streambank protection.
- B. Excavate silt, debris, and other loose material in areas to receive rip-rap streambank protection to establish suitable foundation for rip-rap.

3.2 RIP-RAP CONSTRUCTION

- A. Construct rip-rap in the areas indicated. Trim and dress indicated areas to conform to cross sections, lines, and grades shown within a tolerance of 0.1 foot.
- B. Spread bedding material uniformly to a thickness of at least 4 inches on prepared subgrade. Finish bedding to present even surface free from mounds and windrows.
- C. Place rock for rip-rap on prepared bedding material to produce a well graded mass with the minimum practicable percentage of voids in conformance with lines and grades indicated. Machine-placed rip-rap shall be random rubble, hand laid stones for the full depth placed in one operation to secure interlocking of all face stones and stones placed as backing. Larger stones shall be laid at the base of the slope. The stones shall be laid in close contact with the longer axis perpendicular to the plane of the slope to stagger joints. The openings between the stones in all rip-rap shall be filled with spall, or rocks securely rammed into place. Rip-rap shall be placed on the slope in a well-knit, compact, and uniform layer. The surface stones shall be chinked with smaller stone from the same source.

**SUPPLEMENTAL EARTHWORK SPECIFICATIONS
FOR MARANACOOK LAKE OUTLET DAM**

1. GENERAL

1.1. REGULATORY REQUIREMENTS

- A. Conform to applicable code for environmental requirements, disposal of debris, and erosion and sediment control.
- B. Coordinate clearing work with utility companies.
- C. Limits of clearing shall not exceed those shown on the drawings and authorized by the applicable permits.

1.2 REFERENCES

- A. State of Maine Department of Transportation (MaineDOT) Standard Specifications, November 2014 Edition.

2. PRODUCTS: NOT USED

3. EXECUTION

- A. As detailed in the Top of Slope Work drawing and Section A-A.

WORK PROPOSAL FORM - as amended 10/17/2017

Maranacook Lake Outlet Dam Streambank Stabilization:

Project Elements

1) Lump Sum cost for Clearing and Grubbing work, as specified. \$ _____

2) Lump sum costs for Streambank Protection work, as specified.

Bedding material, installed \$ _____

This price is based upon an estimated _____ cubic yards of bedding material

Rip-rap material, installed \$ _____

This price is based upon an estimated _____ cubic yards of rip-rap material

3) Lump sum costs for Supplemental Earth Work, as specified. \$ _____

TOTAL OF PROJECT ELEMENTS 1, 2, & 3 \$ _____

Project Alternates

Bidders are welcome to propose project alternates. Use additional pages as necessary.

Alternate #1 _____ \$ _____

Alternate #2 _____ \$ _____

Alternate #2 _____ \$ _____

Name of Company: _____

Signature: _____

Date: _____

SERVICES AGREEMENT - as amended 10/17/2017
Maranacook Lake Outlet Dam Streambank Stabilization:

THIS AGREEMENT is made this _____ day of _____, 2017 by and between the Towns of Readfield and Winthrop, municipal corporations existing under the laws of the State of Maine and located in the County of Kennebec, State of Maine (hereinafter "OWNER") and _____ (hereinafter "CONTRACTOR").

The CONTRACTOR shall perform work as directed by the Town Manager of either Readfield or Winthrop, or his/her designee. All equipment and materials involved with the completion of the specified work shall meet current MAINEDOT Standard Specifications and MEDEP Erosion and Sediment Control Best Management Practices.

The CONTRACTOR shall furnish all of the services, labor, equipment, and materials, and perform all of the work as described in the Work Specification and Work Proposal Form in accordance with the Contractor's Proposal dated _____, 2017.

The CONTRACTOR agrees to abide by the OWNER's prohibitions against workplace violence, sexual harassment, and political activities in the Towns while working in the Towns.

The CONTRACTOR must maintain liability insurance, in the amount of \$400,000 per occurrence, for personal injury, death and property damage claims which may arise from operations under this agreement. The CONTRACTOR shall provide evidence of insurance or financial resources sufficient to satisfy the requirements of the Workers' Compensation Act.

The CONTRACTOR will provide to the OWNER a Certificate of Insurance naming the OWNER as an additional insured prior to the start of any work under this agreement. The OWNER disclaims any and all responsibility for injury or damages to the CONTRACTOR, its agents, or others at any time during this agreement.

The CONTRACTOR will provide the OWNER with a current and complete W-9 form prior to the start of any work under this agreement.

The CONTRACTOR, to the fullest extent permitted by law, shall indemnify and hold harmless the OWNER, and their agents, employees and/or invitees against all claims, damages, losses and expenses, including, but not limited to, attorneys' fees arising out of or resulting from the performance of the work regardless of standard of care. This indemnification extends to all costs and all attorneys' fees incurred by the OWNER.

The CONTRACTOR guarantees that the work to be done under this contract and the materials to be furnished by the CONTRACTOR for use in the construction of the same will be free from defects or flaws. This warranty shall be for a period of one year from the date of completion.

All materials and work may be subject to inspection by the OWNER. The Town Managers or designee shall be allowed access to all parts of the work and shall also have the right to inspect and test, at the OWNER's expense, by any methods adequate to ensure an acceptable quality of work. It is strongly recommended that the CONTRACTOR, before submitting a bid, become completely familiar with the job site and the required work. The OWNER may be available to participate in

pre-bid inspections at designated times and locations, and occasionally by request. No consideration will be granted for any alleged misunderstanding of the material to be furnished, the work to be done, or for any defects in the final product that are the result of the absence of a formal pre-bid inspection.

The price(s) quoted in the Work Proposal Form shall include preparation, mobilization, installation, final cleanup, and all labor and materials required to complete the work as specified in the Work Specification and Work Proposal Form. The price shall be firm for the term of this AGREEMENT.

The OWNER reserves the right to submit Change Orders in writing to the CONTRACTOR. In that event, the OWNER will negotiate with the CONTRACTOR to determine any new terms or costs. At the completion of work, each site shall be left in a neat and clean condition, subject to approval of the Town Managers or a Designee.

The OWNER shall remit to the CONTRACTOR payment in two equal installments. The first installment shall be due within two weeks of signing the contract, the second within two weeks of final project completion. The OWNER reserves the right to withhold payment should it be determined that the CONTRACTOR has not performed the services required as stated in the Work Specification.

Every effort shall be made to resolve conflicts between the OWNER and CONTRACTOR through direct negotiations between the parties. If resolution cannot be reached within a reasonable timeframe then the matter will be referred to third party arbitration by mutual agreement of the OWNER and CONTRACTOR.

The OWNER shall have the right to terminate this contract for cause with a minimum notice to the CONTRACTOR of Five (5) business days. Failure to comply with any requirement of this contract shall be cause for termination.

Witness

TOWN OF READFIELD

By: _____
Eric Dyer, Town Manager

Witness

TOWN OF WINTHROP

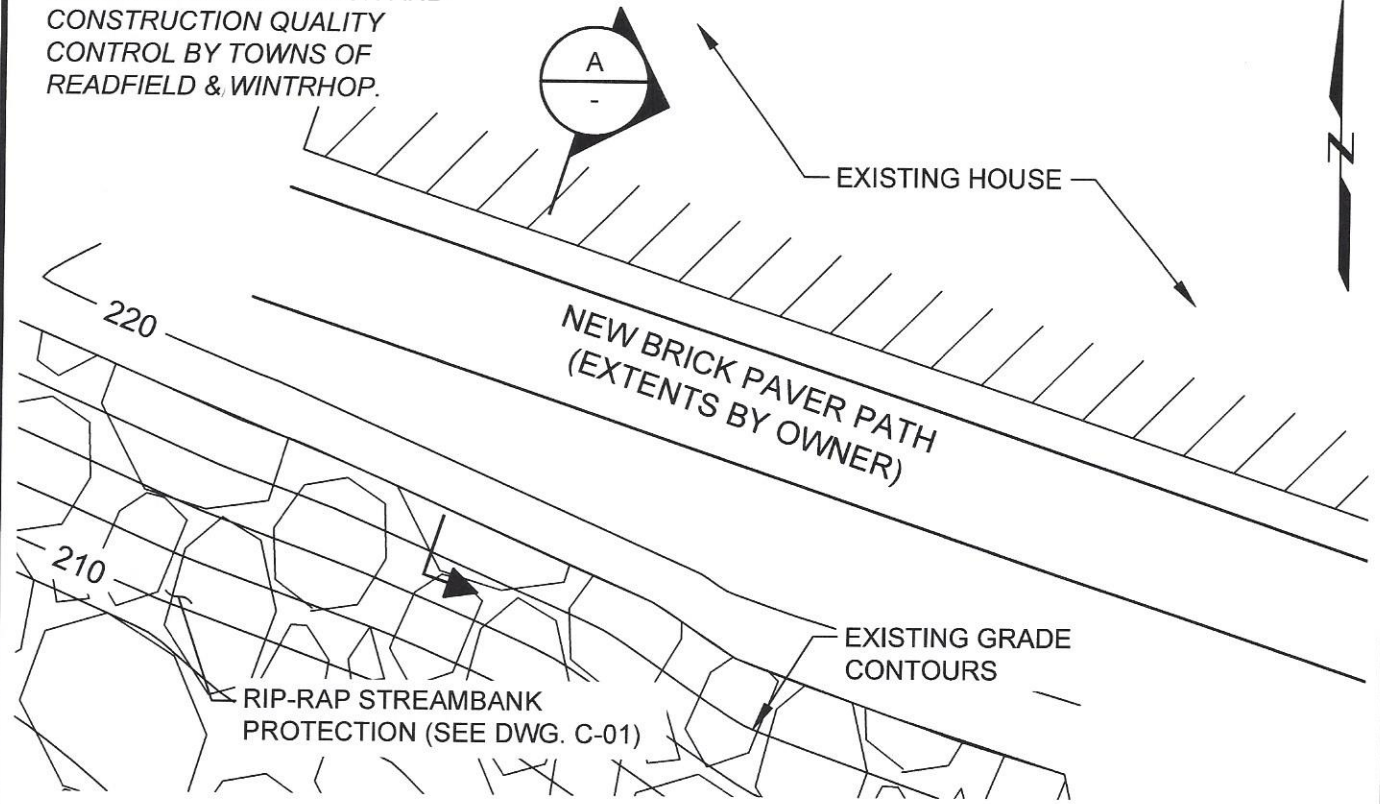
By: _____
Ryan Frost, Town Manager

Witness

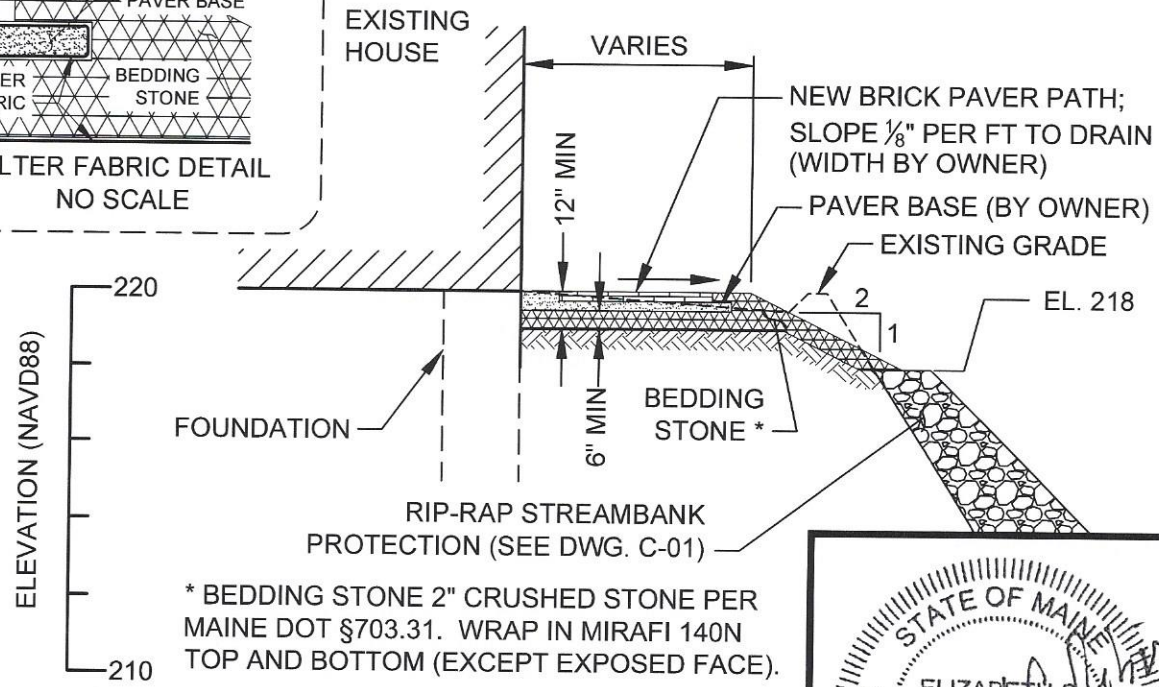
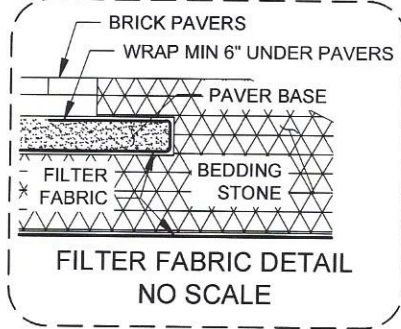
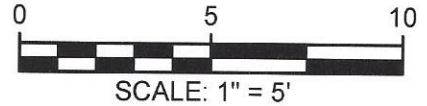
CONTRACTOR

By: _____
Its: _____

NOTE: FIELD INSPECTION AND CONSTRUCTION QUALITY CONTROL BY TOWNS OF READFIELD & WINTRHOP.

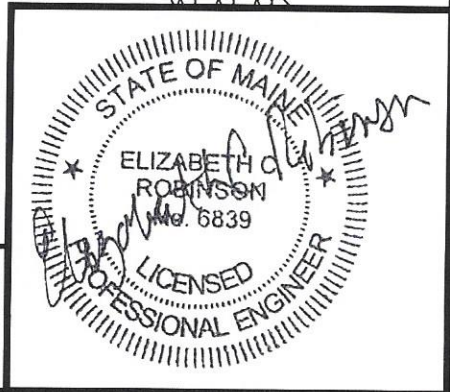


PLAN



SECTION A-A

* BEDDING STONE 2" CRUSHED STONE PER MAINE DOT §703.31. WRAP IN MIRAFI 140N TOP AND BOTTOM (EXCEPT EXPOSED FACE).



Maranacook Lake Outlet Dam
Streambank Protection
Towns of Readfield & Winthrop, Maine



TOP OF SLOPE WORK

Project 1610763

Oct. 18, 2017

SK-1

MARANACOOK LAKE OUTLET DAM TOWNS OF READFIELD AND WINTHROP

NOTES:

1. BEDDING MATERIAL TO PROTECT SUBGRADE FROM WASHING OUT THROUGH RIP-RAP SHALL BE PLACED WHERE RIP-RAP DOES NOT BEAR ON SOUND BEDROCK (LEDGE). PROVIDE MATERIAL CONFORMING TO MAINEDOT STANDARD SPECIFICATIONS FOR CRUSHED STONE (§703.31). SPREAD BEDDING MATERIAL UNIFORMLY TO A THICKNESS OF AT LEAST 4 INCHES ON PREPARED SUBGRADE. FINISH BEDDING TO PRESENT EVEN SURFACE FREE FROM MOUNDS AND WINDROWS.
2. RIP-RAP SHALL BE MACHINE PLACED, NOT DUMPED. PROVIDE MATERIAL CONFORMING TO MAINEDOT STANDARD SPECIFICATIONS FOR STONE FILL (§703.25), EXCEPT THAT THE MINIMUM STONE SIZE SHALL BE 9 INCHES AND FIFTY PERCENT OF THE STONES BY VOLUME SHALL HAVE AN AVERAGE DIMENSION GREATER THAN 15 INCHES. PLACE THE LARGEST STONES AT THE BOTTOM OF THE SLOPE TO FORM A STABLE BASE. EACH STONE SHALL BE INDIVIDUALLY STABLE BY MAKING CONTACT AT A MINIMUM OF THREE POINTS WITH THE SUPPORTING STONE(S) OR FOUNDATION BELOW. THE STONES SHALL BE LAID IN CLOSE CONTACT WITH THE LONGER AXIS PERPENDICULAR TO THE PLANE OF THE SLOPE TO STAGGER JOINTS. THE OPENINGS BETWEEN THE STONES IN ALL RIPRAP SHALL BE FILLED WITH SPALL, OR ROCKS SECURELY RAMMED INTO PLACE. RIPRAP SHALL BE PLACED IN A WELL-KNIT, COMPACT, AND UNIFORM LAYER, FORMING A STRAIGHT-LINE SLOPE FROM TOP TO BOTTOM WITH A MAXIMUM SLOPE OF 1H:1V.
3. PROVIDE EROSION AND SEDIMENTATION CONTROL IN ACCORDANCE WITH MAINE DEP REQUIREMENTS. CONSTRUCT TEMPORARY SANDBAG STREAM DIVERSION TO ISOLATE WORKSITE FROM STREAM FLOWS AND PREVENT SILTATION OF STREAM.
4. RIP-RAP TO BE MAINTAINED BY PERIODIC REMOVAL OF LARGE WOODY VEGETATION. (BY OTHERS.)



**TRANSFER
TAX
PAID**

WARRANTY DEED
(LLC Grantor)

Received Kennebec SS.
12/18/2012 1:18PM
Pages 3 Attest:
BEVERLY BUSTIN-HATHENWAY
REGISTER OF DEEDS

Solstice Property Management, LLC, a limited liability company organized under the laws of the State of Maine, and having a place of business in Wayne, County of Kennebec, State of Maine for consideration paid, grants to

Dharma Real Estate LLC a limited liability company organized under the laws of the State of Maine having a place of business at 38 Mount Vernon Avenue, Suite 1 Augusta, ME 04330,

with WARRANTY COVENANTS


a certain lot or parcel of land, together with any buildings and improvements thereon, situated in Winthrop, County of Kennebec, State of Maine, bounded and described as follows:

(SEE EXHIBIT A ATTACHED HERETO)

IN WITNESS WHEREOF, the Grantor has caused this instrument to be signed, under seal, by its duly authorized officer this 14th day of December, 2012.



Witness

SOLSTICE PROPERTY MANAGEMENT
By: 


Michael J. Hicks
Its Member

State of Maine
County of Kennebec, ss.

December 14, 2012

Then personally appeared the above-named Michael J. Hicks, Member of Solstice Property Management, LLC and acknowledged the foregoing to be his free act and deed in his said capacity and the free act and deed of said Solstice Management Property, LLC.

Before me,



Name:
Notary Public/Attorney-at-Law
Commission expires: _____



DONALD E. GUILD
NOTARY PUBLIC, MAINE
MY COMMISSION EXPIRES MAY 6, 2017

(3) L. Gifford

EXHIBIT A

A certain lot or parcel of land with the buildings thereon, if any, situated in Winthrop, County of Kennebec, State of Maine, bounded and described as follows:

Bounded on the North and East by the Mill Stream leading from Lake Maranacook through Winthrop Village to Lake Annabessacook; on the South by land formerly of Lizzie Jewett and land now or formerly of Mrs. Mary E.W. Davis; on the West by Bowdoin Street; excepting only herein any rights which the Winthrop Mills Company, or its successors in title, now have to pass and repass across the Northerly corner of the foregoing described premises to its dam and gate house situated on the Mill Stream aforesaid and any other right the said Winthrop Mills Company, or its successors in title, or any other parties have in and to said passageway.

Also, excepting and reserving, however, the following portion of the same and right of way conveyed by Peter A. Thaanum, Jr. to Paul Audette, et al., by Warranty Deed dated February 27, 1960, recorded in the Kennebec County Registry of Deeds in Book 1179, Page 279:

Beginning at an iron pin driven into the ground at a point 6.00 feet Northwesterly from the foundation of the dwelling house now or formerly of Roger Oliver, et ux.;

Thence running in a general Northerly direction a distance of 68.00 feet to another iron pin driven into the ground which is distant 36.00 feet and 9 inches from the foundation of an apartment house now or formerly of Peter A. Thaanum, known by the name "the Elmhurst";

Thence at right angles and running Easterly to an iron pin on the bank of Mill Stream, so-called;

Thence running Southerly along the bank of said Mill Stream a distance of 68.00 feet to another iron pin on the bank of Mill Stream;

Thence running Westerly to the point of beginning.

Also, a right of way 16.00 feet in width over a contiguous parcel of land of Peter A. Thaanum, also known as Peter A. Thaanum, Jr., for ingress, egress and regress for use of said Thaanum, Paul Audette and Mabel M. Audette, as joint tenants, and the respective heirs and assigns of each and for all persons whomsoever who may be allowed by the said Thaanum, his heirs and assigns, with the right to pass and repass on foot, with animals and with vehicles over said contiguous lot of land which right of way shall extend from the Northerly end of Elm Street in a Northerly direction along the Westerly side of the land hereinbefore described and hereby conveyed, ending at the iron pin second above-described the distance from Elm Street being approximately 68.00 feet.

Also, excepting and reserving, however, the following portion of the same conveyed by the said Peter A. Thaanum, Jr. to Madeline E. Roberts, et al., by Warranty Deed dated July 9, 1962, recorded in the Kennebec County Registry of Deeds in Book 1273, Page 140:

Beginning at an iron pipe driven into the ground at the Northwest corner of a lot of land known as

Roberts Parking Lot on the Easterly line of Bowdoin Street;

Thence running in a general Northerly direction along said Easterly line of said Bowdoin Street a distance of 65.00 feet to a pin driven into the ground on the Southerly line of the Thaanum driveway to said Bowdoin Street;

Thence running about at right angles in a general Easterly direction along the said Southerly line of said Thaanum driveway a distance of 126.00 feet 3.00 inches to a pin driven into the ground in said Southerly line of said Thaanum driveway;

Thence running in a general Southerly direction a distance of 65.00 feet to a pin driven into the ground at a point located in a general Easterly direction a distance of 130.00 feet from the aforesaid point of beginning;

Thence running in a general Westerly direction a distance of 130.00 feet to the said original point of beginning located at the said Northwest corner of said Roberts Parking Lot in the said Easterly line of said Bowdoin Street.

This property may be subject to pole rights to Central Maine Power Company as recorded by instruments recorded in the Kennebec County Registry of Deeds in Book 1474, Page 267 and Book 771, Page 494.

Meaning and intending to convey the same premises conveyed in the deed from Ralph Homer Latimer to Solstice Property Management, LLC dated November 30, 2006 and recorded in the Kennebec County Registry of Deeds in Book 9167, Page 242.

CMT-

Maranacook Lake Outlet Dam Modifications
Towns of Readfield and Winthrop, Maine

Attachment D – Permits

U.S. Army Corps of Engineers NAE-2018-00128

Maine DEP - Natural Resources Protection Act (NRPA)



REPLY TO ATTENTION OF

DEPARTMENT OF THE ARMY
NEW ENGLAND DISTRICT, CORPS OF ENGINEERS
696 VIRGINIA ROAD
CONCORD, MASSACHUSETTS 01742-2751

MAINE GENERAL PERMIT (GP)
AUTHORIZATION LETTER AND SCREENING SUMMARY

TOWN OF WINTHROP, TOWN OF READFIELD
ATTN: TOWN MANAGER
17 HIGHLAND AVENUE
WINTHROP, MAINE 04364

CORPS PERMIT # NAE-2018-00128
CORPS GP ID# 18-035
STATE ID# NRPA

DESCRIPTION OF WORK:

To repair existing structures, replace the existing spillway gate, and install riprap below the ordinary high water line of Mill Stream adjacent to 97 Bowdoin Street and Maranacook Lake Map 31 Lots 203-001 and 39 at Winthrop, Maine as described on the state of Maine NRPA application entitled "Town of Winthrop, Town of Readfield Maranacook Lake Outlet Dam" and as shown on plans on 12 sheets dated "01-31-2017", sheets "S-03 to S-06" revised and dated "02-15-2018". Approximately 1,153SF of permanent and 6,650SF of temporary fresh water stream bottom impact will occur in conjunction with the reconstruction of the existing structure, dewatered areas, and installation of associated riprap. SPECIAL CONDITIONS: SEE ATTACHED SHEET

LAT/LONG COORDINATES: 44.309616° N -69.972211° W USGS QUAD: WINTHROP, MAINE

I. CORPS DETERMINATION:

Based on our review of the information you provided, we have determined that your project will have only minimal individual and cumulative impacts on waters and wetlands of the United States. Your work is therefore authorized by the U.S. Army Corps of Engineers under the enclosed Federal Permit, the Maine General Permit (GP). Accordingly, we do not plan to take any further action on this project.

You must perform the activity authorized herein in compliance with all the terms and conditions of the GP [including any attached Additional Conditions and any conditions placed on the State 401 Water Quality Certification including any required mitigation]. Please review the enclosed GP carefully, including the GP conditions beginning on page 5, to familiarize yourself with its contents. You are responsible for complying with all of the GP requirements; therefore you should be certain that whoever does the work fully understands all of the conditions. You may wish to discuss the conditions of this authorization with your contractor to ensure the contractor can accomplish the work in a manner that conforms to all requirements.

If you change the plans or construction methods for work within our jurisdiction, please contact us immediately to discuss modification of this authorization. This office must approve any changes before you undertake them.

Condition 37 of the GP (page 16) provides one year for completion of work that has commenced or is under contract to commence prior to the expiration of the GP on October 13, 2020. You will need to apply for reauthorization for any work within Corps jurisdiction that is not completed by October 13, 2021.

This authorization presumes the work shown on your plans noted above is in waters of the U.S. Should you desire to appeal our jurisdiction, please submit a request for an approved jurisdictional determination in writing to the undersigned.

No work may be started unless and until all other required local, State and Federal licenses and permits have been obtained. This includes but is not limited to a Flood Hazard Development Permit issued by the town if necessary.

II. STATE ACTIONS: PENDING [X], ISSUED [], DENIED [] DATE

APPLICATION TYPE: PBR: TIER 1: TIER 2: TIER 3: X LURC: DMR LEASE: NA:

III. FEDERAL ACTIONS:

JOINT PROCESSING MEETING: 02/01/2018 LEVEL OF REVIEW: CATEGORY 1: CATEGORY 2: X

AUTHORITY (Based on a review of plans and/or State/Federal applications): SEC 10, 404 X 10/404, 103

EXCLUSIONS: The exclusionary criteria identified in the general permit do not apply to this project.

FEDERAL RESOURCE AGENCY OBJECTIONS: EPA NO, USF&WS NO, NMFS NO

If you have any questions on this matter, please contact my staff at 207-623-8367 at our Augusta, Maine Project Office. In order for us to better serve you, we would appreciate your completing our Customer Service Survey located at http://per2.nwp.usace.army.mil/survey.html

NEAL.LEEANN.B.12395
04007

Digitally signed by NEAL.LEEANN.B.1239504007
DN: cn=US, o=U.S. Government, ou=DoD, ou=PKI,
ou=USA, cn=NEAL.LEEANN.B.1239504007
Date: 2018.03.14 09:41:52 -0400

LEEANN B. NEAL
SENIOR PROJECT MANAGER
MAINE PROJECT OFFICE

FRANK J. DEL GIUDICE
DATE
CHIEF, PERMITS & ENFORCEMENT BRANCH
REGULATORY DIVISION



**US Army Corps
of Engineers** [®]
New England District

**PLEASE NOTE THE FOLLOWING SPECIAL CONDITIONS FOR
DEPARTMENT OF THE ARMY
GENERAL PERMIT
NO. NAE-2018-00128**

1. The permittee shall assure that a copy of this permit is at the work site whenever work is being performed and that all personnel performing work at the site of the work authorized by this permit are fully aware of the terms and conditions of the permit. This permit, including its drawings and any appendices and other attachments, shall be made a part of any and all contracts and sub-contracts for work which affects areas of Corps of Engineers' jurisdiction at the site of the work authorized by this permit. This shall be done by including the entire permit in the specifications for the work. If the permit is issued after construction specifications but before receipt of bids or quotes, the entire permit shall be included as an addendum to the specifications. The term "entire permit" includes permit amendments. Although the permittee may assign various aspects of the work to different contractors or sub-contractors, all contractors and sub-contractors shall be obligated by contract to comply with all environmental protection provisions of the entire permit, and no contract or sub-contract shall require or allow unauthorized work in areas of Corps of Engineers jurisdiction.
2. This authorization requires you to 1) notify us before beginning work so we may inspect the project, and 2) submit a Compliance Certification Form. You must complete and return the enclosed Work Start Notification Form(s) to this office at least two weeks before the anticipated starting date. You must complete and return the enclosed Compliance Certification Form within one month following the completion of the authorized work and any required mitigation (but not mitigation monitoring, which requires separate submittals).
3. Adequate sedimentation and erosion control devices, such as geotextile silt fences or other devices capable of filtering the fines involved, shall be installed and properly maintained to minimize impacts during construction. These devices must be removed upon completion of work and stabilization of disturbed areas. The sediment collected by these devices must also be removed and placed upland, in a manner that will prevent its later erosion and transport to a waterway or wetland.
4. No clearing of forested vegetation >3" dbh is authorized from June 1- July 31 of any given year in order to avoid direct impact to the Northern Long-eared Bat.
5. All instream work shall be completed within the specified June 1 to November 1 work window.
6. Stockpile storage areas shall be maintained with sediment and erosion control measures to avoid the migration of materials into adjoining areas during and following rain events. These areas shall be monitored and maintained on a daily basis prior to leaving the site for the day.
7. Demolition debris and excavated materials shall be disposed of offsite in an upland location and not in wetlands or waters of the U.S.
8. The permittee must still obtain any other Federal, State, or local permits as required by law before beginning work.

DRAWING NO. 14-101
S.I.

STATE OF MAINE
PLANNING BOARD

EXISTING CONDITIONS PLAN

SCALE

PROJ. NO. 14
DRAWN BY: T.C.
CHECKED BY: C.B.
REVISION NO. N/A
ISSUE DATE: 2014-12-16
ISSUED FOR: FINAL

REVISION NOTES:
1 INCH = 20 FT

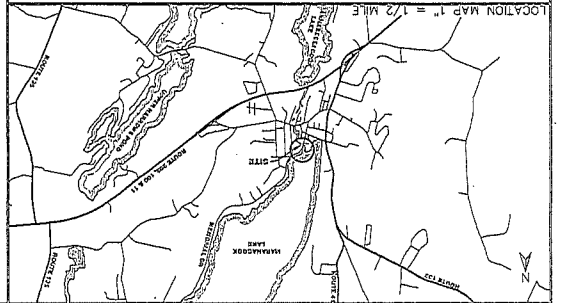
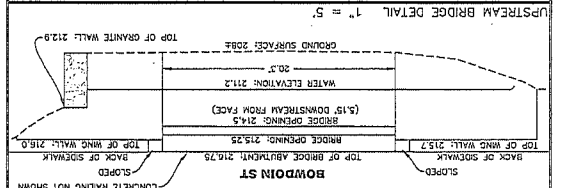
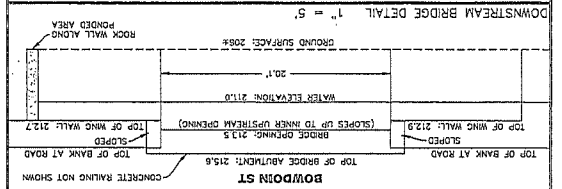
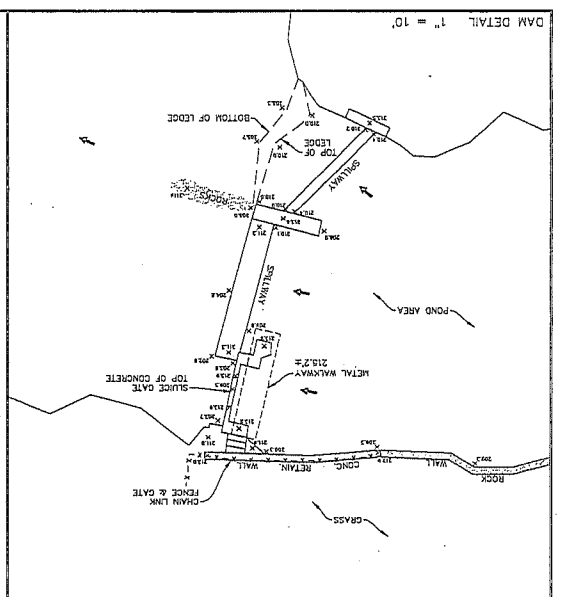
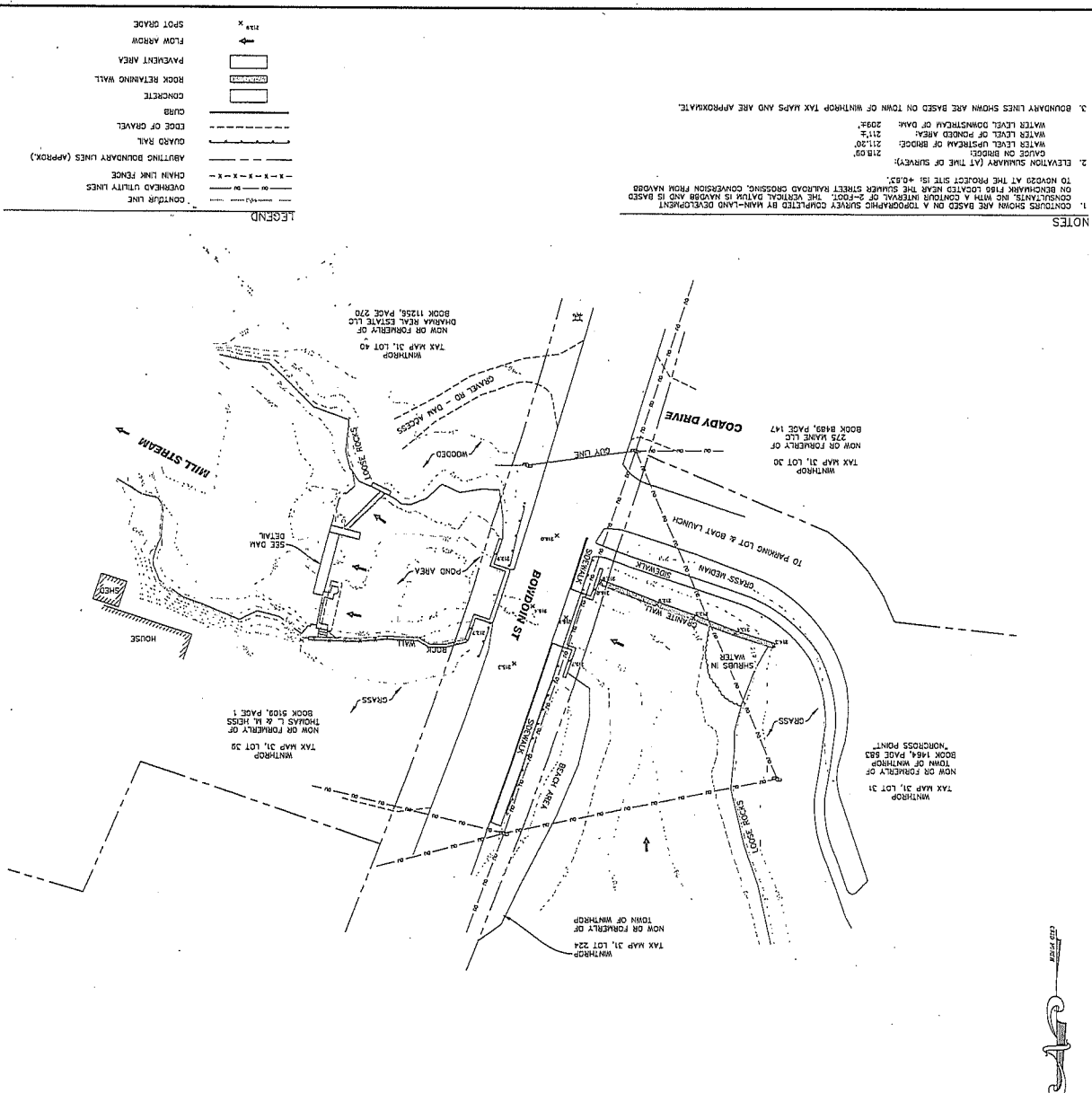
DRAWING SCALE:
WINTHROP PLANNING BOARD
8 00 WALK

C/O BETH BRONKHORST, P.E., C.E.
NORTHSTAR HYDRO, INC.
MADE FOR
17 HIGHLAND AVENUE
WINTHROP, MAINE 04093

OWNER OF RECORD:
TOWN OF WINTHROP, COUNTY OF MAINE

MARANACOOK LAKE DAM
PROJECT
DEVELOPMENT, INC.
1100 STATE STREET
WINTHROP, MAINE 04093
TEL: (603) 753-5881
WWW.MARANACOOK.COM

MAIN-LAND



"TOWN OF READFIELD/WINTHROP
 MARANACOOK LAKE OUTLET DAM"
 WINTHROP, MAINE
 MAE-2018-00128
 SHEET 2 OF 12 "01/31/2017"
 SHEETS "S-03 to S-06" revised "02/15/2018"

MARANACOOK LAKE OUTLET DAM MODIFICATION TOWNS OF WINTHROP AND READFIELD, MAINE

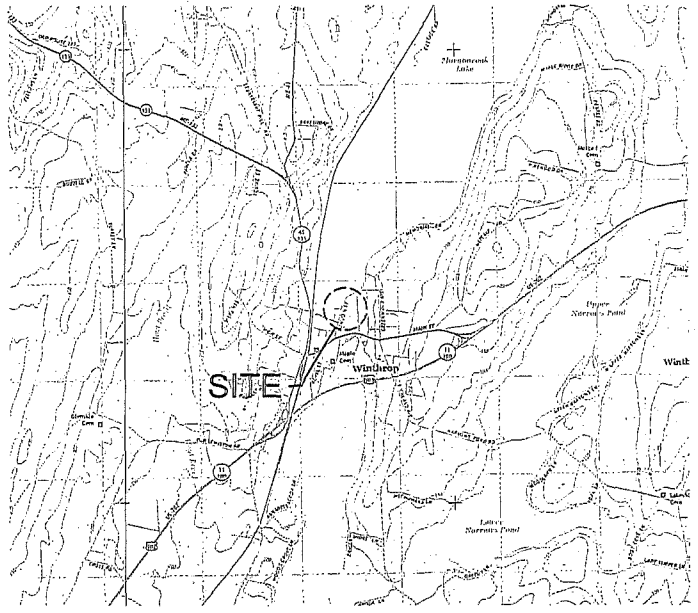


IMAGE FROM USGS TOPOGRAPHIC 7.5 MINUTE SERIES, WINTHROP AND WAYNE, ME QUADRANGLES, 2014.

NOT TO SCALE

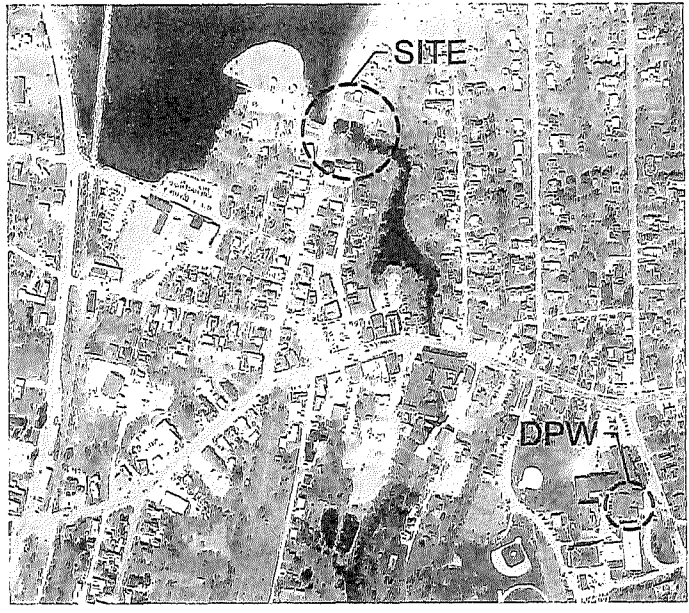


IMAGE FROM USGS; IMAGERY DATED 2015.

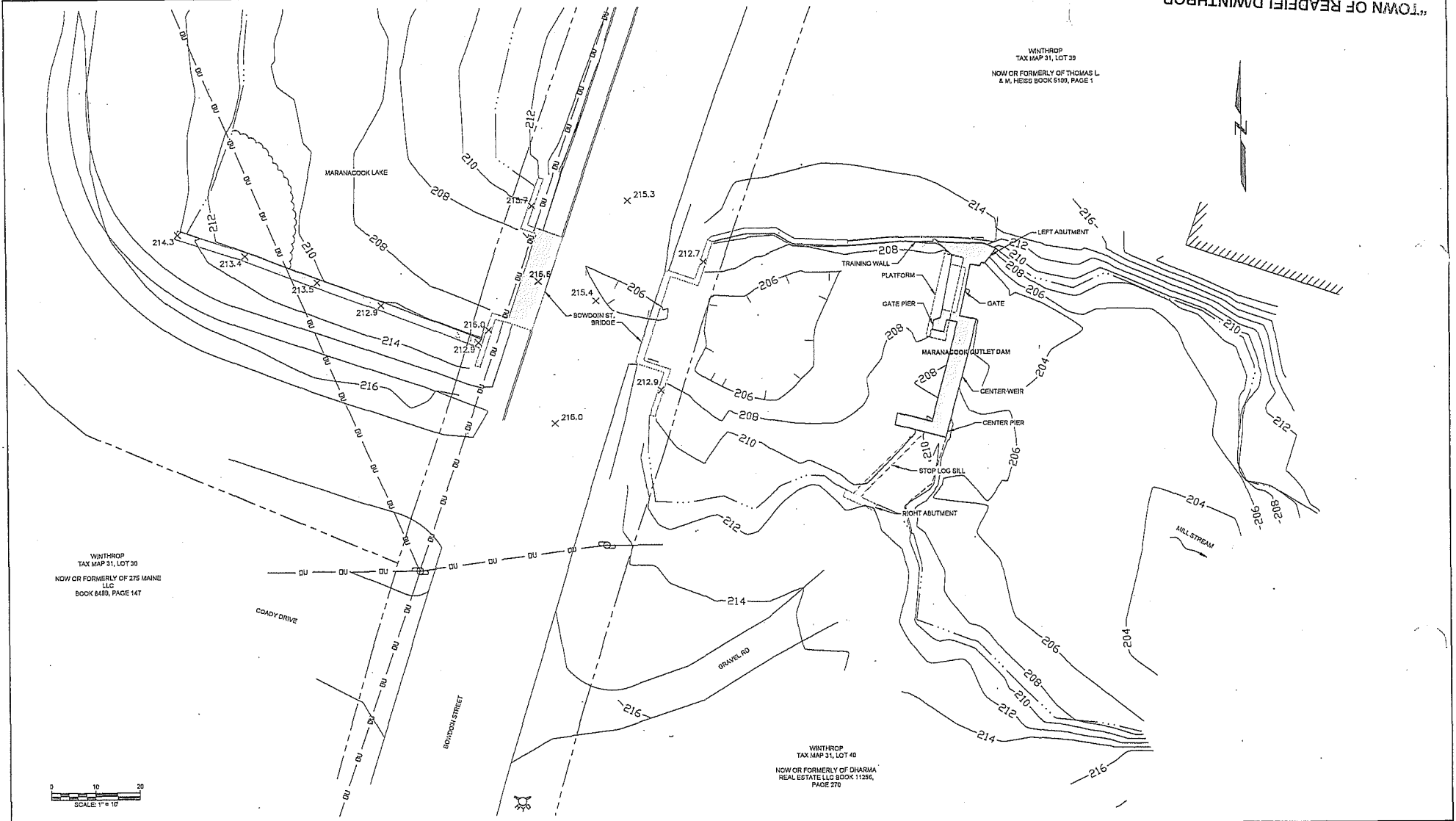
NOT TO SCALE

SHEET INDEX	
DRAWING NO.	TITLE
S-01	TITLE SHEET
S-02	EXISTING CONDITIONS SITE PLAN
S-03	TEMPORARY FACILITIES PLAN
S-04	SITE IMPROVEMENTS PLAN & RIP RAP SECTIONS
S-05	EXISTING CONDITIONS & DEMOLITION PLAN, ELEVATION, & SECTIONS
S-06	SPILLWAY IMPROVEMENTS PLAN, ELEVATION, & SECTIONS
S-07	NEW GATE STRUCTURE
S-08	EXISTING GATE STRUCTURE IMPROVEMENTS
S-09	GATE HOUSE PLAN AND DETAILS

SEE ALSO OBERMEYER HYDRO INC. DRAWINGS (CHI PROJECT 16-1664)

Attention: If this scale bar does not measure 1" then drawing is not original scale.	0	1/31/2017	INITIAL ISSUE	CRK		Designed: A. GRADESKI Checked: C.S. GRANT Drawn: A. GRADESKI Submitted By: C. KARAM P.E. Number: 8741		Towns of Readfield and Winthrop 17 Highland Avenue Winthrop, Maine	Maranacook Lake Outlet Dam Modification Winthrop, Maine	DWG. NO. S-01
	NO.	DATE	ISSUE/REVISION	APP						TITLE SHEET

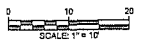
"TOWN OF READFIELD WINTHROP
 MARANACOOK LAKE OUTLET DAM"
 WINTHROP, MAINE
 MAE-2018-00128
 SHEETS 3 OF 12 "01/31/2017"
 SHEETS "S-03 to S-06" revised "02/15/2018"



WINTHROP
 TAX MAP 31, LOT 30
 NOW OR FORMERLY OF 275 MAINE
 LLC
 BOOK 8480, PAGE 147

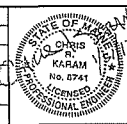
WINTHROP
 TAX MAP 31, LOT 30
 NOW OR FORMERLY OF THOMAS L.
 & M. HEISS BOOK 5100, PAGE 1

WINTHROP
 TAX MAP 31, LOT 40
 NOW OR FORMERLY OF DHARMA
 REAL ESTATE LLC BOOK 11295,
 PAGE 270



- NOTES**
- SITE PLAN DERIVED FROM DWG. 01.1, EXISTING CONDITIONS PLAN, BY MARLANDS DEVELOPMENT CONSULTANTS, INC. DATED 2014.12.15.
 - VERTICAL DATUM FOR ELEVATION CONTOURS SHOWN: NAVD83. CONVERSION FROM NAVD83 TO NAD83/2011 AT SITE: +0.63 FT.

Attention:				
If this scale bar does not measure 1" then drawing is not original scale.				
NO.	DATE	ISSUE/REVISION	CRK	APP
0	1/31/2017	INITIAL ISSUE		
		ISSUE/REVISION		



Designed: A. GRADESKI
 Checked: C.B. GRANT
 Drawn: A. GRADESKI
 Submitted By: C. KARAM
 P.E. Number: 8741



Towns of Readfield and Winthrop
 17 Highland Avenue
 Winthrop, Maine
 GEI Project 1610763-0

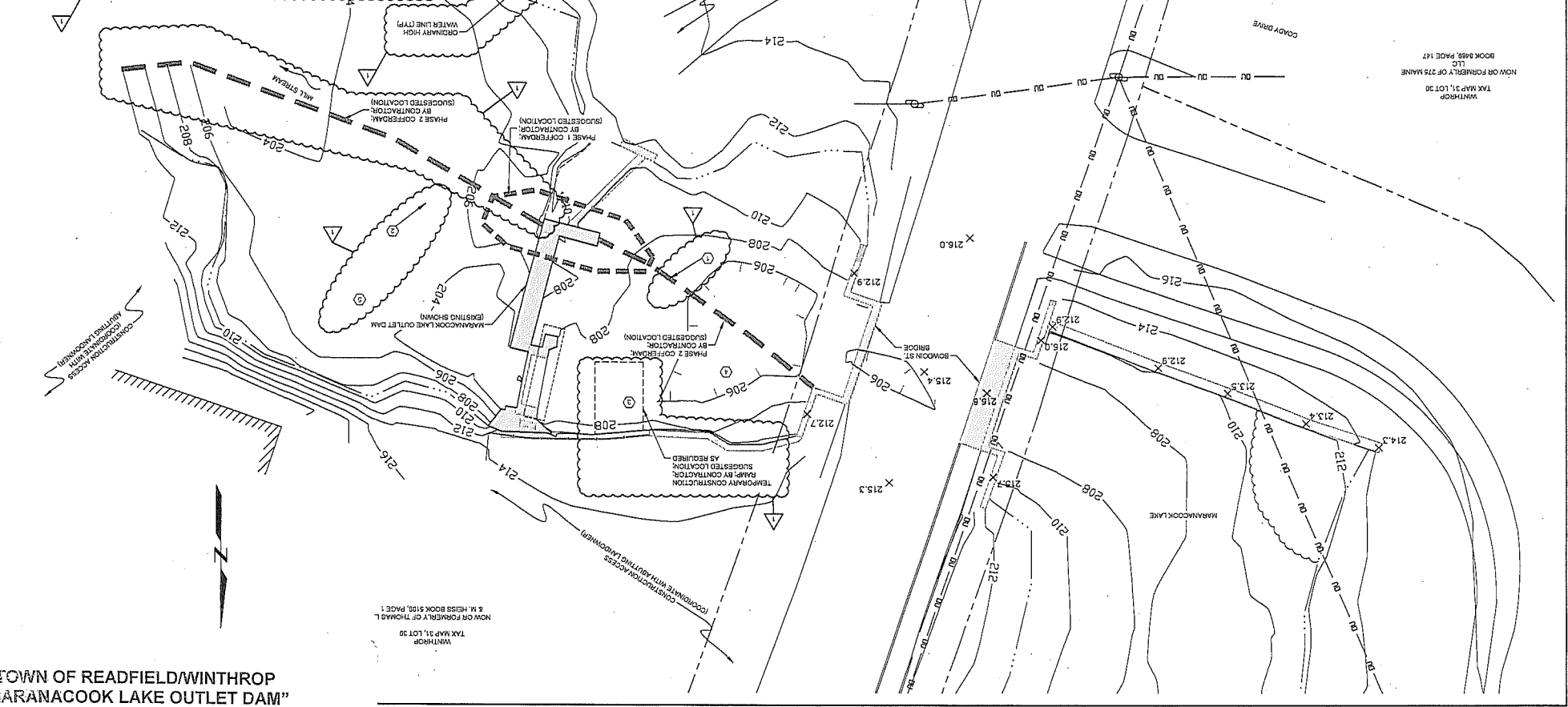
Maranacook Lake Outlet
 Dam Modification
 Winthrop, Maine
 EXISTING CONDITIONS SITE
 PLAN

DWG. NO.
S-02
 REV
0

DMG. NO.	S-03
REV.	1
TEMPORARY FACILITIES PLAN	
Maranacook Lake Outlet Dam Modification Winthrop, Maine	
Towns of Readfield and Winthrop 17 Highland Avenue Winthrop, Maine	
GEI Project 1810783-0	

	Submitted By: C.B. GRANT Drawn: A. GRADESKI Checked: C.B. GRANT Designed: A. GRADESKI
P.E. Number: 15505	App: C.B.G. C.R.K. ISSUE/REVISION INITIAL ISSUE 1/15/2017 REVISED FOR PERMIT 2/15/2018
State of Maine PROFESSIONAL ENGINEER License No. 15505 C.B. GRANT	Attention: NO ORIGINAL COPY. 1. If this scale bar does not accompany the drawing, the drawing is not original. 2. VERTICAL DATUM FOR ELEVATION CONTOURS SHOWN: NAVD83. 3. PLAN DERIVED FROM DWA. 51. EXISTING CONDITIONS PLAN. 4. MARK ANY DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-18. 5. CONVERSION FROM NAVD83 TO NAD83 AT SITE: +0.63 FT.

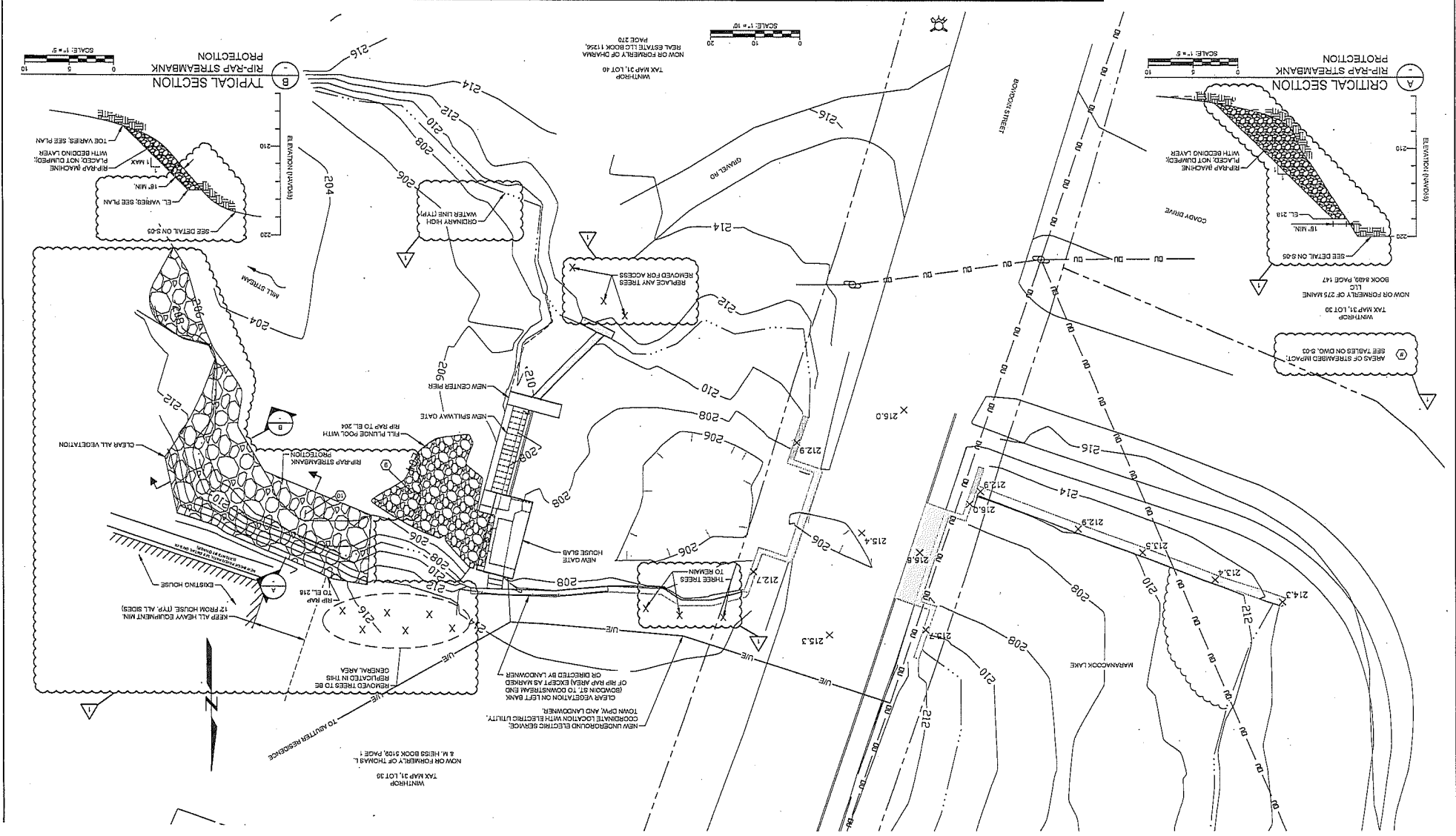
AREA ID	DESCRIPTION	AREA, SQ. FT.
(1)	AREA OF STREAMBED COVERED BY TEMPORARY CONCRETE FOOTPRINT, UPSTREAM OF DAM	400
(2)	AREA OF STREAMBED COVERED BY TEMPORARY CONCRETE FOOTPRINT, DOWNSTREAM OF DAM	520
(3)	AREA OF STREAMBED COVERED BY TEMPORARY CONSTRUCTION BAMP INSIDE DEWATERED AREA	300
(4)	DEWATERED AREA INSIDE TEMPORARY COFFERDAM, UPSTREAM OF DAM	1800
(5)	DEWATERED AREA INSIDE TEMPORARY COFFERDAM, DOWNSTREAM OF DAM	3600
PERMANENT IMPACTS BELOW ORDINARY HIGH WATER LINE		
(6)	AREA OF STREAMBED COVERED BY RAMP-UP STREAMBANK PROTECTION	725
(7)	AREA OF STREAMBED COVERED BY FLANGE POOL FILL	950
(8)	AREA OF EXISTING CONCRETE DAM DEMOLISHED AND NOT REPLACED (REDUCTION OF IMPACT)	60
(9)	STREAMBED COVERED BY NEW CONCRETE UPSTREAM OF DAM	2
(10)	STREAMBED COVERED BY NEW CONCRETE UPSTREAM OF DAM	16
(11)	AREA, SQ. FT.	16

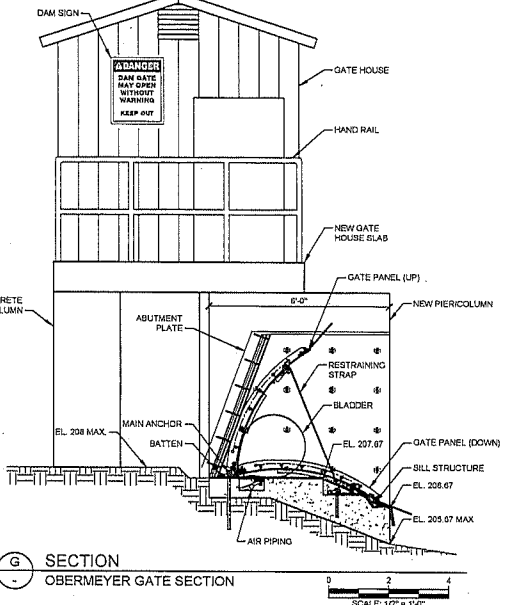
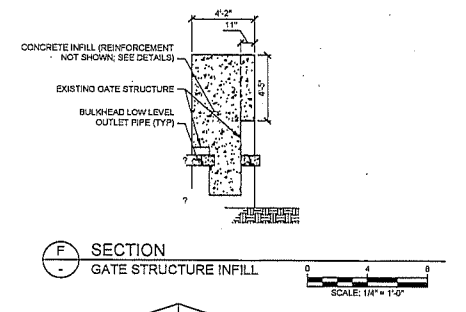
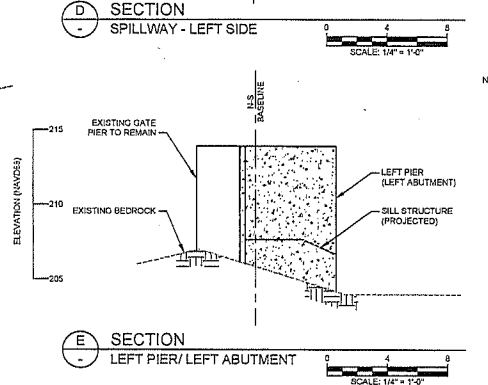
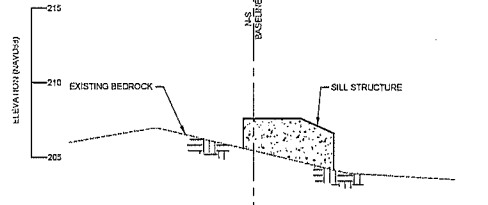
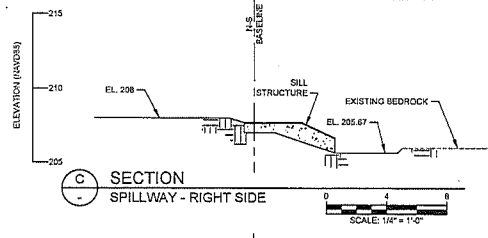
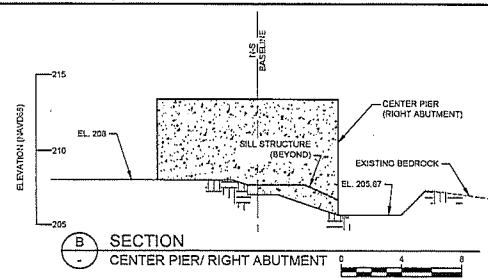
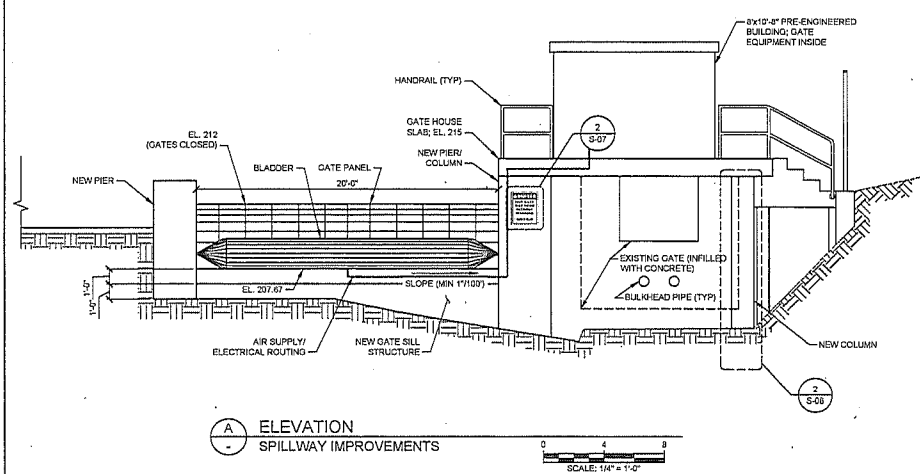
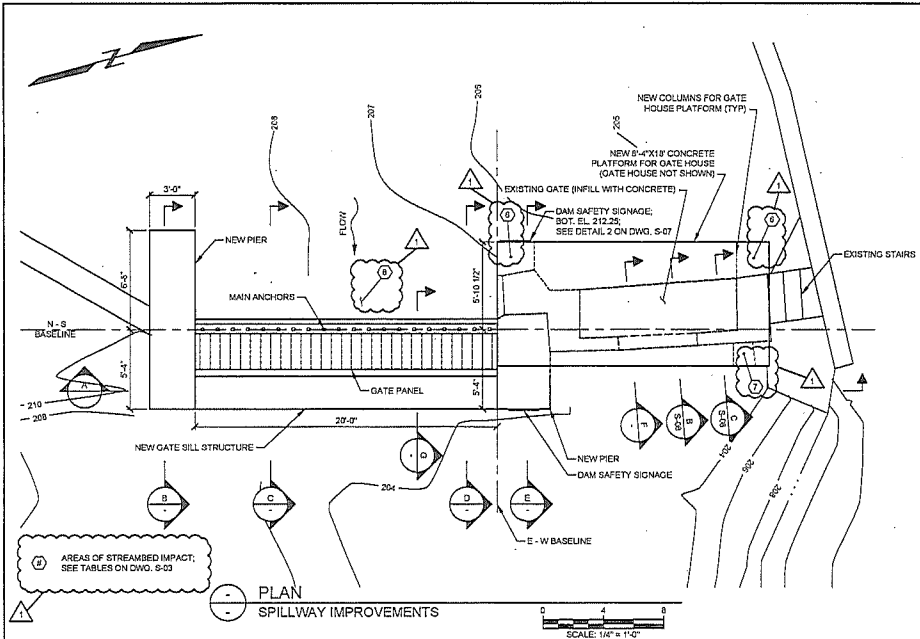


"TOWN OF READFIELD/WINTHROP
 MARANACOOK LAKE OUTLET DAM"
 WINTHROP, MAINE
 NAE-2018-00128
 SHEET 4 OF 12 "01/31/2017"
 SHEETS "S-03 to S-06" revised "02/15/2018"

REV	S-04	DWS, K.O.	MARANACOOK LAKE OUTLET DAM MODIFICATION WINTHROP, MAINE	SITING IMPROVEMENTS PLAN & RIP RAP SECTIONS	1		GEI Project 181073-0 Towns of Readfield and Winthrop 17 Highland Avenue Winthrop, Maine	P.E. Number: 15505 Drawn By: C.B. GRANT A. GRAPESKI Checked: C.B. GRANT A. GRAPESKI Designed: A. GRAPESKI		APP CRK C&G	ISSUE/REVISION	NO.	DATE	1. 2/15/2018 REVISED FOR PERMIT 0. 1/31/2017 INITIAL ISSUE
										Attention: If this scale for 1" = 100' does not show, refer to the drawing.				

- NOTES
- SITE PLAN DERIVED FROM DWS, S-1, EXISTING CONDITIONS PLAN, 2014-2-18.
 - VERTICAL DATA FOR ELEVATION CONTOURS SHOWN: NAVD83. CONVERSION FROM NAVD83 TO NAD83 AT SITE: +0.03 FT.





NOTES:

- UPSTREAM ROCK CONTOURS BASED ON SUPPLEMENTARY HAND PROBES AND MEASUREMENTS PERFORMED BY GEI ON OCTOBER 25, 2018. TOP OF ROCK WAS DETERMINED BY PRODDING UNTIL REFUSAL WAS ENCOUNTERED ON APPARENT ROCK OR POSSIBLE BOULDER.
- DOWNSTREAM ROCK CONTOURS DERIVED FROM DWG. S1-1, EXISTING CONDITIONS PLAN, BY MAINLAND DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-16

NO.	DATE	ISSUE/REVISION	APP.
1	2/15/2018	REVISED FOR PERMIT	CBG
0	1/31/2017	INITIAL ISSUE	CRK
		ISSUE/REVISION	APP

Attention:

1 2/15/2018 REVISED FOR PERMIT CBG

0 1/31/2017 INITIAL ISSUE CRK

NO. DATE ISSUE/REVISION APP



Designed: A. GRADESKI
 Checked: C.B. GRANT
 Drawn: A. GRADESKI
 Submitted By: C.B. GRANT
 P.E. Number: 15505



Towns of Readfield and Wintthrop
 17 Highland Avenue
 Wintthrop, Maine

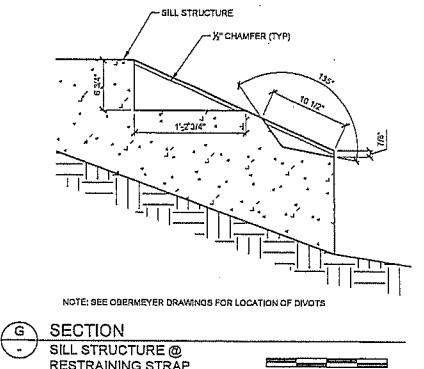
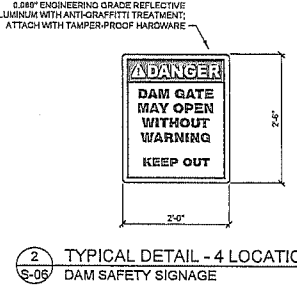
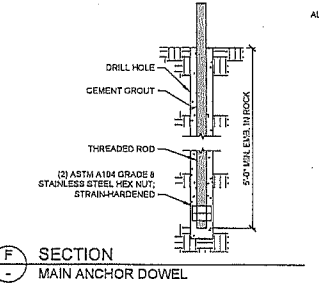
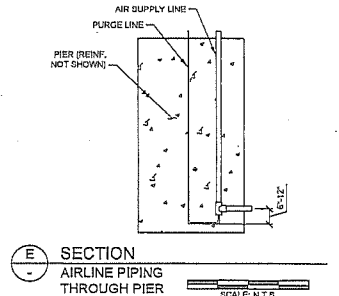
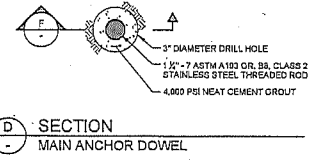
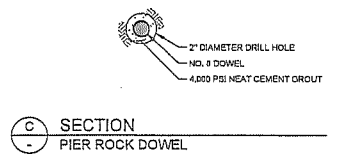
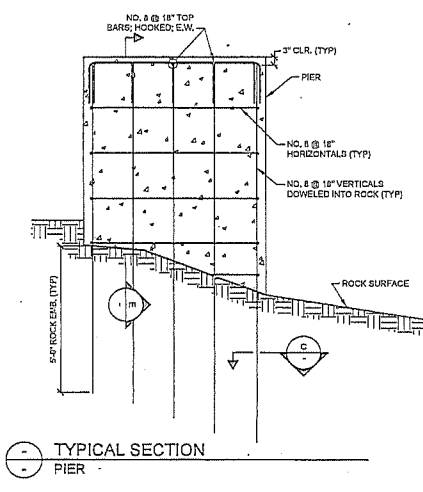
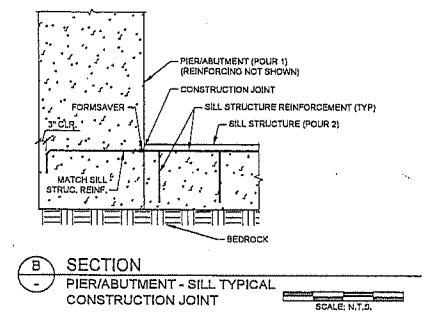
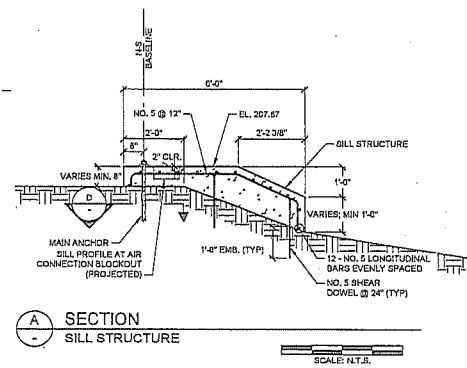
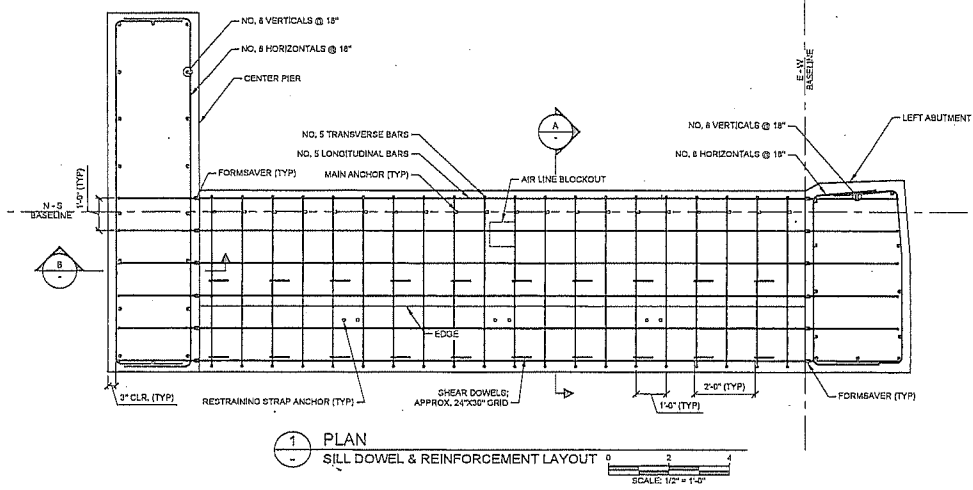
GEI Project: 1610763-0

Maranacook Lake Outlet
 Dam Modification
 Wintthrop, Maine

SPILLWAY IMPROVEMENTS
 PLAN, ELEVATION, & SECTIONS

DWG. NO.
S-06

REV
1



Attention:				
NO.	DATE	ISSUE/REVISION	CRK	APP
0	1/31/2017	INITIAL ISSUE		



Designed:	A. GRADESKI
Checked:	C.B. GRANT
Drawn:	A. GRADESKI
Submitted By:	C. KARAM
P.E. Number:	8741

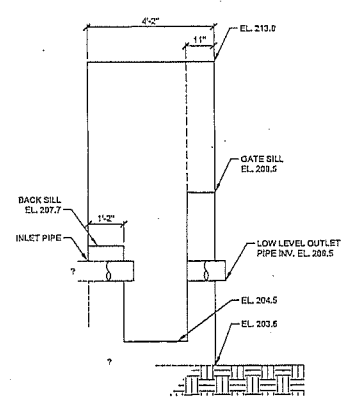


Towns of Readfield and Wintthrop
17 Highland Avenue
Wintthrop, Maine

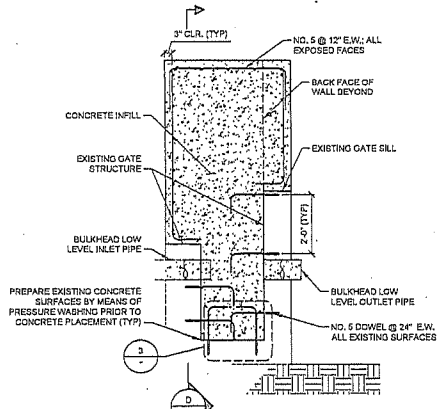
Maranacook Lake Outlet
Dam Modification
Wintthrop, Maine

NEW GATE STRUCTURE

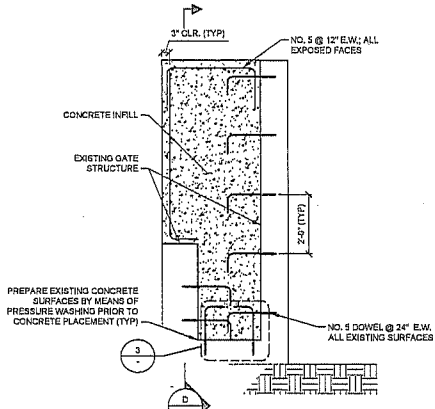
DWG. NO.	S-07
REV	0



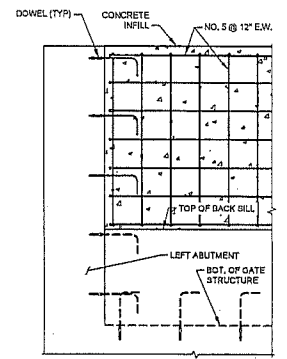
A SECTION
 S-05 EXISTING GATE STRUCTURE
 SCALE: 1/2" = 1'-0"



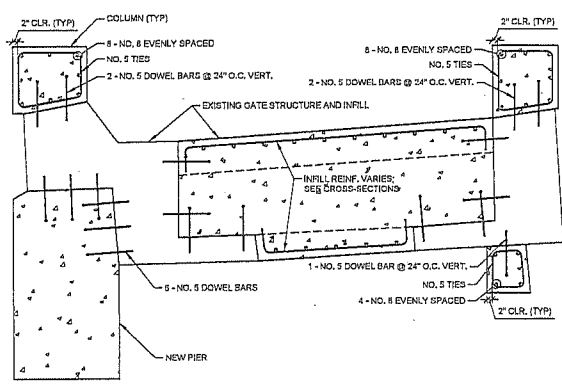
B SECTION
 S-06 CONCRETE INFILL AT GATE OPENING
 SCALE: 1/2" = 1'-0"



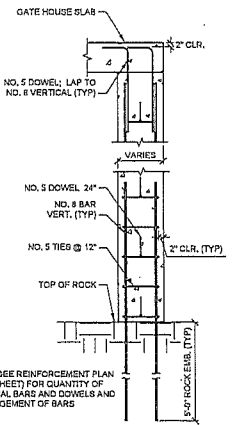
C SECTION
 S-06 CONCRETE INFILL
 SCALE: 1/2" = 1'-0"



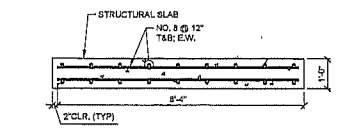
D SECTION
 S-06 CONCRETE INFILL (LOOKING DOWNSTREAM)
 SCALE: 1/2" = 1'-0"



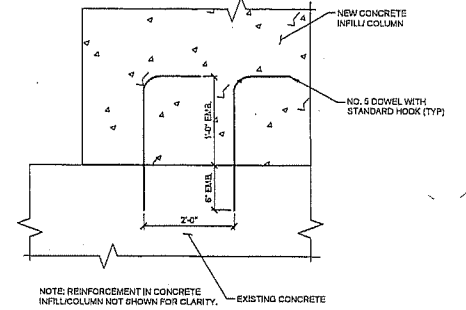
1 PLAN
 S-05 REINFORCEMENT
 SCALE: 1/2" = 1'-0"



2 DETAIL
 S-05 TYPICAL COLUMN
 NOTE: SEE REINFORCEMENT PLAN (THIS SHEET) FOR QUANTITY OF VERTICAL BARS AND DOWELS AND ARRANGEMENT OF BARS

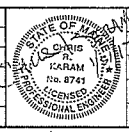


3 SECTION
 S-09 SLAB REINFORCEMENT
 SCALE: 1/2" = 1'-0"



3 DETAIL
 S-09 INFILL COLUMN DOWEL
 NOTE: REINFORCEMENT IN CONCRETE INFILL COLUMN NOT SHOWN FOR CLARITY.

NO.	DATE	ISSUE/REVISION	APP
0	1/31/2017	INITIAL ISSUE	CRK



Designed: A. GRADESKI
 Checked: C.B. GRANT
 Drawn: A. GRADESKI
 Submitted By: C. KARAM
 P.E. Number: 8741



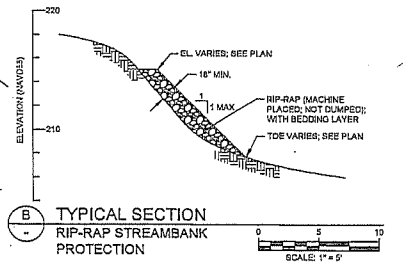
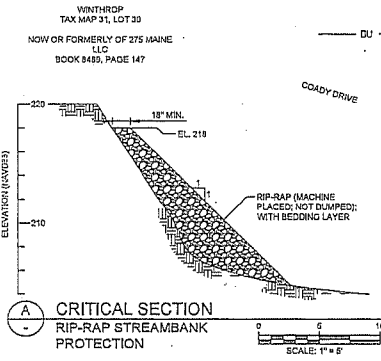
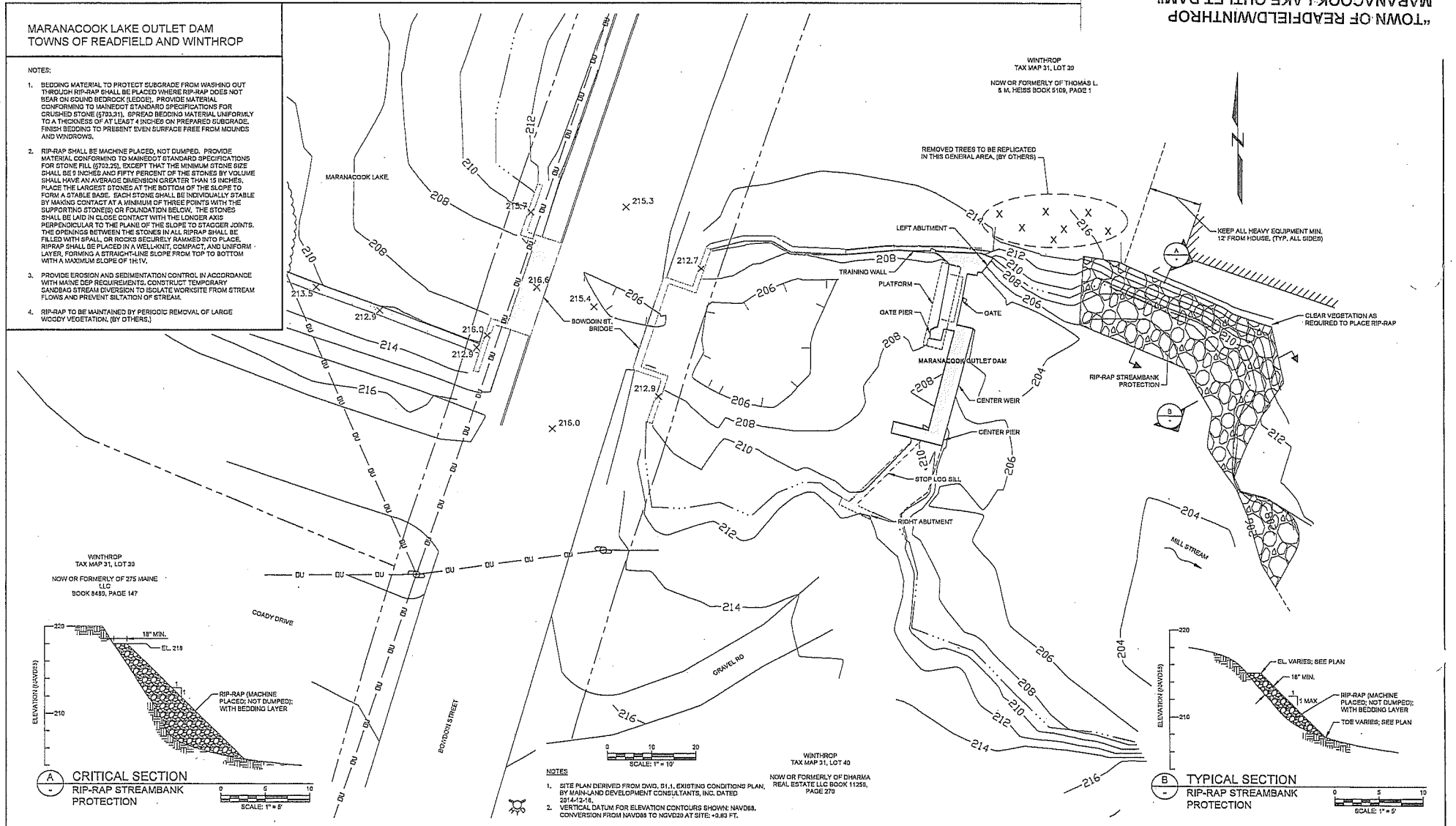
Towns of Readfield and Winthrop
 17 Highland Avenue
 Winthrop, Maine
 GEI Project 1610763-0

Maranacook Lake Outlet
 Dam Modification
 Winthrop, Maine
 EXISTING GATE STRUCTURE
 IMPROVEMENTS

DWG. NO.
S-08
 REV
0

MARANACOOK LAKE OUTLET DAM
 TOWNS OF READFIELD AND WINTHROP

- NOTES:
1. BEDDING MATERIAL TO PROTECT SURGRADE FROM WASHING OUT THROUGH RIP-RAP SHALL BE PLACED WHERE RIP-RAP DOES NOT BEAR ON SOUND BEDROCK (LEDGE). PROVIDE MATERIAL CONFORMING TO MAINDOT STANDARD SPECIFICATIONS FOR CRUSHED STONE (3703.21). SPREAD BEDDING MATERIAL UNIFORMLY TO A THICKNESS OF AT LEAST 4 INCHES ON PREPARED SUBGRADE. FINISH BEDDING TO PRESENT EVEN SURFACE FREE FROM MOUNDS AND WINDROWS.
 2. RIP-RAP SHALL BE MACHINE PLACED, NOT DUMPED. PROVIDE MATERIAL CONFORMING TO MAINDOT STANDARD SPECIFICATIONS FOR STONE FILL (9703.20). EXCEPT THAT THE MINIMUM STONE SIZE SHALL BE 9 INCHES AND FIFTY PERCENT OF THE STONES BY VOLUME SHALL HAVE AN AVERAGE DIMENSION GREATER THAN 15 INCHES. PLACE THE LARGEST STONES AT THE BOTTOM OF THE SLOPE TO FORM A STABLE BASE. EACH STONE SHALL BE INDIVIDUALLY STABLE BY MAKING CONTACT AT A MINIMUM OF THREE POINTS WITH THE SUPPORTING STONE(S) OR FOUNDATION BELOW. THE STONES SHALL BE LAID IN CLOSE CONTACT WITH THE LONGER AXIS PERPENDICULAR TO THE PLANE OF THE SLOPE TO STAGGER JOINTS. THE OPENINGS BETWEEN THE STONES IN ALL RIP-RAP SHALL BE FILLED WITH SPALL OR ROCKS SECURELY RAMMED INTO PLACE. RIP-RAP SHALL BE PLACED IN A WELL-KNIT, COMPACT, AND UNIFORM LAYER, FORMING A STRAIGHT-LINE SLOPE FROM TOP TO BOTTOM WITH A MAXIMUM SLOPE OF 1H:1V.
 3. PROVIDE EROSION AND SEDIMENTATION CONTROL IN ACCORDANCE WITH MAINE DEP REQUIREMENTS. CONSTRUCT TEMPORARY SANDBAG STREAM DIVERSION TO ISOLATE WORKSITE FROM STREAM FLOWS AND PREVENT SILTATION OF STREAM.
 4. RIP-RAP TO BE MAINTAINED BY PERIODIC REMOVAL OF LARGE WOODY VEGETATION. (BY OTHERS.)



- NOTES:
1. SITE PLAN DERIVED FROM DWG. 01.1, EXISTING CONDITIONS PLAN, BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC. DATED 2/14/2018.
 2. VERTICAL DATUM FOR ELEVATION CONTOURS SHOWN: NAVD83. CONVERSION FROM NAVD83 TO NGVD83 AT SITE: +0.83 FT.

Attended:				
NO.	DATE	INITIAL/REVISION	LGR	APP
	10/11/2017	INITIAL ISSUE		



Designed:	A. GRADESKI
Checked:	C.B. GRANT
Drawn:	A. GRADESKI
Submitted By:	L. ROBINSON
P.E. Number:	5839



Towns of Readfield and Winthrop
 17 Highland Avenue
 Winthrop, Maine

Maranacook Lake Outlet Dam
 Winthrop, Maine

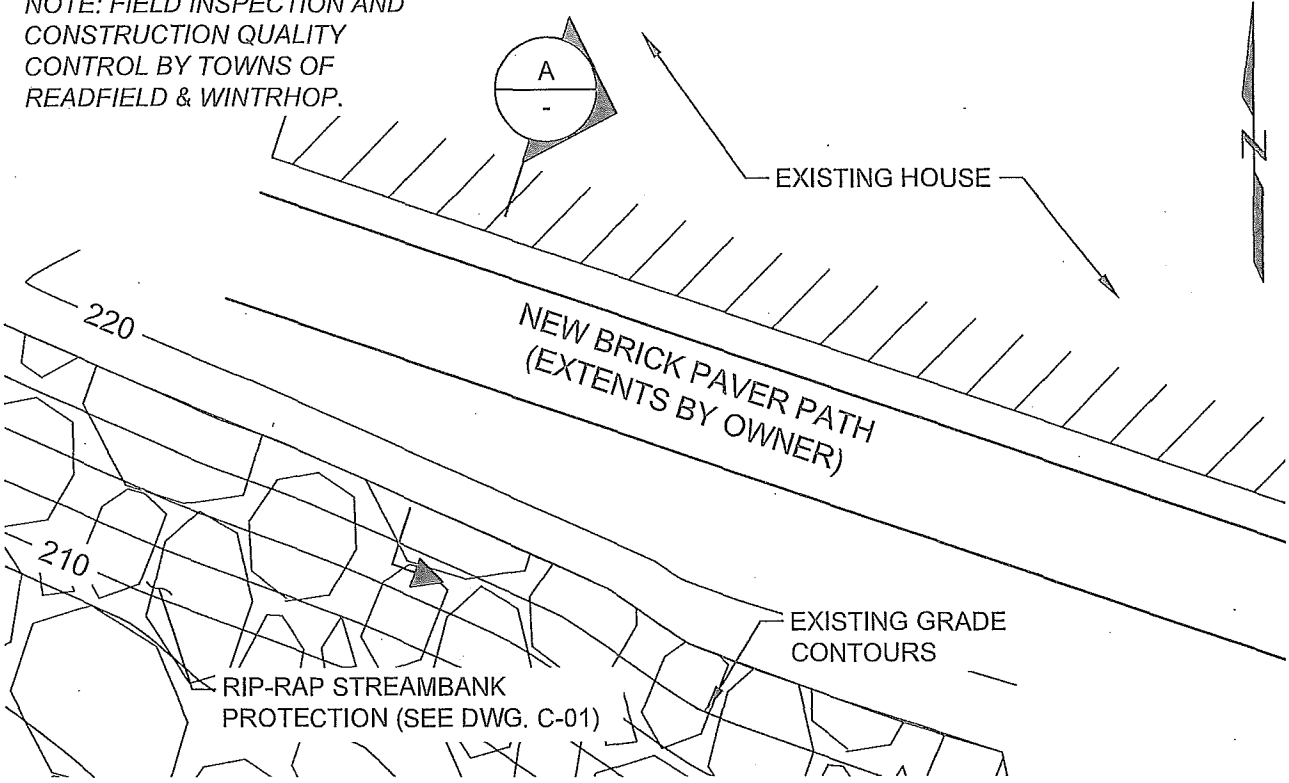
DWG. NO.
C-01

REV
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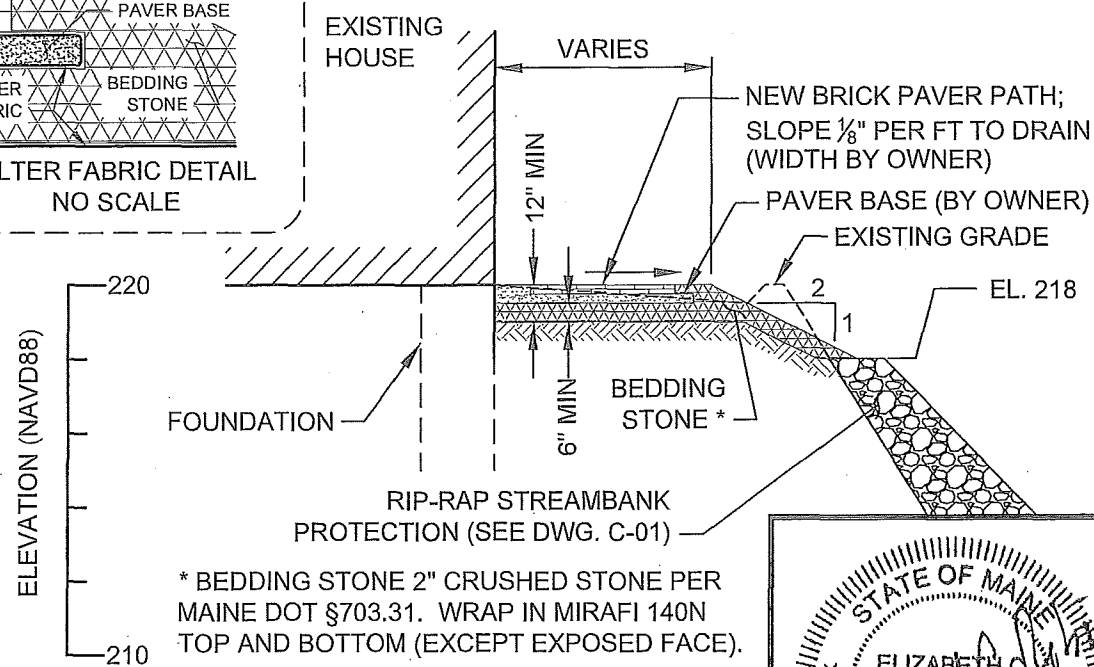
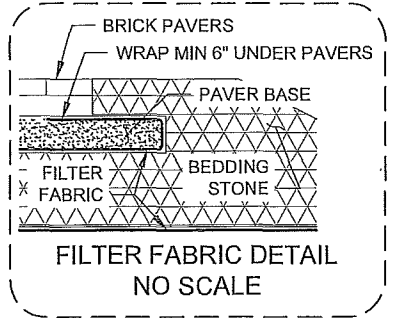
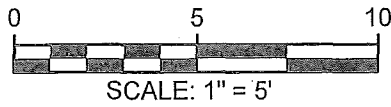
STREAM BANK PROTECTION

GEI Project 1610763-0

NOTE: FIELD INSPECTION AND CONSTRUCTION QUALITY CONTROL BY TOWNS OF READFIELD & WINTRHOP.

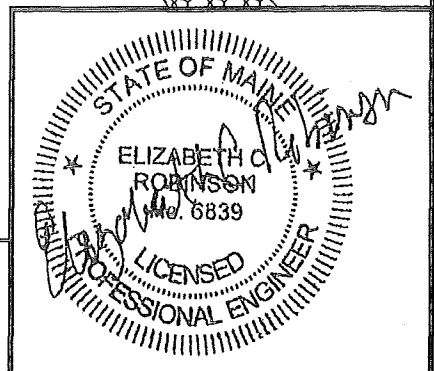


PLAN



SECTION A-A

* BEDDING STONE 2" CRUSHED STONE PER MAINE DOT §703.31. WRAP IN MIRAFI 140N TOP AND BOTTOM (EXCEPT EXPOSED FACE).



"TOWN OF READFIELD/WINTRHOP
 MARANACOOK LAKE OUTLET DAM"
 WINTRHOP, MAINE
 NAE-2018-00128
 SHEET 12 OF 12 "01/31/2017"
 SHEETS "S-03 to S-06" revised "02/15/2018"

Maranacook Lake Outlet Dam
 Streambank Protection
 Towns of Readfield & Winthrop, Maine
 TOP OF SLOPE WORK



Project 1610763 Oct. 18, 2017 SK-1



**US Army Corps
of Engineers**®
New England District

**GENERAL PERMIT
WORK-START NOTIFICATION FORM**

MAIL TO: U.S. Army Corps of Engineers, New England District
Permits and Enforcement Branch C
Regulatory Division
696 Virginia Road
Concord, Massachusetts 01742-2751

A Corps of Engineers Permit (**NAE-2018-00128**) was issued to the Town of Readfield/Town of Winthrop. The permit authorized the permittee(s) to repair existing structures, replace the existing spillway gate, and install riprap below the ordinary high water line of Mill Stream adjacent to 97 Bowdoin Street and Maranacook Lake Map 31 Lots 203-001 and 39 at Winthrop, Maine. Approximately 1,153SF of permanent and 6,650SF of temporary fresh water stream bottom impact will occur in conjunction with the reconstruction of the existing structure, dewatered areas, and installation of associated riprap.

The people (e.g., contractor) listed below will do the work, and they understand the permit's conditions and limitations.

PLEASE PRINT OR TYPE

Name of Person/Firm: _____

Business Address: _____

Telephone: () _____ () _____

Proposed Work Dates: Start: _____
Finish: _____

PERMITTEE'S SIGNATURE: _____ DATE: _____

PRINTED NAME: _____ TITLE: _____

FOR USE BY THE CORPS OF ENGINEERS

PM NEAL Submittals Required: No.

Inspection Recommendation: Random MEGP compliance



**US Army Corps
of Engineers**®
New England District

(Minimum Notice: Permittee must sign and return notification
within one month of the completion of work.)

COMPLIANCE CERTIFICATION FORM

Corps of Engineers Permit No: NAE-2018-00128

Name of Permittee: Town of Readfield/Town of Winthrop

Permit Issuance Date: _____

Please sign this certification and return it to the following address upon completion of the activity and any mitigation required by the permit. You must submit this after the mitigation is complete, but not the mitigation monitoring, which requires separate submittals.

 * MAIL TO: U.S. Army Corps of Engineers, New England District *
 * Policy & Technical Support Branch *
 * Regulatory Division *
 * 696 Virginia Road *
 * Concord, Massachusetts 01742-2751 *

Please note that your permitted activity is subject to a compliance inspection by an U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

I hereby certify that the work authorized by the above referenced permit was completed in accordance with the terms and conditions of the above referenced permit, and any required mitigation was completed in accordance with the permit conditions.

Signature of Permittee

Date

Printed Name

Date of Work Completion

() _____
Telephone Number

() _____
Telephone Number



DEPARTMENT ORDER

IN THE MATTER OF

TOWNS OF WINTHROP AND) NATURAL RESOURCES PROTECTION ACT
READFIELD) NON-HYDROPOWER DAM
Winthrop, Kennebec County) STREAM ALTERATION
MARANACOOK LAKE OUTLET DAM)
L-9120-3E-C-N (approval)) WATER QUALITY CERTIFICATION
L-9120-L5-D-N (approval)) FINDINGS OF FACT AND ORDER

Pursuant to the provisions of 38 M.R.S. §§ 480-A–480-JJ, Section 401 of the Federal Water Pollution Control Act (33 U.S.C. § 1341), and Chapters 310 of Department rules, the Department of Environmental Protection has considered the application of TOWNS OF WINTHROP AND READFIELD with the supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

1. PROJECT DESCRIPTION:

A. History of Project: In Department Order #L-9120-2B-A-X, dated October 28, 1983, the Department approved the dredging of 12 cubic yards of sediment (sand) from the upstream side of the outlet dam of Maranacook Lake. A fish screen was installed per the guidance of the Maine Department of Inland Fisheries and Wildlife (MDIFW) prior to dredging. Special Condition #2 required that the fish screen at the dam be maintained to prevent migration of fish out of the Maranacook Lake watershed. The project site is located on Bowdoin Street in the Town of Winthrop.

B. Summary: The applicants propose to modify the existing Maranacook Lake dam, including the replacement of an existing 25-foot wide concrete spillway with a 20-foot wide by four-foot high pneumatic Obermeyer gate, and the replacement of an existing walkway with a new eight-foot four-inch wide by 18-foot long gatehouse structure. On the north side of the dam, the applicants propose to remove and fill in an existing five-foot wide vertical lift gate. Below this gate, the applicants propose to fill approximately 350 square feet of the Mill Stream with rock to prevent an eddy from forming as a protection against further downstream erosion. Furthermore, the applicants propose to stabilize approximately 70 linear feet of the north bank of Mill Stream, immediately downstream of the dam with riprap. The riprap will be placed up to a height of 12 feet, at a slope with a maximum of 1H:1V, all as shown on a set of plans created by GEI Consultants, the first of which is titled “Existing Conditions Site Plan,” dated January 31, 2017, with a latest revision dated February 15, 2018.

C. Current Use of the Site: The site of the proposed project is the existing Maranacook Outlet Dam and an adjacent property. The parcel on which the dam is located is identified as Lot 203-001 on Map 31 of the Town of Winthrop’s tax maps and

the parcel on which the shoreline stabilization will occur is identified as Lot 39 on Map 31 of the Town of Winthrop's tax maps.

2. EXISTING SCENIC, AESTHETIC, RECREATIONAL OR NAVIGATIONAL USES:

The Natural Resources Protection Act (NRPA), in 38 M.R.S. §480-D(1), requires the applicants to demonstrate that the proposed project will not unreasonably interfere with existing scenic, aesthetic, recreational and navigational uses.

In accordance with Chapter 315, *Assessing and Mitigating Impacts to Scenic and Aesthetic Uses* (06-096 C.M.R. ch. 315, effective June 29, 2003), the applicants submitted a copy of the Department's Visual Evaluation Field Survey Checklist as Appendix A to the application along with a description of the property and the proposed project. The applicants also submitted several photographs of the proposed project site and surroundings. Department staff visited the project site on August 17, 2017.

The proposed project is located in Maranacook Lake and Mill Stream, which are scenic resources visited by the general public, in part, for the use, observation, enjoyment and appreciation of its natural and cultural visual qualities. The dam currently exists, and is visible from Mill Stream and Bowdoin Street. The proposed riprap will be visible from the west bank of the stream.

The applicants have reduced the visibility of the dam reconstruction from the scenic resource by limiting the scope of the project to the dam site and the area surrounding the dam. The shoreline stabilization will be visible above the normal high water line; however, it is necessary to protect the dam and the shoreline from erosion. The surrounding area contains a mix of residential and commercial buildings, with a public park across Bowdoin Street. Maranacook Lake is immediately north of the dam. There are few trees, and some houses are visible from the shore of Mill Stream.

The Department staff utilized the Department's Visual Impact Assessment Matrix in its evaluation of the proposed project and the Matrix showed an acceptable potential visual impact rating for the proposed project. Based on the information submitted in the application, the visual impact rating, and the site visit, the Department determined that the location and scale of the proposed activity is compatible with the existing visual quality and landscape characteristics found within the viewshed of the scenic resource in the project area.

The Department finds that the proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational or navigational uses of Maranacook Lake and Mill Stream.

3. SOIL EROSION:

The NRPA, in 38 M.R.S. §480-D(2), requires the applicants to demonstrate that the proposed project will not cause unreasonable erosion of soil or sediment nor

unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

The applicants propose to conduct all work between June 1 and November 1, and to coincide with low water conditions. The applicants will install erosion control measures prior to any site work. A temporary coffer dam will be installed in Maranacook Lake and the work area will be pumped dry. Then the demolition and removal of select portions of the existing dam will occur. Following the excavation of the sill to accommodate the new gate, the applicants will pour the concrete to fill the existing five-foot wide gate orifice, and construct the new supports, gate sill, and gate house columns. After the construction of the dam modifications, the applicants will install the proposed riprap. The riprap will be placed by equipment working at the top of the slope. Following the construction activities, all disturbed soil will be stabilized and the cofferdam will be removed.

The Department finds that the activity will not cause unreasonable erosion of soil or sediment nor unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.

4. HABITAT CONSIDERATIONS:

The NRPA, in 38 M.R.S. §480-D(3), requires the applicants to demonstrate that the proposed project will not unreasonably harm significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

The project site is the existing Maranacook Lake Outlet Dam. Downstream of the dam, is Mill Stream. The shoreline and channel of Mill Stream contains ledge outcrops and loose rocks. The north side of the stream channel is eroding.

According to the Department's Geographic Information System (GIS) database there are no mapped Essential or Significant Wildlife Habitats located at the site.

MDIFW reviewed the proposed project and stated that there are no Essential or Significant Wildlife Habitats at the project site. MDIFW further commented that Best Management Practices (BMPs) should be followed during construction to avoid impacting either Maranacook Lake or Mill Stream. Furthermore, MDIFW recommended that any in-water work occur between June 1 and November 1 of any given year. The applicants received MDIFW's comments and stated that work on the project will be constructed within the recommended timeframe and BMPs will be used during construction.

The Department finds that the activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine or marine fisheries or other aquatic life.

5. WATER QUALITY CONSIDERATIONS:

As discussed in Finding 3, the applicants propose to use temporary erosion and sediment controls during construction to minimize impacts to water quality from siltation. The project site will be permanently stabilized after construction. As part of the applicants' construction plan, they submitted provisions dealing with pouring concrete which the Department determined are adequate to protect water quality.

The Department does not anticipate that the proposed project will violate any state water quality law, including those governing the classification of the State's waters.

6. WETLANDS AND WATERBODIES PROTECTION RULES:

The applicants propose to directly alter 350 square feet of Mill Stream to fill in the eddy that has formed immediately downstream of the dam, and 725 square feet of stream channel to install the riprap. The new gatehouse will directly impact of 20 square feet of Maranacook Lake as a result of pile supports, and indirectly impact approximately 149 square feet of the lake from shading.

The *Wetlands and Waterbodies Protection Rules*, 06-096 C.M.R. ch. 310 (last amended January 26, 2009), interpret and elaborate on the Natural Resources Protection Act (NRPA) criteria for obtaining a permit. The rules guide the Department in its determination of whether a project's impacts would be unreasonable. A proposed project would generally be found to be unreasonable if it would cause a loss in wetland area, functions and values and there is a practicable alternative to the project that would be less damaging to the environment. Each application for a NRPA permit that involves a great pond or stream alteration must provide an analysis of alternatives in order to demonstrate that a practicable alternative does not exist.

A. Avoidance. Applicants must submit an analysis of whether there is a practicable alternative to the project that would be less damaging to the environment and this analysis is considered by the Department in its assessment of the reasonableness of any impacts. The applicants submitted an alternatives analysis for the proposed project completed by the Cobbossee Watershed District and dated January 2018. The purpose of the project is to better manage the water levels of Maranacook Lake and Mill Stream flows, as well as to stabilize the ongoing erosion issues in Mill Stream. The applicants stated that without constructing the proposed dam modifications and stabilization efforts, the water level in the lake will not be effectively managed and the erosion will continue. If the erosion continues unabated, a house at the top of the slope will be in danger of collapsing into Mill Stream. The applicants stated that given the project purpose, it is not possible to avoid all impacts to the resource and still achieve the project purpose.

B. Minimal Alteration. In support of an application and to address the analysis of the reasonableness of any impacts of a proposed project, applicants must demonstrate that the amount of Maranacook Lake and Mill Stream to be altered will be kept to the

minimum amount necessary for meeting the overall purpose of the project. The applicants stated that utilizing the existing dam structure minimizes impacts to both Maranacook Lake and Mill Stream to the greatest extent practicable while still achieving the proposed objective. Riprap will be placed in areas that are actively eroding. The applicants stated that the proposed project minimizes impacts to both Maranacook Lake and Mill Stream.

C. Compensation. In accordance with Chapter 310 §5(C)(6)(d), compensation may be required to achieve the goal of no net loss of river, stream, or brook functions and values if the project results in over 300 linear feet of impacts to the shoreline of Mill Stream. This project will alter 70 linear feet of the shoreline of Mill Stream. The fill in the eddy of Mill Stream is required to protect the downstream face of the dam from erosion. The project will place approximately 350 square feet of rock to fill the eddy, which will fill the scoured hole in the streambed.

Pursuant to Chapter 310 §5(C)(6)(c), compensation may be required to achieve the goal of no net loss of great pond functions and values if a project places fill below the normal high water line of a great pond, except for the purpose of shoreline stabilization. The proposed gatehouse construction will place 20 square feet of fill below the normal high water line, however, the new gate will allow the applicants to better regulate the water levels at Maranacook Lake, which will create a more stable habitat. Furthermore, the proposed project will not have an adverse impact on wildlife habitat as determined by MDIFW. For these reasons, the Department determined that the impact to Maranacook Lake will be insignificant and waives compensation in accordance with Chapter 310 §5(C)(7).

The Department finds that the applicants has avoided and minimized Maranacook Lake impacts to the greatest extent practicable, and that the proposed project represents the least environmentally damaging alternative that meets the overall purpose of the project.

7. OTHER CONSIDERATIONS:

The Department finds, based on the design, proposed construction methods, and location, the proposed project will not inhibit the natural transfer of soil from the terrestrial to the marine environment, will not interfere with the natural flow of any surface or subsurface waters, and will not cause or increase flooding. The proposed project is not located in a coastal sand dune system, is not a crossing of an outstanding river segment, and does not involve dredge spoils disposal or the transport of dredge spoils by water.

BASED on the above findings of fact, and subject to the conditions listed below, the Department makes the following conclusions pursuant to 38 M.R.S. §§ 480-A–480-JJ and Section 401 of the Federal Water Pollution Control Act:

- A. The proposed activity will not unreasonably interfere with existing scenic, aesthetic, recreational, or navigational uses.
- B. The proposed activity will not cause unreasonable erosion of soil or sediment.
- C. The proposed activity will not unreasonably inhibit the natural transfer of soil from the terrestrial to the marine or freshwater environment.
- D. The proposed activity will not unreasonably harm any significant wildlife habitat, freshwater wetland plant habitat, threatened or endangered plant habitat, aquatic or adjacent upland habitat, travel corridor, freshwater, estuarine, or marine fisheries or other aquatic life.
- E. The proposed activity will not unreasonably interfere with the natural flow of any surface or subsurface waters.
- F. The proposed activity will not violate any state water quality law including those governing the classifications of the State's waters.
- G. The proposed activity will not unreasonably cause or increase the flooding of the alteration area or adjacent properties.
- H. The proposed activity is not on or adjacent to a sand dune.
- I. The proposed activity is not on an outstanding river segment as noted in 38 M.R.S. § 480-P.

THEREFORE, the Department APPROVES the above noted application of TOWNS OF WINTHROP AND READFIELD to modify the existing Maranacook Lake Outlet Dam, stabilize 70 linear feet of Mill Stream and fill in a scour hole in Mill Stream as described in Finding 1, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations:

- 1. Standard Conditions of Approval, a copy attached.
- 2. The applicants shall take all necessary measures to ensure that their activities or those of their agents do not result in measurable erosion of soil on the site during the construction of the project covered by this approval.

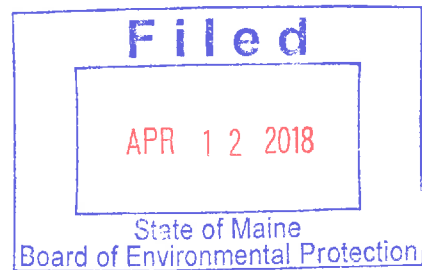
3. Severability. The invalidity or unenforceability of any provision, or part thereof, of this License shall not affect the remainder of the provision or any other provisions. This License shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

THIS APPROVAL DOES NOT CONSTITUTE OR SUBSTITUTE FOR ANY OTHER REQUIRED STATE, FEDERAL OR LOCAL APPROVALS NOR DOES IT VERIFY COMPLIANCE WITH ANY APPLICABLE SHORELAND ZONING ORDINANCES.

DONE AND DATED IN AUGUSTA, MAINE, THIS 12TH DAY OF APRIL, 2018.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: *Mark Bjea*
For: Paul Mercer, Commissioner



PLEASE NOTE THE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES.

ES/L9120CNDN/ATS#82653&83009



Natural Resources Protection Act (NRPA) Standard Conditions

THE FOLLOWING STANDARD CONDITIONS SHALL APPLY TO ALL PERMITS GRANTED UNDER THE NATURAL RESOURCES PROTECTION ACT, 38 M.R.S. § 480-A ET SEQ., UNLESS OTHERWISE SPECIFICALLY STATED IN THE PERMIT.

- A. Approval of Variations From Plans. The granting of this permit is dependent upon and limited to the proposals and plans contained in the application and supporting documents submitted and affirmed to by the applicants. Any variation from these plans, proposals, and supporting documents is subject to review and approval prior to implementation.
- B. Compliance With All Applicable Laws. The applicants shall secure and comply with all applicable federal, state, and local licenses, permits, authorizations, conditions, agreements, and orders prior to or during construction and operation, as appropriate.
- C. Erosion Control. The applicants shall take all necessary measures to ensure that his activities or those of his agents do not result in measurable erosion of soils on the site during the construction and operation of the project covered by this Approval.
- D. Compliance With Conditions. Should the project be found, at any time, not to be in compliance with any of the Conditions of this Approval, or should the applicants construct or operate this development in any way other the specified in the Application or Supporting Documents, as modified by the Conditions of this Approval, then the terms of this Approval shall be considered to have been violated.
- E. Time frame for approvals. If construction or operation of the activity is not begun within four years, this permit shall lapse and the applicants shall reapply to the Board for a new permit. The applicants may not begin construction or operation of the activity until a new permit is granted. Reapplications for permits may include information submitted in the initial application by reference. This approval, if construction is begun within the four-year time frame, is valid for seven years. If construction is not completed within the seven-year time frame, the applicants must reapply for, and receive, approval prior to continuing construction.
- F. No Construction Equipment Below High Water. No construction equipment used in the undertaking of an approved activity is allowed below the mean high water line unless otherwise specified by this permit.
- G. Permit Included In Contract Bids. A copy of this permit must be included in or attached to all contract bid specifications for the approved activity.
- H. Permit Shown To Contractor. Work done by a contractor pursuant to this permit shall not begin before the contractor has been shown by the applicants a copy of this permit.



DEP INFORMATION SHEET

Appealing a Department Licensing Decision

Dated: March 2012

Contact: (207) 287-2811

SUMMARY

There are two methods available to an aggrieved person seeking to appeal a licensing decision made by the Department of Environmental Protection's ("DEP") Commissioner: (1) in an administrative process before the Board of Environmental Protection ("Board"); or (2) in a judicial process before Maine's Superior Court. An aggrieved person seeking review of a licensing decision over which the Board had original jurisdiction may seek judicial review in Maine's Superior Court.

A judicial appeal of final action by the Commissioner or the Board regarding an application for an expedited wind energy development (35-A M.R.S.A. § 3451(4)) or a general permit for an offshore wind energy demonstration project (38 M.R.S.A. § 480-HH(1)) or a general permit for a tidal energy demonstration project (38 M.R.S.A. § 636-A) must be taken to the Supreme Judicial Court sitting as the Law Court.

This INFORMATION SHEET, in conjunction with a review of the statutory and regulatory provisions referred to herein, can help a person to understand his or her rights and obligations in filing an administrative or judicial appeal.

I. ADMINISTRATIVE APPEALS TO THE BOARD

LEGAL REFERENCES

The laws concerning the DEP's *Organization and Powers*, 38 M.R.S.A. §§ 341-D(4) & 346, the *Maine Administrative Procedure Act*, 5 M.R.S.A. § 11001, and the DEP's *Rules Concerning the Processing of Applications and Other Administrative Matters* ("Chapter 2"), 06-096 CMR 2 (April 1, 2003).

HOW LONG YOU HAVE TO SUBMIT AN APPEAL TO THE BOARD

The Board must receive a written appeal within 30 days of the date on which the Commissioner's decision was filed with the Board. Appeals filed after 30 calendar days of the date on which the Commissioner's decision was filed with the Board will be rejected.

HOW TO SUBMIT AN APPEAL TO THE BOARD

Signed original appeal documents must be sent to: Chair, Board of Environmental Protection, c/o Department of Environmental Protection, 17 State House Station, Augusta, ME 04333-0017; faxes are acceptable for purposes of meeting the deadline when followed by the Board's receipt of mailed original documents within five (5) working days. Receipt on a particular day must be by 5:00 PM at DEP's offices in Augusta; materials received after 5:00 PM are not considered received until the following day. The person appealing a licensing decision must also send the DEP's Commissioner a copy of the appeal documents and if the person appealing is not the applicants in the license proceeding at issue the applicants must also be sent a copy of the appeal documents. All of the information listed in the next section must be submitted at the time the appeal is filed. Only the extraordinary circumstances described at the end of that section will justify evidence not in the DEP's record at the time of decision being added to the record for consideration by the Board as part of an appeal.

WHAT YOUR APPEAL PAPERWORK MUST CONTAIN

Appeal materials must contain the following information at the time submitted:

1. *Aggrieved Status.* The appeal must explain how the person filing the appeal has standing to maintain an appeal. This requires an explanation of how the person filing the appeal may suffer a particularized injury as a result of the Commissioner's decision.
2. *The findings, conclusions or conditions objected to or believed to be in error.* Specific references and facts regarding the appellant's issues with the decision must be provided in the notice of appeal.
3. *The basis of the objections or challenge.* If possible, specific regulations, statutes or other facts should be referenced. This may include citing omissions of relevant requirements, and errors believed to have been made in interpretations, conclusions, and relevant requirements.
4. *The remedy sought.* This can range from reversal of the Commissioner's decision on the license or permit to changes in specific permit conditions.
5. *All the matters to be contested.* The Board will limit its consideration to those arguments specifically raised in the written notice of appeal.
6. *Request for hearing.* The Board will hear presentations on appeals at its regularly scheduled meetings, unless a public hearing on the appeal is requested and granted. A request for public hearing on an appeal must be filed as part of the notice of appeal.
7. *New or additional evidence to be offered.* The Board may allow new or additional evidence, referred to as supplemental evidence, to be considered by the Board in an appeal only when the evidence is relevant and material and that the person seeking to add information to the record can show due diligence in bringing the evidence to the DEP's attention at the earliest possible time in the licensing process or that the evidence itself is newly discovered and could not have been presented earlier in the process. Specific requirements for additional evidence are found in Chapter 2.

OTHER CONSIDERATIONS IN APPEALING A DECISION TO THE BOARD

1. *Be familiar with all relevant material in the DEP record.* A license application file is public information, subject to any applicable statutory exceptions, made easily accessible by DEP. Upon request, the DEP will make the material available during normal working hours, provide space to review the file, and provide opportunity for photocopying materials. There is a charge for copies or copying services.
2. *Be familiar with the regulations and laws under which the application was processed, and the procedural rules governing your appeal.* DEP staff will provide this information on request and answer questions regarding applicable requirements.
3. *The filing of an appeal does not operate as a stay to any decision.* If a license has been granted and it has been appealed the license normally remains in effect pending the processing of the appeal. A license holder may proceed with a project pending the outcome of an appeal but the license holder runs the risk of the decision being reversed or modified as a result of the appeal.

WHAT TO EXPECT ONCE YOU FILE A TIMELY APPEAL WITH THE BOARD

The Board will formally acknowledge receipt of an appeal, including the name of the DEP project manager assigned to the specific appeal. The notice of appeal, any materials accepted by the Board Chair as supplementary evidence, and any materials submitted in response to the appeal will be sent to Board members with a recommendation from DEP staff. Persons filing appeals and interested persons are notified in advance of the date set for Board consideration of an appeal or request for public hearing. With or without holding a public hearing, the Board may affirm, amend, or reverse a Commissioner decision or remand the matter to the Commissioner for further proceedings. The Board will notify the appellant, a license holder, and interested persons of its decision.

II. JUDICIAL APPEALS

Maine law generally allows aggrieved persons to appeal final Commissioner or Board licensing decisions to Maine's Superior Court, see 38 M.R.S.A. § 346(1); 06-096 CMR 2; 5 M.R.S.A. § 11001; & M.R. Civ. P 80C. A party's appeal must be filed with the Superior Court within 30 days of receipt of notice of the Board's or the Commissioner's decision. For any other person, an appeal must be filed within 40 days of the date the decision was rendered. Failure to file a timely appeal will result in the Board's or the Commissioner's decision becoming final.

An appeal to court of a license decision regarding an expedited wind energy development, a general permit for an offshore wind energy demonstration project, or a general permit for a tidal energy demonstration project may only be taken directly to the Maine Supreme Judicial Court. See 38 M.R.S.A. § 346(4).

Maine's Administrative Procedure Act, DEP statutes governing a particular matter, and the Maine Rules of Civil Procedure must be consulted for the substantive and procedural details applicable to judicial appeals.

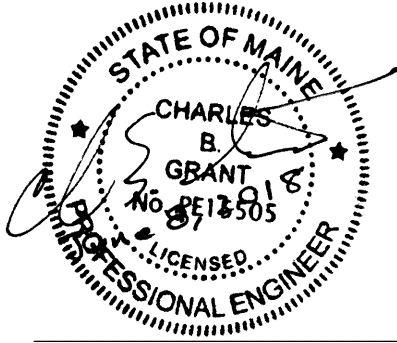
ADDITIONAL INFORMATION

If you have questions or need additional information on the appeal process, for administrative appeals contact the Board's Executive Analyst at (207) 287-2452 or for judicial appeals contact the court clerk's office in which your appeal will be filed.

Note: The DEP provides this INFORMATION SHEET for general guidance only; it is not intended for use as a legal reference. Maine law governs an appellant's rights.

TECHNICAL SPECIFICATIONS

TABLE OF CONTENTS



Charles B. Grant, P.E.

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01 33 00	Submittal Procedures	0
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02 41 19	Selective Structure Demolition	0
03 31 00	Cast-In-Place Concrete	0
11 05 99	Major Manufactured Items	0
13 34 17	Light-Frame Utility Buildings	0
13 34 19	Metal Building Systems	0
26 05 00	Electrical	0
31 11 00	Clearing & Grubbing	0
31 23 16	Excavation	0
31 23 23	Rip-Rap Streambank Protection	0
31 68 13	Rock Anchors & Dowels	0

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Proposed products list.
- C. Product data.
- D. Shop drawings.
- E. Samples.
- F. Test reports.
- G. Certificates.
- H. Manufacturer's instructions.
- I. Manufacturer's field reports.
- J. Erection drawings.

1.2 SUBMITTAL PROCEDURES

- A. Transmit each submittal with the attached form.
- B. Except for samples, manufacturer's instructions, and other items that do not exist electronically, transmit submittals in electronic (PDF) format by email attachment.
- C. Sequentially number transmittal forms. Mark revised submittals with original number and sequential alphabetic suffix.
- D. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, appropriate to submittal.
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with requirements of the work and contract documents.
- F. Schedule submittals to expedite project, and deliver to Owner/Owner's Representative. Coordinate submittal of related items.

SUBMITTAL FORM

From: <i>(Contractor)</i>		To: <i>(Owner/Owner's Representative)</i>	
Date Sent:		Date Received:	
Contract:		Project: Maranacook Lake Outlet Dam (2018)	
Submittal No.:		Description	
<p><i>Submittal No. shall include related specification section - sequential number - revision. For example submittal numbered 03 31 00 - 11 - B is the second revision (B) of the eleventh submittal (11) for Section 03 31 00.</i></p> <p>I hereby certify that I have carefully examined the enclosed submittal and have determined and verified all field measurements, construction criteria, materials, catalog numbers and similar data, coordinated the submittal with other submittals and the work of other trades and subcontractors, and to the best of my knowledge and belief, the enclosed submittal is in full compliance with the Contract requirements, except as follows (enter "NONE" if there are no exceptions):</p> <p>By: _____ Date: _____</p>			
<p>Owner/Owner's Representative Review</p> <p>The Owner/Owner's Representative will review all submittals solely for the purpose of determining whether the information contained in the submittal conforms to the design concept of the contract documents. Review of submittals does not relieve the Contractor from responsibility for errors or omissions in Contractor's design, details, calculations, analyses, test methods, materials, means and methods, and safe and successful construction of the work. Submittals will be returned with the one of the following classifications:</p>			
<input type="checkbox"/>	1	Work may proceed. Reviewed for general consistency with contract documents; no corrections, comments, or marks.	
<input type="checkbox"/>	2N	Work may proceed subject to the changes indicated. Resubmittal not required.	
<input type="checkbox"/>	2R	Work may not proceed on indicated part(s). Work may proceed on other parts subject to comments and revisions. Resubmittal is required.	
<input type="checkbox"/>	3	Work may not proceed. Major corrections or not in conformance with contract documents. Revise and resubmit.	
<input type="checkbox"/>	4	For information only. Items not reviewed or items for which no submittal is required.	
By: _____		Date: _____	

- G. For each submittal for review, allow 10 business days excluding delivery time to and from Contractor.
- H. Identify variations from contract documents and product or system limitations that may be detrimental to successful performance of completed work.
- I. Allow space on submittals for Contractor and Owner/Owner's Representative review stamps.
- J. When revised for resubmittal, identify changes made since previous submittal.
- K. Distribute copies of reviewed submittals as appropriate. Instruct parties promptly to report inability to comply with requirements.
- L. Submittals not requested will not be recognized or processed.

1.3 PROPOSED PRODUCTS LIST

- A. Within 5 business days after date of Owner-Contractor agreement, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.4 PRODUCT DATA

- A. Product Data: Submit to Owner/Owner's Representative for review for limited purpose of checking for conformance with information given and design concept expressed in contract documents.
- B. Submit number of copies Contractor requires, plus one copy for Owner/Owner's Representative.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Indicate product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

1.5 SHOP DRAWINGS

- A. Shop Drawings: Submit to Owner/Owner's Representative for review for limited purpose of checking for conformance with information given and design concept expressed in contract documents.
- B. Indicate special utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

- C. When required by individual specification sections, provide shop drawings signed and sealed by professional engineer responsible for designing components shown on shop drawings.
 - 1. Include signed and sealed calculations to support design.
 - 2. Submit drawings and calculations in form suitable for submittal to and approval by authorities having jurisdiction.
 - 3. Make revisions and provide additional information when required by authorities having jurisdiction.

1.6 SAMPLES

- A. Samples: Submit to Owner/Owner's Representative for review for limited purpose of checking for conformance with information given and design concept expressed in contract documents.
- B. Samples for Selection as Specified in Product Sections:
 - 1. Submit to Owner/Owner's Representative for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes, textures, and patterns for Owner/Owner's Representative selection.
- C. Submit samples to illustrate functional and aesthetic characteristics of products, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- D. Include identification on each sample, with full project information.
- E. Submit number of samples specified in individual specification sections; Owner/Owner's Representative will retain sample.
- F. Reviewed samples which may be used in the work are indicated in individual specification sections.
- G. Samples will not be used for testing purposes unless specifically stated in specification section.

1.7 TEST REPORTS

- A. Submit test reports for information for limited purpose of assessing conformance with information given and design concept expressed in contract documents.

1.8 CERTIFICATES

- A. When specified in individual specification sections, submit certification by manufacturer, installation/application subcontractor, or Contractor to Owner/Owner's Representative, in quantities specified for product data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Owner/Owner's Representative.

1.9 MANUFACTURER'S INSTRUCTIONS

- A. For all manufactured items, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, to Owner/Owner's Representative in quantities specified for product data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

1.10 MANUFACTURER'S FIELD REPORTS

- A. Submit report within 24 of observation to Owner/Owner's Representative for information.
- B. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in contract documents.

1.11 ERECTION DRAWINGS

- A. Submit for information for limited purpose of assessing conformance with information given and design concept expressed in contract documents.
- B. Data indicating inappropriate or unacceptable work may be subject to action by Owner/Owner's Representative.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

SECTION 01 50 00

TEMPORARY FACILITIES & CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Cofferdam and control of water.
- B. Site access; Parking.
- C. Temporary Utilities: Temporary electricity, temporary lighting for construction purposes, temporary water service, and temporary sanitary facilities.
- D. Construction Facilities: Field offices and sheds, vehicular access, parking, progress cleaning and waste removal, and fire prevention facilities.
- E. Temporary Controls: Barriers, security, water control, dust control, erosion and sediment control, noise control, pollution control, rodent control, and removal of utilities, facilities, and controls.

1.2 COFFERDAM AND CONTROL OF WATER

- A. Demolition and construction work to be performed in the dry.
- B. Provide temporary cofferdam in locations and to dimensions shown on drawings to divert water around construction site.
- C. Cofferdam structure to be designed by Contractor and may consist of sandbags, super-sacks, Porta-Dam®, or other structures as selected and designed by Contractor.
- D. In the event of a large rainstorm that would raise the headwater elevation in Maranacook Lake an unacceptable elevation or otherwise endanger the public, Owner may elect, at Owner's sole discretion, to breach the cofferdam to control headwater. When ordered to do so by the Owner:
 - 1. Evacuate jobsite and breach cofferdam in a controlled manner and in compliance with all applicable permits.
 - 2. Restore cofferdam and resume work following passage of flood waters.
 - 3. Owner will pay reasonable costs associated with breaching and restoration of cofferdam, evacuation and restoration of jobsite, and loss of or damage to equipment, work, or materials due to flooding, provided that such costs are not due to Contractor's negligence. Provide substantiation for claimed costs with application for payment.

1.3 SITE ACCESS

- A. Site access is from Bowdoin Street via two (2) locations shown on Drawings:
 - 1. Existing Town of Winthrop Right-of-Way south of dam site.
 - 2. Over property of abutting landowner north of dam site.
- B. Coordinate with landowner(s) and right-of-way holder as appropriate to establish conditions of access.
- C. Locate and mark all utilities and other subsurface structures within site access locations.
 - 1. Inspect and document condition of all utilities prior to construction.
 - 2. Protect utilities from damage throughout construction.
 - 3. Inspect utilities following construction. Repair any damage.
- D. Maintain site access as required to provide width and load bearing capacity to accommodate unimpeded traffic for construction purposes. Ensure proper drainage; prevent rutting and ponding of water.
- E. Mud from Site Vehicles: Provide means of removing mud from vehicle wheels before entering streets.
- F. At conclusion of work, restore access site locations to original condition.

1.4 STAGING AREA

- A. Town of Winthrop DPW yard is available for off-site staging of equipment and materials.
- B. Coordinate with Town of Winthrop DPW to determine size of available area and requirements for access.

1.5 PARKING

- A. Arrange for or construct temporary surface parking areas to accommodate construction personnel.
- B. When site space is not adequate, provide additional off-site parking.
- C. Use of public ways and public parking areas for construction personnel parking is not permitted.

1.6 TEMPORARY ELECTRICITY

- A. Electrical service does not currently exist at dam site. Work required under this Section may be coordinated with installation of permanent electrical service required under this Contract, at Contractor's option.
- B. Provide and pay for power service required from utility source as needed for construction operations, or use generators to generate electrical power on-site.
- C. Provide temporary electric feeder from electrical service.
- D. Provide power outlets, with branch wiring and distribution boxes. Provide flexible power cords as required for portable construction tools and equipment.
- E. Provide main service disconnect and over-current protection at convenient location, feeder switch at source distribution equipment, and meter, as appropriate.

1.7 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

- A. Provide and maintain lighting for construction operations to provide safe and efficient working conditions and comply with regulatory requirements.
- B. Provide and maintain lighting to exterior staging and storage areas after dark for security purposes, at a level acceptable to local law enforcement authorities.
- C. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps for specified lighting levels.
- D. Maintain lighting and provide routine repairs.
- E. Permanent lighting may be utilized during construction.

1.8 TEMPORARY WATER SERVICE

- A. Reservoir water may be utilized for construction operations, unless potable water is specifically required.

1.9 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Existing facility use is not permitted. Provide facilities at time of project mobilization.

1.10 FIELD OFFICES AND SHEDS

- A. Provide field offices and sheds as required for Contractor's operations.
- B. Owner/Owner's Representative does not require field office under this Contract.
- C. At completion of work remove buildings, foundations, utility services, and debris. Restore areas.

1.11 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.
- B. Collect and remove waste materials, debris, and rubbish from site no less frequently than once per week, and dispose off-site.

1.12 FIRE PREVENTION FACILITIES

- A. Prohibit smoking on site.
- B. Establish fire watch for cutting, welding, and other hazardous operations capable of starting fires. Maintain fire watch before, during, and after hazardous operations until threat of fire does not exist.
- C. Portable Fire Extinguishers: NFPA 10; 10 pound capacity, 4A-60B: C UL rating.
 - 1. Provide at least one fire extinguisher at each location where work is being performed.
 - 2. Provide minimum one fire extinguisher in every construction trailer and storage shed.

1.13 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- B. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.14 SECURITY

- A. Security Program:
 - 1. Protect Work and existing premises from theft, vandalism, and unauthorized entry.
 - 2. Maintain program throughout construction period until demobilization.
- B. Entry Control:
 - 1. Restrict entrance of persons and vehicles into Project site and existing facilities.
 - 2. Allow entrance only to authorized persons with proper identification.
 - 3. Maintain log of workers and visitors, make available to Owner/Owner's Representative on request.

4. Owner/Owner's Representative will control entrance of persons and vehicles related to Owner's operations.

1.15 WATER CONTROL

- A. In no case shall water contaminated by construction activities be allowed to flow untreated into any natural body of water.
- B. Prevent water and cutting fluids from running down face of dam. Immediately and thoroughly wash face of dam and collect any residue to prevent staining.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.

1.16 DUST CONTROL

- A. Execute work by methods to minimize raising dust from construction operations.
- B. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.17 EROSION AND SEDIMENT CONTROL

- A. Submit Shop Drawings showing locations and details of erosion and Erosion and Sediment Control Plan in accordance with 01 33 00 - Submittal Procedures.
- B. Comply the requirements of the following documents:
 1. Conceptual erosion and sediment control plan accompanying permit applications for this work.
 2. Maine Erosion and Sediment Control Best Practices: Manual for Designers and Engineers, Maine Department of Environmental Protection, October 2016.
 3. Maine Erosion and Sediment Control Practices Field Guide for Contractors, Maine Department of Environmental Protection, 2014.
- C. Control runoff from disturbed areas, protect and stabilize steep slopes, and protect wetlands, water courses and bodies of water that will be affected by the Work.
- D. Provide, install, maintain, and remove erosion and sedimentation control components, including all materials, equipment, and labor necessary for the implementation of erosion and sedimentation control measures specified herein and in accordance with State and Federal requirements to minimize soil erosion and sedimentation from disturbed areas. Control measures may include:
 1. Sediment barriers installed and maintained to control sedimentation from disturbed areas.

2. Temporary seeding to stabilize disturbed areas during periods when permanent seeding is not allowed, or to stabilize disturbed areas that remain exposed for more than 14 days prior to permanent stabilization.
 3. Temporary mulching or erosion matting placed where vegetative cover cannot be established or maintained.
 4. Waterbars constructed across the road surface to channel road runoff into ditches.
 5. Stone check dams installed within vegetated ditches to allow establishment of vegetation.
- E. Work involving dewatering shall be performed in accordance with Maine DEP standards and applicable permits.

1.18 NOISE CONTROL

- A. Provide methods, means, and facilities to minimize noise produced by construction operations.
- B. Limit intensity of noise at nearest adjacent occupied structure to a maximum of 80 decibels.
- C. Limit hours of construction activities to between 6:00 a.m. and 10:00 p.m.
- D. Comply with Town of Winthrop Unnecessary Noise Ordinance and all other local, state, and federal laws regulations pertaining to construction noise. Comply with noise control provisions of all applicable permits. Comply with noise control and hearing conservation requirements of all applicable construction safety regulations.

1.19 POLLUTION CONTROL

- A. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
- B. Comply with pollution and environmental control requirements of authorities having jurisdiction.

1.20 RODENT CONTROL

- A. Provide methods, means, and facilities to prevent rodents from accessing or invading premises and temporary facilities.

1.21 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, and materials prior to final application for payment inspection.

- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing and permanent facilities used during construction to original condition.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION - NOT USED.

END OF SECTION

SECTION 02 41 19

SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Demolishing designated portions of existing concrete dam structure.
2. Removing existing steel platform.
3. Removing existing slide gate, low-level outlet valves, and operators.
4. Other cutting and demolition required for completion of the work.
5. Removing designated items for Owner's retention.
6. Protecting items designated to remain.
7. Removing demolished materials.

1.2 SUBMITTALS

- A. Demolition Schedule: Indicate overall schedule, staging, and coordination with other work.
- B. Demolition Procedures: Submit technical description of equipment to be used and procedures to be followed.

1.3 QUALITY ASSURANCE

- A. Comply with provisions of all applicable permits.
- B. Conform to applicable codes for demolition work, dust control, rigging, and jobsite safety.
- C. Protect public, abutting properties, and adjacent structures from effects of demolition activities.
- D. Conform to applicable codes for procedures when hazardous or contaminated materials are discovered.

1.4 SCHEDULING

- A. Cooperate with Owner/Owner's Representative in scheduling noisy operations and waste removal that may impact Owner's operations or disturb public or abutting landowners.

1.5 PROJECT CONDITIONS

- A. Conduct demolition to minimize interference with adjacent areas.
- B. Cease operations immediately if structure to remain appears to be in danger and notify Owner/Owner's Representative. Do not resume operations until directed.

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 PREPARATION

- A. Notify affected utility companies before starting work and comply with their requirements.
- B. Mark location and termination of utilities. Identify, disconnect, and cap any utilities in project area. Annotate record drawings indicating location and type of service for capped utilities remaining after demolition.
- C. Erect, and maintain temporary barriers and security devices, including warning signs and lights, and similar measures, for protection of the public, Owner, and Contractor personnel.
- D. Prevent movement of structure to remain; provide temporary bracing and shoring required to ensure safety of existing structure.

3.2 SALVAGE REQUIREMENTS

- A. Coordinate with Owner/Owner's Representative to identify components and equipment required to be removed and delivered to Owner. Tag components and equipment Owner/Owner's Representative designates for salvage. Protect designated salvage items from demolition operations until items can be removed.
- B. Carefully remove components and equipment indicated to be salvaged. Disassemble as required to permit removal. Package small and loose parts to avoid loss. Mark equipment and packaged parts to permit identification and consolidation of components of each salvaged item. Prepare assembly instructions consistent with disassembled parts. Package assembly instructions in protective envelope and securely attach to each disassembled salvaged item.
- C. Deliver salvaged items to Owner.

3.3 REMOVAL

- A. Remove existing steel platform.
- B. Remove existing slide gate, operator, and supporting brackets. Remove existing gate frame if frame can be removed without significant damage to concrete.

- C. Remove existing low-level outlet valves, operators, and supporting brackets. Leave downstream pipe stub in place or cut off square.
- D. Cut off protruding anchor bolts and other embedded hardware flush with concrete surface.
- E. Patch concrete surfaces damaged during removal except where surface will be covered with new concrete infill or structure.

3.4 DEMOLITION

- A. Demolish existing spillway weir, pier, and other designated concrete structures.
- B. Use saws, shears, chipping hammers, and other appropriate equipment. Protect existing structures to remain. Within 2 feet of existing structures to remain, use hand-held chipping equipment only. Saw-cut as required to isolate concrete to be demolished from concrete to remain.
- C. At existing structures to remain, if an existing construction joint is present, demolish to the line of the joint. If concrete is monolithic, demolish at least to line indicated on Drawings, but no more than 2 inches beyond line indicated on Drawings.
- D. Demolish concrete structures to rock.
- E. Cut off protruding rebar and other embedded hardware flush with concrete or rock surface.

3.5 DISPOSAL

- A. Remove demolished materials from site except where specifically noted otherwise. Do not burn or bury materials on site. Remove materials as work progresses. Upon completion of work, leave areas in clean condition.
- B. Haul demolished and removed materials off site. Transport in such a manner as to comply with applicable regulations and protect the public.
- C. Dispose of all demolished and removed materials in accordance with regulatory requirements. Maintain records of disposal locations
- D. Concrete demolition material, excavated rock, and loose material such as sand and gravel may be disposed of at no cost by trucking the material to Map 20 Lot 29 in Winthrop, on Route 202 [directly across from Charlies Chevrolet](#). Additionally, the Town of Readfield and the Town of Winthrop each have transfer stations, should alternative sites be needed.

END OF SECTION

SECTION 03 31 00

CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes cast-in-place concrete, joints in concrete, reinforcement steel and appurtenant work, epoxy-grouted dowels, formwork, bracing, shoring, and supports.
- B. Cement-grouted rock anchors and dowels are not included in this Section. (See Section 31 68 13, Rock Anchors & Dowels.)
- C. For small quantities of concrete, Owner/Owner's Representative may elect to waive certain requirements of this Specification. Any such decision is exclusively at the Owner's/Owner's Representative's option.

1.2 REFERENCES

- A. Where dates or editions are not indicated, the following edition applies:
 - 1. For references included in the design basis Building Code, the edition referenced in that Building Code.
 - 2. For all other references, the current edition in force at the date of Contract award.
- B. American Concrete Institute
 - 1. ACI 301- Structural Concrete for Buildings.
 - 2. ACI 304.2R - Placing Concrete by Pumping Methods.
 - 3. ACI 306.1 - Cold Weather Concreting.
 - 4. ACI 315 - Details and Detailing of Concrete Reinforcement
 - 5. ACI 318 - Building Code Requirements for Reinforced Concrete.
 - 6. ACI 347 - Guide to Formwork for Concrete.
 - 7. ACI 117 - Standard Tolerance for Concrete Construction and Materials.
- C. ASTM International:
 - 1. ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement.
 - 2. ASTM A185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.

3. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
 4. ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field.
 5. ASTM C33 - Concrete Aggregates.
 6. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
 7. ASTM C94 - Ready- Mixed Concrete.
 8. ASTM C114 - Standard Test Methods for Chemical Analysis of Hydraulic Cement.
 9. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
 10. ASTM C150 - Portland Cement.
 11. ASTM C156 - Standard Test Method for Water Retention by Concrete Curing Materials.
 12. ASTM C260 - Air Entraining Admixtures for Concrete.
 13. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
 14. ASTM C494 - Chemical Admixtures for Concrete.
 15. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete.
 16. ASTM C920-14a - Standard Specification for Elastomeric Joint Sealants
 17. ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
 18. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. NSF International
1. NSF/ANSI 61: Drinking Water System Components - Health Effects
- E. American Welding Society:
1. AWS D1.4 - Structural Welding Code - Reinforcing Steel.
- F. Materials:

1. U.S. Product Standard PS 20 - American Softwood Lumber Standard

1.3 SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Submittal Procedures.
- B. Shop Drawings
 1. Detailed drawings of the falsework proposed to be used. Such drawings shall be in sufficient detail to indicate the general layout, sizes of members, anticipated stresses, grade of materials to be used in the falsework, and typical soil conditions.
 2. Shop bending diagrams, placing lists, and drawings of reinforcing steel prior to fabrication.
 3. Details of the concrete reinforcing steel and concrete inserts shall be submitted at the earliest possible date after receipt by the Contractor of the Notice to Proceed. Details of reinforcing steel for fabrication and erection shall conform to ACI 315 and the requirements herein. The shop bending diagrams shall show the actual lengths of bars, to the nearest inch measured to the intersection of the extensions (tangents for bars of circular cross section) of the outside surface. Include bar placement diagrams which clearly indicate the dimensions of each bar splice.
 4. Where mechanical couplers are required or permitted to be used to splice reinforcing steel, submit manufacturer's literature which contains instructions and recommendations for installation for each type of coupler used; certified test reports which verify the load capacity of each type and size of coupler used; and Shop Drawings that show the location of each coupler with details of how they are to be installed in the formwork.
 5. If reinforcement steel is spliced by welding at any location, submit mill test reports that contain the information necessary for the determination of the carbon equivalent per AWS D1.4 Structural Welding Code - Reinforcing Steel. The Contractor shall submit a written welding procedure for each type of weld for each size of bar which is to be spliced by welding; merely a statement that AWS procedures will be followed is not acceptable. The Contractor shall submit certifications of procedure qualifications for each welding procedure used and welder qualifications, for each welding procedure, and for each welder performing the work. Such qualifications shall be as specified in AWS D1.4.
 6. Manufacturer's information demonstrating compliance with requirements of the following:
 - a. Bearing pads
 - b. Neoprene sponge

- c. Preformed joint filler
 - d. Backing rod
 - e. Elastomeric joint sealant
 - f. Bond breaker
 - g. Slip dowels
 - h. PVC tubing
 - i. Form ties and related accessories
 - j. Form gaskets
 - k. Form release agent
 - l. List of form materials and locations of use
 - m. Mill tests for cement
 - n. Admixture certification. Chloride ion content shall be included.
 - o. Aggregate gradation test results and certification
 - p. Aggregate reactivity test results and certification
 - q. Materials and methods for curing
7. Placement drawings showing the location and type of joints for each structure.
- C. Mix Designs: Prior to beginning the work, submit preliminary concrete mix designs which shall show the proportions and gradations of materials proposed for each class and type of concrete. The mix designs shall be checked by an independent testing laboratory acceptable to the Owner/Owner's Representative. Costs related to such checking shall be the Contractor's responsibility. When a water reducing admixture is to be used, the Contractor shall furnish mix designs for concrete both with and without the admixture.
- D. Delivery Tickets: Where ready-mix concrete is used, the Contractor shall furnish certified delivery tickets at the time of delivery of each load of concrete. Each ticket shall show the state certified equipment used for measuring, and the total quantities, by weight, of cement, sand, each class of aggregate, admixtures, the amounts of water in the aggregate, added at the batching plant, and the amount allowed to be added at the Site for the specific design mix. In addition, each certificate shall state the mix number, total yield in cubic yards, and the time of day to the nearest minute, corresponding to the time when the batch was dispatched, when it left the plant, when it arrived at the Site, when unloading began, and when unloading was finished.

1.4 QUALITY ASSURANCE

A. Testing of Reinforcing Steel

1. If requested by the Owner/Owner's Representative, the Contractor shall furnish samples from each heat of reinforcing steel in a quantity adequate for testing. Costs of initial tests will be paid by the Owner. Costs of all testing shall be paid for from the Testing Allowance.
2. If requested by the Owner/Owner's Representative, the Contractor shall furnish samples of each type of welded splice used in the Work in a quantity and of dimensions adequate for testing. At the discretion of the Owner/Owner's Representative, radiographic testing of direct butt welded splices will be performed. The Contractor shall provide assistance necessary to facilitate testing. The Contractor shall repair any weld that fails to meet the requirements of AWS D1.4. Costs of all testing shall be paid for from the Testing Allowance.

B. Testing of Materials

1. Tests on component materials and for compressive strength of concrete will be performed as indicated herein. Tests for determining slump will be in accordance with the requirements of ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
2. Testing for aggregate shall include sand equivalence, reactivity, organic impurities, abrasion resistance, and soundness in accordance with ASTM C33 - Concrete Aggregates.
3. The cost of laboratory tests on cement, aggregates, and concrete, will be paid by the Owner. However, the Contractor shall pay the cost of any additional tests and investigations on Work that does not meet the Specifications. The laboratory will meet or exceed the requirements of ASTM C1077 - Standard Practice for Agencies Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Testing Agency Evaluation.
4. Concrete for testing shall be furnished by the Contractor at no cost to the Owner, and the Contractor shall assist the Owner/Owner's Representative in obtaining samples and disposal and cleanup of excess material.

C. Compression Tests

1. Compression test specimens shall be taken during construction from the first placement of each class of concrete herein and at intervals thereafter as selected by the Owner/Owner's Representative to insure continued compliance with these Specifications. Each set of test specimens will be a minimum of 4 cylinders.

2. Compression test specimens for concrete will be made in accordance with Section 9.2 of ASTM C31 - Standard Practice for Making and Curing Concrete Test Specimens in the Field. Specimens will be 6-inches diameter by 12-inches high cylinders.
 3. Compression tests will be performed in accordance with ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens. One test cylinder will be tested at 7 Days and 2 at 28 Days. The remaining cylinder will be held to verify test results, if needed.
- D. Evaluation and Acceptance of Concrete
1. Evaluation and acceptance of the compressive strength of concrete will be according to the requirements of ACI 318 - Building Code Requirements for Reinforced Concrete, Chapter 5 "Concrete Quality", and as indicated herein.
 2. If any concrete fails to meet these requirements, immediate corrective action shall be taken to increase the compressive strength for subsequent batches of the type of concrete affected.
 3. Concrete that fails to meet the ACI requirements and these Specifications is subject to removal and replacement as part of the Work.
- E. Construction Tolerances:
1. The Contractor shall set and maintain concrete forms and perform finishing operations so that the concrete is within the tolerances herein. Surface defects and irregularities are defined as finishes and are to be distinguished from tolerances. Tolerance is the permissible variation from lines, grades, or dimensions indicated.
 2. Where tolerances are not indicated, permissible deviations will be in accordance with ACI 117 - Standard Tolerance for Concrete Construction and Materials. The variation from required lines or grades shall not exceed 1/4-inch in 10 feet and there shall be no offsets or visible waviness in the finished surface.
 3. Spillway sill structure, piers, and abutment plates for Obermeyer gate are required to meet tolerances specified by Obermeyer Hydro, Inc. See OHI Project 16-1664 drawings. Tolerances are exceptionally stringent with respect to dimensions, alignment, flatness, plumbness, and finishing.

PART 2 - PRODUCTS

2.1 FORM AND FALSEWORK MATERIALS

- A. Except as otherwise expressly accepted by the Owner/Owner's Representative, lumber brought on the Site for use as forms, shoring, or bracing shall be new material.

- B. Materials for concrete forms, formwork, and falsework shall conform to the following requirements:
1. Lumber shall be Douglas Fir or Southern Yellow Pine, construction grade or better, in conformance with U.S. Product Standard PS 20 - American Softwood Lumber Standard.
 2. Form materials shall be metal, wood, plywood, or other material that will not adversely affect the concrete and will facilitate placement of concrete to the shape, form, line, and grade required.
 3. Metal form panels shall be of commercial manufacture and in new or like-new condition. Form edges shall align and butt tightly together. Forms shall be clean and free of rust, pits, dents, holes, bends, and other damage.
 4. Wood form panels shall be High-Density Overlay (HDO) plywood, specifically rated for use as concrete forms, and in new or like-new condition. Form edges shall align and butt tightly together. Forms shall be clean and free of splinters, tears, cuts, holes, bends, and other damage.
- C. Unless otherwise indicated, exterior corners in concrete members shall be provided with 3/4-inch chamfers or be tooled to a 1/2-inch radius. Re-entrant corners in concrete members shall not have fillets unless otherwise indicated.
- D. Forms and falsework to support slabs shall be designed for the total dead load, plus a live load of 50 psf (minimum). The minimum design load for combined dead and live loads shall be 100 psf.

2.2 FORM TIES

- A. Form ties shall be provided with a plastic cone or other suitable means for forming a conical hole to insure that the form tie may be broken off back of the face of the concrete. The maximum diameter of removable cones for rod ties or other removable form-tie fasteners having a circular cross-section shall not exceed 1-1/2 inches; and such fasteners shall be such as to leave holes of regular shape for reaming.
- B. Removable taper ties may be used when approved by the Owner/Owner's Representative.

2.3 REINFORCING STEEL

- A. General: Reinforcing steel for cast-in-place reinforced concrete construction shall conform to the following requirements:
1. Bar reinforcement shall conform to the requirements of ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement, for Grade 60 Billet Steel Reinforcement, unless otherwise indicated.

2. Welded wire fabric reinforcement shall conform to the requirements of ASTM A185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement, and the details indicated. Welded wire fabric with longitudinal wire of W4 size wire and smaller shall be either furnished in flat sheets or in rolls with a core diameter of not less than 10 inches. Welded wire fabric with longitudinal wires larger than W4 size shall be furnished in flat sheets only.
3. Spiral reinforcement shall be cold-drawn steel wire conforming to the requirements of ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement.

B. Accessories

1. Accessories shall include necessary chairs, slab bolsters, concrete blocks, tie wires, dips, supports, spacers, and other devices to position reinforcement during concrete placement. Bar supports shall meet the requirements of the CRSI Manual of Standard Practice including special requirements for supporting epoxy coated reinforcing bars. Wire bar supports shall be CRSI Class 1 for maximum protection with a 1/8-inch minimum thickness of plastic coating which extends at least 1/2-inch from the concrete surface. Plastic shall be gray in color.
2. Concrete blocks (dobies) used to support and position reinforcement steel shall have the same or higher compressive strength than required for the concrete in which they are located. Where concrete blocks are used on concrete surfaces exposed to view, the color and texture of the concrete blocks shall match that required for the finished surface. Wire ties shall be embedded in concrete block bar supports.

2.4 MECHANICAL COUPLERS

- A. Mechanical couplers shall be provided where indicated and where approved by the Owner/Owner's Representative. Couplers shall develop a tensile strength that exceeds 125 percent of the yield strength of the reinforcing bars being spliced at each splice.

2.5 SPLICES

- A. Welded splices shall be provided where indicated and where approved by the Owner/Owner's Representative. Welded splices of reinforcement steel shall develop a tensile strength exceeding 125 percent of the yield strength of the reinforcing bars that are connected.
- B. Materials required to perform the welded splices to the requirements of AWS D1.4 shall be provided.

2.6 CONCRETE MATERIALS

- A. Materials shall be delivered, stored, and handled so as to prevent damage by water or breakage. Only one brand of cement shall be used. Cement reclaimed from cleaning

bags or leaking containers shall not be used. Cement shall be used in the sequence of receipt of shipments.

- B. Materials for the Work shall comply with the requirements of Sections 201, 203, and 204 of ACI 301- Structural Concrete for Buildings, as applicable.
- C. Storage of materials shall conform to the requirements of Section 205 of ACI 301.
- D. Materials for concrete shall conform to the following requirements:
 - 1. Cement shall be Portland cement conforming to ASTM C150 - Portland Cement, Type II.
 - 2. Where Portland cement plus a pozzolan is used the pozzolan shall not constitute more than 20% by weight of the total cementitious materials. Pozzolan shall meet the requirements of ASTM C618 for Class N or F with the following additional requirements:
 - a. The maximum percentage of sulfur trioxide shall be 4.0 percent for Class F.
 - b. The maximum percentage loss on ignition shall be 8.0 percent for Class N and 2.5 percent for Class F.
 - c. The pozzolanic activity index with lime shall be determined using 2-inch cubes and the minimum strength at seven (7) days shall be 900 pounds per square inch.
 - d. Unless the Contractor selects aggregates that are not potentially alkali-reactive, pozzolan shall be tested for reduction of mortar expansion at fourteen (14) days as specified for Class N pozzolan under the optional physical requirements in Table 2A of ANSI/ASTM C618. However, the cement used in the test shall be low-alkali. For the pozzolan to be acceptable, it shall result in an expansion reduction of zero percent or greater when compared to the control test.
 - e. Pozzolan shall not decrease the sulfate resistance of concrete. Before a Class N pozzolan is used, it shall be shown by test and experience not to detract from the sulfate resistance. Before a Class F pozzolan is used, it shall be shown to have an "R" factor of less than 2.5, determined in accordance with ASTM C114.
 - 3. Water shall be potable, clean, and free from objectionable quantities of silty organic matter, alkali, salts, and other impurities. The water shall be considered potable, for the purposes of this Section only, if it meets the requirements of the local governmental agencies. Agricultural water with high total dissolved solids (over 1000 mg/l TDS) shall not be used.

4. Aggregates shall be obtained from pits acceptable to the Owner/Owner's Representative, shall be non-reactive, and shall conform to ASTM C33. Maximum size of coarse aggregate shall be as indicated. Lightweight sand for fine aggregate will not be permitted. Sand shall not exceed 40% of the total aggregates.
5. Ready-mix concrete shall conform to the requirements of ASTM C94 - Ready-Mixed Concrete.
6. Air-entraining agent meeting the requirements of ASTM C260 - Air Entraining Admixtures for Concrete shall be used. Sufficient air-entraining agent shall be used to provide a total air content of 3 to 5 percent. Concrete floors to receive a dry-shake floor hardener shall have an air content not to exceed 3 percent. The Owner reserves the right, at any time, to sample and test the air-entraining agent. The air-entraining agent shall be added to the batch in a portion of the mixing water. The solution shall be batched by means of a mechanical batcher capable of accurate measurement. Air content shall be tested at the point of placement. Air entraining agent shall be Micro-Air by Master Builders, Daravair by Grace Construction Products, Sika AEA-15 by Sika Corporation, or equal.
7. Admixtures: Admixtures may be added at the Contractor's option to control the set, affect water reduction, and increase workability. In either case, the addition of an admixture shall be at the Contractor's expense. The use of an admixture shall be subject to acceptance by the Owner/Owner's Representative. Concrete containing an admixture shall be first placed at a location determined by the Owner/Owner's Representative. If the use of an admixture is producing an inferior end result, the Contractor shall discontinue use of the admixture. Admixtures shall conform to the requirements of ASTM C494 - Chemical Admixtures for Concrete. The required quantity of cement shall be used in the mix regardless of whether or not an admixture is used. Admixtures shall contain no free chloride ions, shall be non-toxic after 30 days, and shall be compatible with and made by the same manufacturer as the air entraining admixture.
 - a. Concrete shall not contain more than one water-reducing admixture.
 - b. Set controlling admixture may be either with or without water-reducing properties. Where the air temperature at the time of placement is expected to be consistently over 80 degrees F, a set retarding admixture such as Sika Corporation Plastocrete 161MR, Master Builder Pozzoloth, Dartard 17 by Grace Construction Products, or equal shall be used. Where the air temperature at the time of placement is expected to be consistently under 40 degrees, a set accelerating admixture such as Sika Corporation Plastocrete 161 FL, Polarset by Grace Construction Products, or equal shall be used.

- c. Normal range water reducer shall conform to ASTM C494, Type A. It shall be WRDA 79 by Grace Construction Products, Plastocrete 161 by Sika Corporation, or equal. The quantity of admixture used and the method of mixing shall be in accordance with the manufacturer's instructions and recommendations.

8. Calcium Chloride: Calcium chloride will not be permitted in concrete.

2.7 CURING MATERIALS

- A. Materials for curing concrete shall conform to the following requirements and ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete and shall either be approved for potable water use per NSF 61 or removed after curing:
 1. Curing compounds shall be white-pigmented and resin-based. Sodium silicate compounds shall not be allowed. Concrete curing compound shall be Kurez VOX White Pigmented by Euclid Chemical Company, Cure R-2 by L&M Construction Chemicals, 1200-White by W.R. Meadows, or equal. When curing compound must be removed for finishes or grouting, curing compounds shall be Kurez DR VOX by Euclid Chemical Company, L&M Cure R by L&M Construction Chemicals, 1100-Clear by WR Meadows, or equal. Curing compounds shall meet local VOC requirements.
 2. Polyethylene sheet for use as concrete curing blanket shall be white and shall have a nominal thickness of 6-mils. The loss of moisture when determined in accordance with the requirements of ASTM C156 - Standard Test Method for Water Retention by Concrete Curing Materials, shall not exceed 0.055 grams per square centimeter of surface.
 3. Evaporation retardant shall be a material such as Confilm by ChemRex MBT, Eucobar by Euclid Chemical Company, E-CON by L&M Construction Chemicals, Inc., or equal.

2.8 JOINT MATERIALS

- A. Materials for joints in concrete shall conform to the following requirements:
 1. Joint filler material shall be of the preformed non-extruding type joint filler constructed of cellular neoprene sponge rubber or polyurethane of firm texture. Bituminous fiber type will not be permitted. Non-extruding and resilient-type preformed expansion joint fillers shall conform to the requirements and tests set forth in ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction; for Type I, except as otherwise indicated.

2. Elastomeric joint sealer shall be a two component, self-leveling, polyurethane or polysulfide sealant conforming to Federal Specification TT-S-227E, Class A, Type I, and ASTM C920, Type M, Class 25, Grade P.
3. Mastic joint sealer shall be a material that does not contain evaporating solvents; that will tenaciously adhere to concrete surfaces; that will remain permanently resilient and pliable; that will not be affected by continuous presence of water and will not in any way contaminate potable water; and that will effectively seal the joints against moisture infiltration even when the joints are subject to movement due to expansion and contraction. The sealer shall be composed of special asphalts or similar materials blended with lubricating and plasticizing agents to form a tough, durable mastic substance containing no volatile oils or lubricants and shall be capable of meeting the test requirements set forth hereinafter, if testing is required by the Owner/Owner's Representative.

2.9 MISCELLANEOUS MATERIALS

- A. Epoxy grout for grouting reinforcing bars shall be HIT-HY 200 two-component adhesive or approved equal. Adhesive shall be rated for used with deformed rebar in cracked and uncracked concrete under wet or dry installation and service conditions.

2.10 CONCRETE DESIGN REQUIREMENTS

A. General

1. Concrete shall be composed of cement, admixtures, aggregates, and water of the qualities indicated. In general, the mix shall be designed to produce a concrete capable of being deposited so as to obtain maximum density and minimum shrinkage, and where deposited in forms, to have good consolidation properties and maximum smoothness of surface. The proportions shall be changed whenever necessary or desirable to meet the required results at no additional cost to the Owner. Mix changes shall be subject to review by the Owner/Owner's Representative.
2. The Contractor is cautioned that the limiting parameters below are NOT a mix design. Admixtures may be required to achieve workability required by the Contractor's construction methods and aggregates. The Contractor is responsible for providing concrete with the required workability.

- B. Water-Cement Ratio and Compressive Strength: The minimum compressive strength and cement content of concrete shall be not less than the following tabulation.

Type of Work	Min 28-Day Compressive Strength, psi	Max Size Aggregate, inches	Cement Content Per cu yd, lbs	Max W/C Ratio (by weight)

Structural concrete	4,000	1	564 to 600	0.46
Sitework concrete	3,000	1	470 (min)	0.50
Lean concrete	2,000	1	376 (min)	0.60

2.11 CONSISTENCY

- A. Consistency of the concrete in successive batches shall be determined by slump tests in accordance with ASTM C 143. The slumps shall be as follows:

Part of Work	Slump (in)
All concrete unless indicated otherwise	3-inches plus or minus 1-inch
Ductbank and pipe encasement	5-inches plus or minus 1-inch

2.12 MEASUREMENT OF CEMENT AND AGGREGATE

- A. The amount of cement and of each separate size of aggregate entering into each batch of concrete shall be determined by direct weighing equipment furnished by the Contractor and acceptable to the Owner/Owner’s Representative; provided that, where batches are so proportioned as to contain an integral number of conventional sacks of cement and the cement is delivered at the mixer in the original unbroken sacks, the weight of the cement contained in each sack may be taken without weighing as 94 pounds.

2.13 MEASUREMENT OF WATER

- A. The quantity of water entering the mixer shall be measured by a suitable water meter or other measuring device of a type acceptable to the Owner/Owner’s Representative and capable of measuring the water in variable amounts within a tolerance of one percent.

2.14 READY-MIXED CONCRETE

- A. At the Contractor's option, ready-mixed concrete may be used if it meets the requirements as to materials, batching, mixing, transporting, placing, the supplementary requirements as required herein, and is in accordance with ASTM C94.
- B. Ready-mixed concrete shall be delivered to the Work, and discharge shall be completed within one hour after the addition of the cement to the aggregates or before the drum has been revolved 250 revolutions, whichever comes first. In hot weather, under conditions contributing to quick stiffening of the concrete, or when the temperature of the concrete is 85 degrees F or above, the time between the introduction of the cement to the aggregates and discharge shall not exceed 60 minutes.

- C. Truck mixers shall be equipped with electrically-actuated counters by which the number of revolutions of the drum or blades may be readily verified. The counter shall be of the resettable, recording type, and shall be mounted in the driver's cab. The counter shall be actuated at the time of starting the mixer at mixing speed.
- D. Each batch of concrete shall be mixed in a truck mixer for not less than 70 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of equipment. Additional mixing, if any, shall be at the speed designated by the manufacturer of the equipment as agitating speed. Materials including mixing water shall be in the mixer drum before actuating the revolution counter for determining the number of revolutions of mixing.
- E. Each batch of ready-mixed concrete delivered to the Work shall be accompanied by a delivery ticket furnished to the Owner/Owner's Representative in accordance with the requirements above.
- F. The use of non-agitating equipment for transporting ready-mixed concrete will not be permitted. Combination truck and trailer equipment for transporting ready-mixed concrete will not be permitted. The quality and quantity of materials used in ready-mixed concrete and in batch aggregates shall be subject to continuous inspection at the batching plant by the Owner/Owner's Representative.

PART 3 - EXECUTION

3.1 GENERAL FORMWORK REQUIREMENTS

- A. Forms to confine the concrete and shape it to the required lines shall be used wherever necessary. The Contractor shall assume full responsibility for the adequate design of forms, and any forms that are unsafe or inadequate in any respect shall promptly be removed from the Work and replaced. A sufficient number of forms of each kind shall be available to permit the required rate of progress to be maintained. The design and inspection of concrete forms, falsework, and shoring shall comply with applicable local, state and federal regulations. Design, construction, maintenance, preparation, and removal of forms shall be in accordance with ACI 347 - Guide to Formwork for Concrete and the requirements herein.
- B. Forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete.

3.2 CONSTRUCTION

- A. Vertical Surfaces: Vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is indicated. Not less than 1-inch of concrete shall be added to the indicated thickness of a concrete member where

concrete is permitted to be placed against trimmed ground in lieu of forms. Permission to do this on other concrete members will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until the concrete has been placed.

- B. Construction Joints: Concrete construction joints will not be permitted at locations other than those indicated, except as may be acceptable to the Owner/Owner's Representative. When a second lift is placed on hardened concrete, special precautions shall be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the forms where required.
- C. Form Ties
1. Embedded Ties: Wire ties for holding forms will not be permitted. No form-tying device or part thereof, other than metal, shall be left embedded in the concrete. Ties shall not be removed in such manner as to leave a hole extending through the interior of the concrete members. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 1-inch back from the formed face or faces of the concrete.
 2. Removable Ties: Where taper ties are approved for use, after the taper tie is removed, the hole shall be thoroughly cleaned and roughened for bond. A precast neoprene or polyurethane tapered plug shall be located at the wall centerline. The hole shall be completely filled with non-shrink or regular cement grout. Exposed faces of walls shall have at least the outer 2-inches of the exposed face filled with a cement grout which shall match the color and texture of the surrounding wall surface.

3.3 REUSE OF FORMS

- A. Forms may be reused only if in good condition and only if acceptable to the Owner/Owner's Representative. Light sanding between uses will be required wherever necessary to obtain uniform surface texture on exposed concrete surfaces. Exposed concrete surfaces are defined as surfaces which are permanently exposed to view.

3.4 REMOVAL OF FORMS

- A. Careful procedures for the removal of forms shall be strictly followed, and this Work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. Members which must support their own weight shall not have their forms removed until they have attained at least 75 percent of the 28-Day strength of the concrete. Forms for vertical walls and columns shall remain in place at least 48 hours after the concrete has been placed. Forms for parts of the Work not specifically mentioned herein shall remain in place for periods of time as recommended in ACI 347.

3.5 STEEL REINFORCEMENT

- A. General Requirements: Reinforcement steel, welded wire fabric, couplers, and other appurtenances shall be fabricated, and placed in accordance with the requirements of the Building Code and the supplementary requirements indicated herein.
- B. Fabrication
 - 1. Reinforcement steel shall be accurately formed to the dimensions and shapes indicated, and the fabricating details shall be prepared in accordance with ACI 315 and ACI 318, except as modified by the Drawings.
 - 2. The Contractor shall fabricate reinforcement bars for structures in accordance with bending diagrams, placing lists, and placing drawings. Said drawings, diagrams, and lists shall be prepared by the Contractor.
 - 3. Unless otherwise indicated, dowels shall match the size and spacing of the spliced bar.
- C. Bending or Straightening: Reinforcement shall not be straightened or rebent in a manner that will injure the material. Bars shall be bent or straight as indicated. Do not use bends different from the bends indicated. Bars shall be bent cold unless otherwise permitted by the Owner/Owner's Representative. No bars partially embedded in concrete shall be field-bent except as indicated or specifically permitted by the Owner/Owner's Representative.
- D. Placing
 - 1. Reinforcement steel shall be accurately positioned as indicated and shall be supported and wired together to prevent displacement, using annealed iron wire ties or suitable clips at intersections. Reinforcement steel shall be supported by concrete, plastic or metal supports, spacers or metal hangers that are strong and rigid enough to prevent any displacement of the reinforcement steel. Where concrete is to be placed on the ground, supporting concrete blocks (or dobies) shall be used in sufficient numbers to support the bars without settlement, but in no case shall such support be continuous. Concrete blocks used to support reinforcement steel shall be tied to the steel with wire ties which are embedded in

the blocks. For concrete over formwork, the Contractor shall provide concrete, metal, plastic, or other acceptable bar chairs and spacers.

2. The portions of accessories in contact with the formwork shall be made of concrete, plastic, or steel coated with a 1/8-inch minimum thickness of plastic which extends at least 1/2-inch from the concrete surface. Plastic shall be gray in color.
3. Tie wires shall be bent away from the forms in order to provide the required concrete coverage.
4. Bars additional to those indicated which may be found necessary or desirable by the Contractor for the purpose of securing reinforcement in position shall be provided by the Contractor as part of the Work.
5. Unless otherwise indicated, reinforcement placing tolerances shall be within the limits specified in Section 7.5 of ACI 318 except where in conflict with the requirements of the Building Code.
6. The minimum spacing requirements of ACI 318 shall be followed for reinforcing steel.
7. Welded wire fabric reinforcement placed over horizontal forms shall be supported on slab bolsters having gray, plastic-coated standard type legs. Slab bolsters shall be spaced not more than 30-inches on centers, shall extend continuously across the entire width of the reinforcing mat, and shall support the reinforcing mat in the plane indicated.
8. Welded wire fabric placed over the ground shall be supported on wired concrete blocks (dobies) spaced not more than 3-feet on centers in any direction. The construction practice of placing welded wire fabric on the ground and hooking into place in the freshly placed concrete shall not be used.

E. Splicing

1. General: Reinforcement bar splices shall only be used at locations indicated. When it is necessary to splice reinforcement at points other than where indicated, the character of the splice shall be reviewed and accepted by the Owner/Owner's Representative.
2. Splices of Reinforcement
 - a. The length of lap for reinforcement bars, unless otherwise indicated, shall be in accordance with ACI 318, Section 12.15.1 for a Class B splice.
 - b. Welded splices shall be performed in accordance with AWS D1.4.

- c. Laps of welded wire fabric shall be in accordance with the ACI 318. Adjoining sheets shall be securely tied together with No. 14 tie wire, one tie for each 2 running feet. Wires shall be staggered and tied in such a manner that they cannot slip.

F. Cleaning and Protection

- 1. Reinforcement steel shall always be protected from conditions conducive to corrosion until concrete is placed around it.
- 2. The surfaces of reinforcement steel and other metalwork to be in contact with concrete shall be thoroughly cleaned of dirt, grease, loose scale and rust, grout, mortar, and other foreign substances immediately before the concrete is placed. Where there is delay in depositing concrete, reinforcing shall be reinspected and, if necessary recleaned.

3.6 EPOXY-GROUTED DOWELS

- A. Drill holes using equipment and tools specified in epoxy grout manufacturer's instructions.
- B. Drill holes perpendicular to concrete surface unless otherwise indicated on drawings.
- C. Drill holes to depth indicated on drawings, or minimum depth to fully develop dowels per manufacturer's data, whichever is greater.
- D. Blow out with compressed air, brush, clean, and otherwise prepare holes per manufacturer's instructions.
- E. Inject epoxy grout into hole per manufacturer's instructions.
- F. Insert bar into hole per manufacturer's instructions.
- G. Protect bar from disturbance until epoxy grout has cured.

3.7 PROPORTIONING AND MIXING

- A. Proportioning: Proportioning of the concrete mix shall conform to the requirements of Chapter 3 "Proportioning" of ACI 301.
- B. Mixing: Mixing of concrete shall conform to the requirements of Chapter 7 ACI 301.
- C. Slump: Slumps shall be as indicated herein.
- D. Retempering: Retempering of concrete or mortar which has partially hardened shall not be permitted.

3.8 PREPARATION OF SURFACES FOR CONCRETING

- A. General: Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.
- B. Joints in Concrete: Concrete surfaces upon or against which concrete is to be placed, where the placement of the concrete has been stopped or interrupted so that, as determined by the Owner/Owner's Representative, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be given a compacted, roughened surface for good bonding. Except where the Drawings call for joint surfaces to be coated, the joint surfaces shall be cleaned of laitance, loose or defective concrete, and foreign material, and be roughened to a minimum 1/4-inch amplitude. Such cleaning and roughening shall be accomplished by hydroblasting. Pools of water shall be removed from the surface of construction joints before the new concrete is placed.
- C. Placing Interruptions: When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means, that will secure proper union with subsequent Work; provided that construction joints shall be made only where acceptable to the Owner/Owner's Representative.
- D. Embedded Items
 - 1. No concrete shall be placed until formwork, installation of parts to be embedded, reinforcement steel, and preparation of surfaces involved in the placing have been completed and accepted by the Owner/Owner's Representative at least 4 hours before placement of concrete. Surfaces of forms and embedded items that have become encrusted with dried grout from previous usage shall be cleaned before the surrounding or adjacent concrete is placed.
 - 2. Reinforcement, anchor bolts, sleeves, inserts, and similar items shall be set and secured in the forms at locations indicated or by Shop Drawings and shall be acceptable to the Owner/Owner's Representative before any concrete is placed. Accuracy of placement is the responsibility of the Contractor.
- E. Casting New Concrete Against Old: Where concrete is to be cast against old concrete (defined as any concrete which is greater than 60 Days of age), the surface of the old concrete shall be thoroughly cleaned and roughened by hydroblasting (exposing aggregate) prior to the application of an epoxy bonding agent. Application shall be according to the bonding agent manufacturer's instructions and recommendations.
- F. No concrete shall be placed in any structure until water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the Work. No concrete shall be deposited

underwater nor shall the Contractor allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, shall be subject to the review of the Owner/Owner's Representative.

- G. Corrosion Protection: Pipe, conduit, dowels, and other ferrous items required to be embedded in concrete construction shall be so positioned and supported prior to placement of concrete that there will be a minimum of 2-inches clearance between said items and any part of the concrete reinforcement. Securing such items in position by wiring or welding them to the reinforcement will not be permitted.
- H. Openings for pipes, inserts for pipe hangers and brackets, and anchors shall, where practicable, be provided for during the placing of concrete.
- I. Anchor bolts shall be accurately set and shall be maintained in position by templates while being embedded in concrete.

3.9 HANDLING, TRANSPORTING, AND PLACING

- A. General: Placing of concrete shall conform to the applicable requirements of Chapter 8 of ACI 301 and the requirements of this Section. No aluminum materials shall be used in conveying any concrete.
- B. Non-Conforming Work or Materials: Concrete which during or before placing is found not to conform to the requirements indicated herein shall be rejected and immediately removed from the Work. Concrete which is not placed in accordance with these Specifications or which is of inferior quality shall be removed and replaced.
- C. Unauthorized Placement: No concrete shall be placed except in the presence of a duly authorized representative of the Owner/Owner's Representative. The Contractor shall notify the Owner/Owner's Representative in writing at least 24 hours in advance of placement of any concrete.
- D. Placement in Wall and Column Forms
 - 1. Concrete shall not be dropped through reinforcement steel or into any deep form nor shall concrete be placed in any form in such a manner as to leave accumulation of mortar on the form surfaces above the placed concrete. In such cases, some means such as the use of hoppers and, if necessary, vertical ducts of canvas, rubber, or metal shall be used for placing concrete in the forms in a manner that it may reach the place of final deposit without separation. In no case shall the free fall of concrete exceed 4-feet in walls and 8-feet in columns below the ends of ducts, chutes, or buggies. Concrete shall be uniformly distributed during the process of depositing and in no case after depositing shall any portion

be displaced in the forms more than 6-feet in horizontal direction. Concrete in wall forms shall be deposited in uniform horizontal layers not deeper than 2-feet; and care shall be taken to avoid inclined layers or inclined construction joints except where such are required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in wall forms shall not exceed 5-feet of vertical rise per hour. Sufficient illumination shall be provided in the interior of forms so that the concrete at the places of deposit is visible from the deck or runway.

2. The surface of the concrete shall be level whenever a run of concrete is stopped. To insure a level, straight joint on the exposed surface of walls, a wood strip at least 3/4-inch thick shall be tacked to the forms on these surfaces. The concrete shall be carried about 1/2-inch above the underside of the strip. About one hour after the concrete is placed, the strip shall be removed and any irregularities in the edge formed by the strip shall be leveled with a trowel, and laitance shall be removed.
- E. Conveyor Belts and Chutes: Ends of chutes, hopper gates, and other points of concrete discharge throughout the Contractor's conveying, hoisting, and placing system shall be so designed and arranged that concrete passing from them will not fall separated into whatever receptacle immediately receives it. Conveyor belts, if used, shall be of a type acceptable to the Owner/Owner's Representative. Chutes longer than 50-feet will not be permitted. Minimum slopes of chutes shall be such that concrete of the required consistency will readily flow in them. If a conveyor belt is used, it shall be wiped clean by a device operated in such a manner that none of the mortar adhering to the belt will be wasted. Conveyor belts and chutes shall be covered.
- F. Temperature of Concrete: The temperature of concrete when it is being placed shall be not more than 90 degrees F nor less than 40 degrees F in moderate weather, and not less than 50 degrees F in weather during which the mean daily temperature drops below 40 degrees F. Concrete ingredients shall not be heated to a temperature higher than that necessary to keep the temperature of the mixed concrete, as placed, from falling below the required minimum temperature. If concrete is placed when the weather is such that the temperature of the concrete would exceed 90 degrees F, the Contractor shall employ effective means, such as precooling of aggregates and mixing water or using ice as necessary to maintain the temperature of the concrete, as it is placed, below 90 degrees F. The Contractor shall be entitled to no additional compensation on account of the foregoing requirements.
- G. Cold Weather Placement
1. Placement of concrete shall conform to ACI - 306.1 - Cold Weather Concreting, and the following.

2. Earth foundations shall be free from frost or ice when concrete is placed upon or against them.
3. Maintain the concrete temperature above 50 degrees F for at least 72-hours after placement.

3.10 PUMPING OF CONCRETE

- A. General: If the pumped concrete does not produce satisfactory end results, the Contractor shall discontinue the pumping operation and proceed with the placing of concrete using conventional methods.
- B. Pumping Equipment
 1. The pumping equipment shall have 2 cylinders and be designed to operate with one cylinder only in case the other one is not functioning. In lieu of this requirement, the Contractor may have a standby pump on the Site during pumping.
 2. The minimum diameter of the hose conduits shall be in accordance with ACI 304.2R -Placing Concrete by Pumping Methods.
 3. Pumping equipment and hose conduits that are not functioning properly, shall be replaced.
 4. Aluminum conduits for conveying the concrete shall not be permitted.

3.11 TAMPING AND VIBRATING

- A. As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted, throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete. Vibrators shall be high speed power vibrators (8000 to 12,000 rpm) of an immersion type in sufficient number and with at least one standby unit as required.
- B. Concrete in walls shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers of concrete shall not be placed until the layers previously placed have been worked thoroughly. Vibrators shall be provided in sufficient numbers, with standby units as required, to accomplish the required results within 15 minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall not contact the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its constituents.

3.12 FINISHING CONCRETE SURFACES

- A. General: Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, bugholes, or roughness of any kind, and shall present a finished, smooth, continuous hard surface.
- B. Allowable deviations from plumb or level and from the alignment, profiles, and dimensions indicated are defined as tolerances and are indicated above. These tolerances are to be distinguished from irregularities in finish as described herein.
- C. Aluminum finishing tools shall not be used.
- D. Formed Surfaces
 - 1. All formed surfaces on this project shall be given a grout-cleaned finish after all required curing, cleaning, and repairs have been completed.
 - 2. Moist cure surfaces to be grout-cleaned for the required period of time before application of the grout-cleaned finish. Delay grout-cleaning until near the end of construction on all surfaces not to be painted in order to achieve uniformity of appearance and reduce the chance of discoloring caused by subsequent construction operations. The temperature of the air adjacent to the surface must be not less than 40 degrees F for 24 hours prior to and 72 hours following the application of the finish. Complete the finish for any area in the same day, and make the limits of a finished area at natural breaks in the finished surface.
 - 3. Thoroughly wet the surface to receive grout-cleaned finish to prevent absorption of water from the grout but have no free water present. Then coat the surface with grout. Apply the grout as soon as the surface of the concrete approaches surface dryness and vigorously and thoroughly rubbed over the area with clean burlap pads, cork floats or stones, so as to fill all voids. The grout is composed of one part Portland cement as used on the project, to two parts by volume of well-graded sand passing a No. 30 sieve mixed with water to the consistency of thick paint. Use white Portland cement for all or part of the cement as approved by the Owner/Owner's Representative to give the desired finish color. The applied coating must be uniform, completely filling all pits, air bubbles, and surface voids. While the grout is still plastic, remove all excess grout by working the surface with a rubber float, burlap pad, or other means. Then, after the surface whitens from drying (about 30 minutes at normal temperature) rub vigorously with clean burlap pads. Tightly stretch burlap pads used for this operation around a board to prevent dishing the mortar in the voids.
 - 4. Immediately after rubbing is completed, moist cure the finished surface for 72 hours.
- E. Unformed Surfaces

1. After proper and adequate vibration and tamping, unformed top surfaces of slabs, floors, walls, and curbs shall be brought to a uniform surface with suitable tools.
2. Whenever the air temperature exceeds 85 degrees F or the wind speed exceeds 25 mph at the time of placement, the concrete shall be treated as follows. Immediately after the concrete has been screeded, it shall be treated with a liquid evaporation retardant. The retardant shall be used again after each Work operation as necessary to prevent drying shrinkage cracks.
3. The classes of finish for unformed concrete surfaces are designated and defined as follows:
 - a. Finish U1 - Sufficient leveling and screeding to produce an even, uniform surface with surface irregularities not to exceed 3/8-inch. No further special finish is required.
 - b. Finish U2 - After sufficient stiffening of the screeded concrete, surfaces shall be float finished with wood or metal floats or with a finishing machine using float blades. Excessive floating of surfaces while the concrete is plastic and dusting of dry cement and sand on the concrete surface to absorb excess moisture will not be permitted. Floating shall be the minimum necessary to produce a surface that is free from screed marks and is uniform in texture. Surface irregularities shall not exceed 1/4-inch. Joints and edges shall be tooled where indicated or as determined by the Owner/Owner's Representative.
 - c. Finish U3 - After the Finish U2 surface has hardened sufficiently to prevent excess of fine material from being drawn to the surface, steel troweling shall be performed with firm pressure such as will flatten the sandy texture of the floated surface and produce a dense, uniform surface free from blemishes, ripples, and trowel marks. The finish shall be smooth and free of irregularities.
 - d. Finish U4 - Trowel the Finish U3 surface to remove local depressions or high points. In addition, the surface shall be given a light broom finish with brooming perpendicular to drainage unless otherwise indicated. The resulting surface shall be rough enough to provide a nonskid finish.
4. Unformed surfaces shall be finished according to the following schedule:

Area	Finish
Spillway Sill Structure	U3

Tops of Piers	U4
Gate House Slab	U4

3.13 CURING AND DAMPPROOFING

- A. General: Concrete shall be cured for not less than 7 Days after placing, in accordance with the methods indicated below for the different parts of the Work.

Surface to be Cured	Method
Unstripped forms	1
Construction joints between footings and walls, and between floor slab and columns	2
Encasement and ductbank concrete and thrust blocks	3
Concrete surfaces not specifically provided for elsewhere in this Paragraph	4
Buried slabs and backfilled walls	5

- B. Method 1: Wooden forms shall be wetted immediately after concrete has been placed and shall be kept wet with water until removal. If steel forms are used, the exposed concrete surfaces shall be kept continuously wet until the forms are removed. If forms are removed within 7 Days of placing the concrete, curing shall be continued in accordance with Method 4 below.
- C. Method 2: The surface shall be covered with burlap mats which shall be kept wet with water for the duration of the curing period, until the concrete in the walls has been placed. No curing compound shall be applied to surfaces cured under Method 2.
- D. Method 3: The surface shall be covered with moist earth not less than 4 hours nor more than 24 hours after the concrete is placed. Earthwork operations that may damage the concrete shall not begin until at least 7 Days after placement of concrete.
- E. Method 4: The surface shall be sprayed with a liquid curing compound.
 - 1. It shall be applied in accordance with the manufacturer's printed instructions at a maximum coverage rate of 200 square feet per gallon and in such a manner as to cover the surface with a uniform film that will seal thoroughly.
 - 2. Where the curing compound method is used, care shall be exercised to avoid damage to the seal during the 7 Day curing period. If the seal is damaged or broken before the expiration of the curing period, the break shall be repaired

- immediately by the application of additional curing compound over the damaged portion.
3. Wherever curing compound has been applied by mistake to surfaces against which concrete subsequently is to be placed and to which it is to adhere, compound shall be entirely removed by wet sandblasting just prior to the placing of new concrete.
 4. Curing compound shall be applied as soon as the concrete has hardened enough to prevent marring on unformed surfaces, and within 2 hours after removal of forms. Repairs required to be made to formed surfaces shall be made within the said 2 hour period; provided, however, that any such repairs which cannot be made within the said 2 hour period shall be delayed until after the curing compound has been applied. When repairs are to be made to an area on which curing compound has been applied, the area involved shall first be wet-sandblasted to remove the curing compound.
 5. During the curing period, no traffic of any nature and no depositing of any materials, temporary or otherwise, shall be permitted on surfaces coated with curing compound. Foot traffic and the depositing of materials may be allowed after 3 Days if the surface is covered with 5/8-inch plywood placed over polyethylene sheets.
- F. Method 5: This method applies to both buried slabs and walls to be backfilled.
1. The concrete shall be kept continuously wet by the application of water for a minimum period of at least 7 Days beginning immediately after the concrete has reached final set or forms have been removed.
 2. Until the concrete surface is covered with the curing medium, the entire surface shall be kept damp by applying water through nozzles that atomize the flow so that the surface is not marred or washed.
 3. Heavy curing mats shall be used as a curing medium to retain the moisture during the curing period. The curing medium shall be weighted or otherwise held substantially in contact with the concrete surface to prevent being dislodged by wind or any other causes. Edges shall be continuously held in place.
 4. The curing blankets and concrete shall be kept continuously wet by the use of sprinklers or other means both during and after normal working hours.
 5. Immediately after the application of water has terminated at the end of the curing period, the curing medium shall be removed, any dry spots shall be rewetted, and curing compound shall be immediately applied in accordance with Method 4 above.

6. The Contractor shall dispose of excess water from the curing operation to avoid damage to the Work.
- G. The Contractor may submit alternate methods of curing which maintain the concrete in a continuously wet condition for acceptance by the Owner/Owner's Representative.

3.14 PROTECTION

- A. The Contractor shall protect concrete against injury until final acceptance.
- B. Fresh concrete shall be protected from damage due to rain, hail, sleet, or snow. The Contractor shall provide such protection while the concrete is still plastic and whenever precipitation is imminent or occurring.

3.15 CURING IN COLD WEATHER

- A. Water curing of concrete may be reduced to 6 Days during periods when the mean daily temperature in the vicinity of the Site is less than 40 degrees F; provided that, during the prescribed period of water curing, when temperatures are such that concrete surfaces may freeze, water curing shall be temporarily discontinued.
- B. Concrete cured by an application of curing compound will require no additional protection from freezing if the protection at 50 degrees F for 72 hours is obtained by means of approved insulation in contact with the forms or concrete surfaces; otherwise, the concrete shall be protected against freezing temperatures for 72 hours immediately following 72 hours protection at 50 degrees F. Concrete cured by water shall be protected against freezing temperatures for 72 hours immediately following the 72 hours of protection at 50 degrees F.
- C. Discontinuance of protection against freezing temperatures shall be such that the drop in temperature of any portion of the concrete will be gradual and will not exceed 40 degrees F in 24 hours. In the spring, when the mean daily temperature rises above 40 degrees F for more than 3 Days, 72 hour protection at a temperature not lower than 50 degrees F may be discontinued for as long as the mean daily temperature remains above 40 degrees F; provided, that the concrete shall be protected against freezing temperatures for not less than 48 hours after placement.
- D. Where artificial heat is employed, special care shall be taken to prevent the concrete from drying. Use of unvented heaters will be permitted only when unformed surfaces of concrete adjacent to the heaters are protected for the first 24 hours from an excessive carbon dioxide atmosphere by application of curing compound; provided, that the use of curing compound for such surfaces is otherwise permitted by these Specifications.

3.16 TREATMENT OF SURFACE DEFECTS

- A. As soon as forms are removed, exposed concrete surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall be made until after inspection by the Owner/Owner's Representative. In no case will extensive patching of honeycombed concrete be permitted. Concrete containing minor voids, holes, honeycombing, or similar depression defects shall be repaired as indicated below. Concrete containing extensive voids, holes, honeycombing, or similar depression defects, shall be completely removed and replaced. Repairs and replacements shall be performed promptly.
- B. Defective surfaces to be repaired shall be cut back from true line a minimum depth of 1/2- inch over the entire area. Feathered edges will not be permitted. Where chipping or cutting tools are not required in order to deepen the area properly, the surface shall be prepared for bonding by the removal of laitance or soft material, plus not less than 1/32- inch depth of the surface film from hard portions by means of an efficient sandblast. After cutting and sandblasting, the surface shall be wetted sufficiently in advance of shooting with shotcrete or with cement mortar so that while the repair material is being applied, the surfaces underneath will remain moist but not so wet as to overcome the suction upon which a good bond depends. The material used for repair shall consist of a mixture of one sack of cement to 3 cubic feet of sand. For exposed walls, the cement shall contain such a proportion of Atlas white Portland cement as is required to make the color of the patch match the color of the surrounding concrete.
- C. Holes left by tie-rod cones shall be reamed with suitable toothed reamers so as to leave the surfaces of the holes clean and rough. These holes then shall be repaired in an approved manner with dry-packed cement grout. Holes left by form-tying devices having a rectangular cross-section, and other imperfections having a depth greater than their least surface dimension, shall not be reamed but shall be repaired in an approved manner with dry-packed cement grout.
- D. Repairs shall be built up and shaped in such a manner that the completed Work will conform to the requirements of this Section as applicable, using approved methods which will not disturb the bond, cause sagging, or cause horizontal fractures. Surfaces of repairs shall receive the same kind and amount of curing treatment as required for the concrete in the repaired section.

3.17 CARE AND REPAIR OF CONCRETE

- A. The Contractor shall protect concrete against injury or damage from excessive heat, lack of moisture, overstress, or any other cause until final acceptance. Particular care shall be taken to prevent the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged, or which may have been originally defective, which becomes defective at any time prior to the final acceptance

of the completed Work, which departs from the established line or grade, or which, for any other reason, does not conform to the requirements of the Contract Documents, shall be satisfactorily repaired or removed and replaced with acceptable concrete.

END OF SECTION

SECTION 11 05 99

MAJOR MANUFACTURED ITEMS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Pneumatically Operated Dam Gate
- B. Pre-Engineered Metal Gate House

1.2 SUBSTITUTIONS

- A. Dam Gate: No substitutions allowed.
- B. Gate House: List of pre-approved manufacturers provided in Section 13 34 19. Alternate manufacturers may be approved at sole discretion of Owner/Owner's Representative.
- C. Approval Requirements
 - 1. Where allowed, contractor shall propose substitutions of Major Manufactured Items within 15 days of Contract Award.
 - 2. To be considered for approval, substitute products shall be, at a minimum, of similar configuration, form, function, quality, durability, and fitness for use as products specified herein, and shall interface, connect, and correspond with all other aspects of the Work in an equal or better manner than specified products.
 - 3. Contractor shall state reasons for proposed substitution, including but not limited to improved quality, better features, lower price, faster delivery, or greater ease of construction. To the extent that substitution results in cost savings, Contractor shall credit Owner one-half (50 percent) of savings to Contract Price.
 - 4. At Owner's/Owner's Representative's sole discretion, Owner/Owner's Representative may impose additional requirements for approval of substitutions, and may reject any and all proposed substitutions without need to provide or state specific justification.

1.3 DESIGN REQUIREMENTS

- A. All structures regulated under state and/or local Building Codes shall be designed in accordance with those Codes, meet all provisions thereof, and be supplied with signed and sealed Engineering Drawings and Design Analyses as required by the Authorities Having Jurisdiction.
- B. All systems and components shall be designed to perform their intended purpose.

1.4 SUBMITTALS

- A. Shop Drawings: Indicate sizes, configurations, materials, connections, and interfaces with other parts of the Work.
- B. Design Data: Where applicable, submit Engineering Design Analyses required for compliance with Building Code.

PART 2 - PRODUCTS

2.1 DAM GATE

- A. Pneumatically operated dam gate, 20 feet long by 4 feet high, with programmable logic controller, compressed air supply, and associated equipment, by Obermeyer Hydro, Inc. of Fort Collins, Colorado.

- B. Manufacturer Point of Contact:

Mr. Robert Eckman, Vice President
Obermeyer Hydro, Inc.
P.O. Box 668
Fort Collins, CO 80522
(970) 568-9844
rob.eckman@obermeyerhydro.com

- C. Reference: Obermeyer Hydro, Inc. Project No. 16-1664

2.2 PRE-ENGINEERED METAL GATE HOUSE (BID ALTERNATE)

- A. Pre-engineered metal building, 10 feet 8 inches long by 8 feet 0 inches wide, single story in height with gable roof. Configuration shown on Drawings.
- B. Pre-approved manufacturers provided in Section 13 34 19.

2.3 ADDITIONAL ANCILLARY ITEMS

- A. Where items are shown or otherwise called for on the Manufacturer's drawings, data sheets, specifications, etc., to complete the assembly, installation, or placing into operation of Major Manufactured Items, but are not provided by the Manufacturer, such items shall be considered Additional Ancillary Items.
- B. Additional Ancillary Items may include, but are not limited to, piping, valves, conduits, cables, wiring, fasteners, anchors, and other hardware.
- C. Such Additional Ancillary Items, including costs for procurement, design, fabrication, installation, testing, and all other necessary work, shall be included by the Contractor in the prices bid for the various Items of the Work under this Contract.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Comply with Manufacturer's requirements with respect to structures and surfaces supporting or interfacing with the Major Manufactured Items, particularly with respect to tolerances, slopes, and finishes.
- B. Verify supporting and interfacing structures and surfaces are in proper locations, have adequate strength, and are clean.

3.2 INSTALLATION

- A. Lift items using rigging designed to prevent damage or distortion.
- B. Exercise care in positioning items to prevent impact with adjacent structures.
- C. Install items in accordance the Manufacturer's instructions.

END OF SECTION

SECTION 13 34 17

LIGHT-FRAME UTILITY BUILDINGS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes conventional wood light-frame utility building.
- B. Provide a complete, integrated building structure designed and built in accordance with the requirements of the Maine Uniform Building and Energy Code (MUBEC) in effect at the time of Contract award.
- C. Building is to be constructed directly on gate house slab; no floor is required. Building is to be unfinished on the interior (bare studs) and uninsulated.
- D. Building may be site-built or prefabricated, at Contractor's option.
- E. Related Sections:
 - 1. Section 03 31 00 - Cast-in-Place Concrete
 - 2. Section 26 05 00 - Electrical

1.2 REFERENCES

- A. American Wood Council (AWC)
 - 1. NDS (2015) National Design Specification (NDS) for Wood Construction.
- B. American Wood Protection Association (AWPA):
 - 1. AWPA Standard U1-17 - User Specification for Treated Wood.
 - 2. AWPA Standard M1-15 - Standard for the Care of Preservative-Treated Wood Products.

1.3 DESIGN REQUIREMENTS

- A. Dimensional Requirements: As indicated on Drawings.
- B. Structural Requirements
 - 1. Structure and anchorage to gate house slab to conform to the Maine Uniform Building and Energy Code (MUBEC), Section 2308 - Conventional Light-Frame Construction.
 - 2. If required, Engineering Drawings to be signed and sealed by a by a Professional Engineer licensed in the State of Maine.

- C. Heating and Insulation - Not Required.

1.4 SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Submittal Procedures.
- B. Shop Drawings: Submit drawings showing building in plan, side elevation, end elevation, and cross-section. Indicate dimensions, framing arrangement, member types and sizes, sheathing, roof, and siding materials. Provide fastening schedules and details of connections. Show anchor bolt types, sizes, locations, and foundation loads.
- C. Roof and siding products: Submit samples in selected colors for owner's approval.

PART 2 - PRODUCTS

2.1 STRUCTURAL

- A. Conform to Maine Uniform Building and Energy Code (MUBEC), Section 2308 - Conventional Light-Frame Construction, except as modified by more restrictive provisions stated herein.
- B. Pressure-Treated Wood
 1. Sill plates shall be sawn lumber treated in accordance with AWWA Standard U1 to the requirements of Use Category 4C (UC4C).
 2. Wall studs shall be sawn lumber treated in accordance with AWWA Standard U1 to the requirements of Use Category 3B (UC3B).
 3. Wall sheathing shall be plywood treated in accordance with AWWA Standard U1 to the requirements of Use Category 3B (UC3B); oriented strand board (OSB) shall not be allowed for wall sheathing.
 4. Pressure-treated wood shall be kiln-dried after treatment to a maximum moisture content of 19 percent.
 5. All field-cut ends and drilled holes in pressure-treated wood shall be treated in accordance with AWWA Standard M4.
 6. Fasteners in contact with treated wood shall be rated by the manufacturer for the specific treatment type and environmental exposure.

2.2 SIDING

- A. Siding shall be premium vinyl siding as follows:
 1. Double 4-inch clapboard design with woodgrain textured finish.
 2. Full-length pieces only; no splices.

3. Minimum 0.044-inch panel thickness.
- B. Approved products: Alside Odyssey Plus®, Georgia-Pacific Compass®, or approved equal.
- C. Trim materials and other accessory components: Same manufacturer and product line as siding panels.
- D. Color: As selected by Owner from manufacturer's standard colors; with coordinating trim and accessory color.

2.3 ROOF SYSTEM

- A. Roof Panels: ASTM A792/A792M with aluminum-zinc alloy coating.
- B. Joint Seal Gaskets: Manufacturer's standard type.
- C. Fasteners: Manufacturer's standard type, galvanized, finish to match adjacent surfaces when exterior exposed.
- D. Bituminous Paint: Asphaltic type.
- E. Sealant: Manufacturer's standard type, non-staining, elastomeric, skinning.
- F. Trim, Closure Pieces, Caps, Flashings, and other accessory components: Same material, thickness, and finish as exterior sheets; brake formed to required profiles.

2.4 METAL DOORS AND FRAMES

- A. Pre-hung steel door with frame, 3'-0" wide by 7'-0" nominal dimensions with closer and hold-open.
- B. Knobs/latches and separate deadbolts installed. All doors and locks keyed alike.
- C. Color to match trim.

2.5 LOUVERS

- A. Minimum 12-inch-square nominal size. Manually adjustable to open or close.
- B. Manufactured of aluminum or galvanized steel.
- C. Screened to prevent entry of vermin.

2.6 GUTTERS & DOWNSPOUTS

- A. None.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify base slab, mechanical and electrical utilities, and placed anchors are in correct position.

3.2 INSTALLATION - STRUCTURAL

- A. Fit framing lumber and other rough carpentry, set accurately to the required lines and levels, and secure in place in a rigid manner. Do not splice framing members between bearing points. Set joists, rafters, and purlins with their crown edge up.
- B. Frame members for the passage of pipes, conduits, and ducts. Do not cut or bore structural members for the passage of ducts or pipes without approval. For all members damaged by such cutting or boring, remove and provide new.
- C. Spikes, nails, and bolts must be drawn up tight.
- D. Provide as necessary for the proper completion of the work all framing members not indicated or specified.

3.3 INSTALLATION - SIDING AND ROOFING SYSTEMS

- A. Exercise care when cutting prefinished material to ensure cuttings do not remain on finished surface.
- B. Fasten cladding system to structural supports, aligned level and plumb.
- C. Lap panels and provide expansion joints per manufacturer's instruction.
- D. Install sealant and gaskets to prevent weather penetration.

3.4 INSTALLATION - ACCESSORIES

- A. Install door frames, doors, and louvers.
- B. Seal wall and roof accessories watertight and weather tight with sealant

3.5 TOLERANCES

- A. Framing Members: 1/8 inch per foot from level and plumb.
- B. Siding and Roofing: 1/8 inch from indicated position.

END OF SECTION

SECTION 13 34 19

METAL BUILDING SYSTEMS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes pre-engineered, shop fabricated structural steel building frame, metal wall and sloped roof system, exterior doors, and louvers.
- B. Provide a complete, integrated set of metal building system manufacturer's standard mutually dependent components and assemblies that form a metal building system capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure or infiltration of water into building interior. Include primary and secondary framing, metal roof panels, metal wall panels, and accessories complying with requirements indicated.
- C. Related Sections:
 - 1. Section 03 31 00 - Cast-in-Place Concrete
 - 2. Section 11 05 99 - Major Manufactured Items
 - 3. Section 26 05 00 - Electrical

1.2 REFERENCES

- A. American Institute of Steel Construction:
 - 1. AISC S335 - Specification for Structural Steel Buildings Allowable Stress Design, and Plastic Design.
 - 2. AISC S342L - Load and Resistance Factor Design Specification for Structural Steel Buildings.
 - 3. AISC S344L - Metric Load and Resistance Factor Design Specification for Structural Steel Buildings.
- B. ASTM International:
 - 1. ASTM A36 - Standard Specification for Carbon Structural Steel.
 - 2. ASTM A123 - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
 - 3. ASTM A153 - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

4. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.
5. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
6. ASTM A490 - Standard Specification for Heat-Treated Steel Structural Bolts, 150 ksi Minimum Tensile Strength.
7. ASTM A500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
8. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
9. ASTM A529 - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality.
10. ASTM A572 - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
11. ASTM A653 - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.
12. ASTM A792 - Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process.
13. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
14. ASTM C991 - Standard Specification for Flexible Glass Fiber Insulation for Pre-Engineered Metal Buildings.
15. ASTM C1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink).
16. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
17. ASTM E96 - Standard Test Methods for Water Vapor Transmission of Materials.
18. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength

C. American Welding Society:

1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.

2. AWS D1.1 - Structural Welding Code - Steel.
- D. Metal Building Manufacturers Association:
1. MBMA - Low Rise Building Systems Manual.
- E. National Fire Protection Association:
1. NFPA 255 - Standard Method of Test of Surface Burning Characteristics of Building Materials.
- F. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
 2. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
- G. Underwriters Laboratories Inc.:
1. UL - Building Materials Directory.
 2. UL 723 - Tests for Surface Burning Characteristics of Building Materials.

1.3 DESIGN REQUIREMENTS

- A. Dimensional Requirements: As indicated on Drawings.
- B. Structural Design
1. Structural design to be performed in accordance with State Maine Building Code in effect at time of Contract Award. Engineering Drawings to be signed and sealed by a by a Professional Engineer licensed in the State of Maine.
 2. Design members to support mechanical and electrical equipment.
 3. Maximum allowable deflection: 1/240 of span with imposed loads for exterior wall and roof system.
 4. Provide drainage to exterior for water entering or condensation occurring within wall or roof system.
 5. Permit movement of components without buckling, failure of joint seals, undue stress on fasteners or other detrimental effects, when subject to temperature range of -40 to 120 degrees F.
 6. Size and fabricate wall and roof systems free of distortion or defects detrimental to appearance or performance.
- C. Heating and Insulation - Not Required.

1.4 SUBMITTALS

- A. Furnish submittals in accordance with Section 01 33 00 - Submittal Procedures.
- B. Engineering Drawings: Indicate assembly dimensions, locations of structural members, connections, attachments, openings, cambers, and loads; wall and roof system dimensions, panel layout, general construction details, and anchorages and method of anchorage; framing anchor bolt settings, sizes, and locations, and foundation loads; indicate welded connections with AWS A2.4 welding symbols; indicate net weld lengths.
- C. Product Data: Submit data on profiles, component dimensions, fasteners, and performance characteristics.
- D. Samples: Submit two samples of precoated metal panels for each color selected, 18 inches square in size illustrating color and texture of finish.
- E. Manufacturer's Instructions: Submit preparation requirements, anchor bolt placement, and assembly instructions.
- F. Warranty: Submit manufacturer's warranty, valid for specified period and conveying all rights thereunder to Owner.

1.5 QUALIFICATIONS

- A. Manufacturer: Company specializing in manufacturing products specified in this section with minimum five (5) years documented experience.
- B. Erector: Company specializing in performing Work of this section, approved by manufacturer.

1.6 WARRANTY

- A. Furnish manufacturer's no-dollar-limit warranty for the metal building system. The warranty period is to be no less than 20 years from the date of acceptance of the Work.
- B. The warranty must provide that if within the warranty period, the metal building system shows evidence of deterioration resulting from defective materials and/or workmanship, correcting of any defects is the responsibility of the metal building system manufacturer.
- C. The warranty shall cover the following items:
 - 1. Structural Defects, including collapse, visible deflection, loosening of connections, racking, shifting, bending, warping, or any other distress affecting the building structure.
 - 2. Weather-Tightness, as indicated by infiltration of rainwater, snow, or wind;

corrosion; perforation; rupture; failure of gaskets or seals; or excess weathering.

3. Roof and Wall Panel Finish, as indicated by evidence of checking, delaminating cracking, peeling, chalk in excess of a numerical rating of eight, as determined by ASTM D4214 test procedures; or change colors in excess of five CIE or Hunter units in accordance with ASTM D2244 or excess weathering due to deterioration of the panel system.
- D. Repairs that become necessary because of defective materials and workmanship while metal building system is under warranty are to be performed within 48 hours after notification, unless additional time is approved by the Owner/Owner's Representative. Failure to perform repairs within 48 hours of notification will constitute grounds for having emergency repairs performed by others at Manufacturer's expense and will not void the warranty.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Pre-Approved
1. Butler Manufacturing Co. of Kansas City, Missouri
 2. Nucor Building Systems of Waterloo, Indiana
 3. Parkline, Inc., of Eleanor, West Virginia
 4. Star Building Systems of Oklahoma City, Oklahoma
 5. Varco-Pruden Buildings of Memphis, Tennessee
 6. Vulcan Steel Structures, Inc., of Adel, Georgia
- B. Other Manufacturers may be approved at discretion of Owner/Owner's Representative in accordance with Section 11 05 99.

2.2 COMPONENTS - FRAMING

- A. Structural Steel Members: ASTM A36 or A572, Grade 50.
- B. Structural Tubing: ASTM A500.
- C. Plate or Bar Stock: ASTM A3 or A529.
- D. Anchor Bolts: ASTM A307 or F1554, galvanized.
- E. Structural Bolts, Nuts, and Washers: ASTM A325 or ASTM A490, galvanized.
- F. Welding Materials: AWS D1.1; type required for materials being welded.

- G. Primer: SSPC Paint 20, Red Oxide.

2.3 COMPONENTS - WALL AND ROOF SYSTEM

- A. Sheet Steel Stock: ASTM A653/A653M galvanized, or ASTM A792/A792M with aluminum-zinc alloy coating.
- B. Joint Seal Gaskets: Manufacturer's standard type.
- C. Fasteners: Manufacturer's standard type, galvanized, finish to match adjacent surfaces when exterior exposed.
- D. Bituminous Paint: Asphaltic type.
- E. Sealant: Manufacturer's standard type, non-staining, elastomeric, skinning.
- F. Trim, Closure Pieces, Caps, Flashings, and other accessory components: Same material, thickness and finish as exterior sheets; brake formed to required profiles.

2.4 COMPONENTS - METAL DOORS AND FRAMES

- A. Pre-hung steel door with frame, 3'-0" wide by 7'-0" nominal dimensions with closer and hold-open.
- B. Knobs/latches and separate deadbolts installed. All doors and locks keyed alike.
- C. Color to match trim.

2.5 COMPONENTS - LOUVERS

- A. Minimum 12-inch-square nominal size. Manually adjustable to open or close.
- B. Manufactured of galvanized steel.
- C. Screened to prevent entry of vermin.

2.6 COMPONENTS - GUTTERS & DOWNSPOUTS

- A. None.

2.7 FABRICATION - FRAMING

- A. Fabricate members in accordance with AISC Specification for plate, bar, tube, or rolled structural shapes.
- B. Anchor Bolts: Post-installed into concrete.
- C. Provide framing for door and louver openings.

2.8 FABRICATION - WALL AND ROOF SYSTEMS

- A. Girts/Purlins: Rolled formed structural shape to receive siding, roofing [and liner] sheet.
- B. Internal and External Corners: Same material thickness and finish as adjacent material, profile brake formed or shop cut and factory mitered to required angles. Back brace mitered internal corners.
- C. Expansion Joints: Same material and finish as adjacent material, of profile to suit system.
- D. Flashings, Closure Pieces, Fascia, Infills, Caps, etc.: Same material and finish as adjacent material, profile to suit system.
- E. Fasteners: To maintain load requirements and weather tight installation, same finish as cladding, non-corrosive type.

2.9 FACTORY FINISHING

- A. Framing Members: Clean, prepare, and galvanize to ASTM A123/A123M. Balvanize after fabrication.
- B. Galvanizing for Nuts, Bolts and Washers: ASTM A153/A153M.
- C. Exterior Surfaces of Wall and Roof Components and Accessories: Precoated enamel on steel of color as selected by Owner/Owner's Representative from manufacturer's standard range.
- D. Interior Surfaces of Wall and Roof Components and Accessories: Precoated enamel on steel of color as selected by Owner/Owner's Representative from manufacturer's standard range.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify foundation, floor slab, mechanical and electrical utilities, and placed anchors are in correct position.

3.2 ERECTION - FRAMING

- A. Erect framing in accordance with AISC Specification.
- B. Provide for erection and wind loads. Provide temporary bracing to maintain structure plumb and in alignment until completion of erection and installation of permanent bracing.
- C. Set column base plates with non-shrink grout to achieve full plate bearing.
- D. Do not field cut or alter structural members without approval of Manufacturer.

- E. After erection, prime welds, abrasions, and uncoated steel.

3.3 ERECTION - WALL AND ROOFING SYSTEMS

- A. Exercise care when cutting prefinished material to ensure cuttings do not remain on finish surface.
- B. Fasten cladding system to structural supports, aligned level and plumb.
- C. Locate end laps over supports. End laps minimum 2 inches. Place side laps over bearing.
- D. Install expansion joints where indicated on Drawings.
- E. Install sealant and gaskets to prevent weather penetration.

3.4 ERECTION - ACCESSORIES

- A. Install door frames, doors, and louvers.
- B. Seal wall and roof accessories watertight and weather tight with sealant

3.5 ERECTION TOLERANCES

- A. Framing Members: 1/8 inch per foot from level and plumb.
- B. Siding and Roofing: 1/8 inch from indicated position.

END OF SECTION

SECTION 26 05 00

ELECTRICAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes electrical service, conduit, wiring, lighting, and convenience receptacles.
- B. New electrical service and all wiring and electrical equipment shall be installed by an Electrician licensed in the State of Maine.
- C. Electrical service from Bowdoin Street is to be run underground to dam site. No new utility poles or transformers are to be installed. As part of the work under this Contract, underground service is to be extended to house of abutting landowner north of dam site.

1.2 DESIGN REQUIREMENTS

- A. Design electrical system to meet current state and local electrical code requirements.
- B. All systems and components shall be sized to perform their intended purpose, be designed to account for the length of run, electrical voltages, all other relevant factors, and be designed to interface with existing utilities.
- C. All utilities exposed to weather shall be weather tight to prevent the incursion of water or other substances.
- D. All exterior materials shall be galvanized steel or otherwise permanently immune to the effects of corrosion, water, ultraviolet light, airborne pollution, and any and all other environmental effects.
- E. Do not use aluminum when in contact with earth or concrete and, where connected to dissimilar metal, protect by approved fittings and treatment. Provide hot-dip galvanized ferrous metals such as, but not limited to, anchors, bolts, braces, boxes, bodies, clamps, fittings, guards, nuts, pins, rods, shims, thimbles, washers, and miscellaneous not of corrosion-resistant steel except where other equivalent protective treatment is specifically approved in writing.

1.3 SUBMITTALS

- A. Shop Drawings: Indicate sizes, locations, identification, connections, supports, and all other relevant information for all electrical components.
- B. Product Data: Conduits, Wire, Cable, Splices, Connectors, and Fixtures.

PART 2 - PRODUCTS

2.1 ELECTRICAL SERVICE

- A. Provide minimum 100-amp, 230-volt single-phase electrical service panel. Connect to electrical service. Provide meter as required by local electric utility.
- B. Install circuit breakers appropriate to connected equipment. Circuits to be GFCI protected as required by electrical code.
- C. Size wiring as appropriate to load and length of run.

2.2 HARD-WIRED EQUIPMENT

- A. Hard-wire gate control panel, air compressor, and air dryer to service panel, unless otherwise specified by gate manufacturer.
- B. Wiring for equipment to be run in metallic conduit.

2.3 LIGHTING

- A. Provide 2 each, 2-tube, 4-foot-length fluorescent light fixtures attached to roof framing.
- B. Wire light fixtures to three-way switches located at both doors. (Both fixtures controlled by single switch at each door.)

2.4 CONVENIENCE RECEPTACLES

- A. Provide 4 each, 20-amp duplex receptacles.
- B. Locate one receptacle on each end wall and two receptacles on side wall opposite permanently installed equipment.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify field conditions are acceptable and are ready to receive work.

3.2 INSTALLATION

- A. Conduits, Raceways, and Fittings
 - 1. Conduit runs between outlet and outlet, between fitting and fitting, or between outlet and fitting cannot contain more than the equivalent of three 90-degree bends, including those bends located immediately at the outlet or fitting.
 - 2. Do not install crushed or deformed conduit. Avoid trapped conduit runs where possible. Take care to prevent the lodgment of foreign material in the conduit,

boxes, fittings, and equipment during the course of construction. Clear any clogged conduit of obstructions or be replaced.

3. Conduit and raceway runs concealed in or behind walls, above ceilings, or exposed on walls and ceilings 5 feet or more above finished floors and not subject to mechanical damage may be electrical metallic tubing (EMT).

B. Rigid Steel Conduit

1. Make field-made bends and offsets with approved hickey or conduit bending machine. Use long radius conduit for elbows larger than 2-1/2 inches.
2. Provide all conduit stubbed-up through concrete floors for connections to free-standing equipment with the exception of motor-control centers, cubicles, and other such items of equipment, with a flush coupling when the floor slab is of sufficient thickness. Otherwise, provide a floor box set flush with the finished floor. For conduits installed for future use, terminate with a coupling and plug set flush with the floor.

C. Wiring

1. Color code feeder and branch circuit conductors.
2. Use conductors up to and including AWG No. 2 that are manufactured with colored insulating materials. For conductors larger than AWG No. 2, have ends identified with color plastic tape in outlet, pull, or junction boxes.
3. Splice in accordance with the NFPA 70. Provide conductor identification within each enclosure where a tap, splice, or termination is made and at the equipment terminal of each conductor. Match terminal and conductor identification as indicated.
4. Where several feeders pass through a common pullbox, tag the feeders to clearly indicate the electrical characteristics, circuit number, and panel designation.

D. Boxes and Fittings

1. Furnish and install pullboxes where necessary in the conduit system to facilitate conductor installation. For conduit runs longer than 100 feet or with more than three right-angle bends, install a pullbox at a convenient intermediate location.
2. Securely mount boxes and enclosures to the building structure with supporting facilities independent of the conduit entering or leaving the boxes.
3. Select the mounting height of wall-mounted outlet and switch boxes, as measured between the bottom of the box and the finished floor, in accordance with ICC/ANSI A117.

END OF SECTION

SECTION 31 11 00

CLEARING & GRUBBING

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. Removal of surface debris.
- B. Removal of trees, shrubs, and other plant life.
- C. Protection of landscaping and trees outside of the work area.

1.2 REGULATORY REQUIREMENTS

- A. Conform to applicable code for environmental requirements, disposal of debris, and erosion and sediment control.
- B. Coordinate clearing work with utility companies.
- C. Limits of clearing shall not exceed those shown on the drawings and authorized by the applicable permits.

1.3 REFERENCES

- A. State of Maine Department of Transportation (MaineDOT) Standard Specifications, November 2014 Edition.

PART 2 - PRODUCTS: NOT USED

PART 3 - EXECUTION

3.1 PREPARATION

- A. Inspect the work area.
- B. Verify that existing plant life designated to remain is tagged or identified by the Owner/Owner's Representative.
- C. Establish a schedule for daily removal of debris from the site. Debris may not be stockpiled on site.
- D. Establish required sediment and erosion control measures prior to Work. Establish the limits of work and all measures required for pollution protection.
- E. Coordinate work with the Owner/Owner's Representative and other utilities.

3.2 PROTECTION OF UTILITIES AND BENCHMARKS

- A. Locate, identify, and protect utilities designed to remain.

- B. Protect benchmarks, survey control points, and existing structures from damage or displacement.
- C. Keep Work within limits established on the Drawings.

3.3 PROTECTION OF TREES AND LANDSCAPING

- A. Protect trees, plant growth, and features designated to remain, as final landscaping. Protected landscaping includes all trees, shrubbery, and landscaping that are not specifically required to be removed, or fall outside the limits of work or limits of clearing specified on the drawings.
- B. Provide protective barriers or other means required to prevent damage to remaining landscaping from construction equipment, operations, stockpiles, or chemicals.
- C. Do not use trees for anchorages without permission from the Owner/Owner's Representative. Provide the tree trunk with suitable wraps of protective material before placing any rope, cable, or wire.
- D. Repair or treat any bruising, scarring, tearing, or breaking of limbs, trunk, or roots at no additional cost to the Owner. The Owner/Owner's Representative will determine the method of repair or treatment as recommended by a licensed tree surgeon or horticulturist provided at the expense of the Contractor.
- E. Remove and replace injured trees or shrubs that cannot be repaired or treated. Replace trees or shrubs early in the next planting season with the same species and of the maximum size that is practicable to plant and sustain growth in the particular environment. Maintain replacement trees or shrubs for a minimum of one month or until growth is established. Replacement of damaged trees and shrubs will be at no additional cost to the Owner.
- F. If repairs, treatments, or replacements of trees or shrubs are not performed promptly or to the Owner's/Owner's Representative's satisfaction, the Owner reserves the right to perform this corrective work, and to deduct the costs of the corrective work from the Contractor's invoice or retainage.

3.4 CLEARING

- A. Clear areas specifically designated on Drawings.
- B. Clear other areas required for access to the site and execution of the Work.
- C. Remove trees, shrubs, boulders, concrete rubble, bituminous asphalt debris, posts, rails, fences, gates, or other debris within designated areas. Remove stumps, main root ball, and all roots with a diameter greater than 2 inches.
- D. Fell large trees in a controlled manner. Cut in sections as necessary. Cut and lower branches and limbs to prevent falling on or damaging adjacent ground or structures.

- E. Clear undergrowth and deadwood without disturbing the subsoil.
- F. Backfill root hole immediately after removal of roots with 2-inch minus fill meeting MaineDOT Standard Specifications for Common Borrow (§703.18) or other material acceptable to Owner/Owner's Representative. Compact in 6-inch loose lifts.

3.5 REMOVAL

- A. Remove cleared debris, rock, extracted plant life, and any other cleared material or debris from site before the end of each workday.
- B. Leave the area in a clean and neat condition. Grade the site surface to prevent freestanding surface water.

END OF SECTION

SECTION 31 00 00

EXCAVATION

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Excavation of loose materials, including topsoil, subsoil, fill, silt, and debris on river banks and upstream and downstream of dam.
2. Rock excavation within river channel.
3. Disposal of excavated materials.

B. Comply with local utility standards when working in vicinity of utility lines.

C. For all excavations, plan and perform excavation under the direct supervision of a Competent Person as defined by the Occupational Safety and Health Administration (OSHA).

1.2 CLASSIFICATION OF EXCAVATION

A. Common Excavation: Removal and disposal of all materials not classified as rock excavation, including loose surface debris.

B. Rock Excavation: Excavating, grading, and disposing of material classified as rock, and removal and disposal of boulders 1 cubic yard or more in volume.

C. Definitions

1. Rock is defined as solid rock; rock material that is in ledges, bedded deposits, and unstratified masses; and firmly cemented conglomerate deposits possessing the characteristics of solid rock.
2. Rock-like material that can be broken with a standard digging bucket on a 20-ton excavator will be classified as common excavation.
3. Rock excavation does not include demolition or removal of concrete.

PART 2 - PRODUCTS - NOT USED.

PART 3 - EXECUTION

3.1 PREPARATION

A. Perform all work in accordance with applicable permits for this project.

- B. Coordinate to mark underground utilities before performing Work.
 - 1. Request underground utilities to be located and marked within and surrounding construction areas.
 - 2. Allow sufficient lead time so that utilities can be marked before starting excavation.
- C. Identify required lines, levels, contours, and datum.
- D. Remove and relocate or coordinate with utility companies for removal and relocation of utilities.
- E. Protect utilities indicated to remain from damage.
- F. Protect plant life, lawns, and other features remaining as portion of final landscaping.
- G. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic. If necessary, remove these items before construction and replace upon completion.

3.2 GENERAL

- A. Protect adjacent structures that may be damaged by excavation work.
- B. Remove excavated material from site and dispose of in accordance with permits and all applicable federal, state, and local regulations. Excavated rock and loose material such as sand and gravel may be disposed of at no cost by trucking the material to Map 20 Lot 29 in Winthrop, on Route 202 directly across from Charlies Chevrolet. Additionally, the Town of Readfield and the Town of Winthrop each have transfer stations, should alternative sites be needed.
- C. Repair or replace items indicated to remain damaged by excavation. Restore to preconstruction condition.

3.3 COMMON EXCAVATION

- A. Excavate to accommodate site structures and construction operations.
- B. Excavate all loose material in river channel upstream of dam. Excavate to depth of new spillway sill.

3.4 ROCK EXCAVATION

- A. Excavate rock by mechanical means only. Blasting will not be allowed. Limit size of excavator-mounted hydraulic breakers (“hoe rams”) and similar percussive equipment to protect adjacent structures. Pre-drill rock as necessary.

- B. Excavate to Rock Excavation lines and grades shown on Drawings. Rock Excavation lines and grades shown on Drawings are minimum depth (maximum elevation) to accommodate new spillway sill structure.
- C. Excavate below Rock Excavation lines and grades shown on Drawings as directed by Owner/Owner's Representative to locate Sound Rock. Sound Rock is at sole discretion of Owner/Owner's Representative, but is generally defined as intact bedrock without loose blocks or open joints.

3.5 PROTECTION

- A. Prevent displacement or loose soil from falling into excavation; maintain soil stability.
- B. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- C. Protect structures, utilities and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth operations.

END OF SECTION

SECTION 31 23 23

RIP-RAP STREAMBANK PROTECTION

PART 1 - GENERAL

1.1 REFERENCES

- A. State of Maine Department of Transportation (MaineDOT) Standard Specifications, November 2014 Edition.

1.2 SUBMITTALS

- A. Product data for rip-rap.
- B. Product data for rip-rap bedding material.

PART 2 - PRODUCTS

- A. Rip-Rap: Provide material conforming to MaineDOT Standard Specifications for Stone Fill (§703.25), except that the minimum stone size shall be 9 inches (50 lbs) and fifty percent of the stones by volume shall have an average dimension greater than 15 inches.
- B. Bedding Material: Rip-Rap: Provide material conforming to MaineDOT Standard Specifications for Crushed Stone (§703.31).

PART 3 - EXECUTION

3.1 PREPARATION

- A. Clear and grub vegetated areas to receive rip-rap streambank protection.
- B. Excavate silt, debris, and other loose material in areas to receive rip-rap streambank protection to establish suitable foundation for rip-rap.

3.2 RIP-RAP CONSTRUCTION

- A. Construct rip-rap in the areas indicated. Trim and dress indicated areas to conform to cross sections, lines and grades shown within a tolerance of 0.1 foot.
- B. Bedding material to protect subgrade from washing out through rip-rap shall be placed where rip-rap does not bear on sound bedrock (ledge). Spread bedding material uniformly to a thickness of at least 4 inches on prepared subgrade. Finish bedding to present even surface free from mounds and windrows.
- C. Place rock for rip-rap on prepared bedding material to produce a well graded mass with the minimum practicable percentage of voids in conformance with lines and grades indicated. Machine-placed rip-rap shall be random rubble, hand laid stones for

the full depth placed in one operation to secure interlocking of all face stones and stones placed as backing. Place the largest stones at the bottom of the slope to form a stable base. Each stone shall be individually stable by making contact at a minimum of three points with the supporting stone(s) or foundation below. The stones shall be laid in close contact with the longer axis perpendicular to the plane of the slope to stagger joints. The openings between the stones in all riprap shall be filled with spall, or rocks securely rammed into place. Riprap shall be placed on the slope in a well-knit, compact, and uniform layer, forming a straight-line slope from top to bottom with a maximum slope of 1H:1V. The surface stones shall be chinked with smaller stone from the same source.

3.3 TOP OF SLOPE WORK

- A. Conform to applicable code for environmental requirements, disposal of debris, and erosion and sediment control.
- B. Coordinate clearing work with utility companies.
- C. Limits of clearing shall not exceed those shown on the drawings and authorized by the applicable permits.
- D. As detailed in drawing S-05, Section 1.

END OF SECTION

SECTION 31 68 13

ROCK ANCHORS & DOWELS

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes:
 - 1. Main Anchors for Obermeyer Gate.
 - 2. No. 8 Bar Anchors for piers and columns.
 - 3. No. 5 rock dowels for spillway sill structure.
- B. All anchors and dowels included in this Section are cement-grouted into rock. For dowels epoxy-grouted into existing concrete, see Section 03 31 00, Cast-In-Place Concrete.

1.2 REFERENCES

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referred to within the text by the basic designation only.
- B. Where dates or editions are not indicated, the following edition applies:
 - 1. For references included in the design basis Building Code, the edition referenced in that Building Code.
 - 2. For all other references, the current edition in force at the date of Contract award.
- C. American Concrete Institute International (ACI)
 - 1. ACI 117 - Specifications for Tolerances for Concrete Construction and Materials
- D. ASTM INTERNATIONAL (ASTM)
 - 1. ASTM A615 - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
 - 2. ASTM C109 - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars Using 2-in.Cube Specimens)
 - 3. ASTM A193 - Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications

1.3 SUBMITTALS

- A. Submit the following in accordance with Section 01 33 00, Submittal Procedures:
 - 1. Shop Drawings (Fabrication and Installation Drawings)
 - 2. Product Data (Equipment Data Sheets)
 - 3. Installer Qualifications
 - 4. Drill Hole Records

1.4 INSTALLER QUALIFICATIONS

- A. Submit the qualifications and experience records for approval. Experience records shall identify all the individuals responsible for the anchors and shall include a listing of projects of similar scope performed within the specified period along with points of contact.
- B. The anchors shall be installed by a firm which is regularly engaged in the installation of rock anchors and has at least ten years' experience in the installation of similar anchors. The superintendent shall have installed anchors on at least five projects of similar scope and size.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Anchors shall be suitably wrapped, packaged or covered at the factory or shop to prevent being affected by dirt, water, oil, grease, and rust.
- B. Protect anchors against abrasion or damage during shipment and handling. Place materials stored at the site above ground on a well-supported platform and covered with plastic or other approved material.
- C. Anchors shall be protected from adjacent construction operations.
- D. Reject and remove from the site anchors damaged by abrasion, cuts, nicks, heavy corrosions, pitting, welds or weld spatter. Inspect anchors prior to insertion into anchor holes for damage or deformation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Stainless Steel Anchors: ASTM A193 Grade B8, Class 2 threaded rod.
- B. Bar Anchors & Dowels: ASTM A615 Grade 60 deformed bar; plain (uncoated).

- C. Centralizers: Centralizers shall be fabricated from plastic. Centralizers shall be able to support the anchor in the drill hole and position the anchor so a minimum of ½ inch of grout cover is provided. Centralizers shall permit grout to freely flow up the drill hole. Centralizers shall be required for all anchors greater than ¾ inch nominal diameter or No. 6 bar size. Where required, provide a minimum of two centralizers (one near the top and one near the bottom).

2.2 EQUIPMENT

- A. Drilling Equipment: Provide drilling equipment suitable for advancing the drill tools to the depths and at the alignment required.
- B. Grouting Equipment
1. Grout Mixer
 - a. The grout mixer shall be a high-speed, high-shear, colloidal type grout mixer capable of continuous mechanical mixing that will produce uniform and thoroughly mixed grout which is free of lumps and undispersed cement.
 - b. The mixer shall be equipped with a suitable water measuring device calibrated to read in cubic feet and tenths and so designed that after each delivery the hands can be conveniently set back to zero.
 2. Grout Pump
 - a. The grout pump shall be of the positive displacement type, and shall be capable of pumping at all flow rates below 5 gpm, shall be capable of pumping at the pressure of at least 50 psi at zero flow rate.
 - b. For neat cement grout, the pump shall have a screen with 0.125-inch maximum clearance to sieve the grout before being introduced into the pump. Screens are not required for shear type mixers.
 - c. Make available a pump which is capable of pumping neat cement grout mixes. The pumping equipment shall have a pressure gage capable of measuring pressures of at least 150 psi or twice the required grout pressure, whichever is greater.

2.3 GROUT

- A. Materials
1. Cement: Five Star® Special Grout 400 as manufactured by Five Star Products, Inc., Fairfield, Connecticut.
 2. Water: Provide fresh, clean, potable water free from injurious amounts of sewage, oil, acid, alkali, salts, or organic matter.

3. Admixtures: Admixtures shall not be used.

B. Proportioning

1. Proportion in accordance with Manufacturer's instructions.
2. Water content shall be the minimum necessary for proper placement
3. The Contractor is responsible for taking, curing, and breaking of grout test cubes for verifying mix design.
4. At least 60 days prior to scheduled anchor or dowel grouting, mix trial batch using proposed equipment, methods, and materials. Make a sufficient number of two-inch cube samples in accordance with ASTM C109.
5. Retain an independent laboratory to test cubes in accordance with ASTM C109 at 1, 7, 28, and 56 days. Minimum compressive strength shall be 4,000 psi at 28 days.
6. Provide test reports to verify that the grout mixture proportions selected will produce grout of the strength specified. If grout does not achieve the strength specified, propose alternative methods or materials.
7. Do not install any rock anchors or dowels until mix design has been verified by successful testing of trial batch.

PART 3 - EXECUTION

3.1 TOLERANCES

A. Main Anchors for Obermeyer Gate

1. Main Anchors for Obermeyer gate must be installed to tolerances specified by Obermeyer Hydro, Inc. See OHI Project 16-1664 drawings. Tolerances are exceptionally stringent with respect to location and inclination.
2. A rigid steel template will be required to hold the anchors in place to the specified tolerances while the grout sets. Submit shop drawings showing template and method of locating and supporting same. Demonstrate that template will locate and align anchors within specified tolerances.
3. A template may also be required (at the Contractor's option) to locate drill holes and attain required drill hole verticality. Drill holes that are out-of-plumb or not accurately located shall be re-drilled. Drill holes shall not be over-drilled to more than 1 inch greater than the specified diameter.
4. All main anchors shall be grouted simultaneously.

- B. Rebar Rock Anchors & Dowels: Tolerances for location and alignment as per ACI 117 requirements for reinforcing steel.

3.2 DRILLING

- A. Holes in rock may be drilled by core drilling, rotary drilling, percussion drilling, or down-the-hole hammer using equipment suitable for the intended purpose. The drilling method shall not cause structural damage to existing structures.
- B. Holes shall be drilled at the locations and inclinations shown and to the depths and diameters indicated on the drawings. The locations of the holes may be changed only as approved by the Owner/Owner's Representative. Any redesign of the anchored structure due to relocation of anchor holes will be performed by the Owner/Owner's Representative at the Contractor's expense.
- C. No holes shall be drilled within 50 feet of a grouted hole until the grout has set at least 24 hours.
- D. Holes shall be drilled a maximum of four (4) diameters beyond the required length.
- E. Provide a temporary plug for all holes drilled more than 10 days prior to installation of the anchor.

3.3 WATER TIGHTNESS TESTING

- A. After drilling, clean drill holes by pressurized air and/or water to remove drill cuttings and mud.
- B. Fill each hole to top with clean water. After filling, prevent entry of surface water.
- C. Observe level of water in hole.
- D. Hole is acceptable as drilled if water level does not fall more than 3 inches in one hour, and if no water flows out of hole.
- E. If hole is not acceptable, pre-grout with neat cement grout or sanded grout, let grout set at least 24 hours, and re-drill hole. Re-test and repeat until hole is water-tight as specified above.

3.4 GROUTING

- A. Grout drill holes prior to installation of anchors or dowels.
- B. Re-clean drill holes by pressurized air and/or water.
- C. Re-check drilled depth prior to grouting.
- D. Grouting shall be gravity flow.

- E. Gravity grouting shall proceed from the bottom to the top of the drill hole. For drill holes greater than 12 inches deep, grouting shall be performed using a tremie tube or pipe. Insert the tremie to the bottom of the hole and pump grout until clean, uniform grout returns at the top of the hole. Slowly withdraw the tremie while continuing to pump grout. After fully withdrawing tremie, top off drill hole with grout.
- F. Do not allow grout to set before installing anchor.

3.5 INSTALLATION OF ANCHORS AND DOWELS

- A. All the equipment used in handling and placing the anchors and dowels shall be such that it does not damage or deteriorate the steel, threads, nuts, or centralizers. Each anchor or dowel shall be inspected prior to insertion into the hole. Any damaged anchor shall be replaced.
- B. Insert anchor or dowel into grouted hole. Ensure that anchor or dowel is correctly positioned and adequately supported to achieve specified tolerances.
- C. Clean up excess grout expelled from drill hole by anchor or dowel insertion.
- D. Protect anchor or dowel from disturbance for a minimum of 24 hours to prevent damage to green grout.

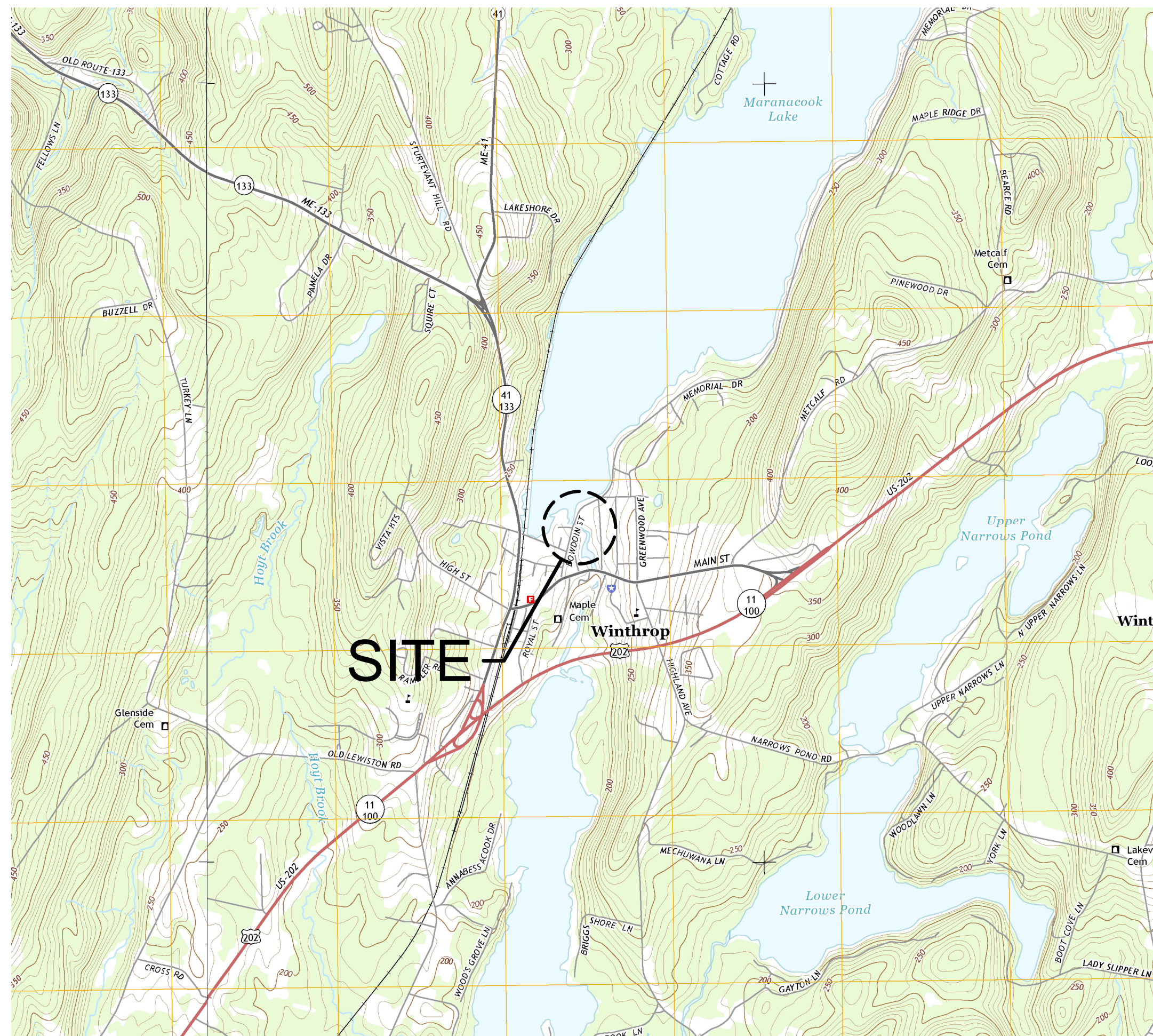
3.6 FIELD QUALITY CONTROL

- A. Provide drill hole records for all rock anchors. (Drill hole records are not required for rock dowels not exceeding 12 inches embedment into rock.)
- B. Submit logs following each day of drilling. Logs may be handwritten, if legible.
- C. Separate logs shall be made for each hole.
- D. The following information shall be included on the logs for each hole:
 - 1. Hole number or designation and elevation of top of hole.
 - 2. Inclination of the hole.
 - 3. Make and manufacturer's model designation of drilling equipment.
 - 4. Dates and time when drilling operations were performed.
 - 5. Time required for drilling hole.
 - 6. Description by depths of types of rock or other materials encountered.
 - 7. Depth and elevation of any noticeable changes in return, with descriptions.
 - 8. Depth and elevation of any inconsistencies in drilling action, drops of tooling, or other unusual occurrences.

9. Depths and elevations at which drill water, if used, is lost and regained, and amounts.
10. Depth and elevation of bottom of hole, determined by measuring the drill steel.

END OF SECTION

MARANACOOK LAKE OUTLET DAM MODIFICATION - 2018 TOWNS OF WINTHROP AND READFIELD, MAINE



SHEET INDEX

DRAWING NO.	TITLE
S-01	TITLE SHEET
S-02	EXISTING CONDITIONS SITE PLAN
S-03	TEMPORARY FACILITIES PLAN
S-04	SITE IMPROVEMENTS PLAN & RIP RAP SECTIONS
S-05	EXISTING CONDITIONS & DEMOLITION PLAN, ELEVATION, & SECTIONS
S-06	SPILLWAY IMPROVEMENTS PLAN, ELEVATION, & SECTIONS
S-07	NEW GATE STRUCTURE
S-08	EXISTING GATE STRUCTURE IMPROVEMENTS
S-09	GATE HOUSE PLAN AND DETAILS

SEE ALSO OBERMEYER HYDRO INC. DRAWINGS
(OHI PROJECT 16-1664)

IMAGE FROM USGS TOPOGRAPHIC 7.5 MINUTE SERIES, WINTHROP AND WAYNE, ME QUADRANGLES, 2014.

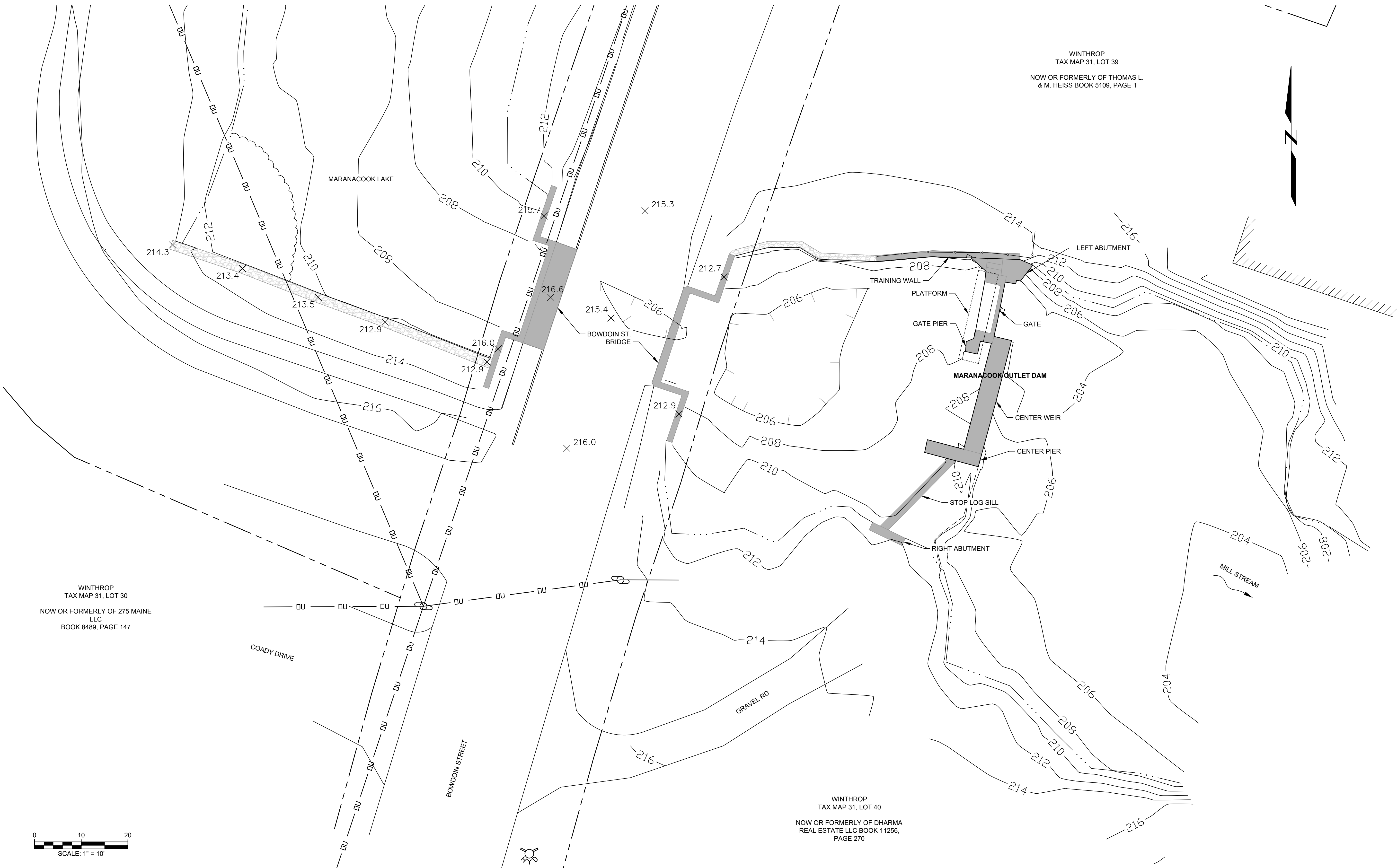
NOT TO SCALE

IMAGE FROM USGS; IMAGERY DATED 2015.

NOT TO SCALE

Attention: If this scale bar does not measure 1" then drawing is not original scale.					Designed: A. GRADESKI Checked: C.B. GRANT Drawn: A. GRADESKI Submitted By: C.B. GRANT P.E. Number: 15505	 5 MILK STREET PORTLAND, ME 04101 (207)797-8901	Towns of Readfield and Winthrop 17 Highland Avenue Winthrop, Maine GEI Project 1610763-0	Maranacook Lake Outlet Dam Modification (2018) Winthrop, Maine TITLE SHEET	DWG. NO. S-01
	NO. DATE ISSUE/REVISION APP								
	0	6/8/2018	INITIAL ISSUE	CBG					REV 0

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& M. HEISS BOOK 5109, PAGE 1



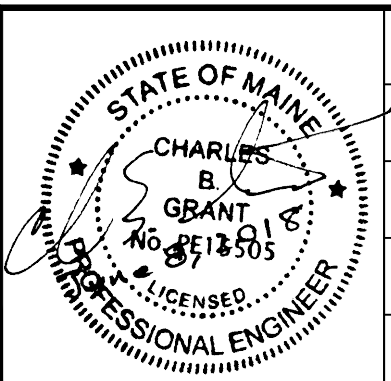
WINTHROP
TAX MAP 31, LOT 30
NOW OR FORMERLY OF 275 MAINE
LLC
BOOK 8489, PAGE 147

WINTHROP
TAX MAP 31, LOT 40
NOW OR FORMERLY OF DHARMA
REAL ESTATE LLC BOOK 11256,
PAGE 270



- NOTES**
- SITE PLAN DERIVED FROM DWG. S1.1, EXISTING CONDITIONS PLAN, BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-16.
 - VERTICAL DATUM FOR ELEVATION CONTOURS SHOWN: NAVD88. CONVERSION FROM NAVD88 TO NGVD29 AT SITE: +0.63 FT.

NO.	DATE	ISSUE/REVISION	APP
0	6/8/2018	INITIAL ISSUE	CBG



Designed:	A. GRADESKI
Checked:	C.B. GRANT
Drawn:	A. GRADESKI
Submitted By:	C.B. GRANT
P.E. Number:	15505



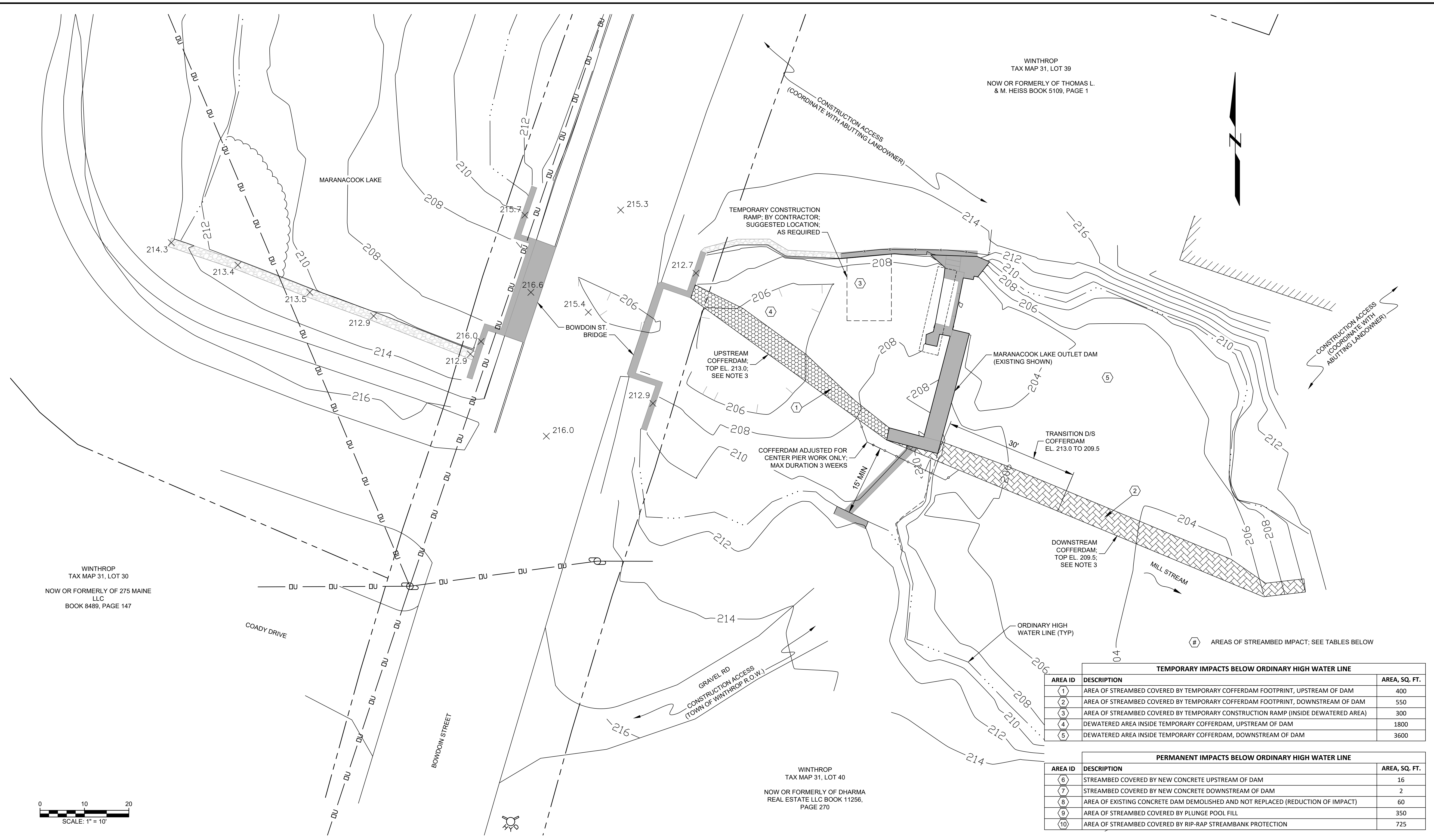
Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine

GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine

**EXISTING CONDITIONS SITE
PLAN**

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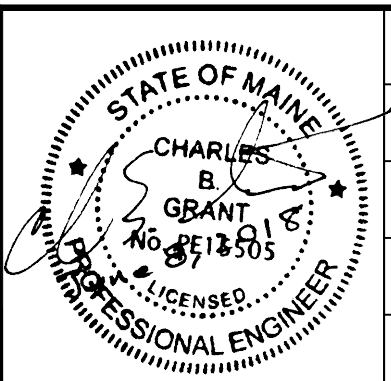
WINTHROP
TAX MAP 31, LOT 39
NOW OR FORMERLY OF THOMAS L.
& M. HEISS BOOK 5109, PAGE 1

WINTHROP
TAX MAP 31, LOT 30
NOW OR FORMERLY OF 275 MAINE
LLC
BOOK 8489, PAGE 147



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 - COFFERDAM LOCATION AND TOP ELEVATION AS SHOWN. COFFERDAM TYPE AND STRUCTURAL DESIGN BY CONTRACTOR.

Attention:				
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	NO.	DATE	ISSUE/REVISION	APP



Designed: A. GRADESKI
Checked: C.B. GRANT
Drawn: A. GRADESKI
Submitted By: C.B. GRANT
P.E. Number: 15505



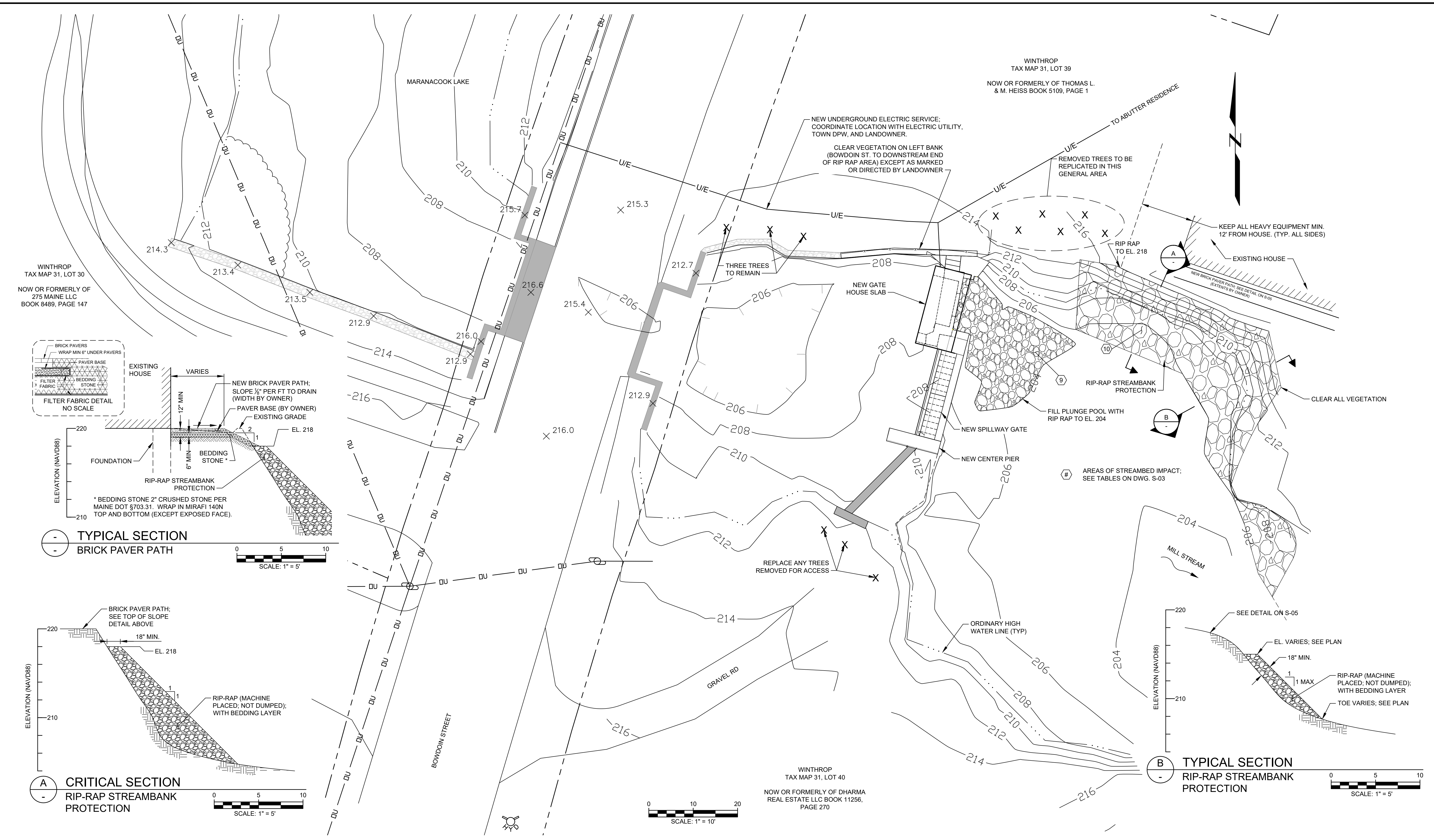
Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine
GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine
TEMPORARY FACILITIES PLAN

DWG. NO.
S-03
REV
0

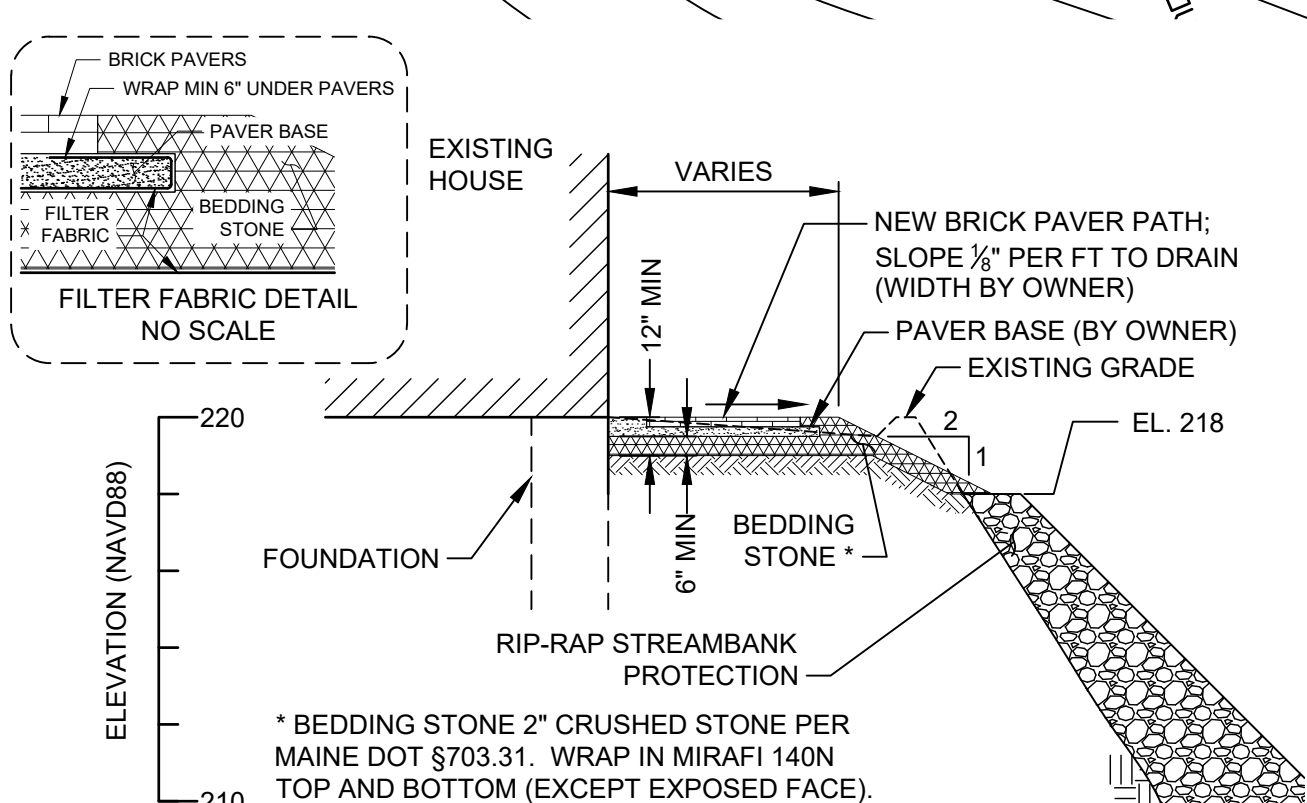
TEMPORARY IMPACTS BELOW ORDINARY HIGH WATER LINE		
AREA ID	DESCRIPTION	AREA, SQ. FT.
1	AREA OF STREAMBED COVERED BY TEMPORARY COFFERDAM FOOTPRINT, UPSTREAM OF DAM	400
2	AREA OF STREAMBED COVERED BY TEMPORARY COFFERDAM FOOTPRINT, DOWNSTREAM OF DAM	550
3	AREA OF STREAMBED COVERED BY TEMPORARY CONSTRUCTION RAMP (INSIDE DEWATERED AREA)	300
4	DEWATERED AREA INSIDE TEMPORARY COFFERDAM, UPSTREAM OF DAM	1800
5	DEWATERED AREA INSIDE TEMPORARY COFFERDAM, DOWNSTREAM OF DAM	3600

PERMANENT IMPACTS BELOW ORDINARY HIGH WATER LINE		
AREA ID	DESCRIPTION	AREA, SQ. FT.
6	STREAMBED COVERED BY NEW CONCRETE UPSTREAM OF DAM	16
7	STREAMBED COVERED BY NEW CONCRETE DOWNSTREAM OF DAM	2
8	AREA OF EXISTING CONCRETE DAM DEMOLISHED AND NOT REPLACED (REDUCTION OF IMPACT)	60
9	AREA OF STREAMBED COVERED BY PLUNGE POOL FILL	350
10	AREA OF STREAMBED COVERED BY RIP-RAP STREAMBANK PROTECTION	725

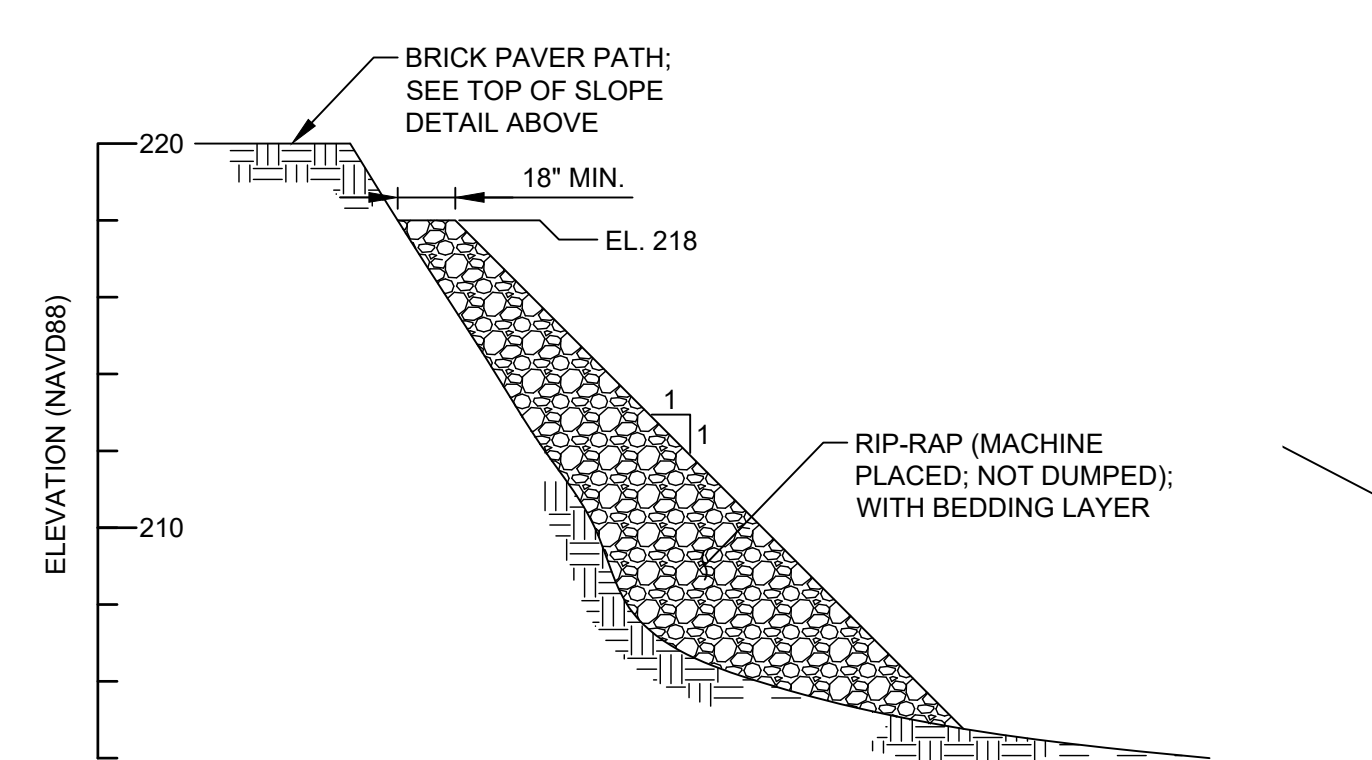


WINTHROP
TAX MAP 31, LOT 30
NOW OR FORMERLY OF
275 MAINE LLC
BOOK 8489, PAGE 147

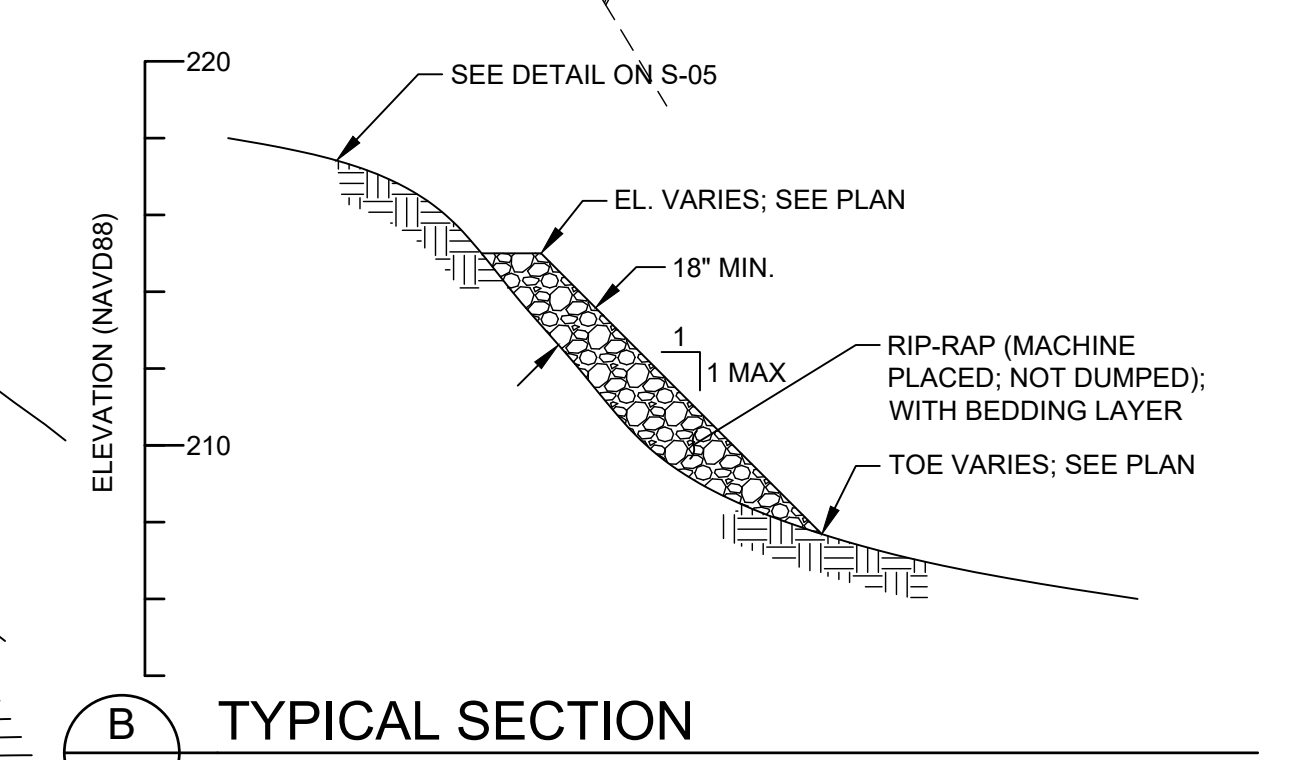
WINTHROP
TAX MAP 31, LOT 39
NOW OR FORMERLY OF THOMAS L.
& M. HEISS BOOK 5109, PAGE 1



**TYPICAL SECTION
BRICK PAVER PATH**
SCALE: 1" = 5'



**CRITICAL SECTION
RIP-RAP STREAMBANK
PROTECTION**
SCALE: 1" = 5'



**TYPICAL SECTION
RIP-RAP STREAMBANK
PROTECTION**
SCALE: 1" = 5'

- NOTES**
- SITE PLAN DERIVED FROM DWG. S-1.1, EXISTING CONDITIONS PLAN, BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-16.
 - VERTICAL DATUM FOR ELEVATION CONTOURS SHOWN: NAVD88. CONVERSION FROM NAVD88 TO NGVD29 AT SITE: +0.63 FT.

NO.	DATE	ISSUE/REVISION	APP
0	6/8/2018	INITIAL ISSUE	CBG

Designed: A. GRADESKI
Checked: C.B. GRANT
Drawn: A. GRADESKI
Submitted By: C.B. GRANT
P.E. Number: 15505

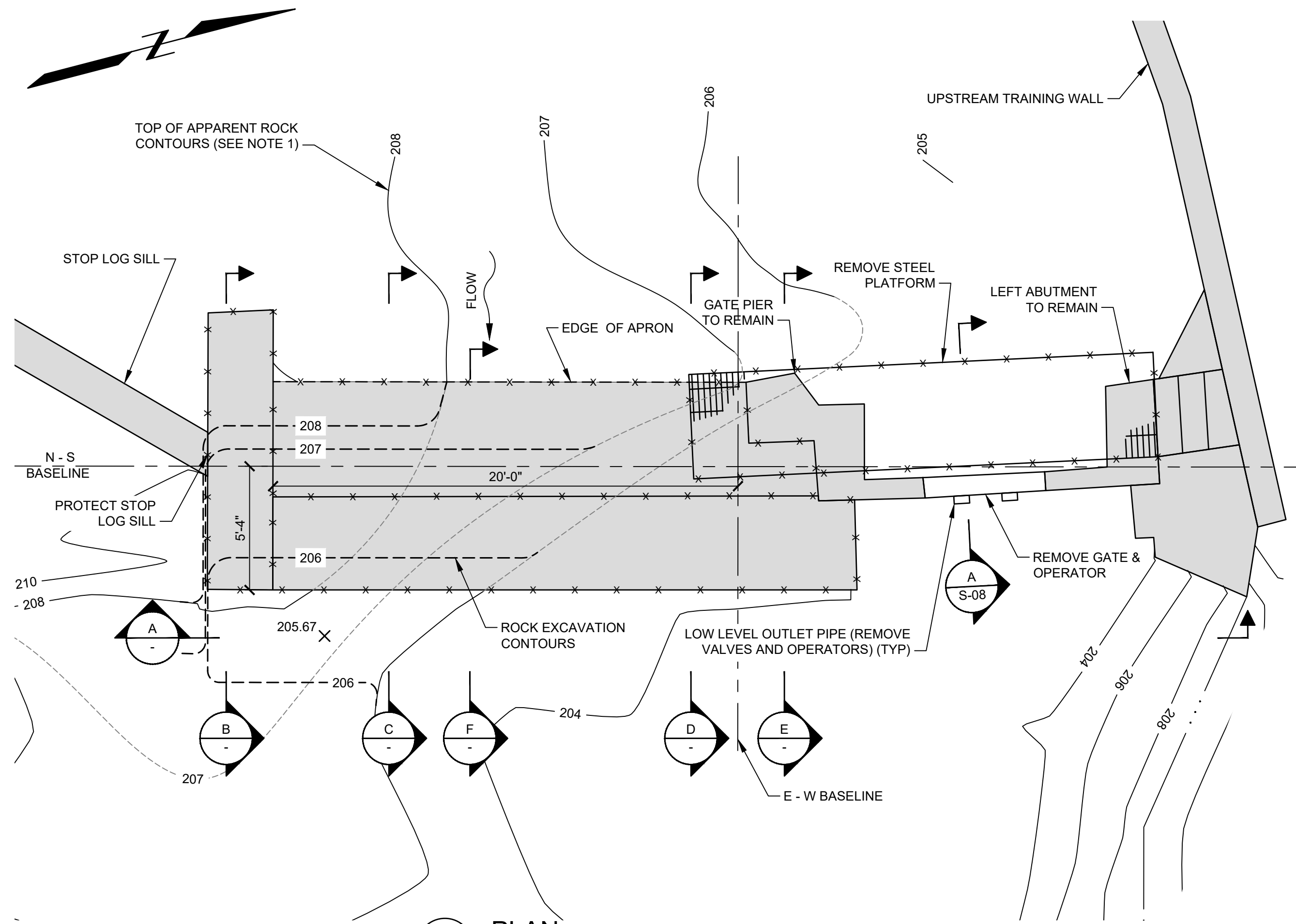


GEI Consultants
5 MILK STREET
PORTLAND, ME 04101
(207) 797-8901

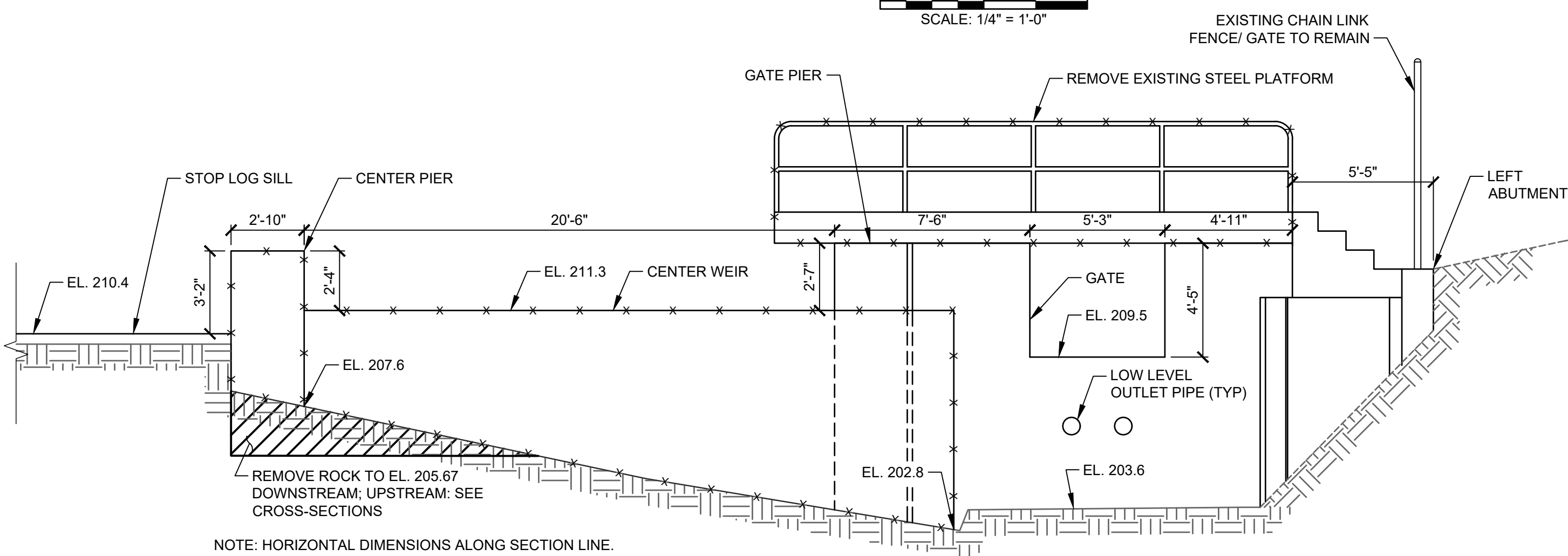
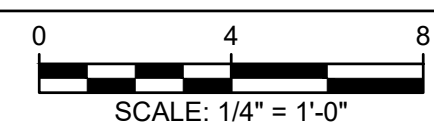
Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine
GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine
**SITE IMPROVEMENTS PLAN &
RIP RAP SECTIONS**

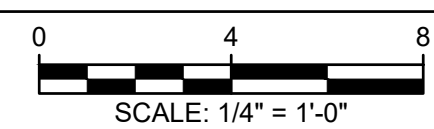
DWG. NO.
S-04
REV
0



PLAN
SPILLWAY



ELEVATION
SPILLWAY



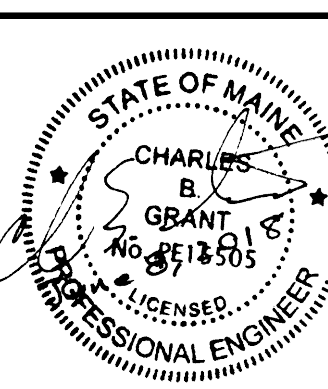
NOTES:

- UPSTREAM ROCK CONTOURS BASED ON SUPPLEMENTARY HAND PROBES AND MEASUREMENTS PERFORMED BY GEI ON OCTOBER 25, 2016. TOP OF ROCK WAS DETERMINED BY PROBING UNTIL REFUSAL WAS ENCOUNTERED ON APPARENT ROCK OR POSSIBLE BOULDER.
- DOWNSTREAM ROCK CONTOURS DERIVED FROM DWG. S1.1, EXISTING CONDITIONS PLAN, BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-16
- THE NORTH-SOUTH BASELINE IS LOCATED 5'-4" UPSTREAM FROM THE TOE OF THE EXISTING CENTER WEIR. THE EAST-WEST BASELINE IS LOCATED 20'-0" NORTH OF THE NORTHERN FACE OF THE EXISTING CENTER PIER AND PERPENDICULAR TO THE NORTH-SOUTH BASELINE.

LEGEND:

- DEMOLISH/ REMOVE
- 208 --- EXISTING BEDROCK CONTOURS
- 207 --- ASSUMED/ INTERPOLATED BEDROCK CONTOURS
- 208 --- ROCK EXCAVATION CONTOURS

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			APP



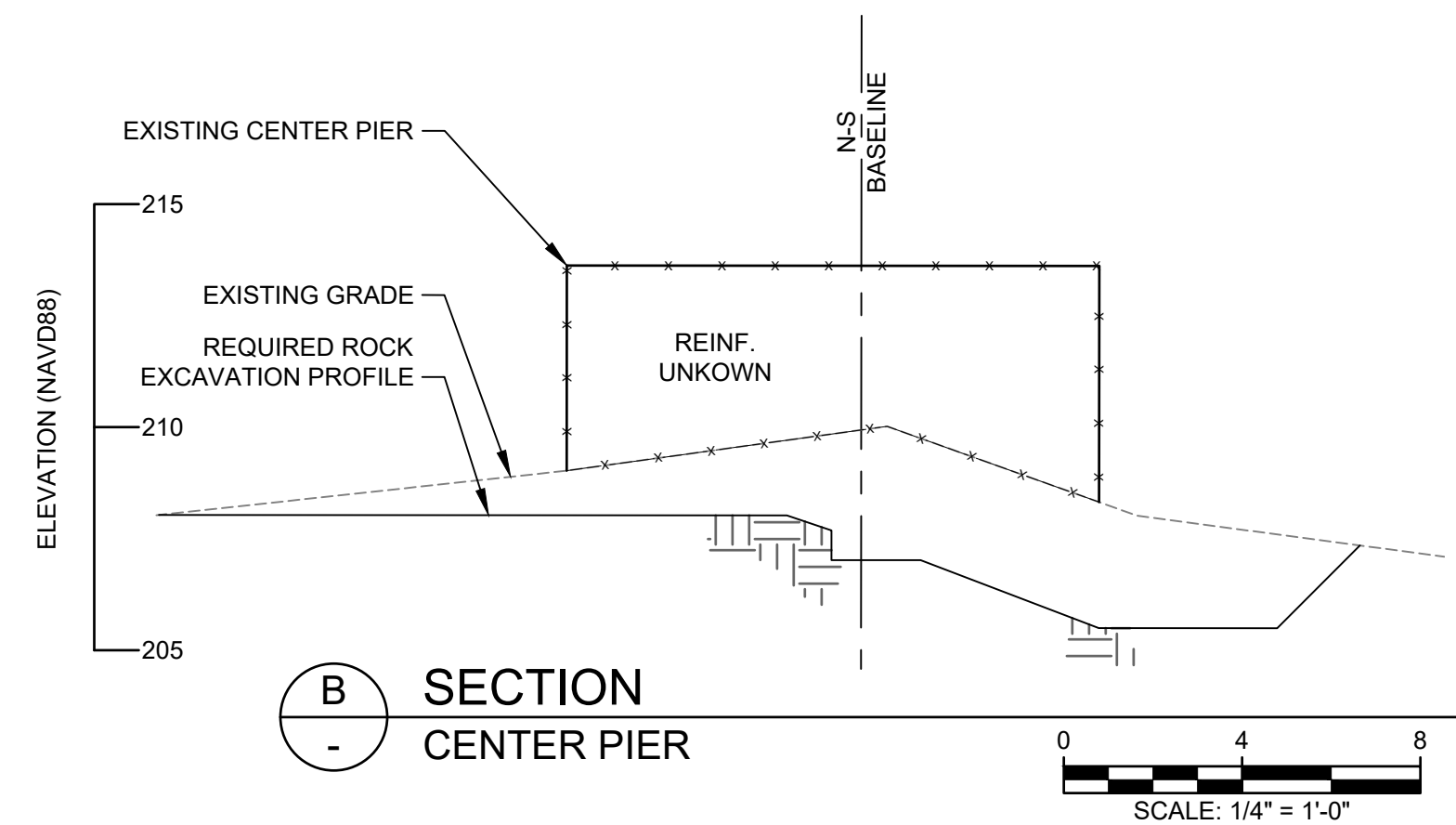
Designed:	A. GRADESKI
Checked:	C.B. GRANT
Drawn:	A. GRADESKI
Submitted By:	C.B. GRANT
P.E. Number:	15505



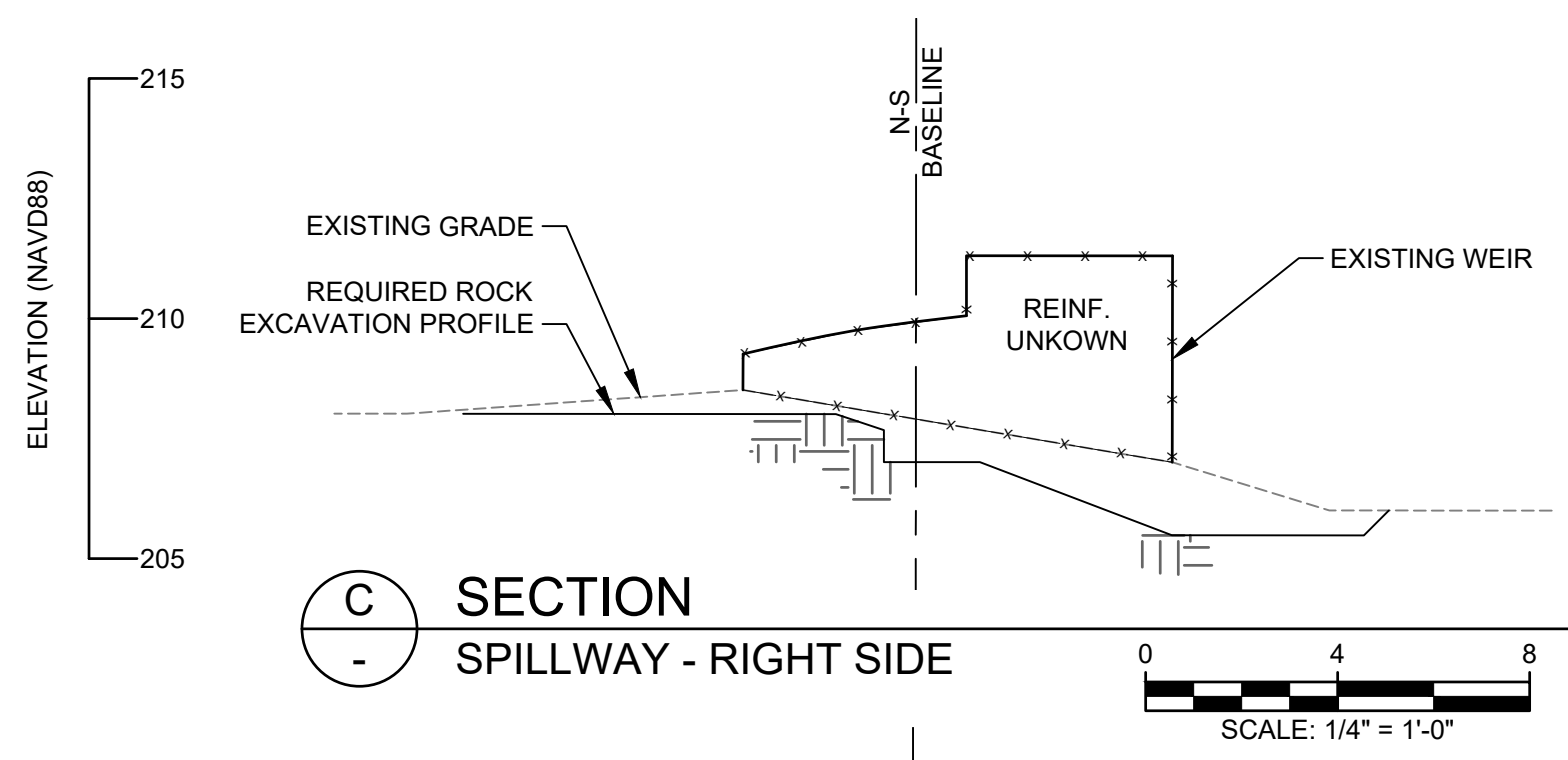
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GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine
EXISTING CONDITIONS &
DEMOLITION PLAN,
ELEVATION, & SECTIONS

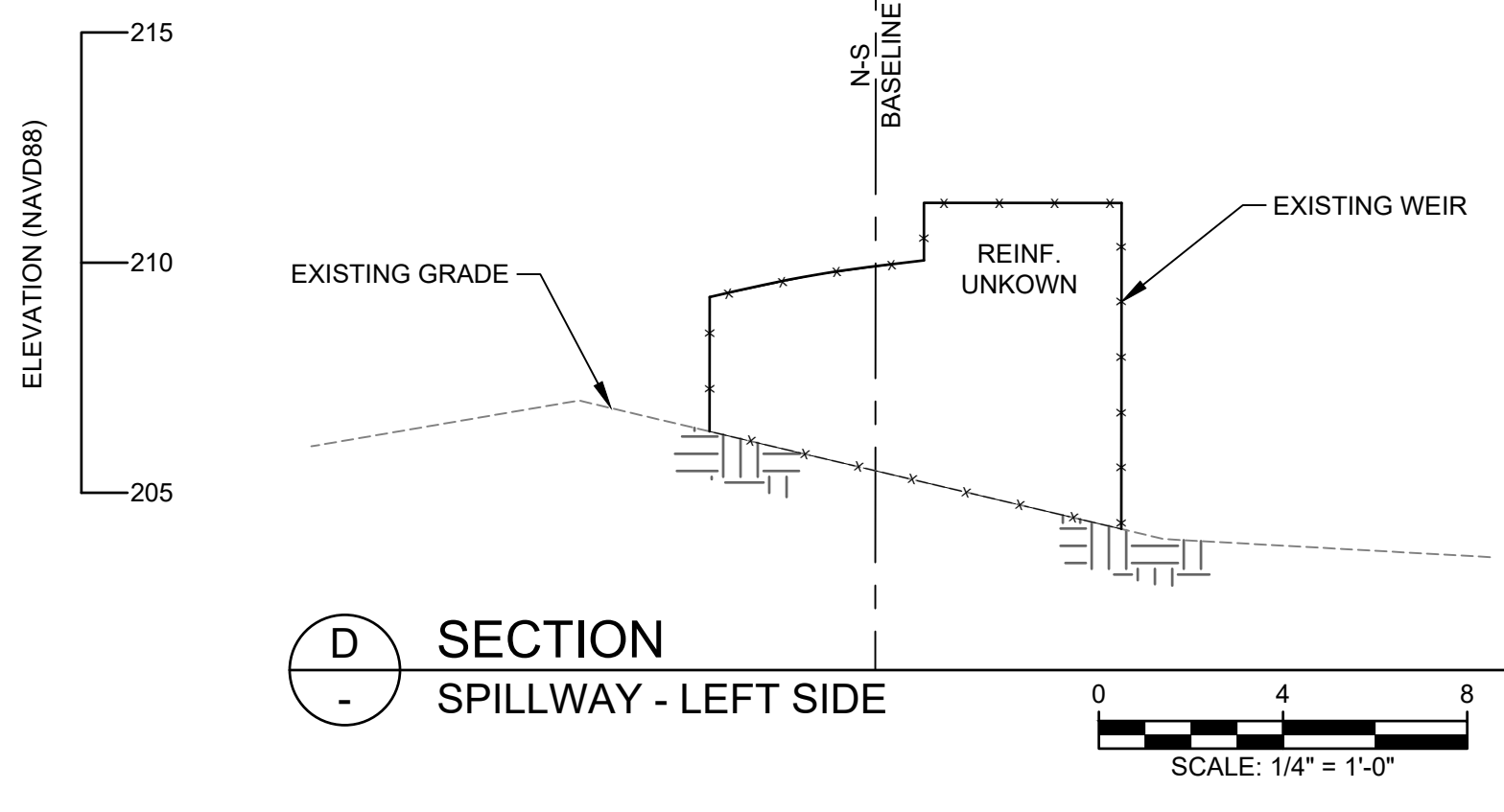
DWG. NO.	S-05
REV	0



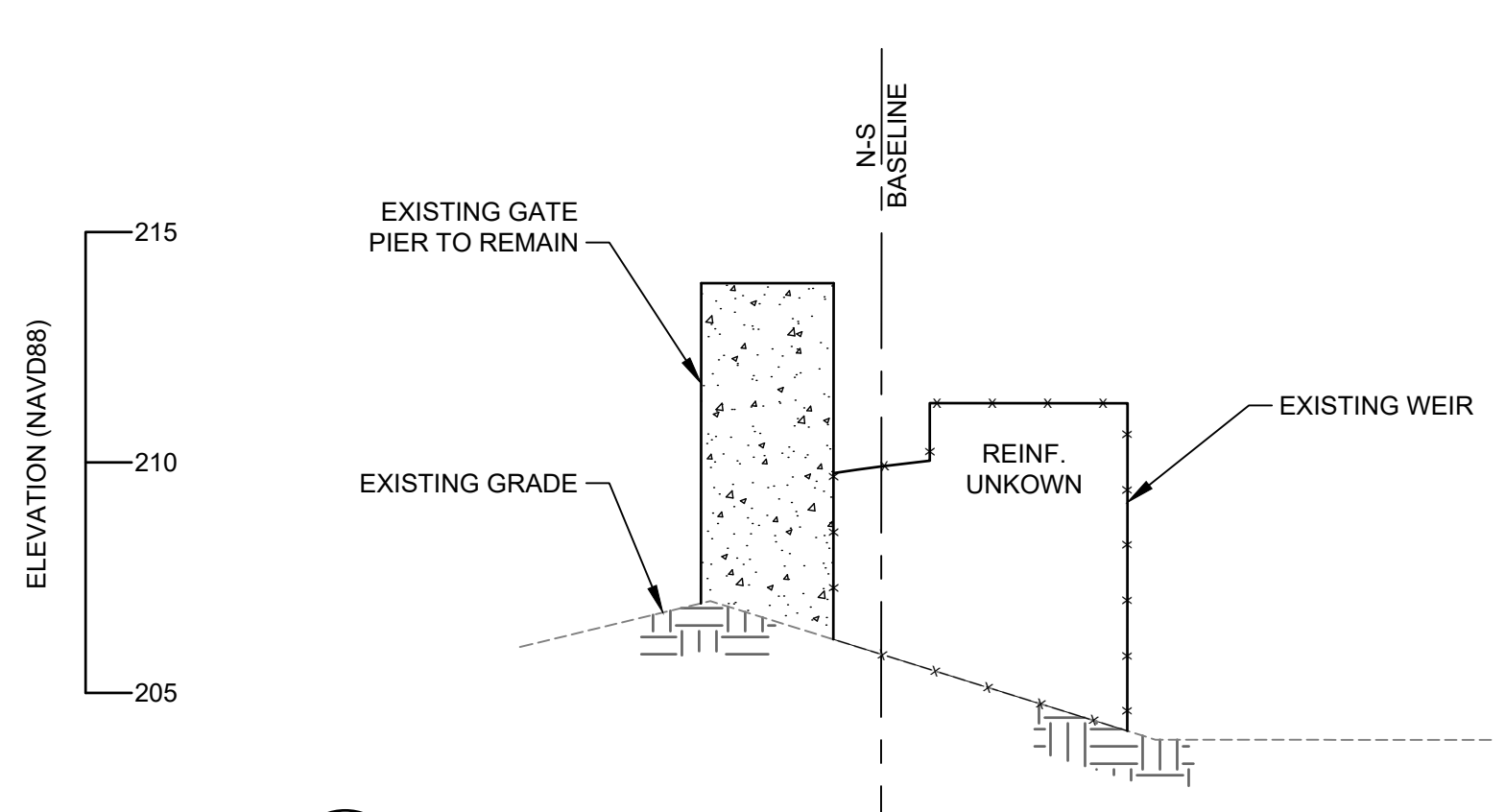
SECTION
CENTER PIER



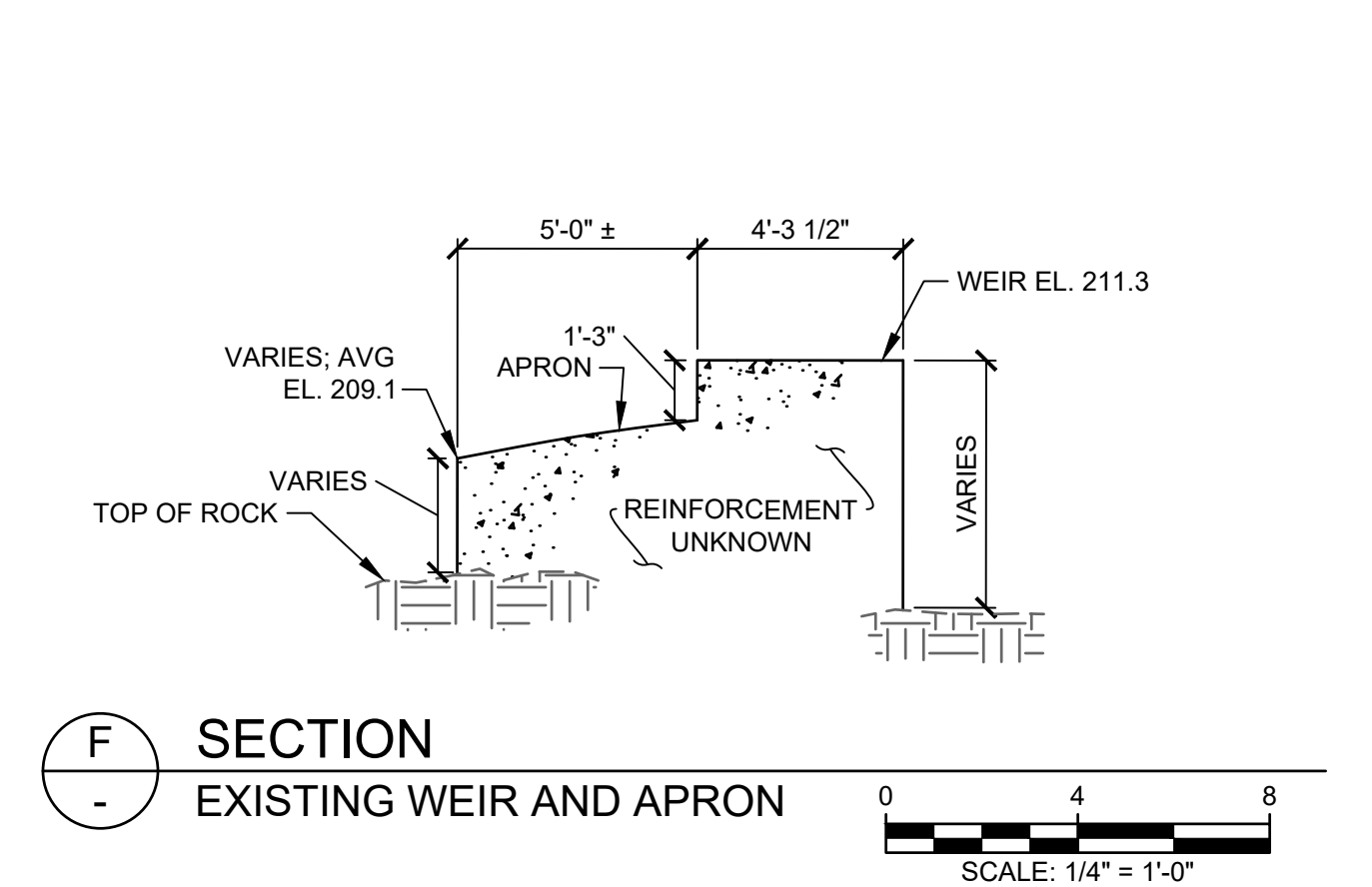
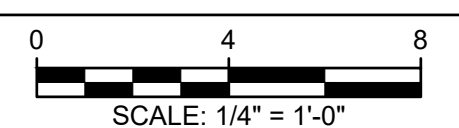
SECTION
SPILLWAY - RIGHT SIDE



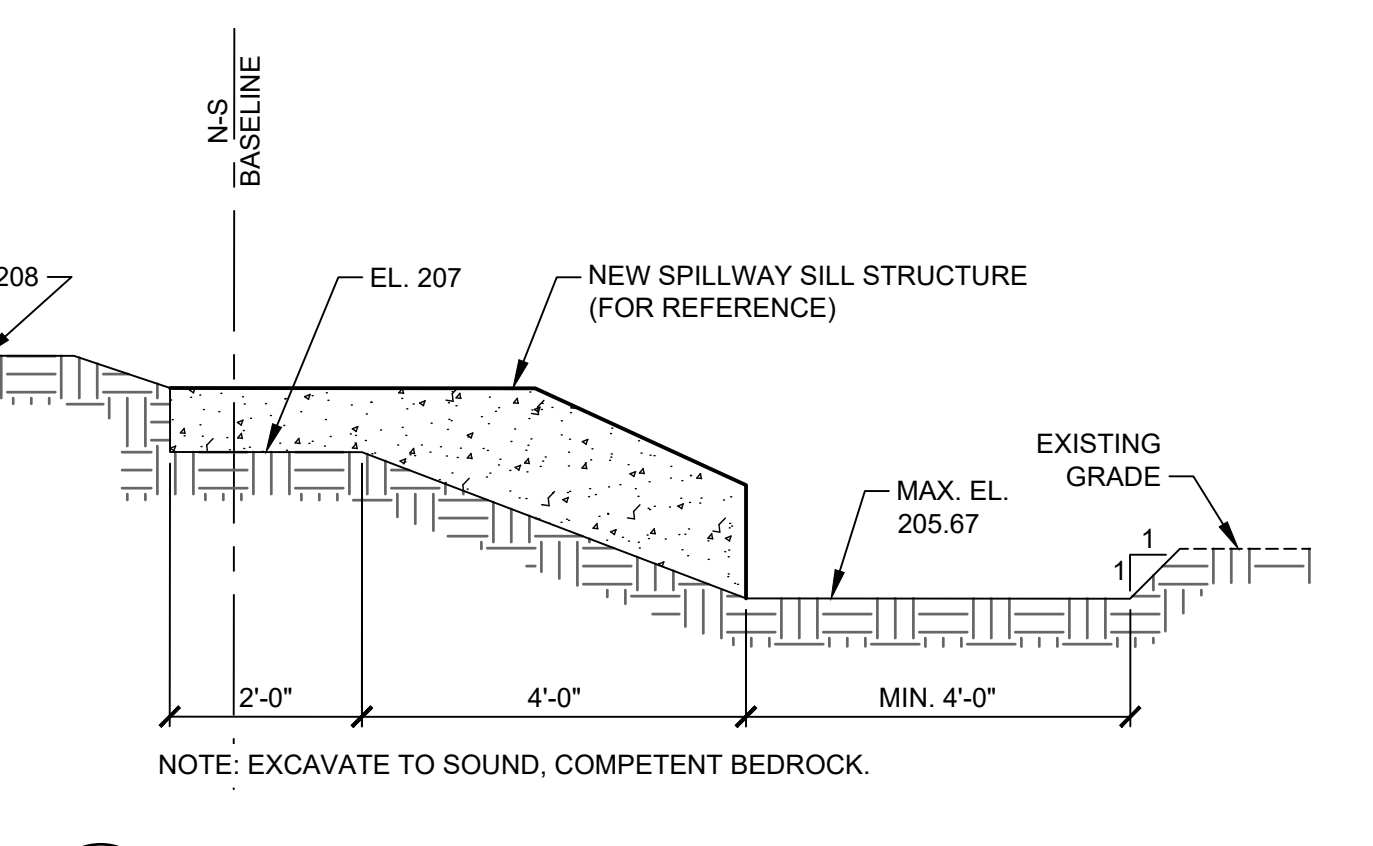
SECTION
SPILLWAY - LEFT SIDE



SECTION
LEFT PIER/ ABUTMENT

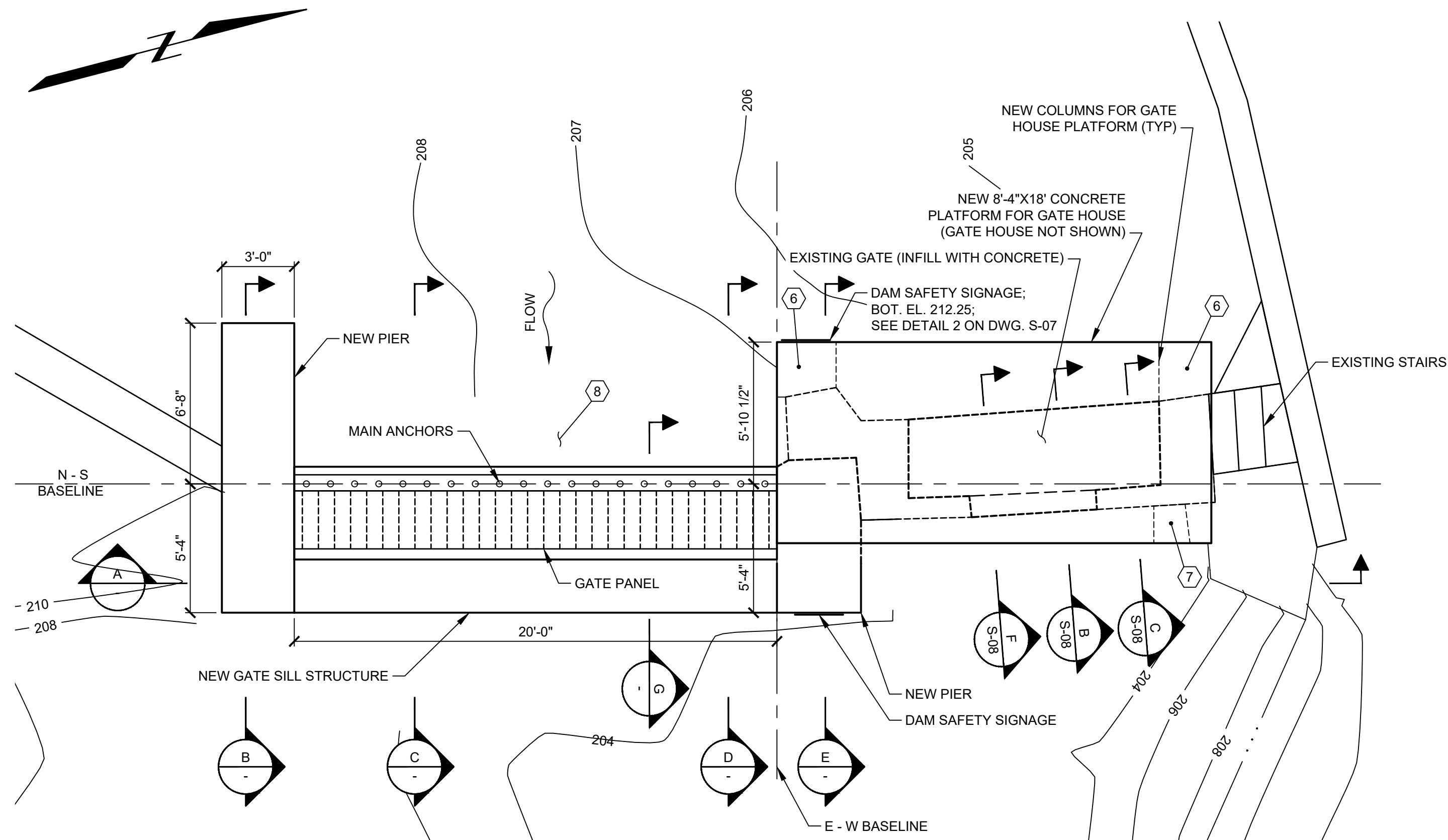


SECTION
EXISTING WEIR AND APRON

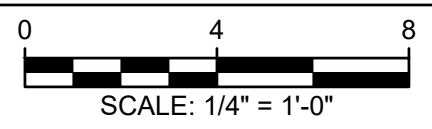


TYPICAL SECTION
REQUIRED ROCK EXCAVATION
PROFILE

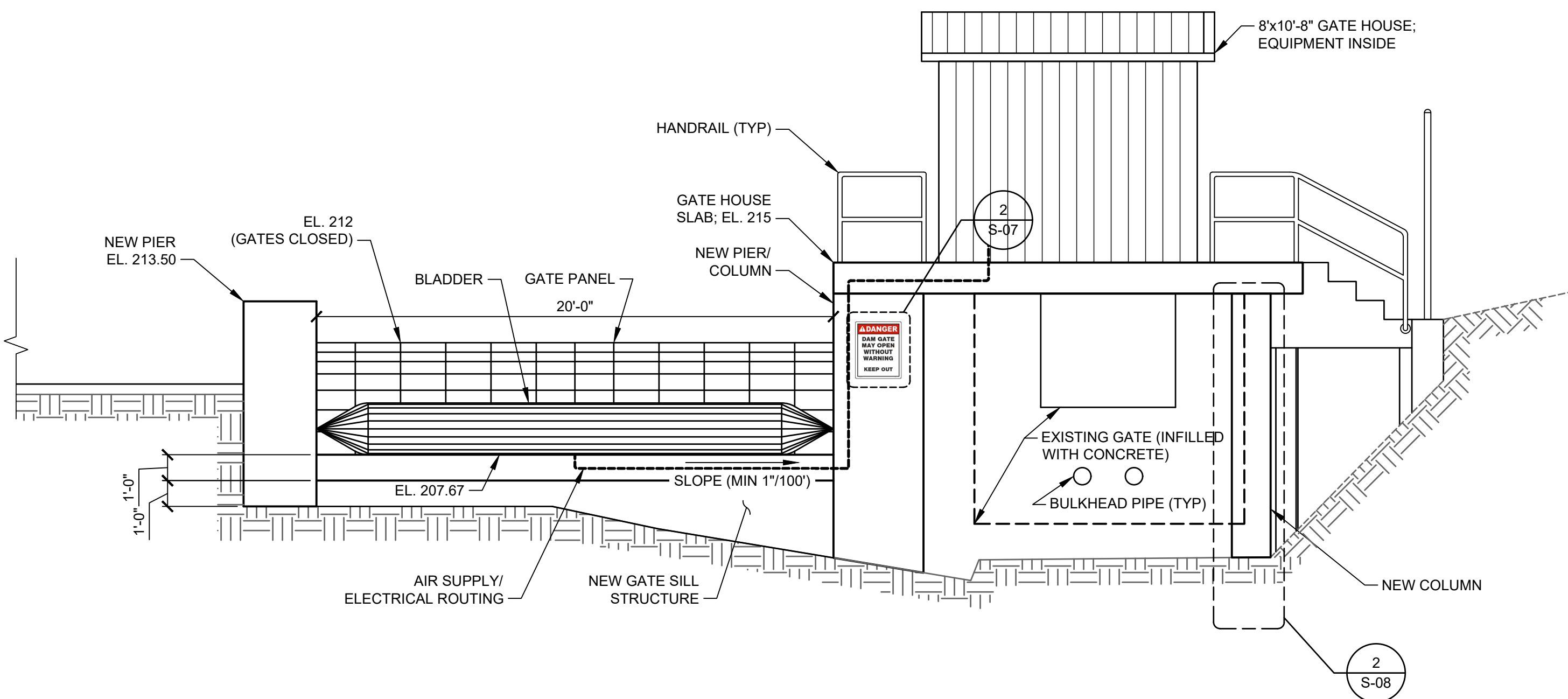




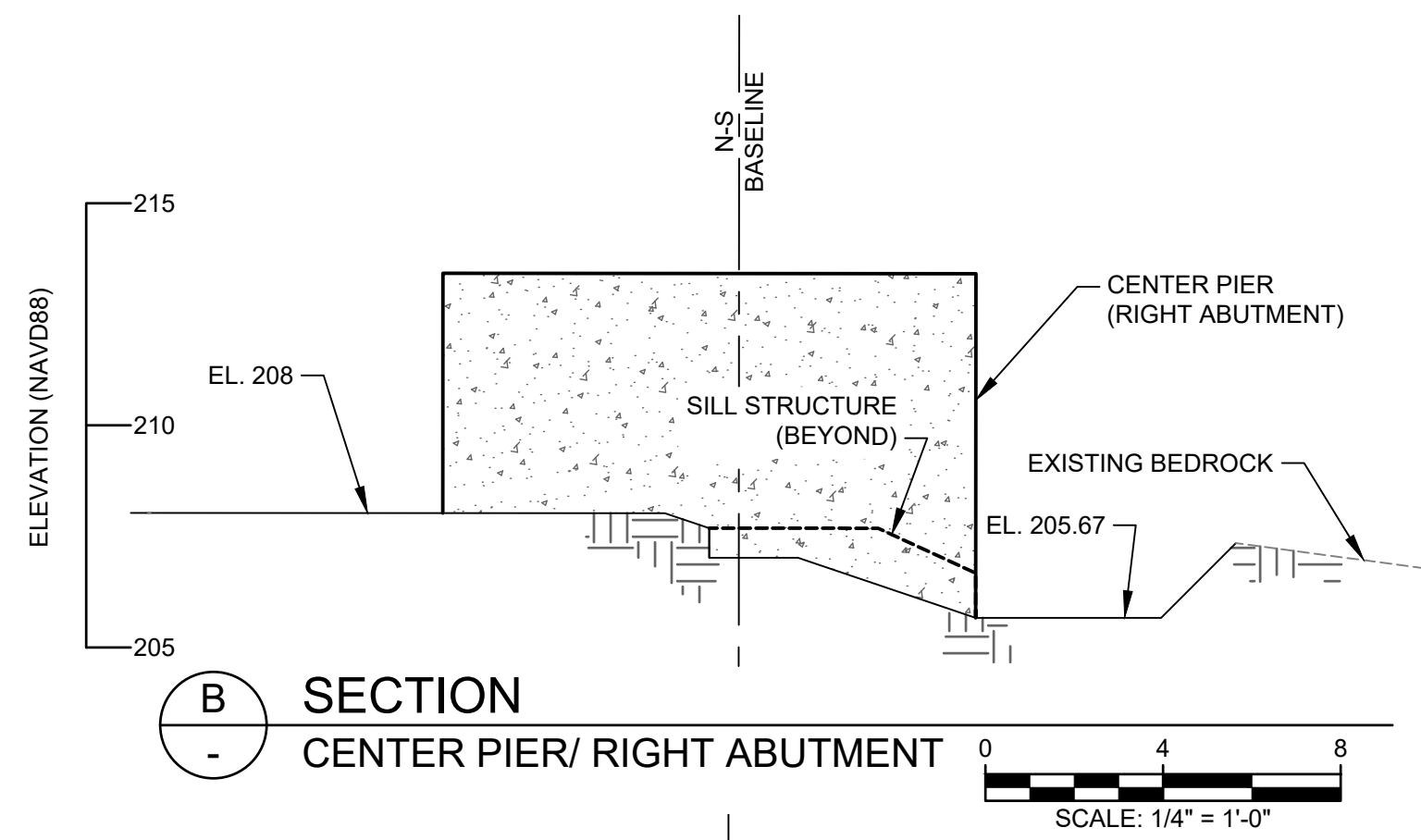
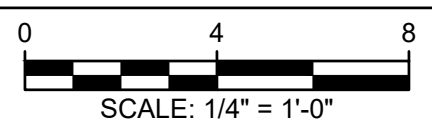
PLAN
SPILLWAY IMPROVEMENTS



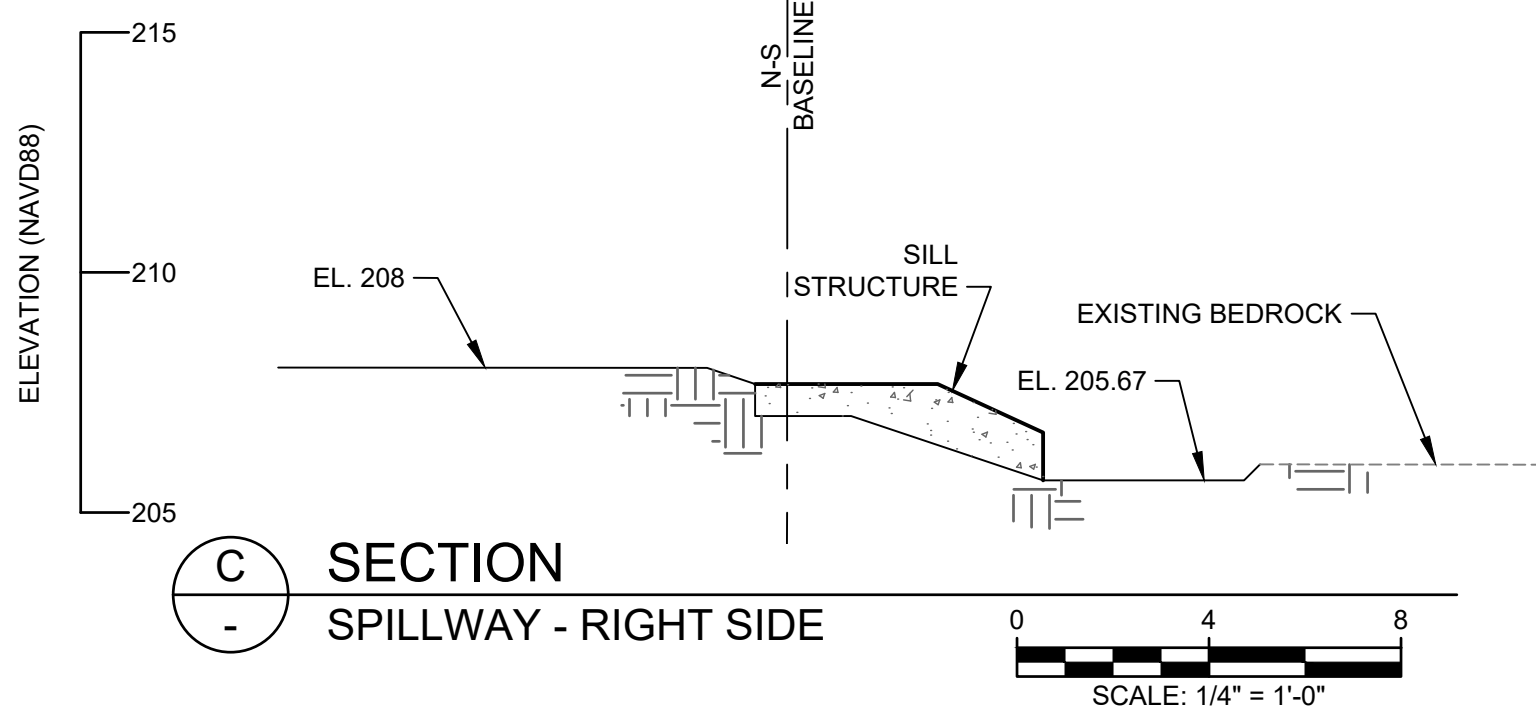
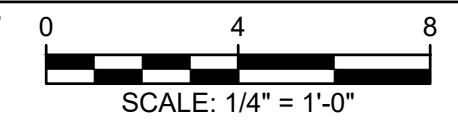
AREAS OF STREAMBED IMPACT;
SEE TABLES ON DWG. S-03



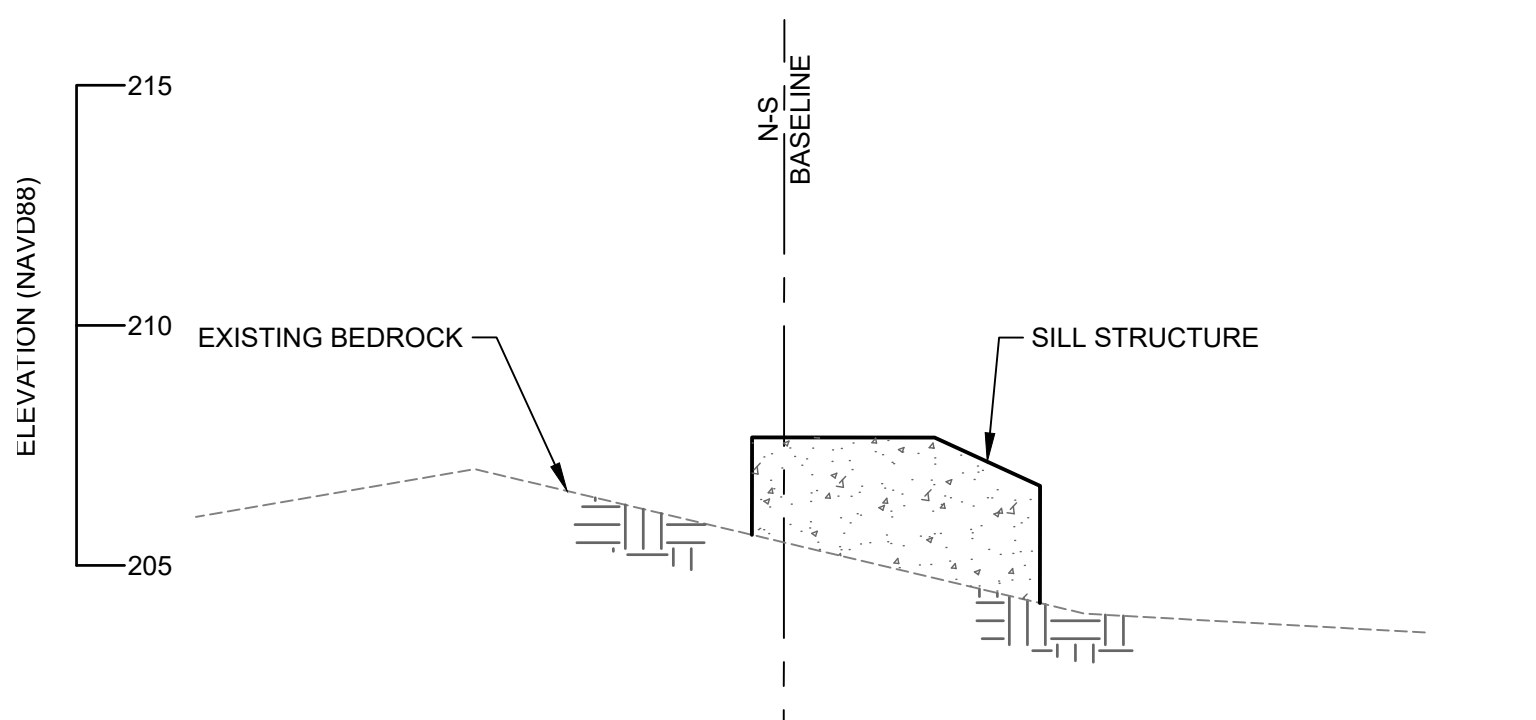
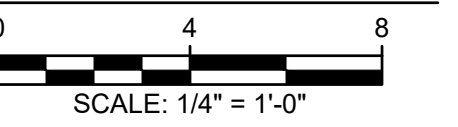
A ELEVATION
SPILLWAY IMPROVEMENTS



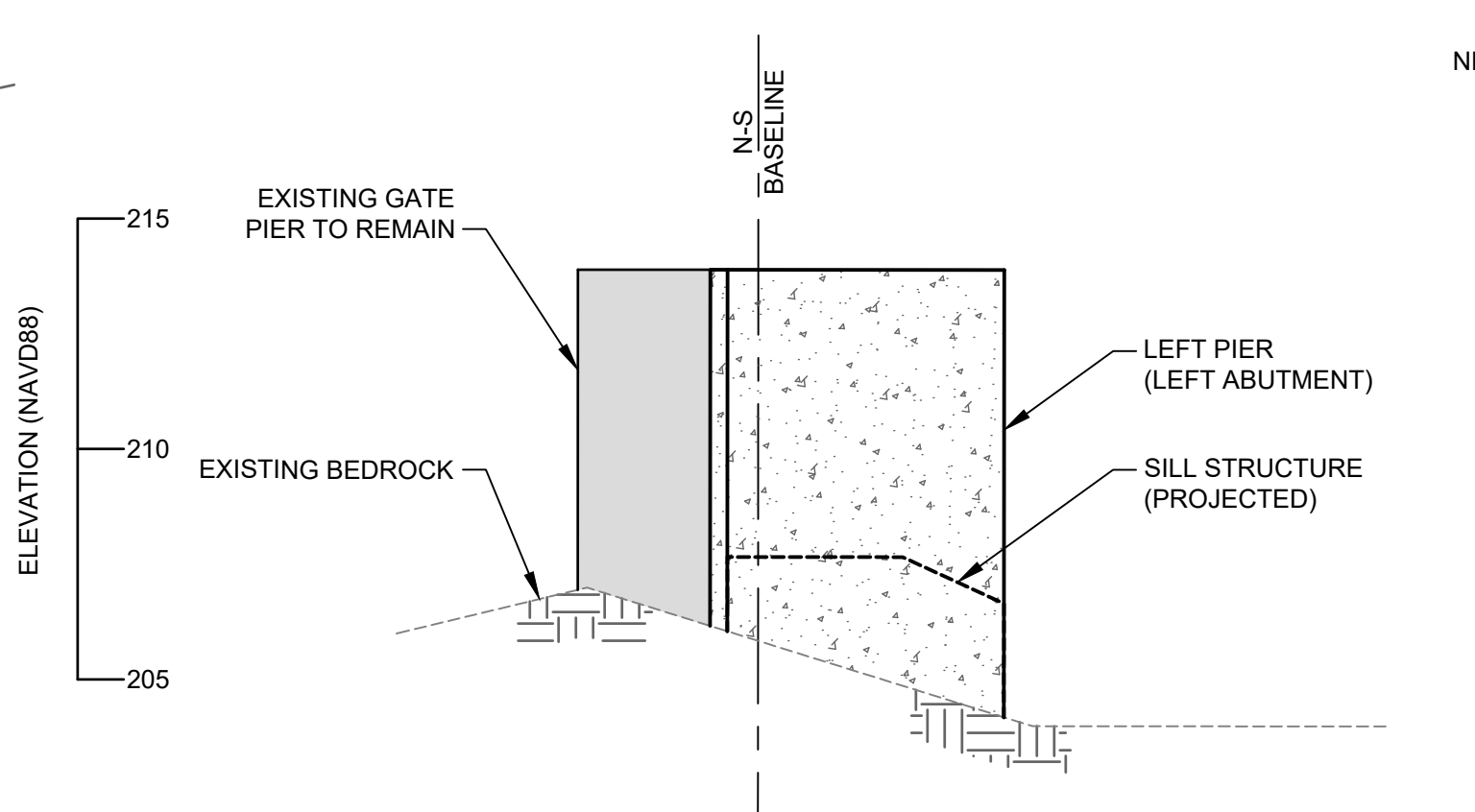
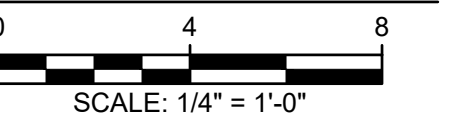
B SECTION
CENTER PIER/ RIGHT ABUTMENT



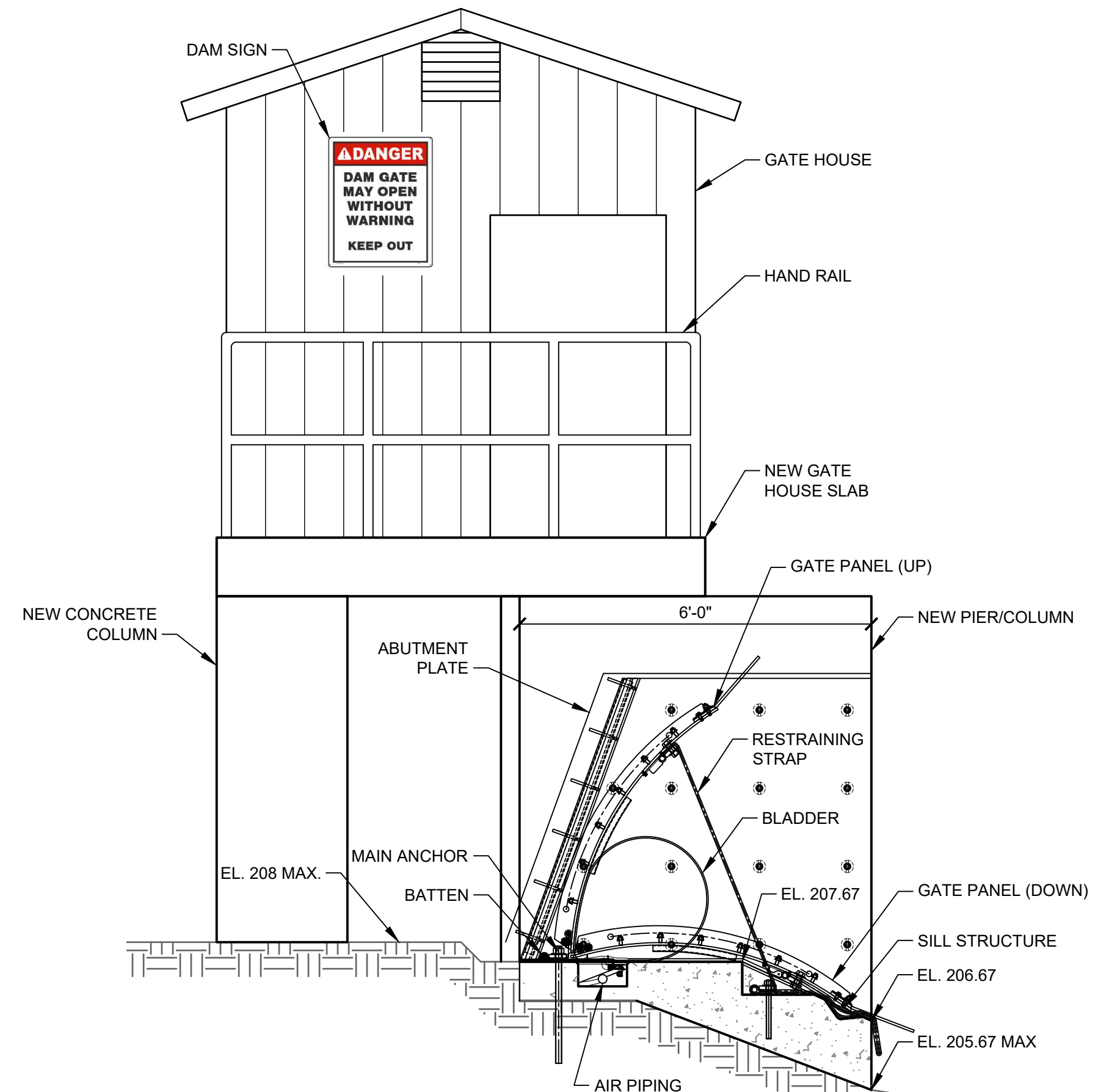
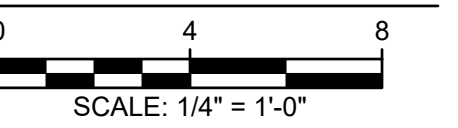
C SECTION
SPILLWAY - RIGHT SIDE



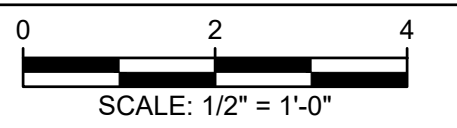
D SECTION
SPILLWAY - LEFT SIDE



E SECTION
LEFT PIER/ LEFT ABUTMENT



G SECTION
OBERMEYER GATE SECTION



- NOTES:**
- UPSTREAM ROCK CONTOURS BASED ON SUPPLEMENTARY HAND PROBES AND MEASUREMENTS PERFORMED BY GEI ON OCTOBER 25, 2016. TOP OF ROCK WAS DETERMINED BY PROBING UNTIL REFUSAL WAS ENCOUNTERED ON APPARENT ROCK OR POSSIBLE BOULDER.
 - DOWNSREAM ROCK CONTOURS DERIVED FROM DWG. S1.1, EXISTING CONDITIONS PLAN, BY MAIN-LAND DEVELOPMENT CONSULTANTS, INC. DATED 2014-12-16

Attention:				
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P.E. Number:	15505

5 MILK STREET
PORTLAND, ME 04101
(207)797-8901

Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine

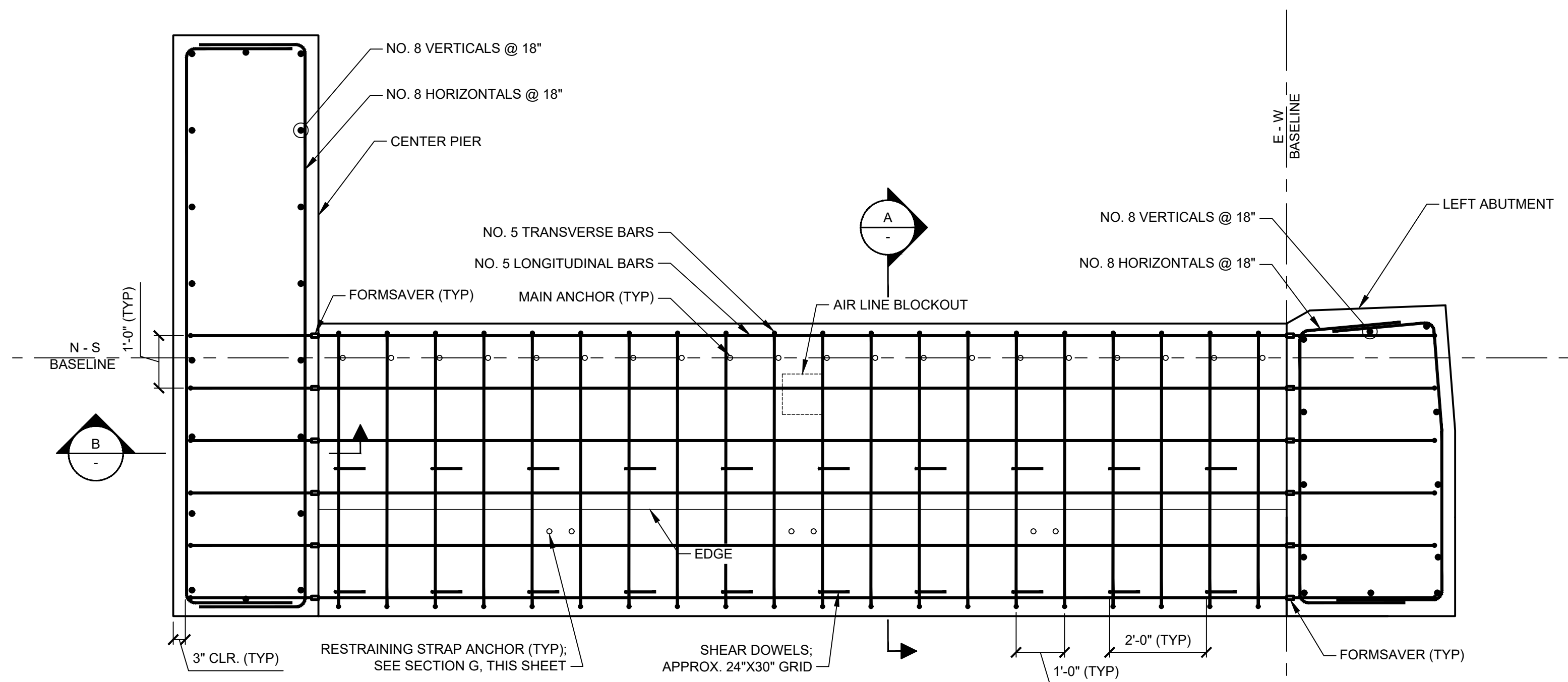
Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine

DWG. NO.
S-06

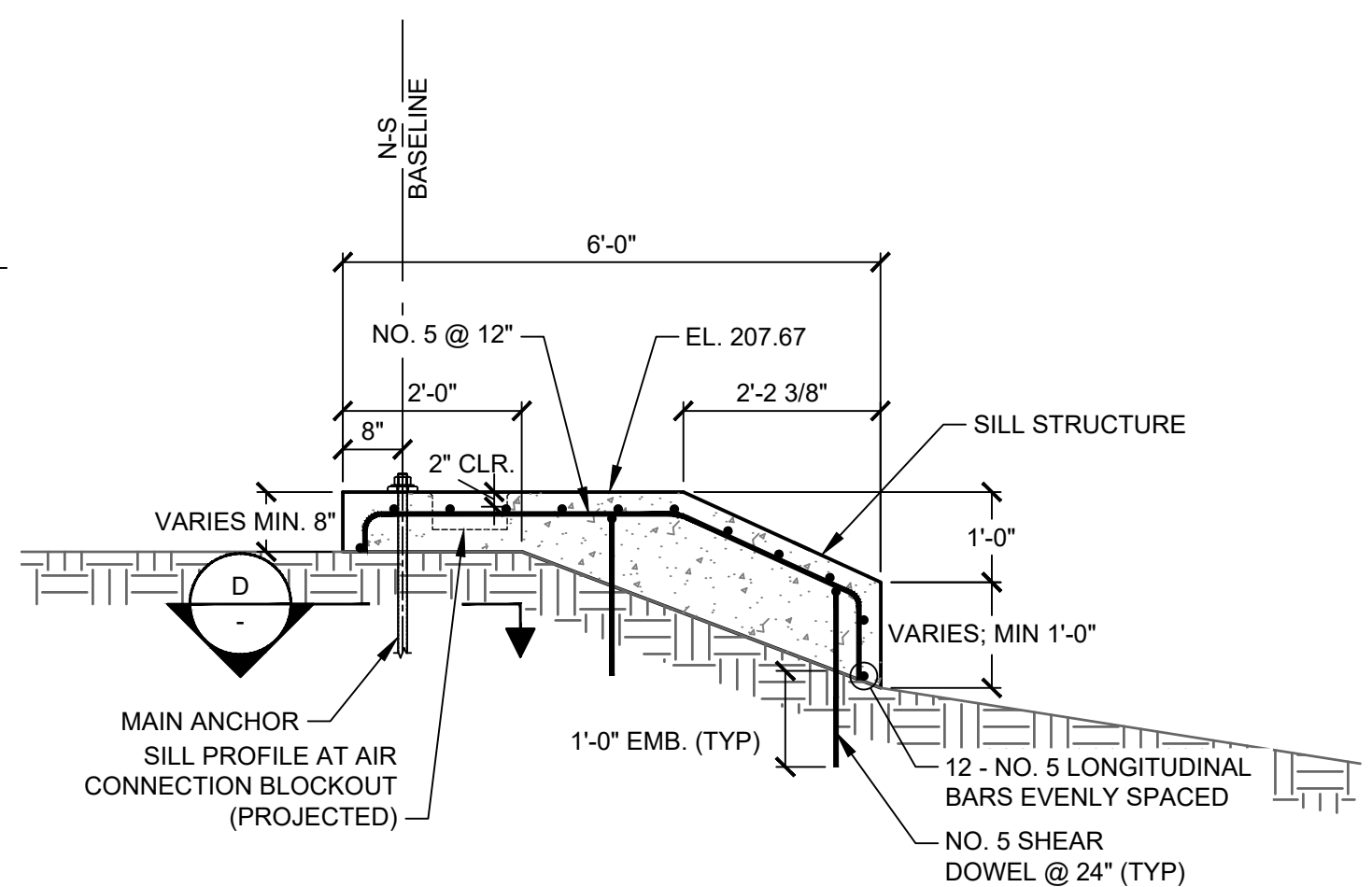
REV
0

SPILLWAY IMPROVEMENTS
PLAN, ELEVATION, & SECTIONS

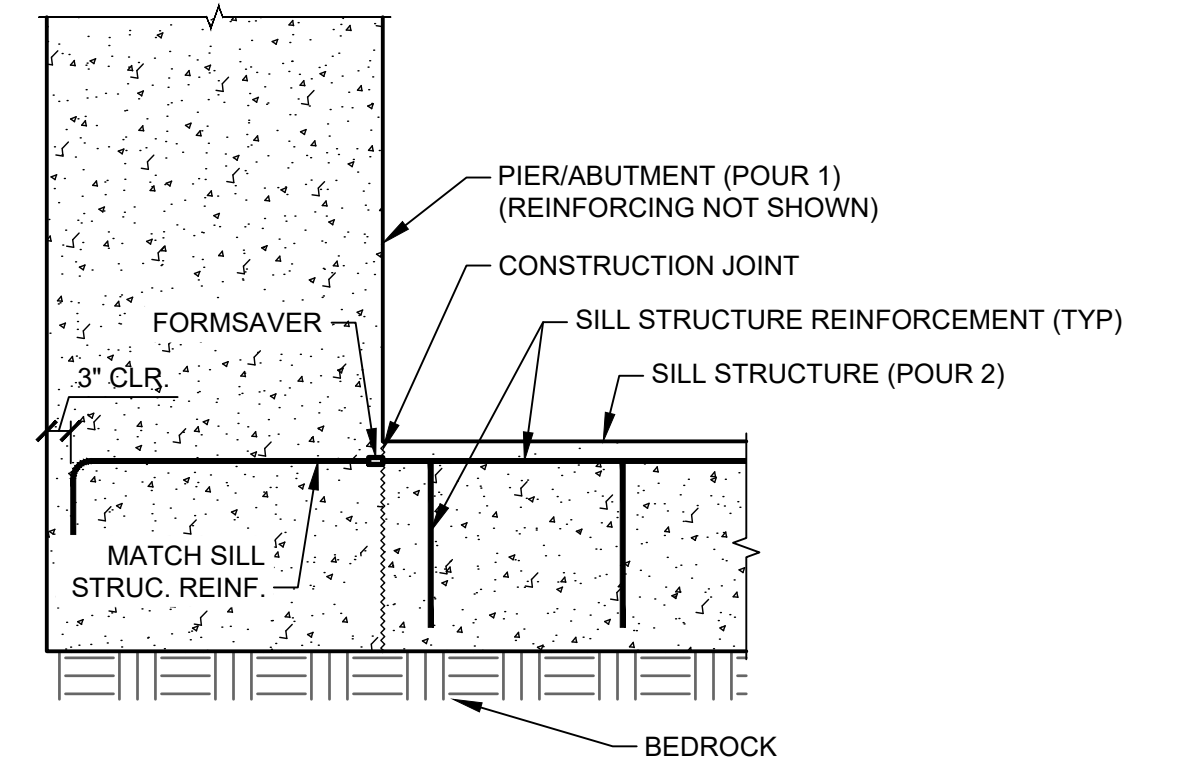
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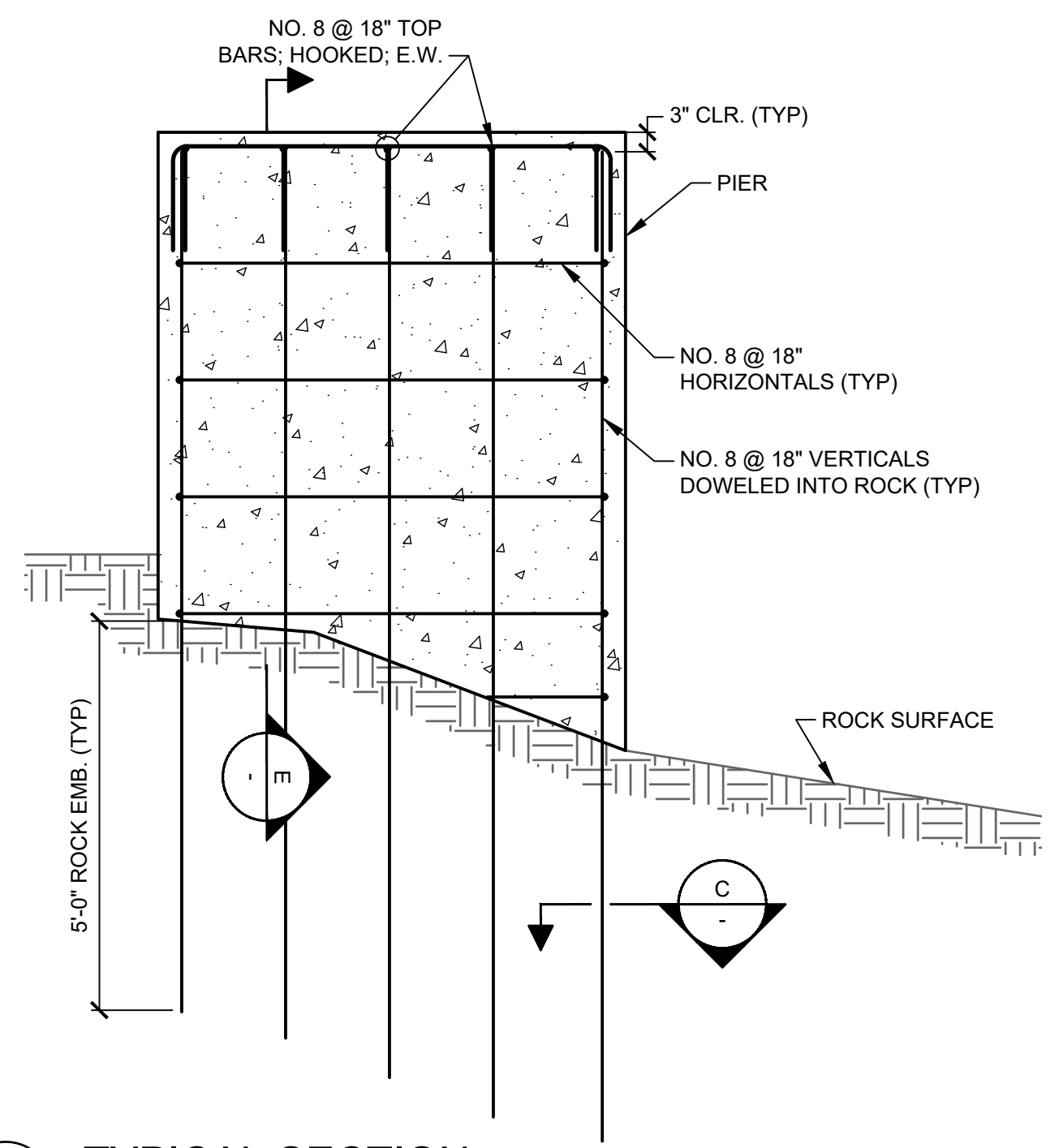
PLAN
SILL DOWEL & REINFORCEMENT LAYOUT
SCALE: 1/2" = 1'-0"



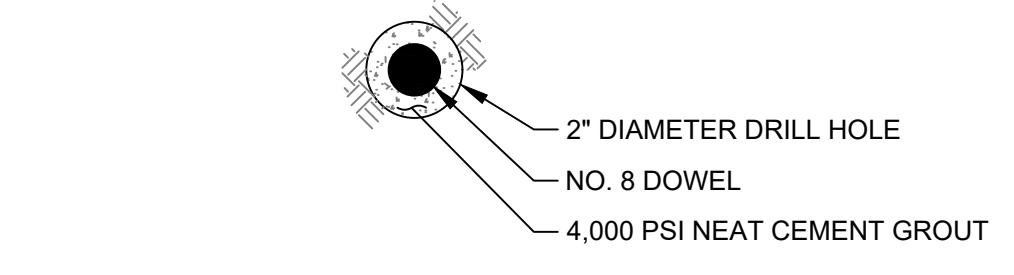
A SECTION
SILL STRUCTURE
SCALE: N.T.S.



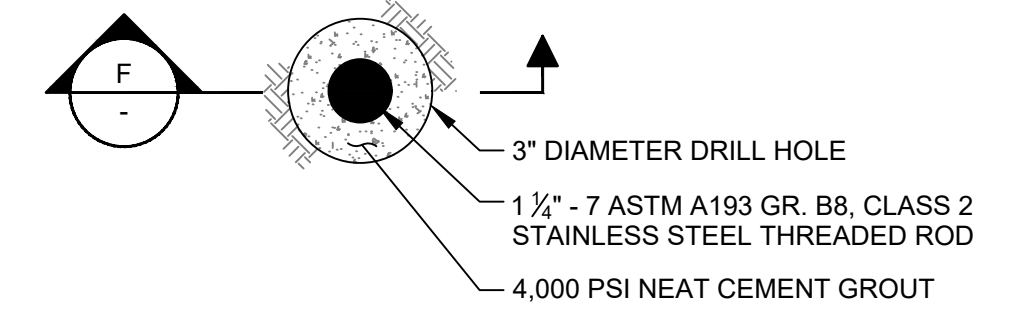
B SECTION
PIER/ABUTMENT - SILL TYPICAL
CONSTRUCTION JOINT
SCALE: N.T.S.



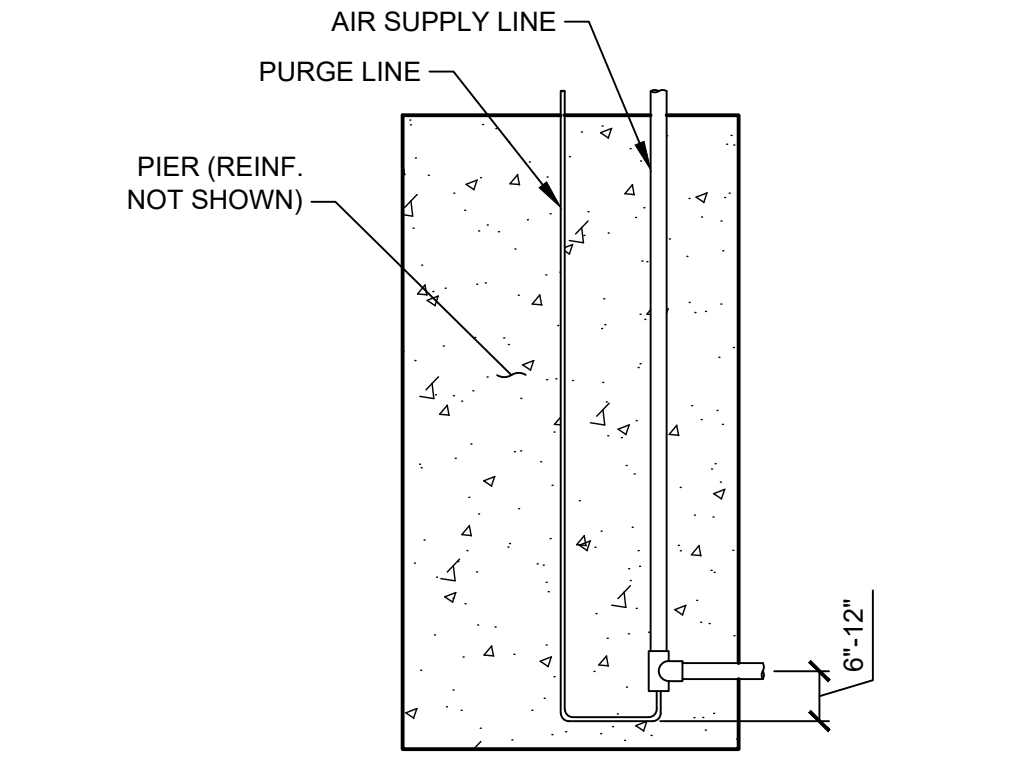
TYPICAL SECTION
PIER



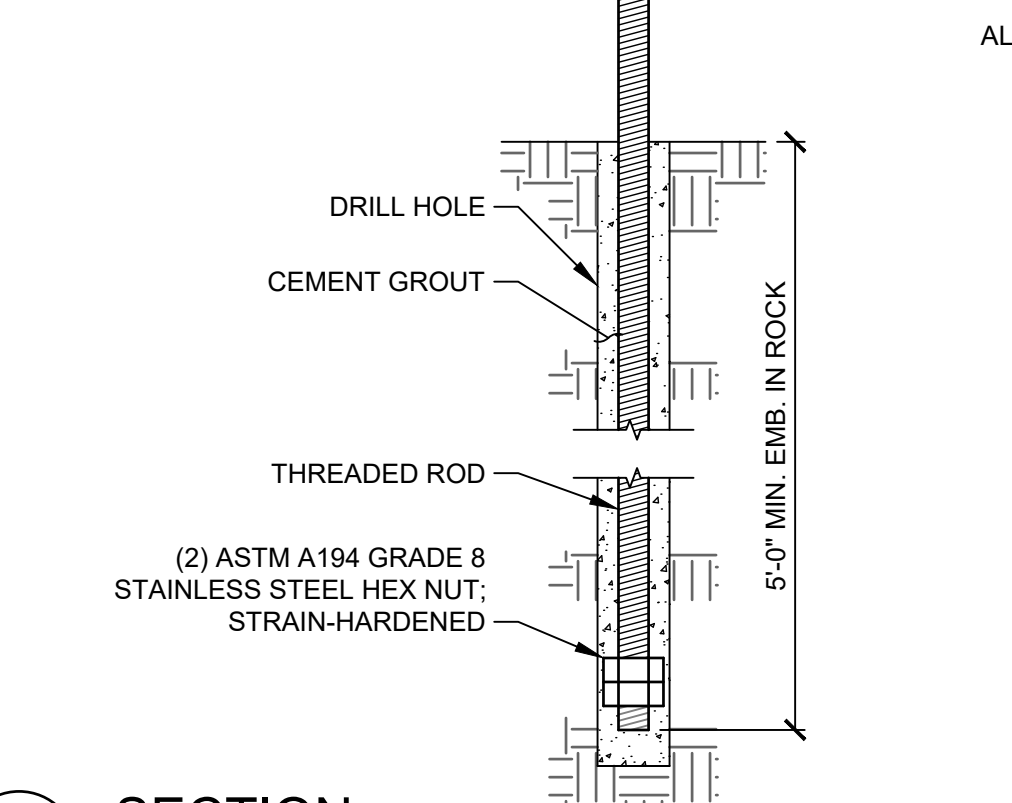
C SECTION
PIER ROCK DOWEL



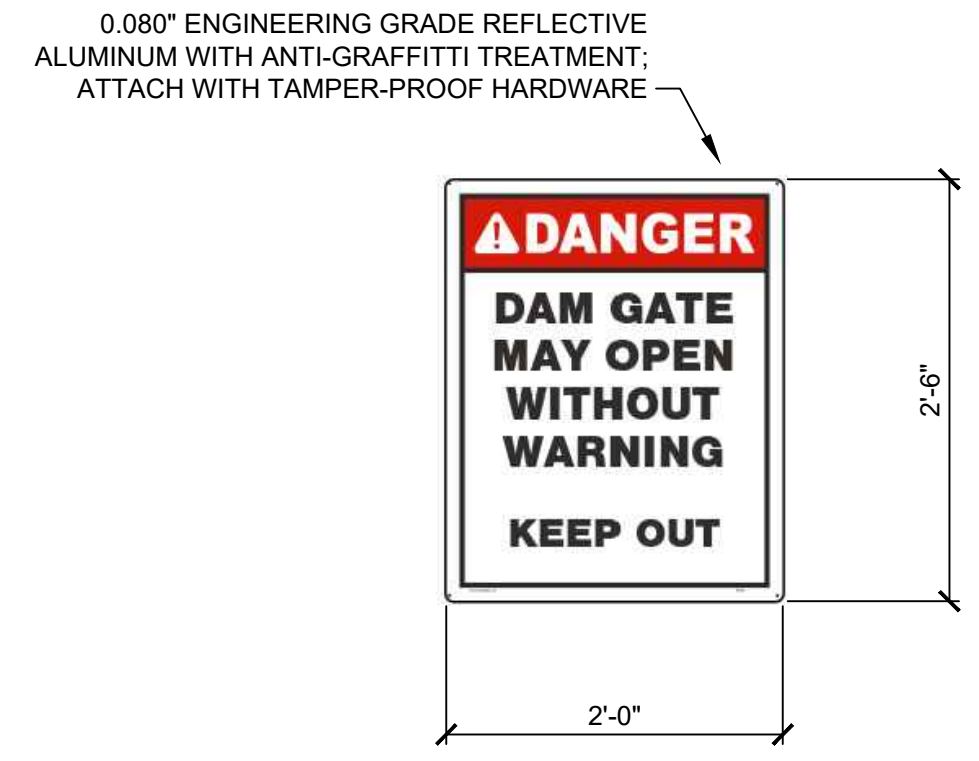
D SECTION
MAIN ANCHOR DOWEL



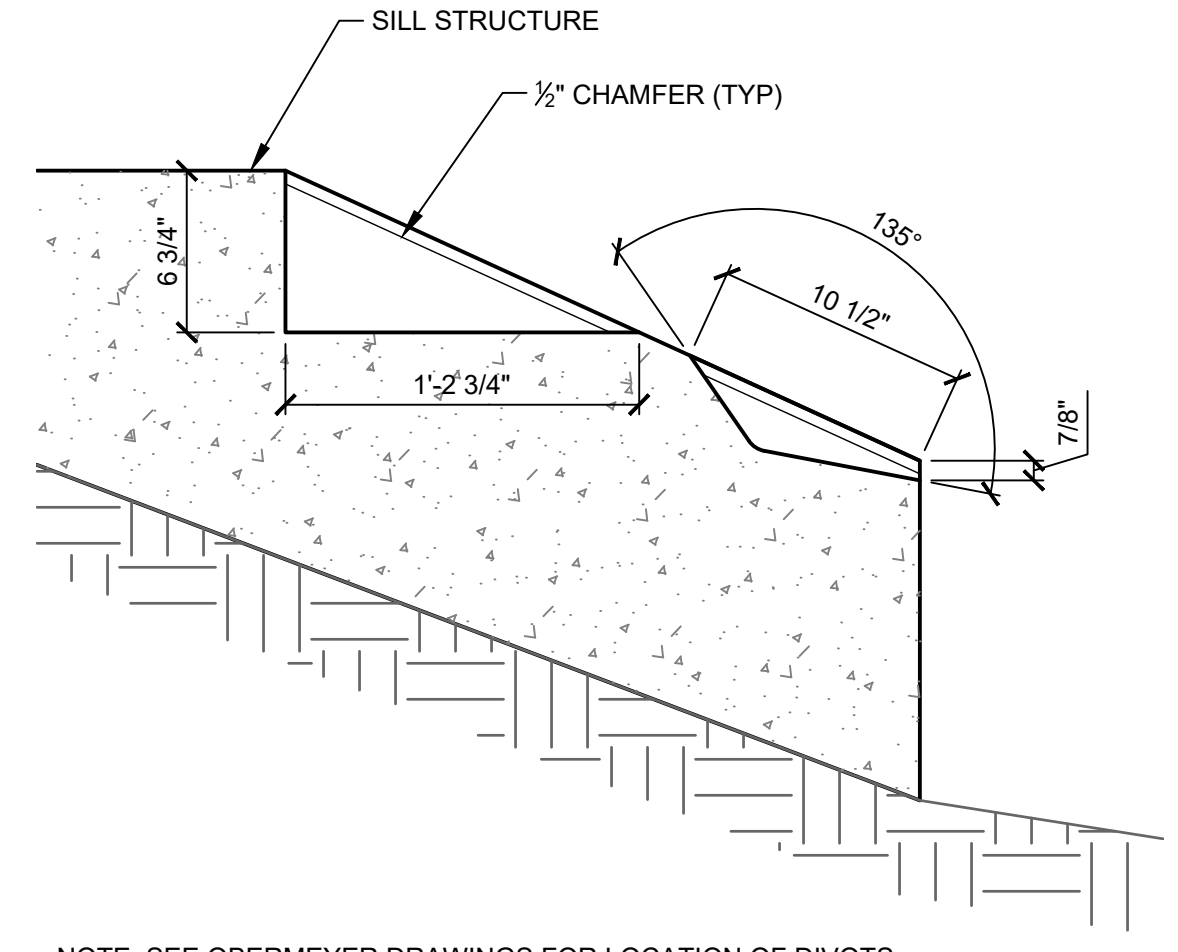
E SECTION
AIRLINE PIPING
THROUGH PIER
SCALE: N.T.S.



F SECTION
MAIN ANCHOR DOWEL



2 S-06
TYPICAL DETAIL - 4 LOCATIONS
DAM SAFETY SIGNAGE



G SECTION
SILL STRUCTURE @
RESTRAINING STRAP
SCALE: N.T.S.

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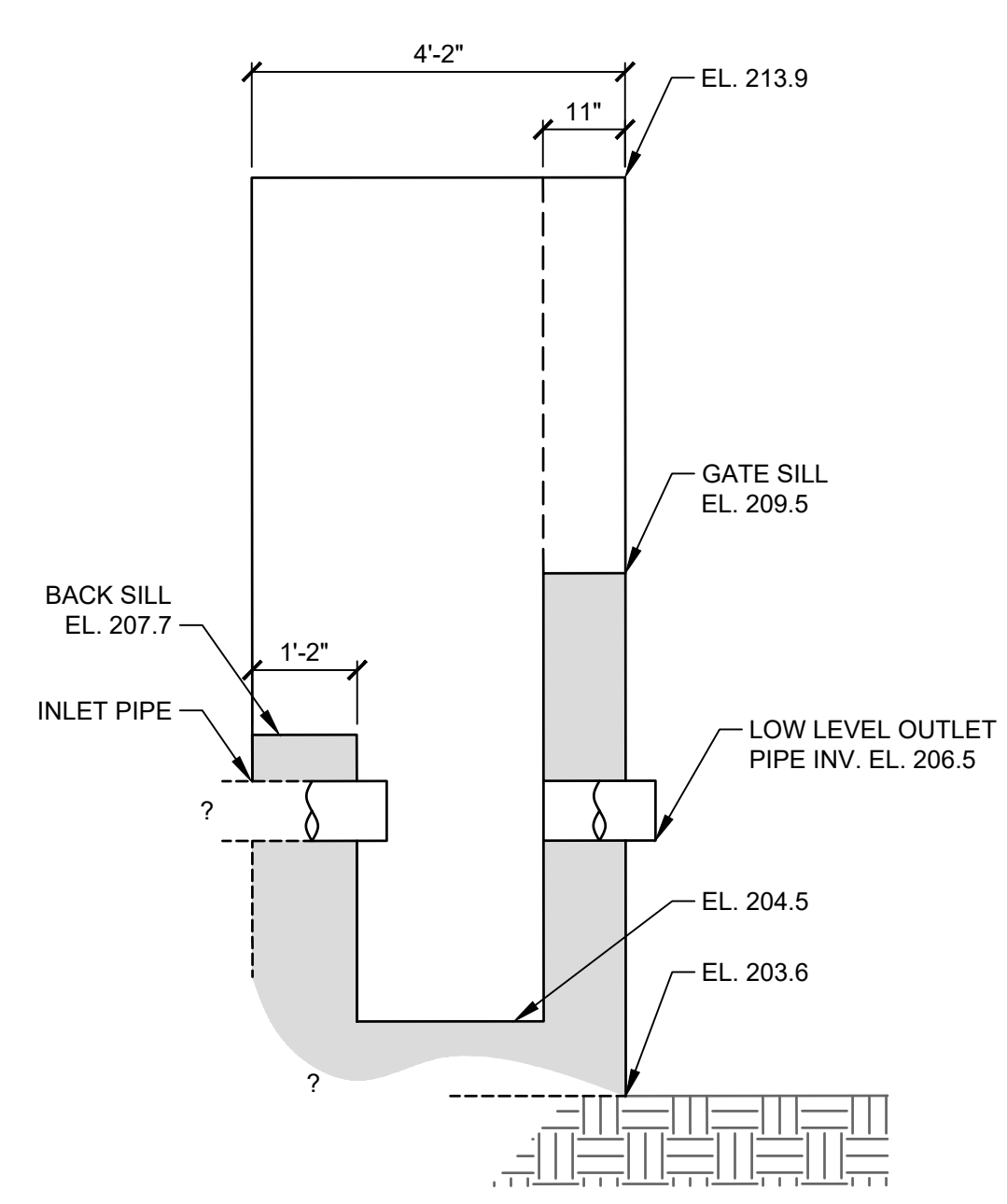
GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine

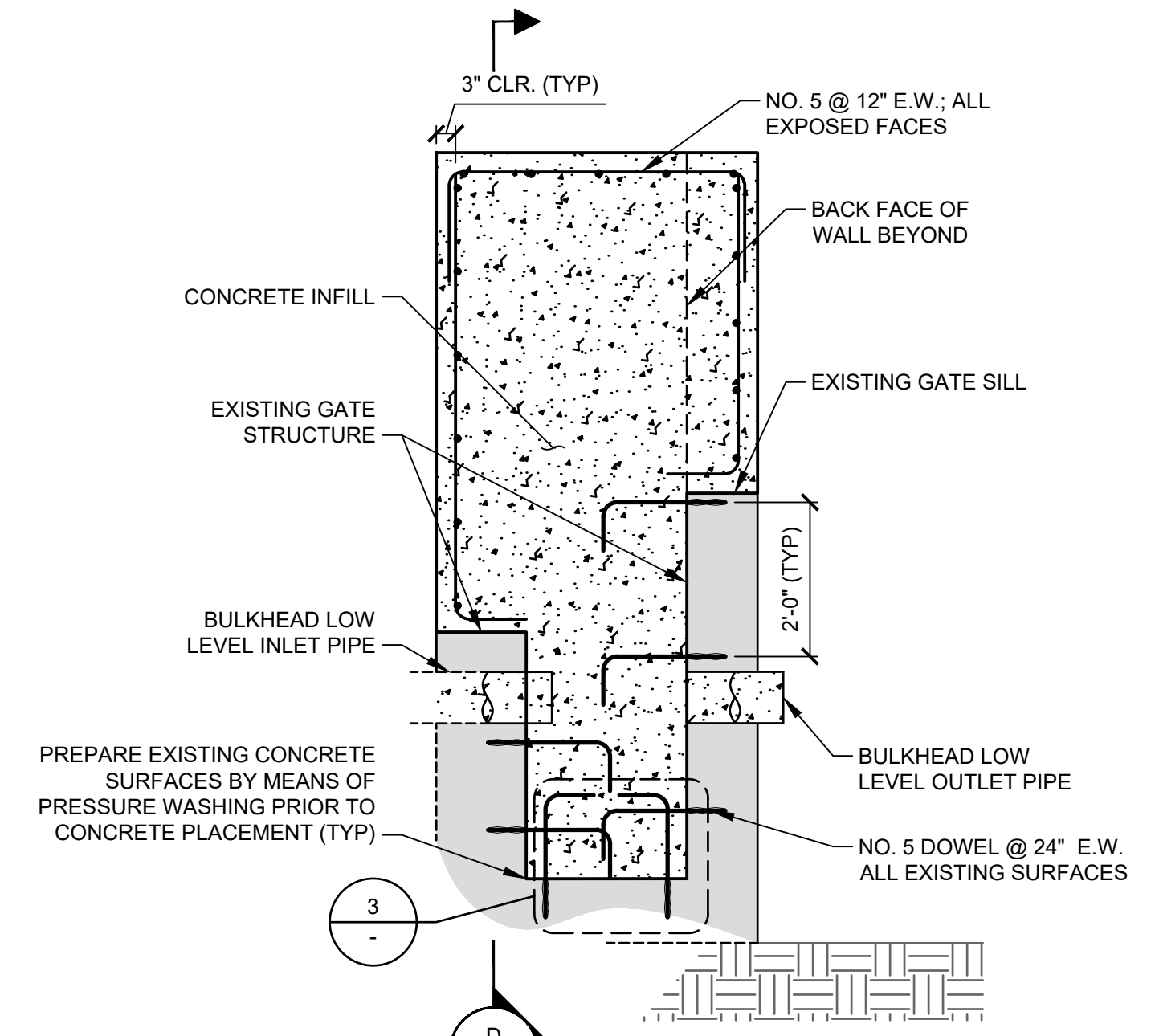
NEW GATE STRUCTURE

DWG. NO.
S-07

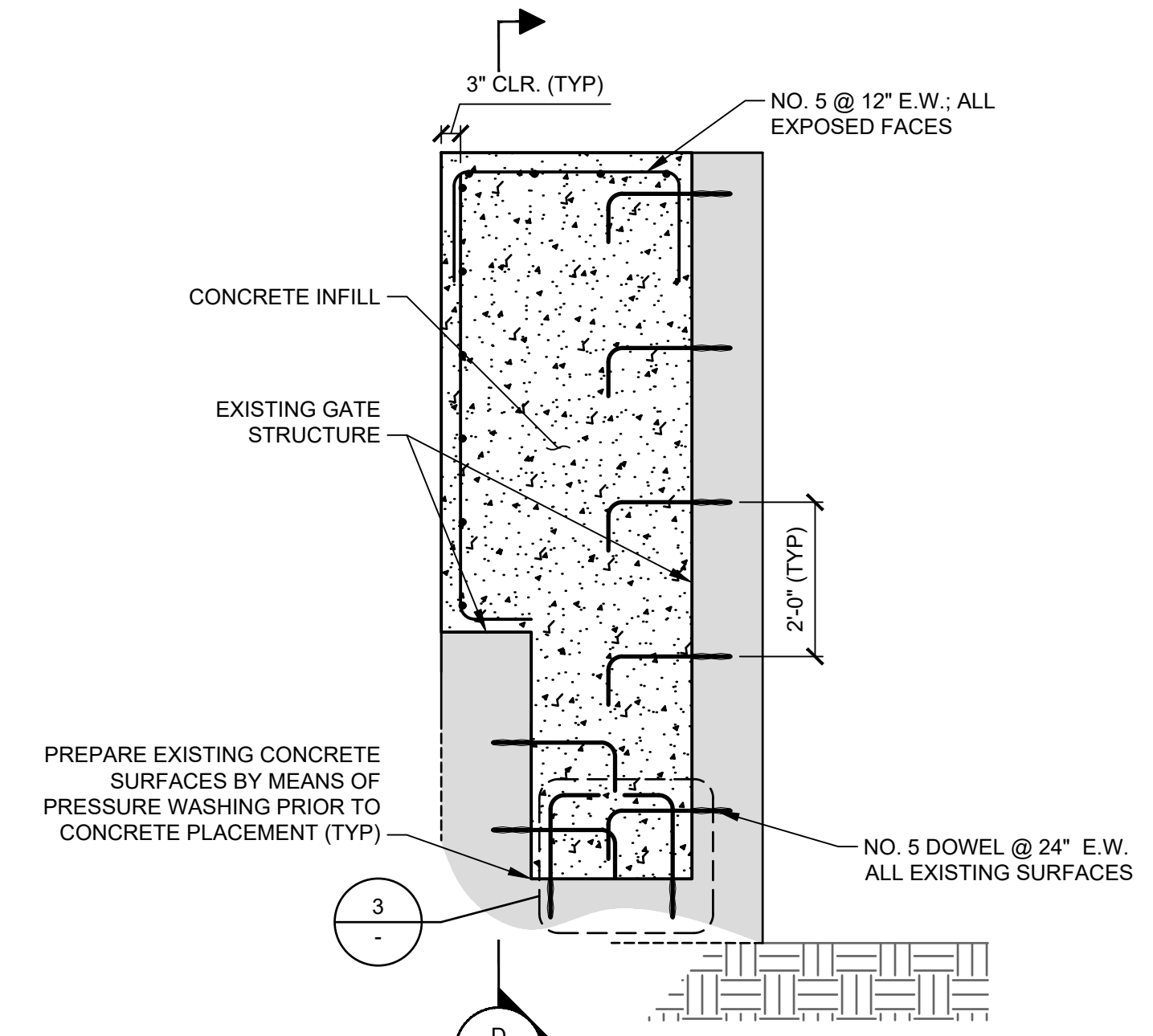
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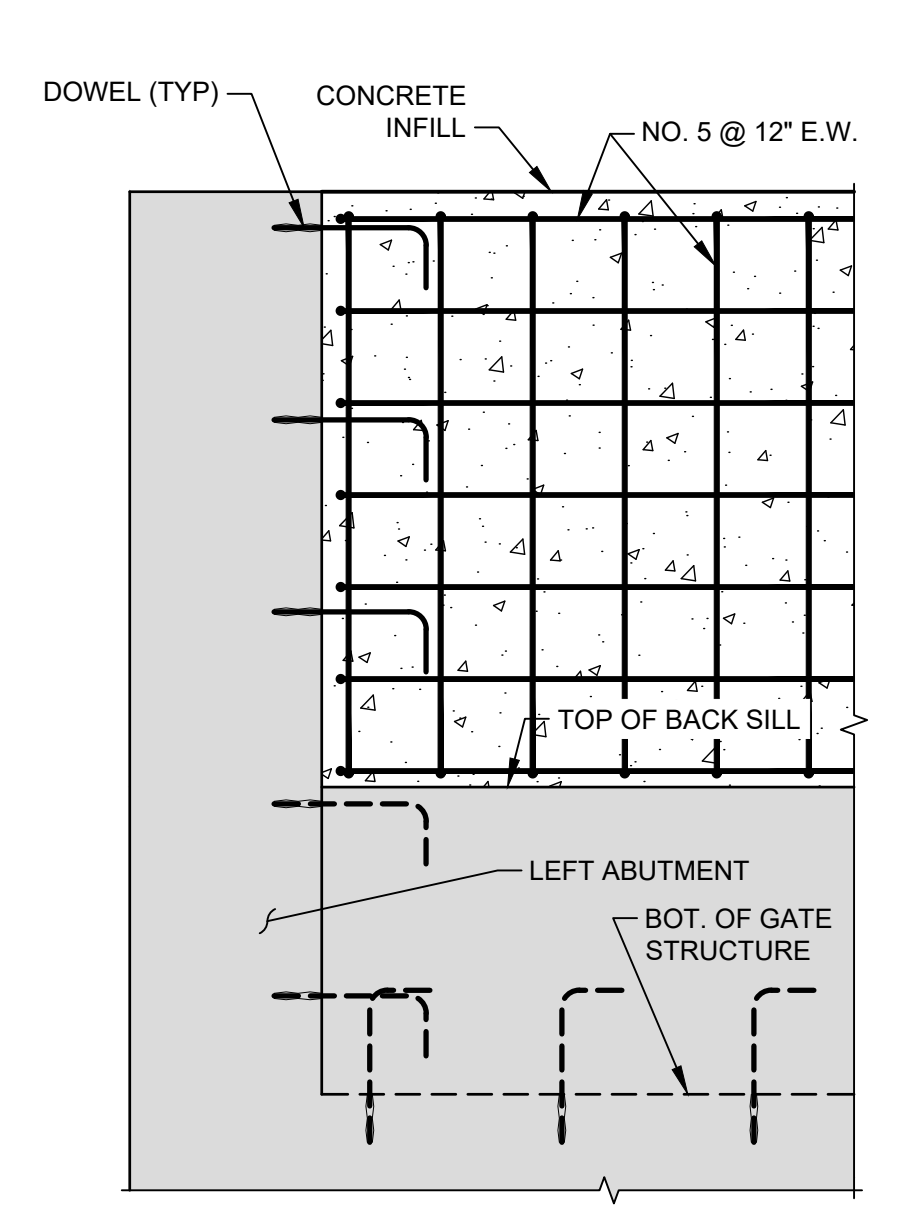
A SECTION
S-05 EXISTING GATE STRUCTURE
SCALE: 1/2" = 1'-0"



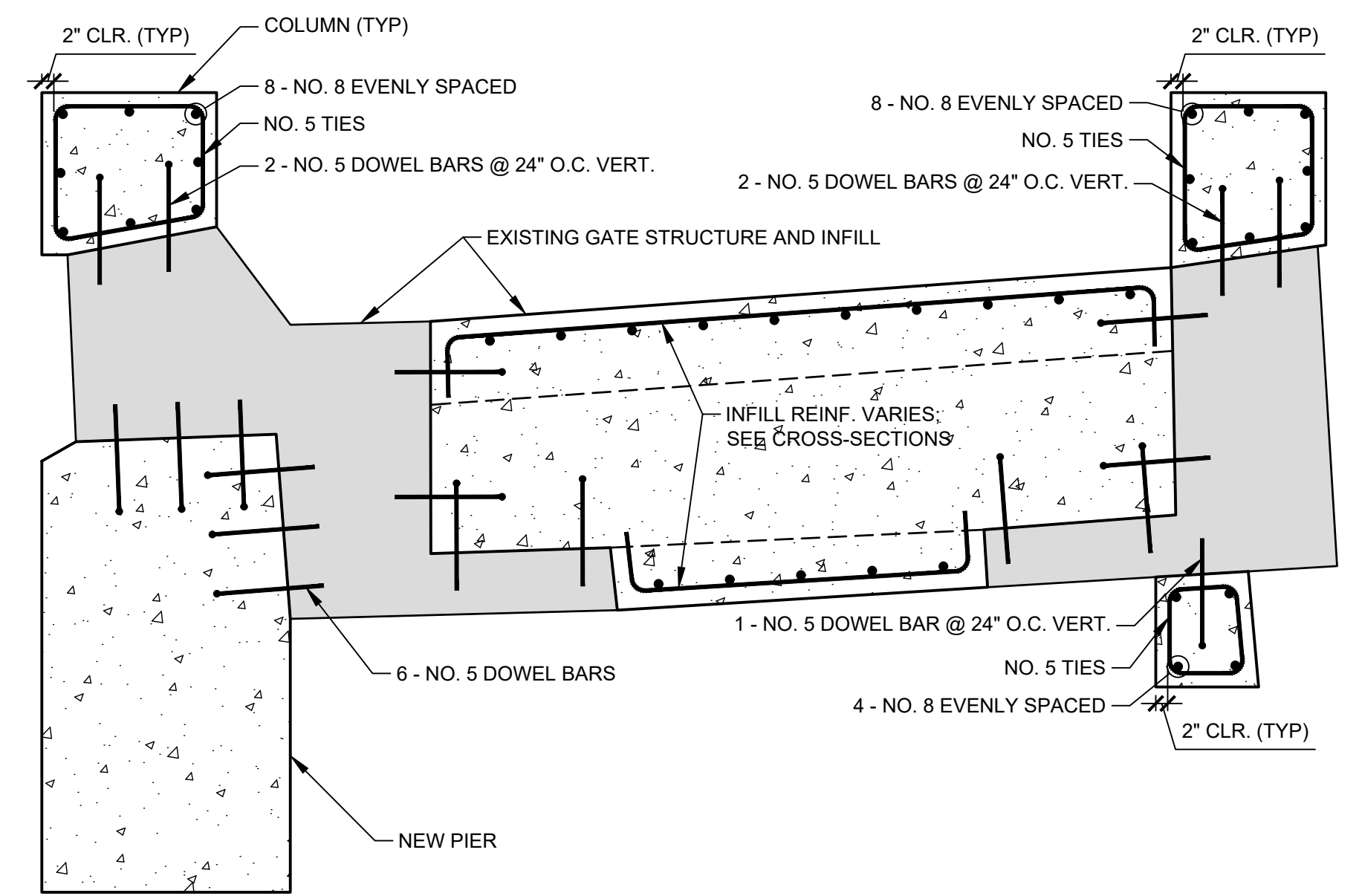
B SECTION
S-06 CONCRETE INFILL AT GATE OPENING
SCALE: 1/2" = 1'-0"



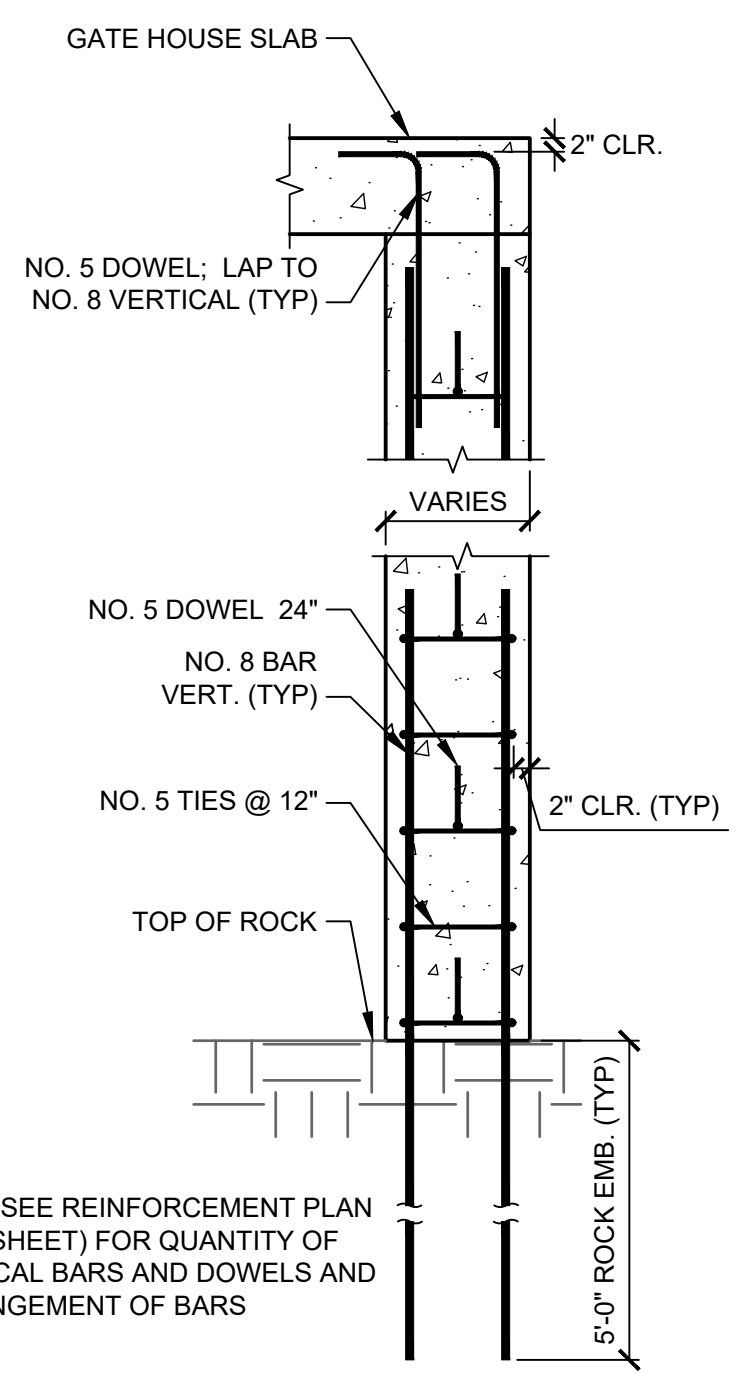
C SECTION
S-06 CONCRETE INFILL
SCALE: 1/2" = 1'-0"



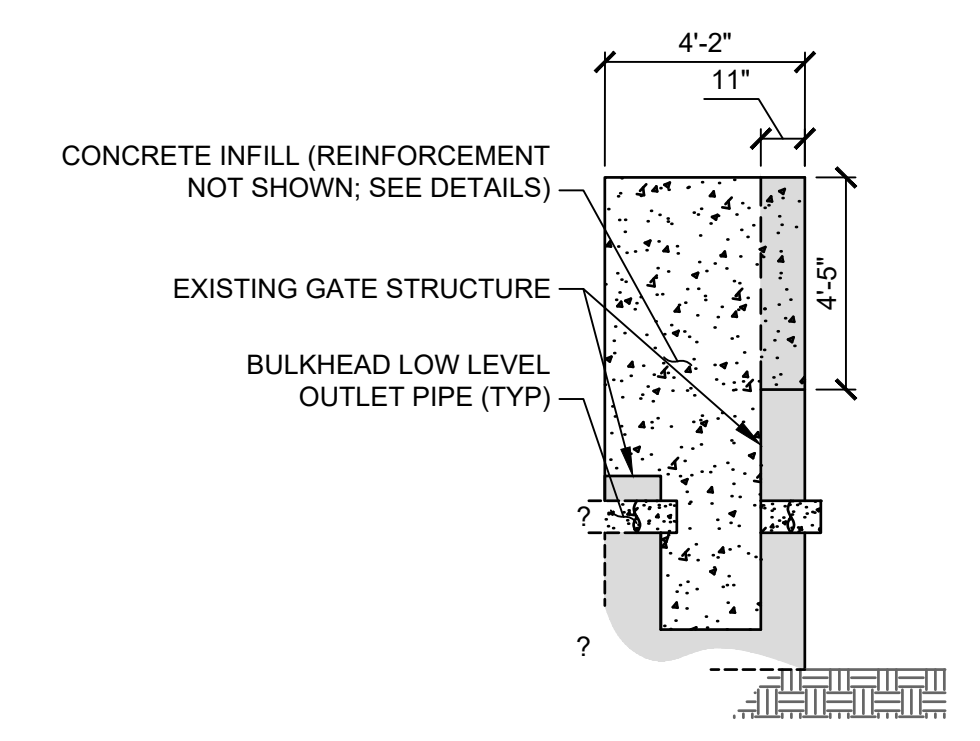
D SECTION
CONCRETE INFILL (LOOKING DOWNSTREAM)
SCALE: 1/2" = 1'-0"



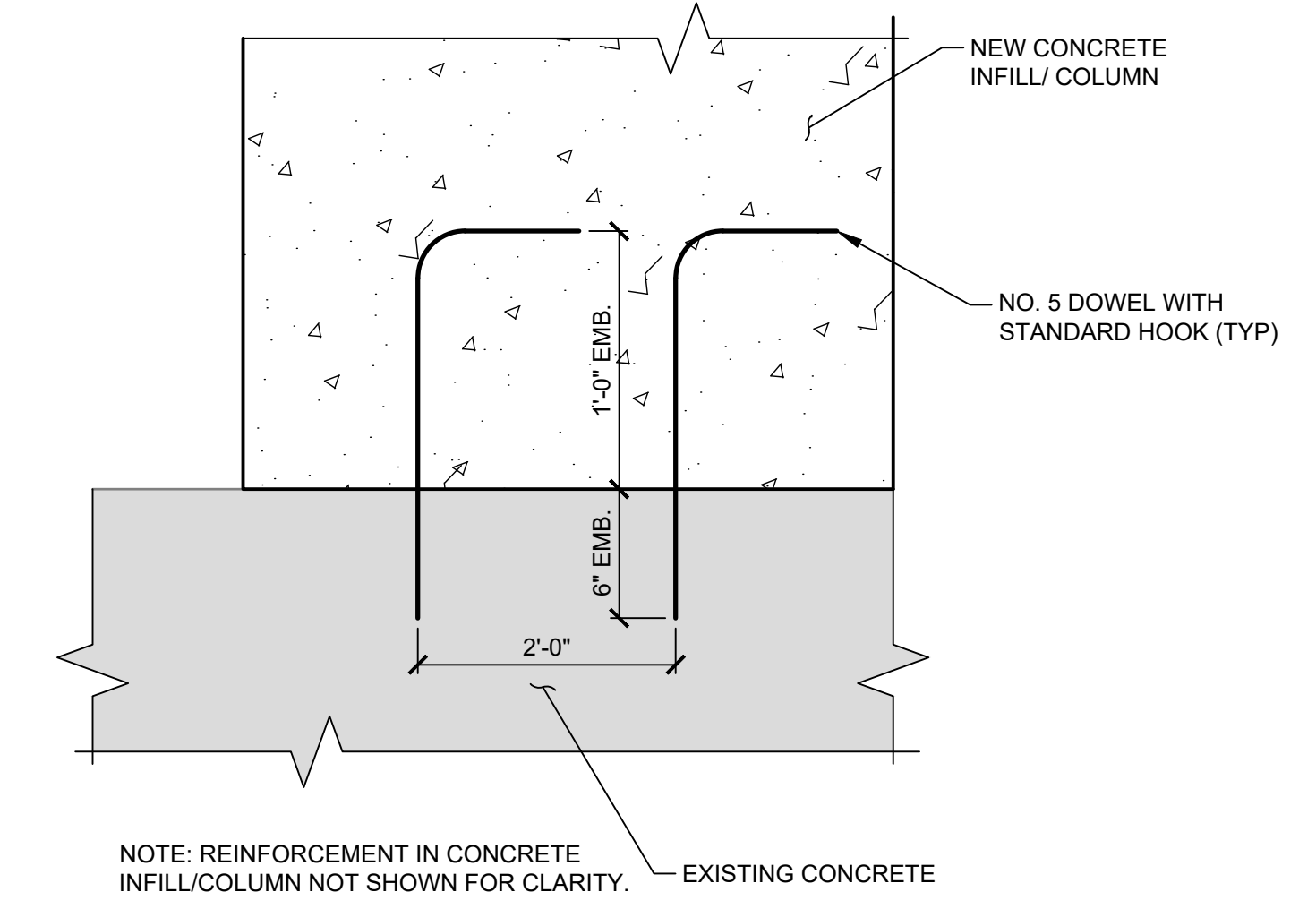
PLAN
REINFORCEMENT
SCALE: 1/2" = 1'-0"



2 DETAIL
S-06 TYPICAL COLUMN
NOTE: SEE REINFORCEMENT PLAN (THIS SHEET) FOR QUANTITY OF VERTICAL BARS AND DOWELS AND ARRANGEMENT OF BARS



F SECTION
S-06 GATE STRUCTURE INFILL
SCALE: 1/4" = 1'-0"



3 DETAIL
INFILL/ COLUMN DOWEL
NOTE: REINFORCEMENT IN CONCRETE INFILL/COLUMN NOT SHOWN FOR CLARITY.

NO.	DATE	ISSUE/REVISION	APP
0	6/8/2018	INITIAL ISSUE	CBG

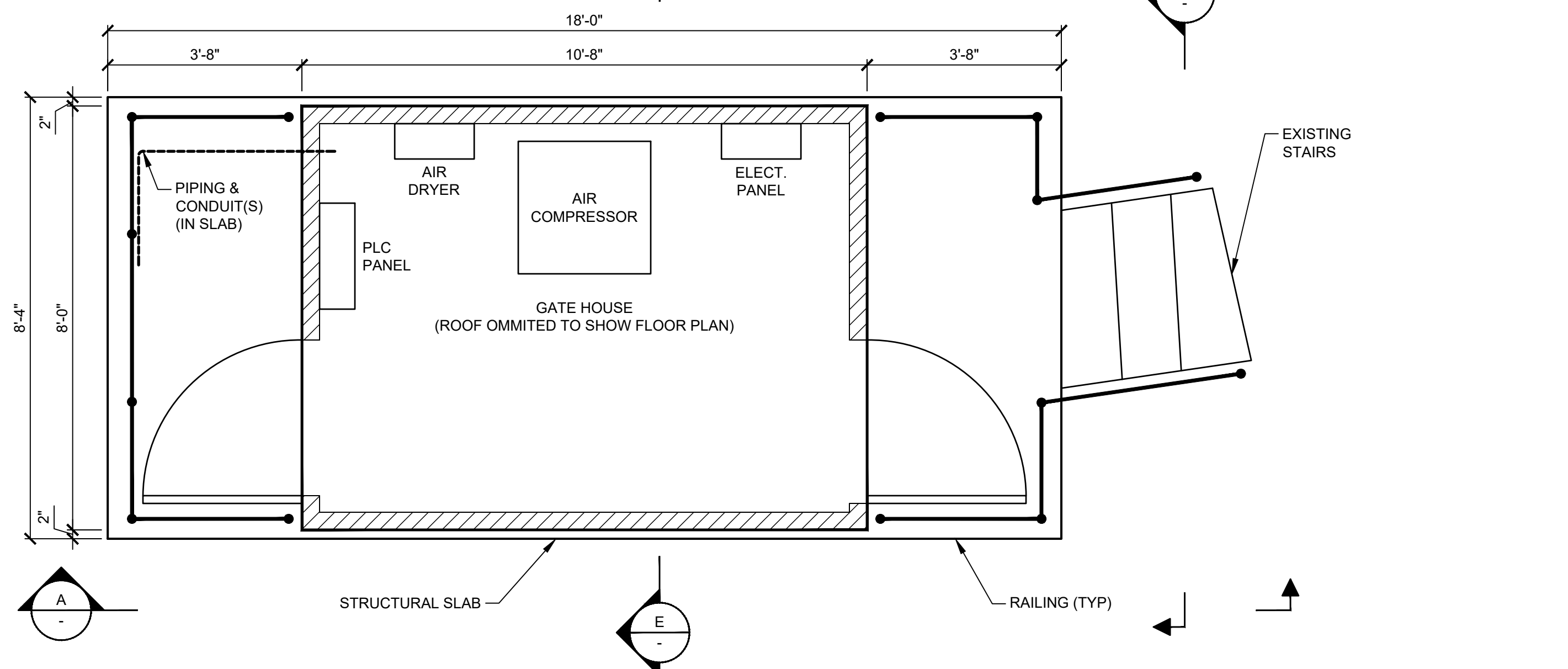
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Drawn:	A. GRADESKI
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P.E. Number:	15505



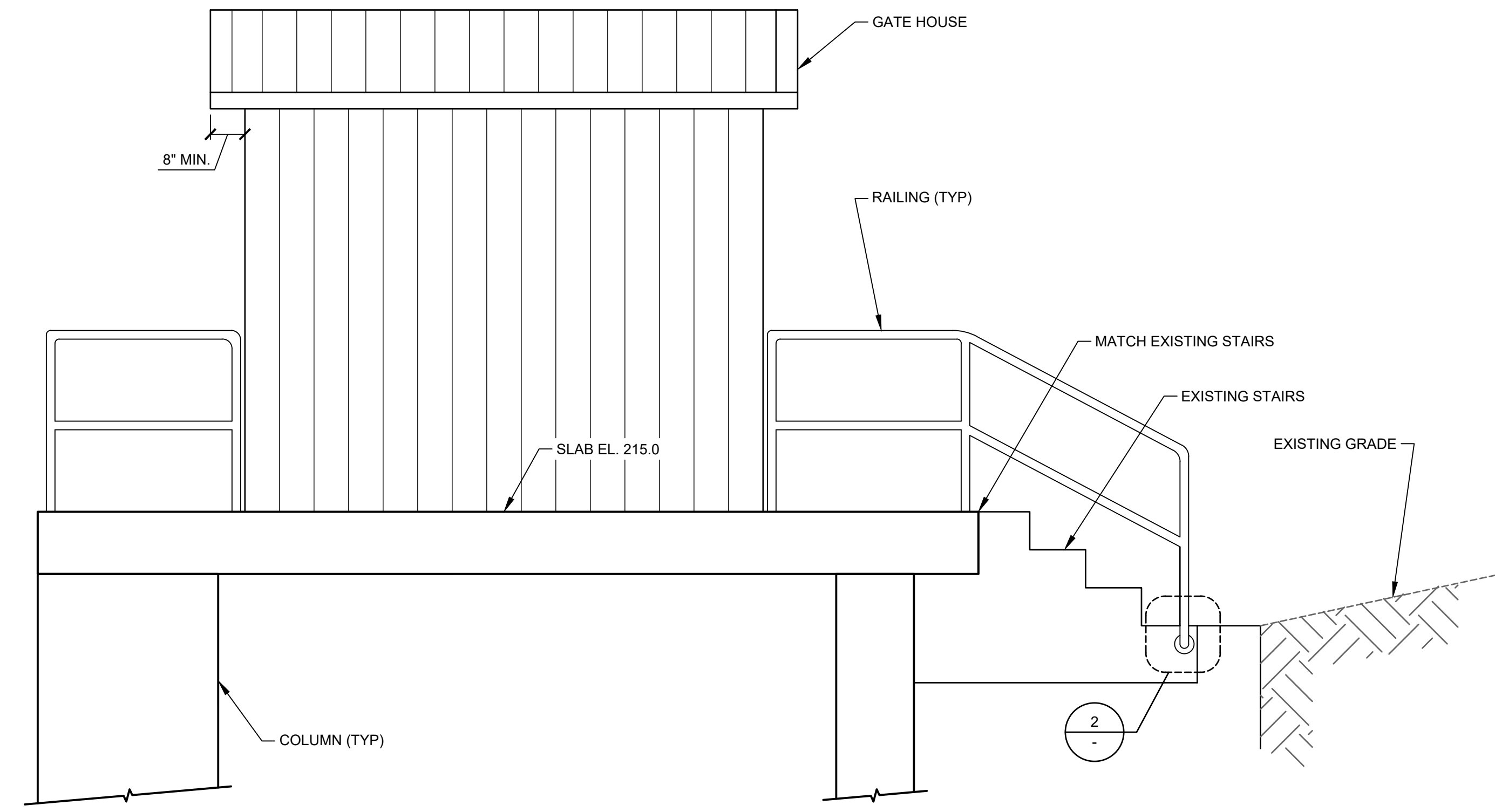
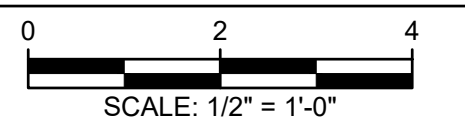
Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine
GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine
EXISTING GATE STRUCTURE
IMPROVEMENTS

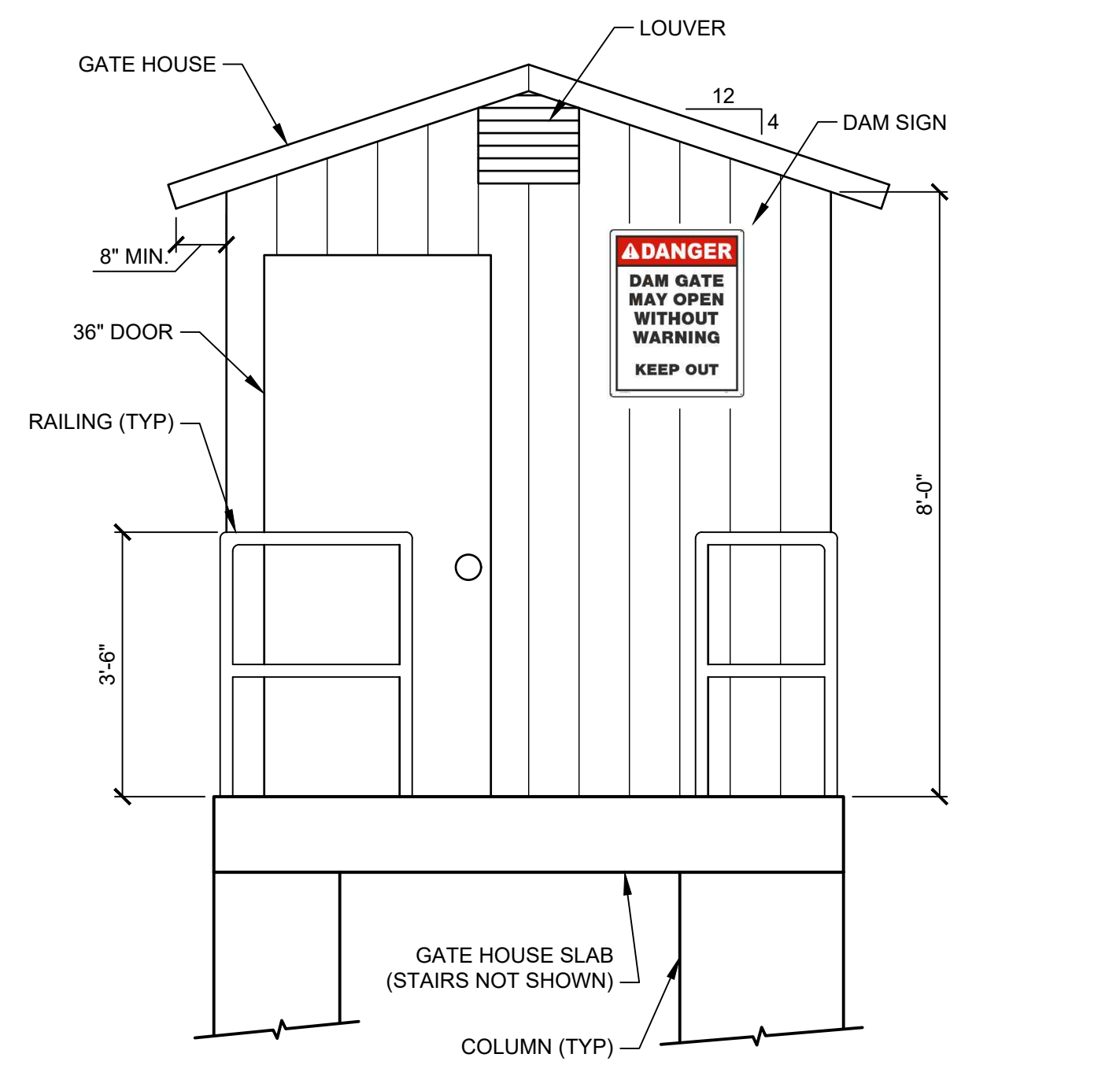
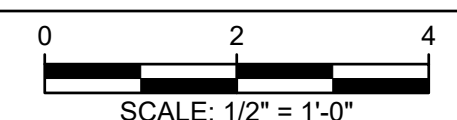
DWG. NO.
S-08
REV
0



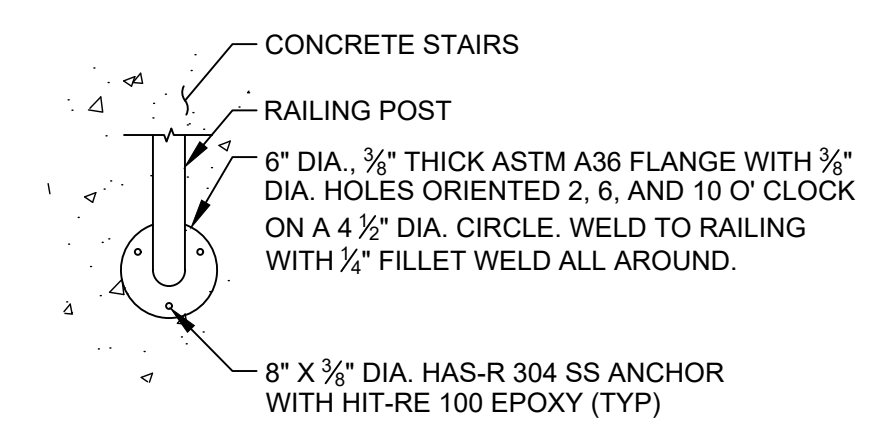
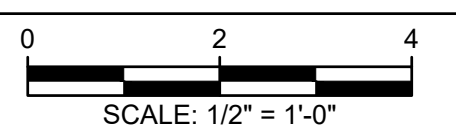
PLAN
GATE HOUSE



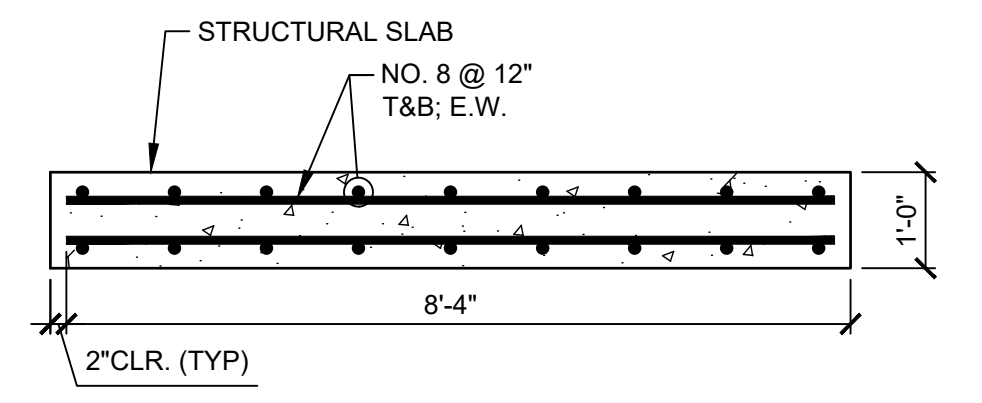
ELEVATION
GATE HOUSE LOOKING WEST (UPSTREAM)



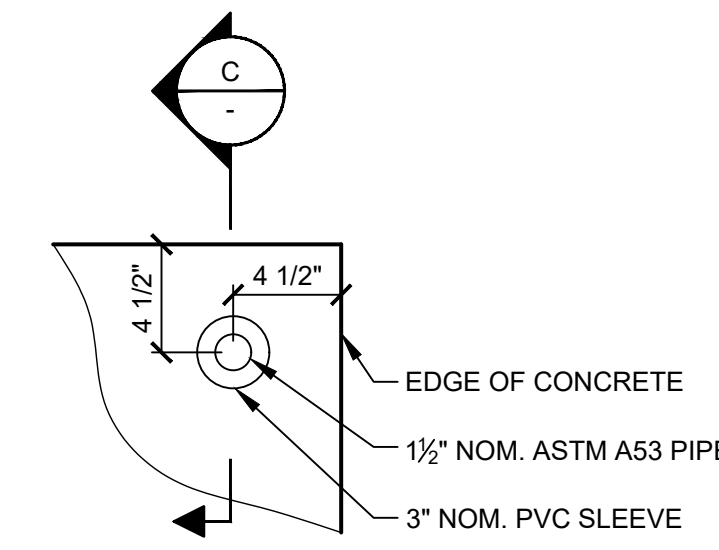
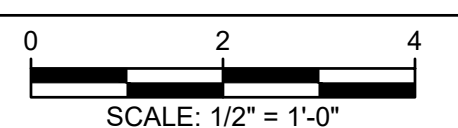
ELEVATION
GATE HOUSE LOOKING SOUTH (ENTRANCE)



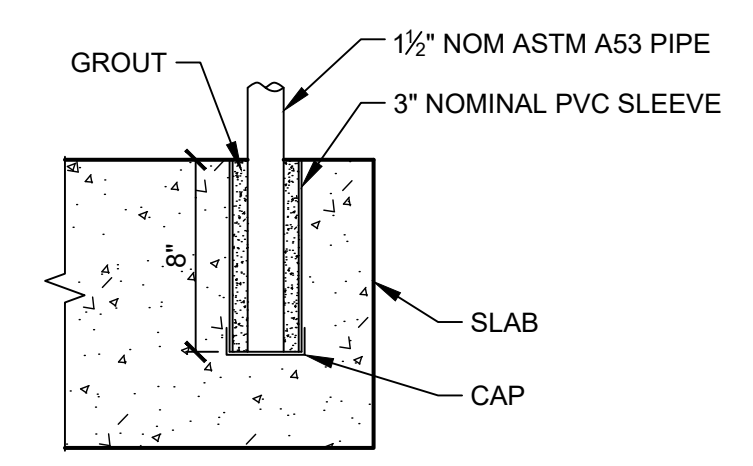
DETAIL
RAILING CONNECTION TO EX. STAIRS



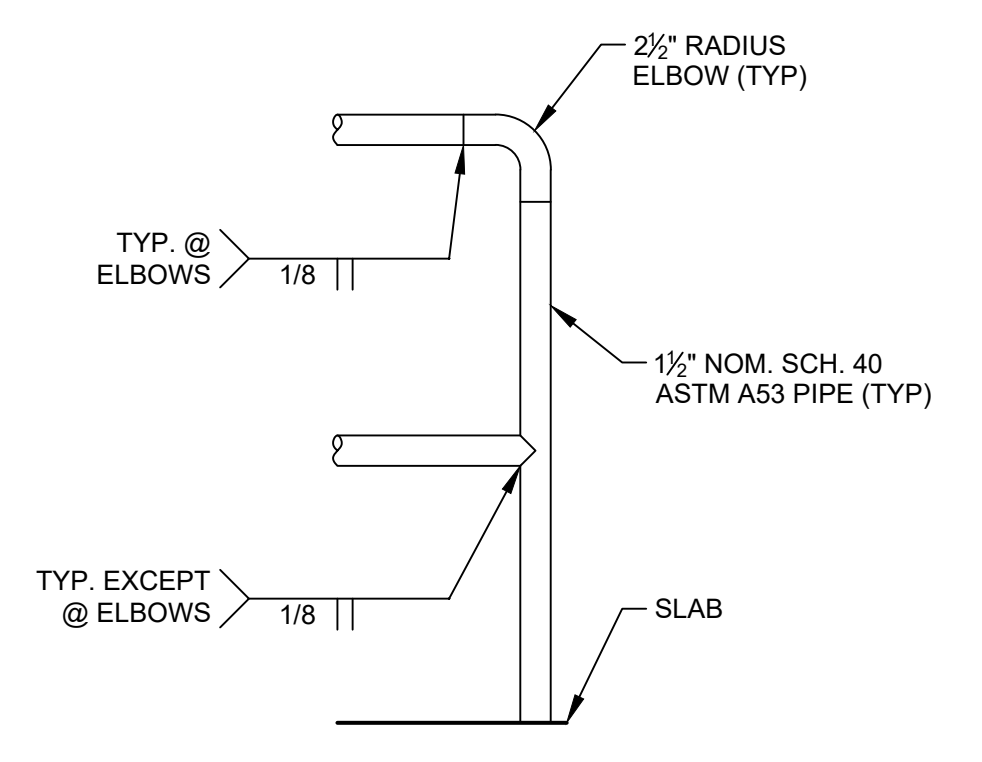
SECTION
SLAB REINFORCEMENT



DETAIL
RAILING CONNECTION TO GATE HOUSE SLAB



SECTION
RAILING CONNECTION TO GATE HOUSE SLAB

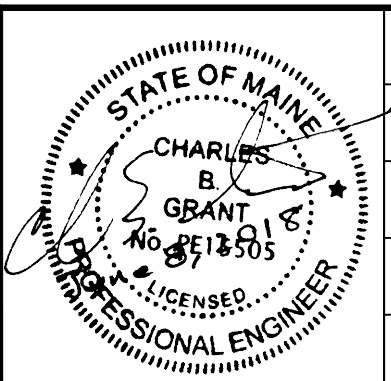


DETAIL
TYPICAL RAILING

NOTES:

1. GATE HOUSE TO BE EITHER:
 - 1.1. CONVENTIONAL LIGHT-FRAME (WOOD) BUILDING - SEE SPECIFICATION SECTION 13 34 19; OR
 - 1.2. PRE-ENGINEERED METAL BUILDING FROM APPROVED MANUFACTURER - SEE SPECIFICATION SECTION 13 34 19.
2. RAILING TO COMPLY WITH OSHA REQUIREMENTS (29 CFR 1910.23).
 - 2.1. FABRICATE FROM ASTM A53 GRADE B SCHEDULE 40 PIPE, 1-1/2 INCH NOMINAL DIAMETER
 - 2.2. POSTS LOCATED AS SHOWN. TOP RAIL HEIGHT 42 INCHES; MID RAIL HEIGHT 21 INCHES. TOE PLATE NOT REQUIRED.
 - 2.3. WELDING PER AWS D1.1. GRIND ALL WELDS SMOOTH.
 - 2.4. FABRICATE RAILING IN THREE SECTIONS AS SHOWN. DRY FIT IN FIELD ON COMPLETED CONCRETE STRUCTURE. HOT-DIP GALVANIZE AFTER FABRICATION AND DRY FITTING. INSTALL COMPLETED GALVANIZED RAILING SECTIONS PER DETAILS.

Attention:				
NO.	DATE	ISSUE/REVISION		APP
0	6/8/2018	INITIAL ISSUE		CBG



Designed:	A. GRADESKI
Checked:	C.B. GRANT
Drawn:	A. GRADESKI
Submitted By:	C.B. GRANT
P.E. Number:	15505



Towns of Readfield and Winthrop
17 Highland Avenue
Winthrop, Maine
GEI Project 1610763-0

Maranacook Lake Outlet
Dam Modification (2018)
Winthrop, Maine
GATE HOUSE PLAN AND
DETAILS

DWG. NO.	S-09
REV	0

Maranacook Lake Dam

Winthrop, Maine

OHI PROJECT 16-1664

DRAWING LIST	DESCRIPTION	REV
100	COVER SHEET AND PROJECT DESCRIPTION	2
101	SPILLWAY PLAN VIEW	2
102	MAIN ANCHOR LAYOUT AND SPACING	1
110	SECTION ELEVATION	1
111	ELEVATION SURFACE FEATURES	2
112	ABUTMENT PLATE INSTALLATION	2
120	MAIN CLAMP INSTALLATION AND HYPALON PLACEMENT	1
121	GATE PANEL ASSEMBLY	1
123	AIR BLADDER CONNECTION DETAILS	1
124	RESTRAINING STRAP INSTALLATION	1
127	INCLINOMETER INSTALLATION DETAIL	1

PACKAGE LIST	DESCRIPTION	COMMENT
100	GENERAL ARRANGEMENT	THIS SECT.
200	STEEL FABRICATION PACKAGE & NOTES	SEE SECTION 200
240	ABUTMENT PLATES PACKAGE & NOTES	SEE SECTION 240
300	RUBBER FABRICATION PACKAGE	SEE SECTION 300
400	CONTROL PANEL LAYOUTS	SEE SECTION 400
500	AIR CONTROL SCHEMATICS	SEE SECTION 500
600	ELECTRICAL SCHEMATICS	SEE SECTION 600


7							
6							
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2						UPDATED NOTES	
1						NEW DRAWING	
NO							REVISION DESCRIPTION

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HYDRO, INC.

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DRAWING DESCRIPTION

COVER PAGE

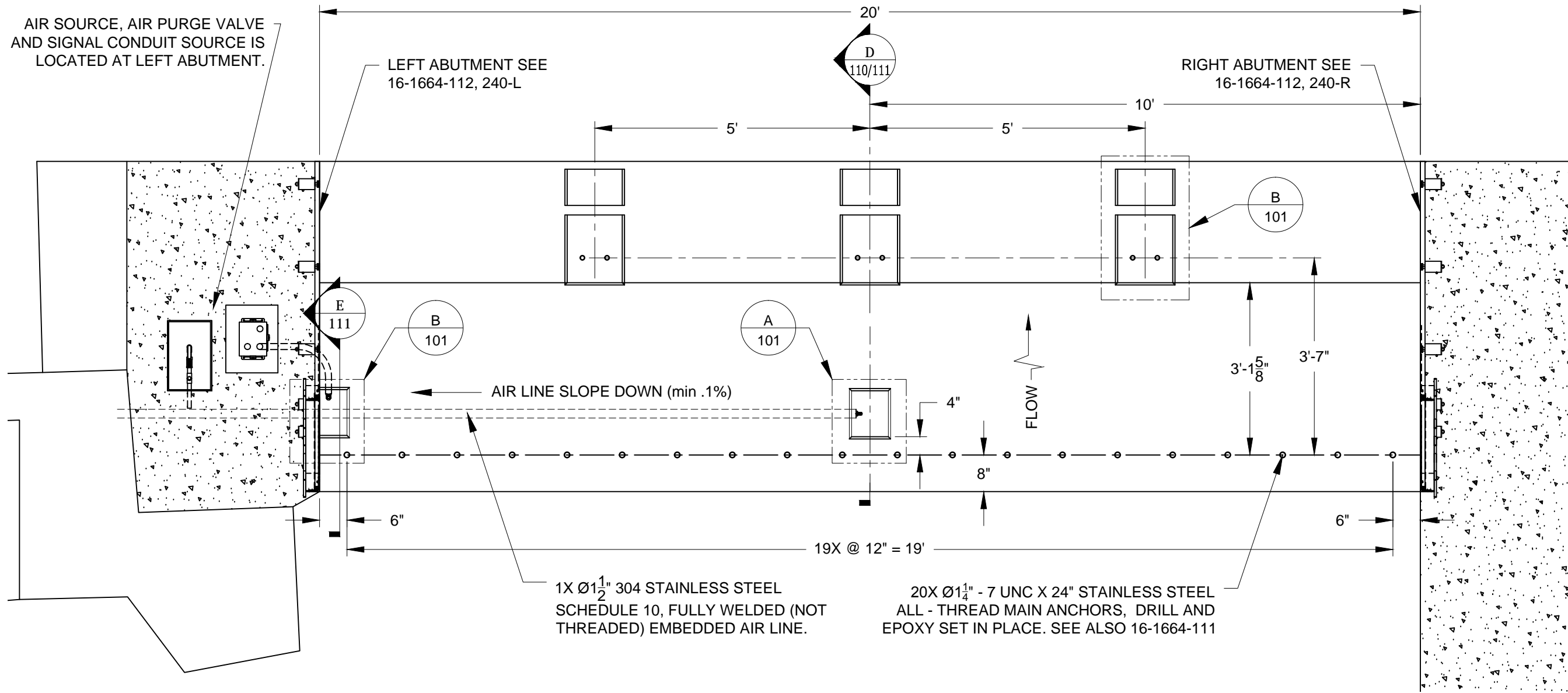
	SHEETS	SCALE
	1 of 1	NO SCALE
JOB		
Maranacook Lake Dam		
DWG. NO.		
16-1664-100		

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AIR SOURCE, AIR PURGE VALVE AND SIGNAL CONDUIT SOURCE IS LOCATED AT LEFT ABUTMENT.

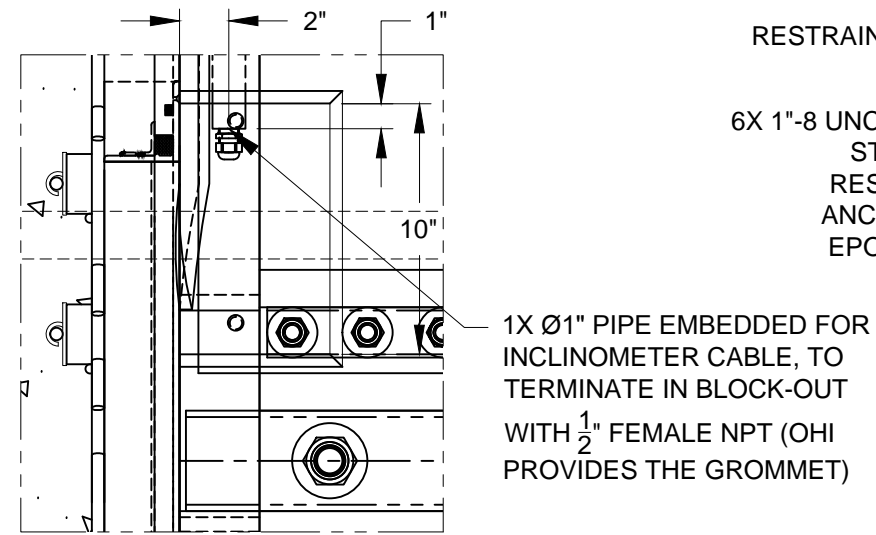
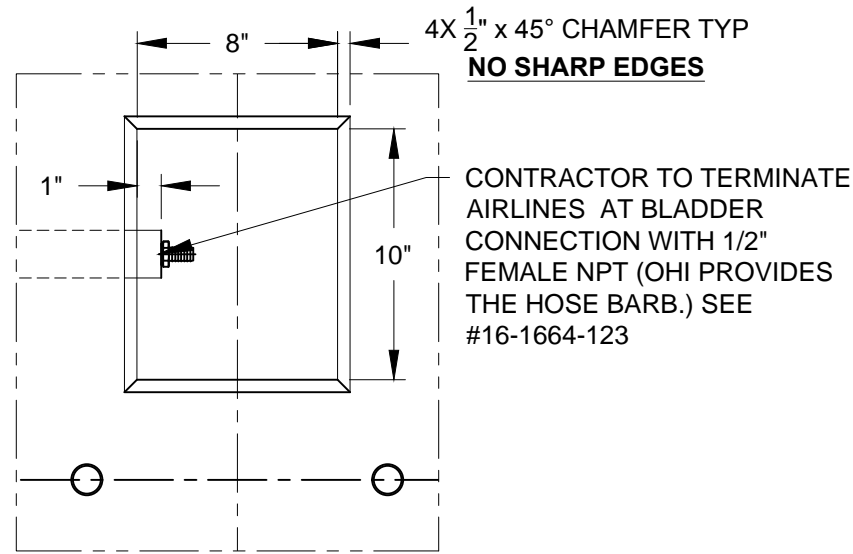
LEFT ABUTMENT SEE 16-1664-112, 240-L

RIGHT ABUTMENT SEE 16-1664-112, 240-R



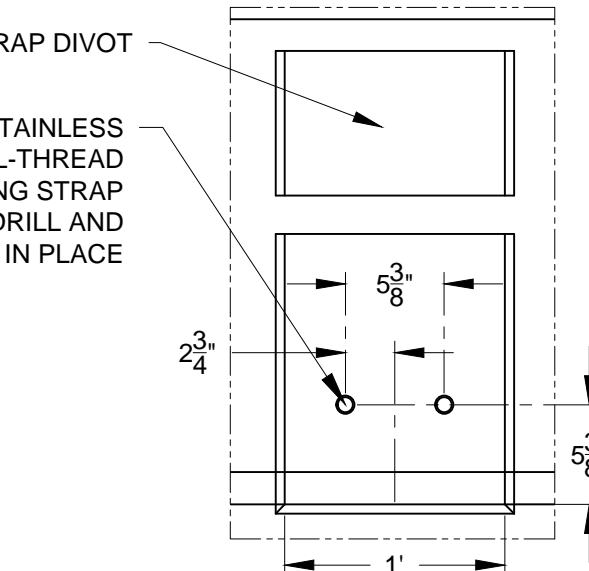
1X Ø1½" 304 STAINLESS STEEL SCHEDULE 10, FULLY WELDED (NOT THREADED) EMBEDDED AIR LINE.

20X Ø1¼" - 7 UNC X 24" STAINLESS STEEL ALL-THREAD MAIN ANCHORS, DRILL AND EPOXY SET IN PLACE. SEE ALSO 16-1664-111



RESTRAINING STRAP DIVOT

6X 1"-8 UNC X 12" STAINLESS STEEL ALL-THREAD RESTRAINING STRAP ANCHORS. DRILL AND EPOXY SET IN PLACE



A **DETAIL**
AIR CONNECTION BLOCK-OUT, TYP. 1X, SEE 16-1664-111

B **DETAIL**
INCLINOMETER BLOCK-OUT, TYP. 1X, SEE 16-1664-111

C **DETAIL**
RESTRAINING STRAP ANCHOR BLOCK-OUT, TYP. 3X, SEE 16-1664-111

7						
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2		BAH	28 Feb 2017	ADDED INCLINOMETER BLOCKOUT		
1		BAH	2 Nov 2016	NEW DRAWING		
NO		DRAWN	DATE APRVD	REVISION DESCRIPTION		

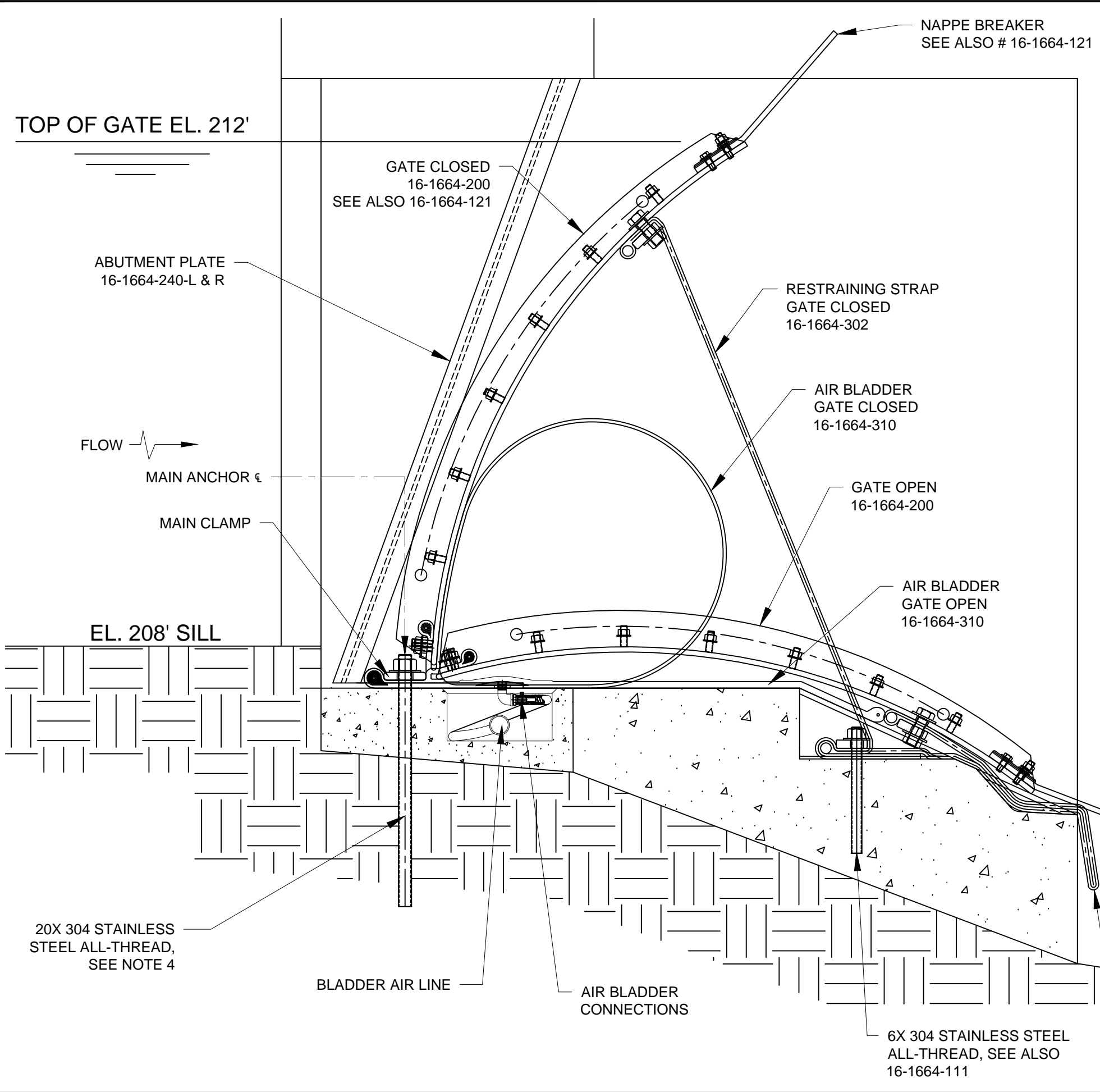
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DRAWING DESCRIPTION
SPILLWAY PLAN VIEW

SHEETS	SCALE
1 of 1	NO SCALE
JOB Maranacook Lake Dam	
DWG. NO. 16-1664-100	

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NOTES:

- 1) CONCRETE FINISH: CONCRETE UNDER GATE SYSTEM **MUST** HAVE HIGH QUALITY TROWEL FINISH AND BE FLAT WITHIN $\pm 1/8"$. A BROOM FINISH IS **NOT** ACCEPTABLE AND WILL RESULT IN ACCELERATED WEAR OF AIR BLADDERS.
- 2) THE HORIZONTAL CONCRETE CLAMPING SURFACE EXTENDING 6" DOWNSTREAM OF MAIN ANCHOR BOLT CENTERLINE AND 6" UPSTREAM OF MAIN ANCHOR BOLT CENTERLINE SHOULD BE LEVEL WITHIN $\pm 1/4"$ FROM ABUTMENT TO ABUTMENT AND SHOULD NEVER VARY MORE THAN $1/8"$ PER FOOT.
- 3) ALL DIMENSIONS TO WITHIN $\pm 1/8"$ OF TRUE POSITION UNLESS OTHERWISE DIMENSIONED OR NOTED ON PART DRAWING. SPACING OF ADJACENT MAIN ANCHOR BOLTS SHOULD NOT VARY MORE THAN $1/16"$ FROM NOMINAL SPACING.
- 4) ALL MAIN ANCHOR BOLTS TO BE PLUMB WITHIN $\pm 1/8"$. MAIN ANCHOR BOLT CENTER LINE TO BE PERPENDICULAR TO ABUTMENT FACE $\pm 0.1^\circ$.
- 5) DURING CONCRETE PLACEMENT, THE FORM WORK SUPPORTING THE ABUTMENT PLATES MUST BE HELD PLANAR, PLUMB AND PERPENDICULAR TO THE MAIN ANCHOR BOLTS WITHIN $1/8"$ PER FOOT AND WITHIN $1/4"$ OVERALL. RIGID STEEL BRACING OF FORMS IS RECOMMENDED. CONCRETE LIFTS SHOULD BE LIMITED SO AS TO NOT EXCEED ABOVE DEFLECTION LIMITS OF FORMS.
- 6) 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 INCLUDED IN THE OBERMEYER BILL OF MATERIALS.
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- 8) ALL ANCHOR BOLTS, BOLTS, FASTENERS TO BE ACCURATELY TORQUED TO APPROPRIATE LEVEL AS DEFINED IN THE OBERMEYER INSTALLATION PROCEDURE.
- 9) THERE IS **NO WELDING ALLOWED** ON THE MAIN ANCHOR BOLTS. WELDING TO HEAT TREATED ANCHOR BOLTS CAN CAUSE FRACTURE AND CATASTROPHIC SYSTEM FAILURE.
- 10) ALL DIMENSIONS IN INCHES UNLESS OTHERWISE NOTED.

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1						NEW DRAWING	
NO							REVISION DESCRIPTION

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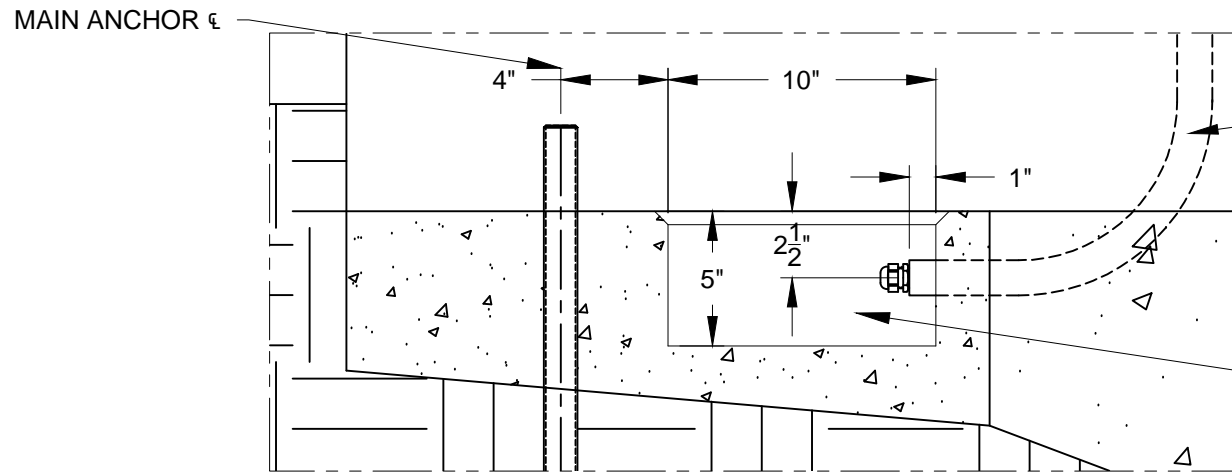
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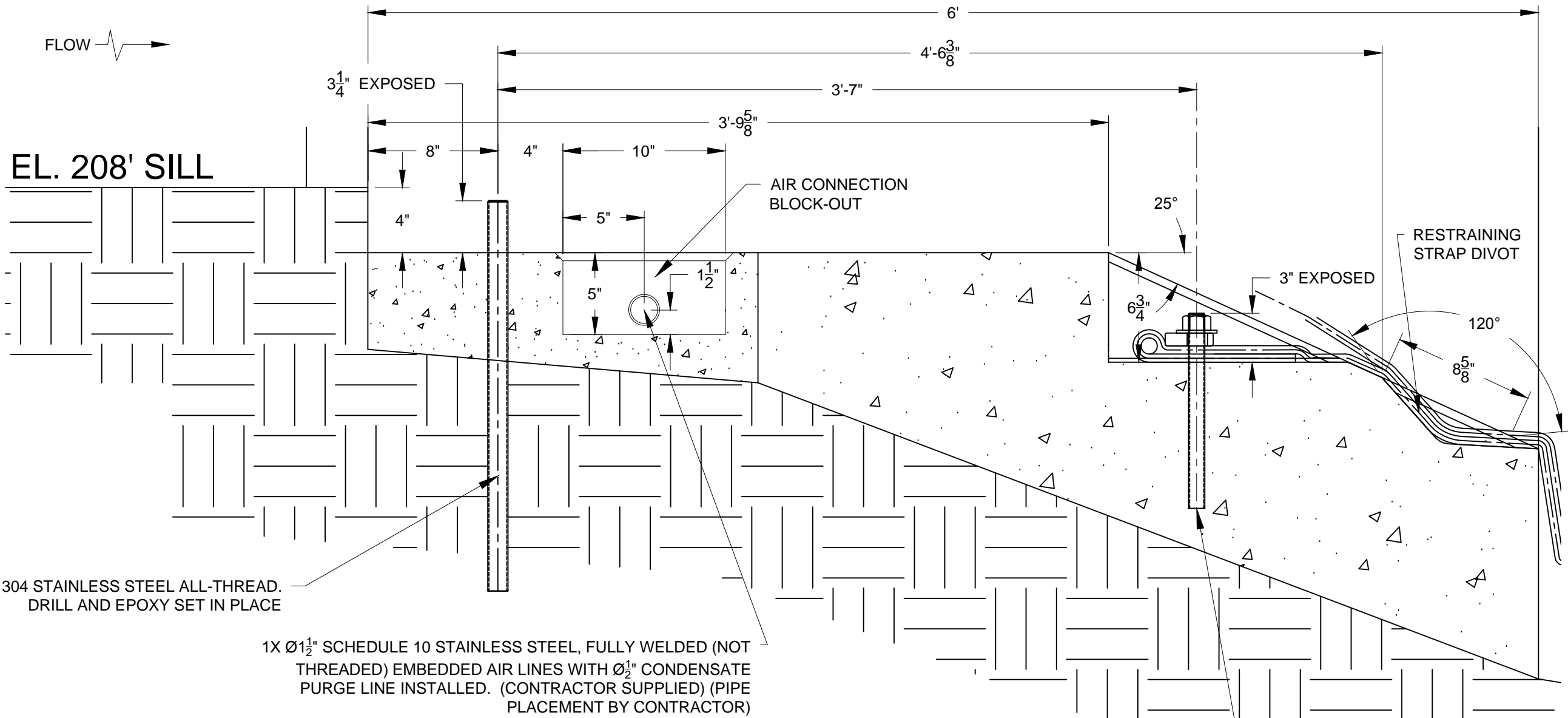
DRAWING DESCRIPTION

Fill in Drawing Description

SHEETS	SCALE
1 of 1	NO SCALE
JOB	
Maranacook Lake Dam	
DWG. NO.	
16-1664-110	



E INCLINOMETER BLOCKOUT
REF 16-1664-101



D AIR CONNECTION BLOCK-OUT & RESTRAINING STRAP ANCHORS
REF 16-1664-101

EMBEDDED 1" CONDUIT FROM ABUTMENT J-BOX TO BLOCK-OUT. RADIUS IN CONDUIT BENDS MUST BE 6" MIN. TO TERMINATE IN BLOCK-OUT WITH 3/4" NPT FEMALE THREADS.

INCLINOMETER BLOCK-OUT

AIR CONNECTION BLOCK-OUT

RESTRAINING STRAP DIVOT

6X 1"-8 UNC X 12" STAINLESS STEEL ALL-THREAD RESTRAINING STRAP ANCHORS. DRILL AND EPOXY SET IN PLACE

7					
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2		BAH	28 Feb 2017	ADDED INCLINOMETER BLOCKOUT	
1		BAH	2 Nov 2016	NEW DRAWING	
NO					REVISION DESCRIPTION

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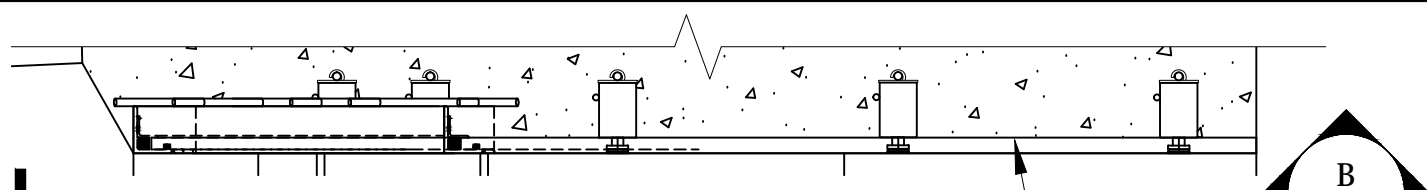
DRAWING DESCRIPTION
ELEVATION SURFACE FEATURES

SHEETS	SCALE
1 of 1	NO SCALE
JOB Maranacook Lake Dam	
DWG. NO. 16-1664-111	

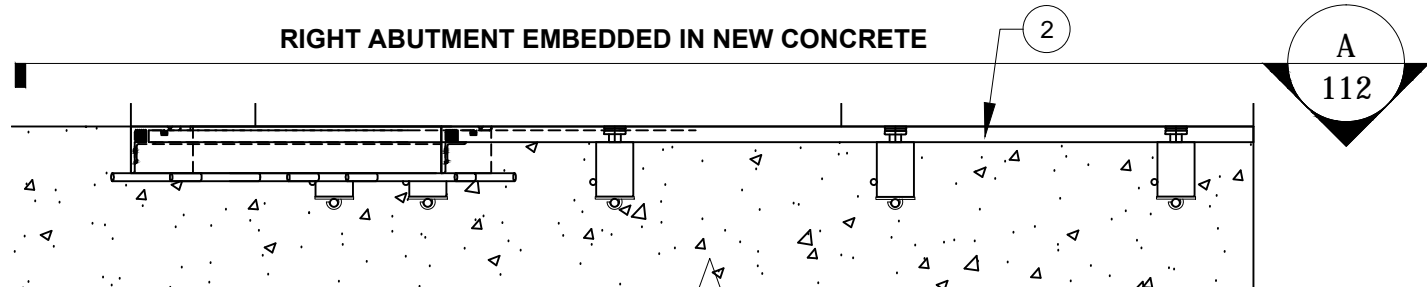
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BILL OF MATERIAL FOR ABUTMENT PLATE INSTALLATION

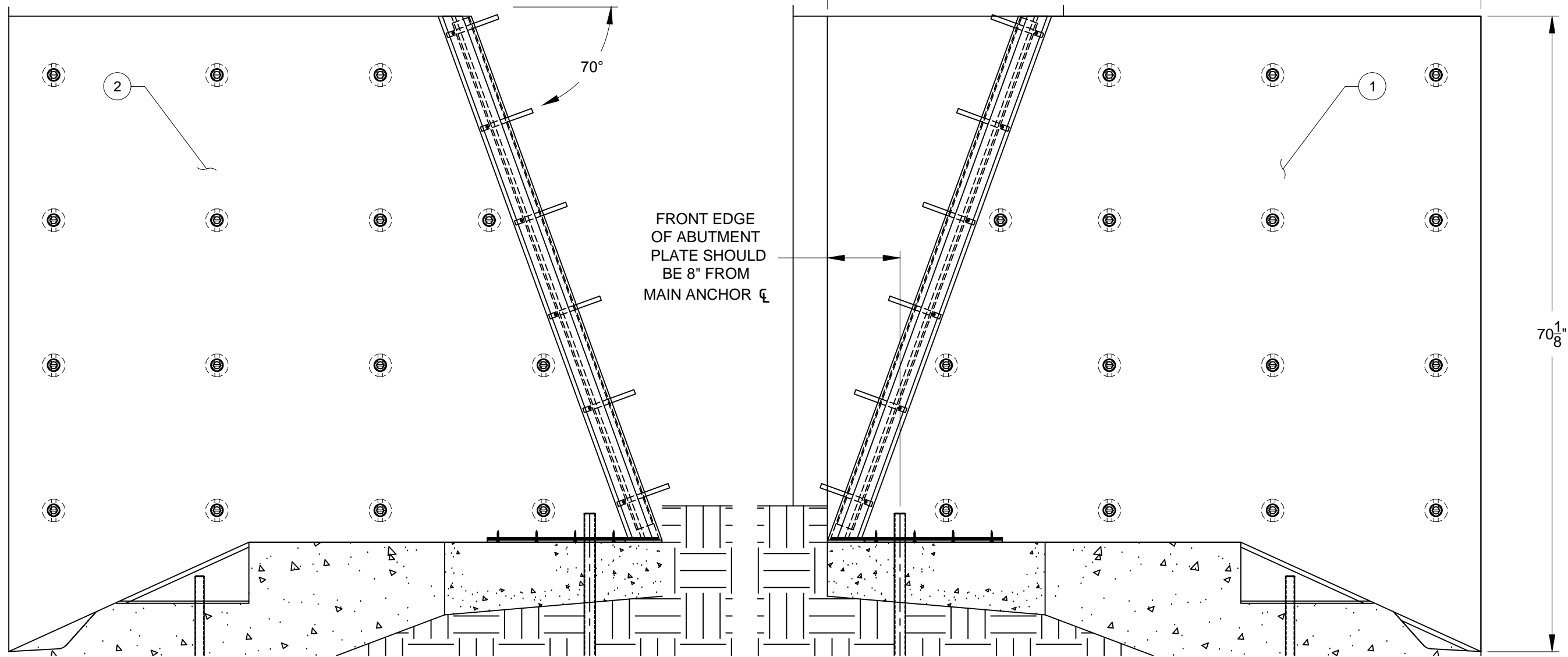
ITEM	PART NO.	DESCRIPTION	FINISH	QTY.	TOTAL
EMBEDS					
1	16-1664-240-R	ABUTMENT PLATE ASSEMBLY, RIGHT	UHMW	1	1
2	16-1664-240-L	ABUTMENT PLATE ASSEMBLY, LEFT	UHMW	1	1



LEFT ABUTMENT EMBEDDED IN NEW CONCRETE



RIGHT ABUTMENT EMBEDDED IN NEW CONCRETE



A **ELEVATION**
RIGHT ABUTMENT SHOWN

B **ELEVATION**
LEFT ABUTMENT SHOWN

NO	REVISION DESCRIPTION	DATE	APRVD	APRVD
1	NEW DRAWING	4 Nov 2016	BAH	
2	REMOVED EXISTING CONCRETE	28 Feb 2017	BAH	
3				
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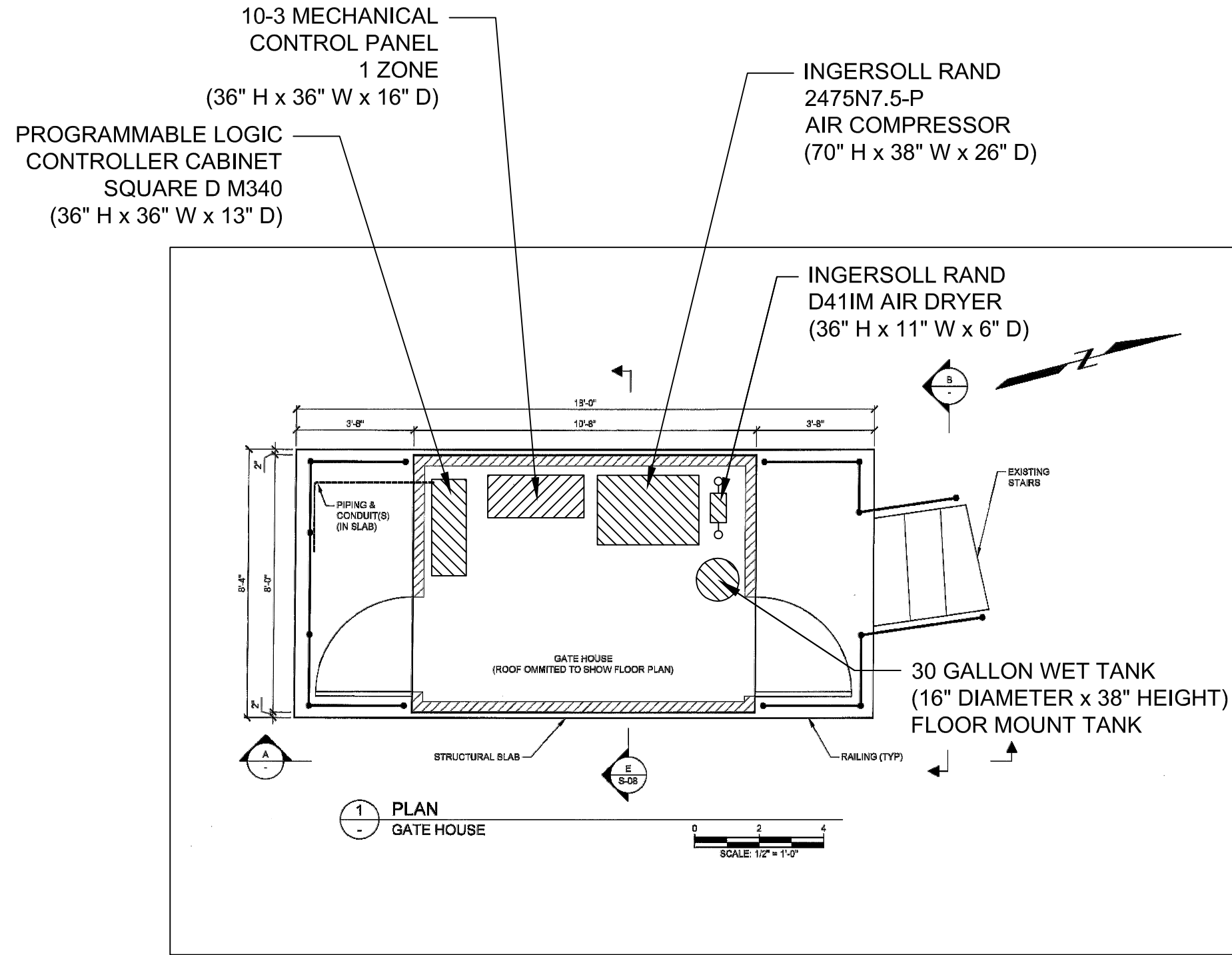
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DRAWING DESCRIPTION
ABUTMENT PLATE
INSTALLATION DETAIL

SHEETS	SCALE
1 of 1	NO SCALE
JOB	
Maranacook Lake Dam	
DWG. NO.	
16-1664-112	

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NOTES: (UNLESS OTHERWISE SPECIFIED)

- 1.) THE CONTRACTOR SHALL DETERMINE THE LOCATION OF ALL CONNECTIONS TO THE CONTROL BUILDING AND PROVIDE SAME.
- 2.) ALL LINES INTO AND OUT OF THE CABINETS AND PANELS MUST BE BRAIDED STAINLESS STEEL FLEX HOSE FOR A MINIMUM OF 12" FROM THE PANEL.

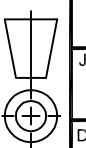
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DRAWING DESCRIPTION
EXAMPLE
CONTROL ROOM LAYOUT

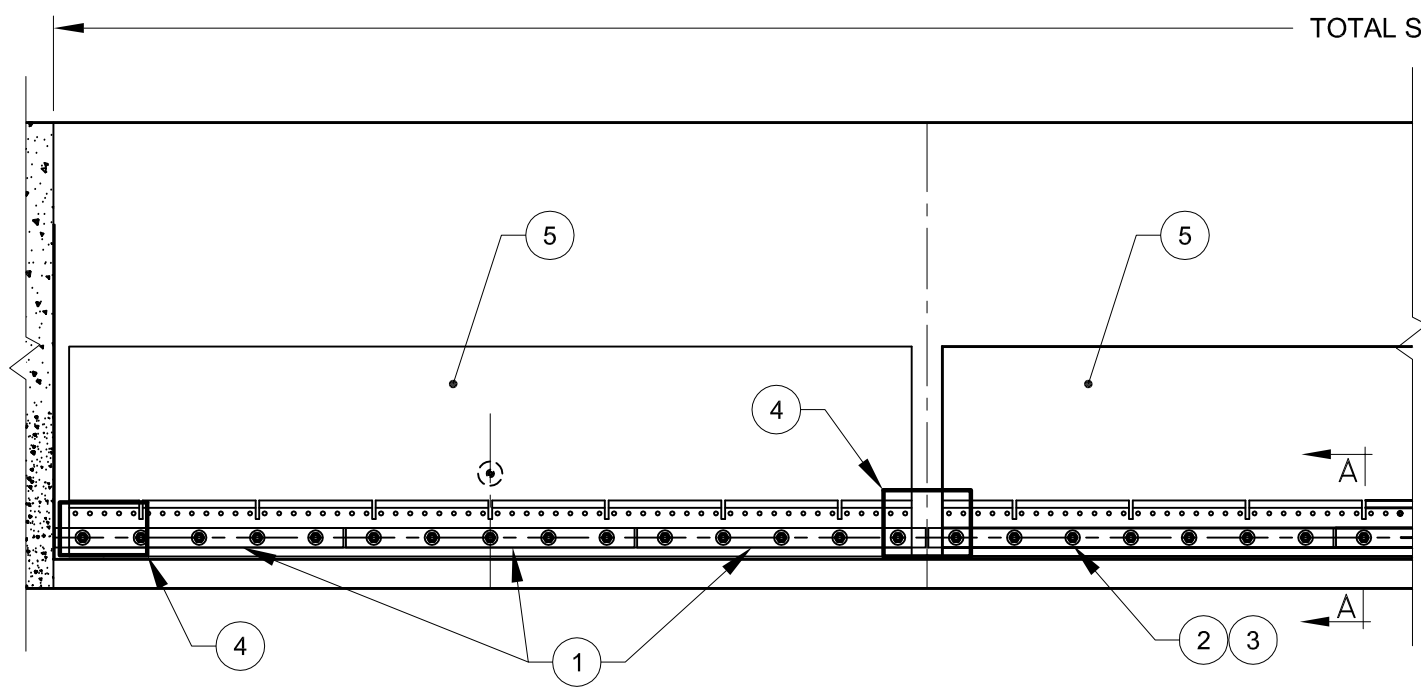


SHEETS	SCALE
1 OF 1	NO SCALE

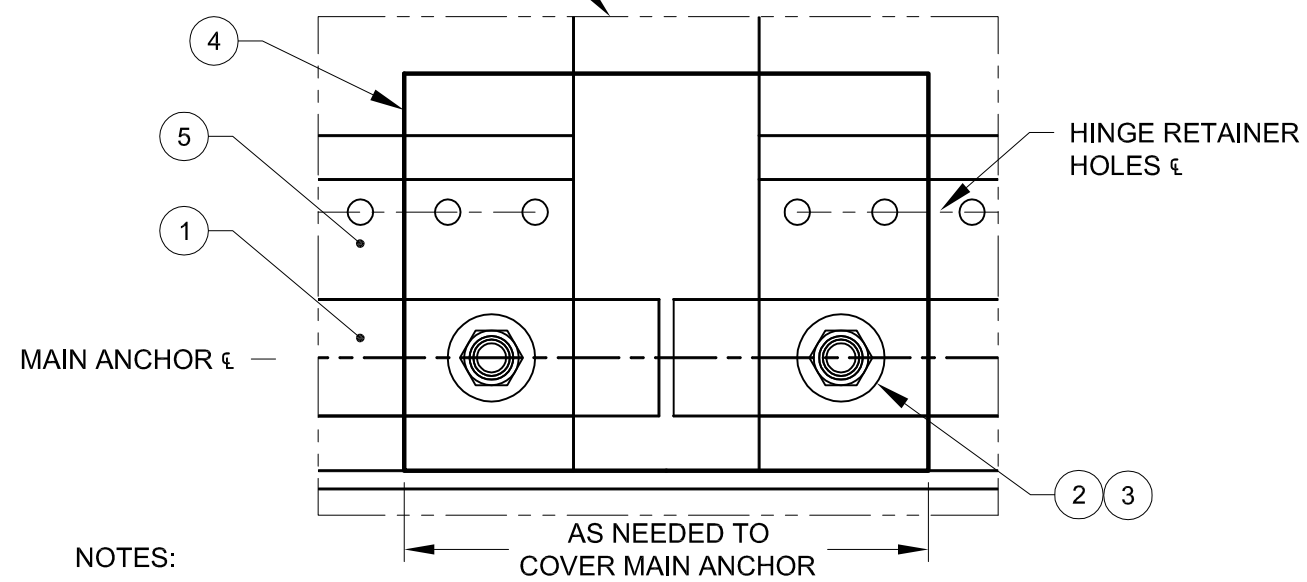
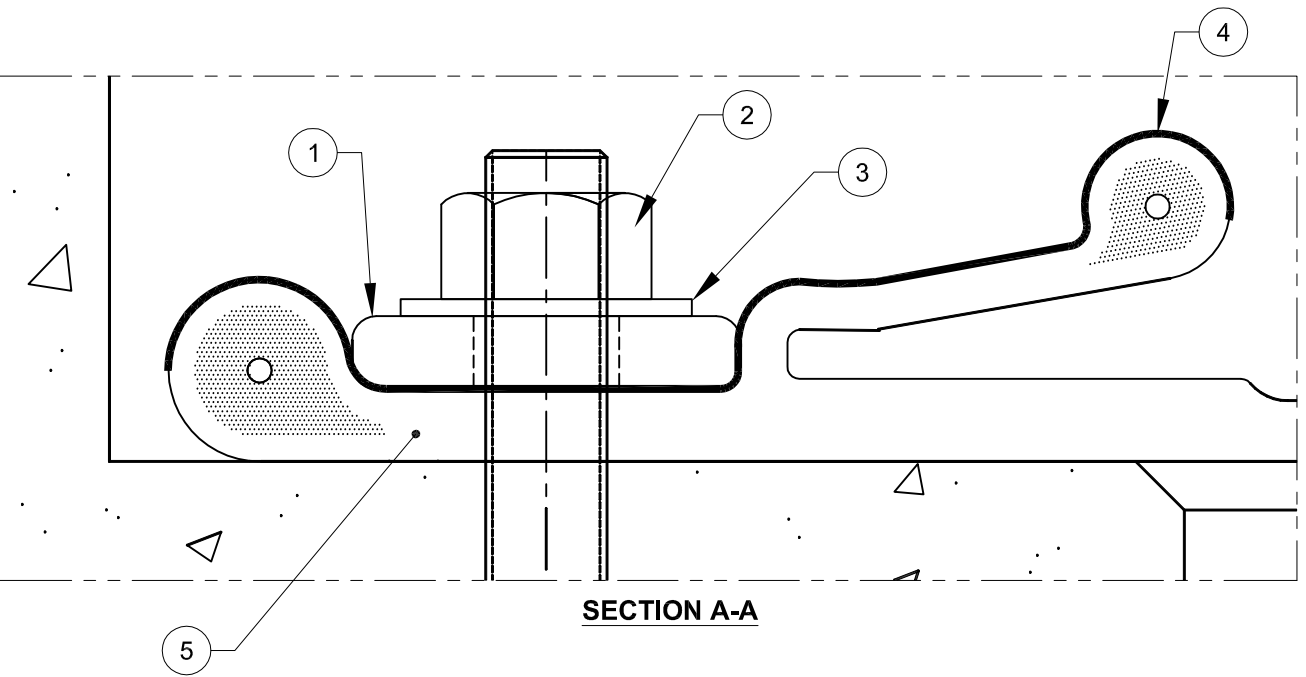
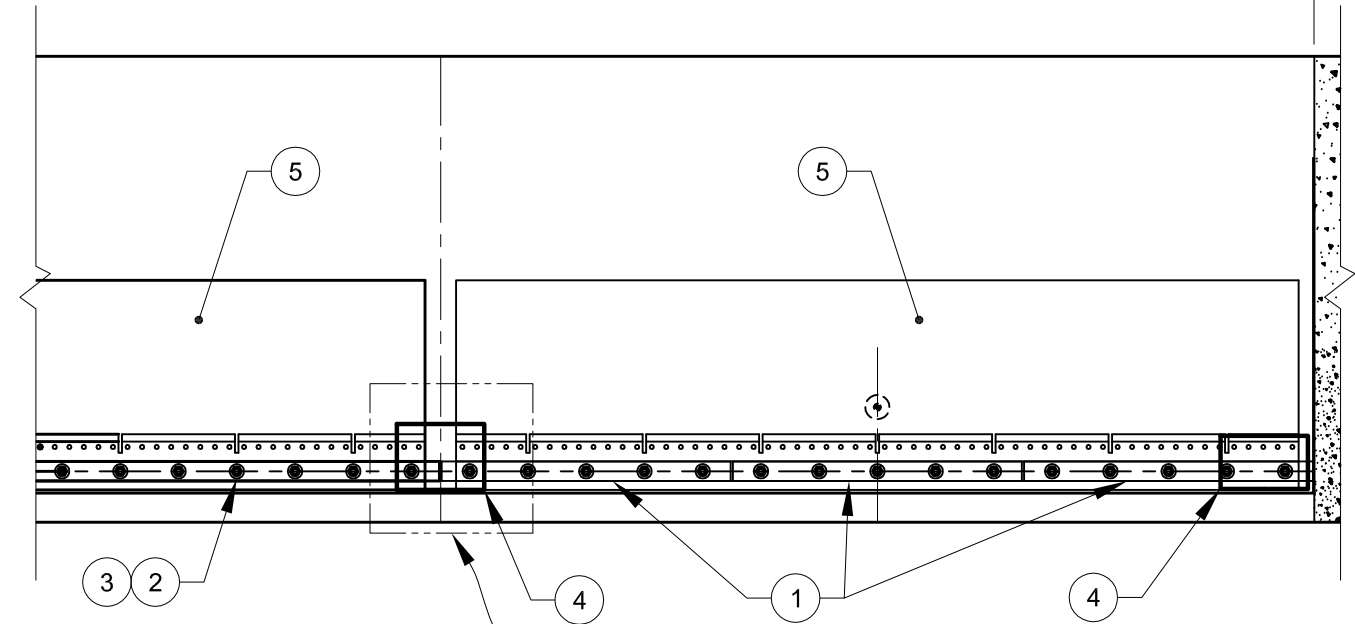
JOB
Maranacook Lake Dam

DWG. NO.
16-1664-405R

NO	REVISION DESCRIPTION	DATE APRV'D	APRV'D	DRAWN
1	NEW DRAWING	JAN 24, 2016	PAC	PAC
2	ADDED CUSTOMER GATE HOUSE	28 Feb 2017	BAH	BAH
3				
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FLOW ↑



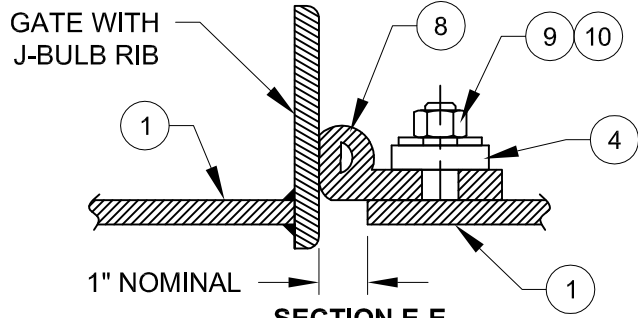
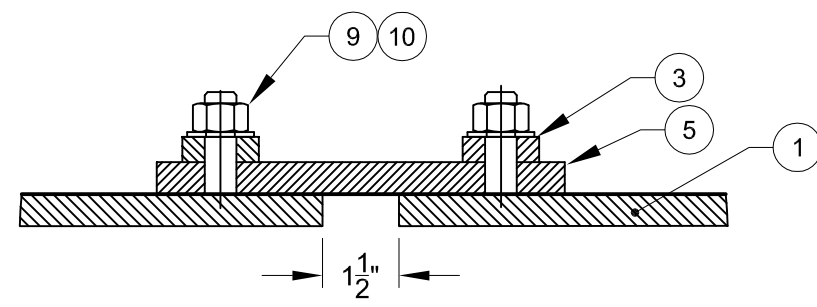
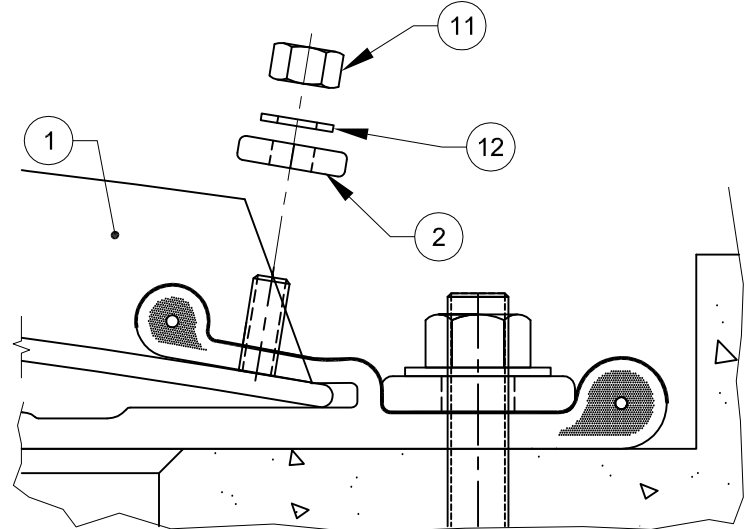
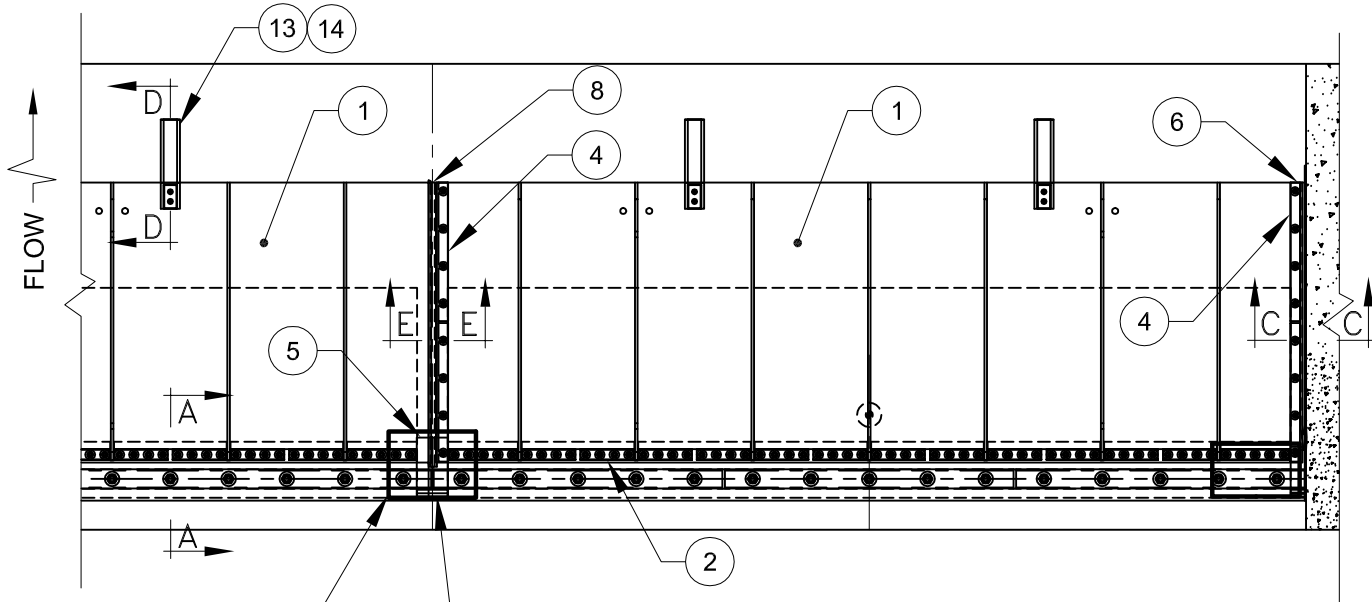
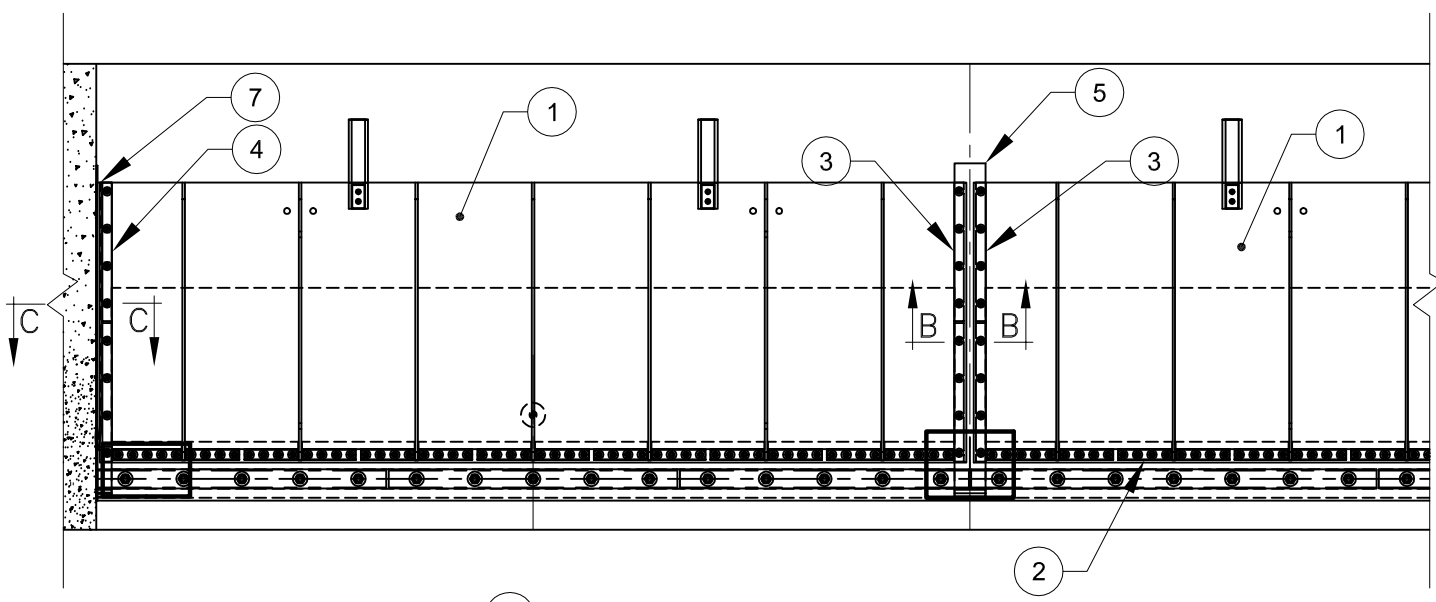
NOTES:

- 1) THE HYPALON SHOULD BE WRAPPED AROUND THE END OF THE AIR BLADDER, UNDER THE MAIN ANCHOR CLAMP BAR, AND LONG ENOUGH TO COVER HINGE RETAINER HOLES CENTER LINE ON AIR BLADDER.
- 2) SILICONE SHOULD BE USED BETWEEN THE HYPALON AND THE AIR BLADDER FOR A WATER TIGHT SEAL.
- 3) APPLY BEAD OF MARINE GRADE SILICONE AROUND ALL OUTER EDGES OF HYPALON SHEET. APPLY TWO BEADS OF SILICONE ALONG BOTH SIDES OF EACH SEAM BETWEEN BLADDER.
- 4) HOLES SHOULD BE CUT IN THE FIELD TO FIT HYPALON OVER MAIN ANCHORS AND GATE STUDS. PLACE SILICONE AROUND HOLE AND ANCHOR OR STUD TO PREVENT LEAKAGE.

BILL OF MATERIAL FOR MAIN CLAMP INSTALLATION

ITEM	PART NO.	DESCRIPTION
STEEL -120		
1	XX-XXX-211-X	MAIN CLAMP BAR
FASTENERS -120		
2		HEX NUT
3		FLAT WASHER
RUBBER -120		
4		HYPALON
5	XX-XXX-310-X	FLAT CLAMP AIR BLADDER

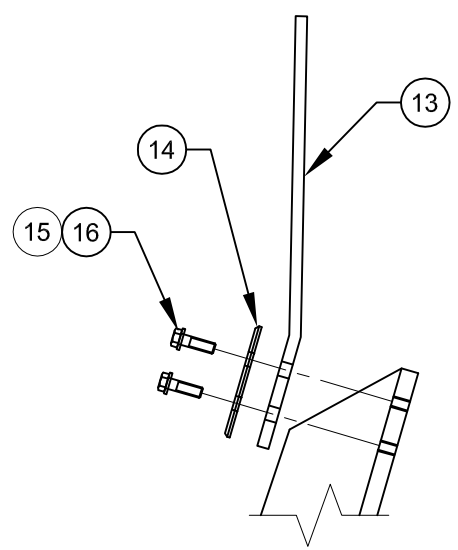
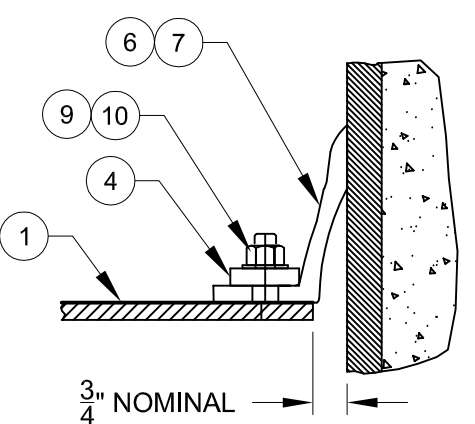
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DRAWING DESCRIPTION OHI STANDARD MAIN CLAMP INSTALLATION AND HYPALON PLACEMENT							
SHEETS		SCALE		JOB		DWG. NO.	
1 of 1		NO SCALE		OHI		OHI-FLC-120	
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SECTION A-A
ASSEMBLY OF GATE TO HINGE FLAP
TYPICAL FOR ALL GATES

SECTION B-B
INTER-PANEL SEAL
INSTALLATION

SECTION E-E
J-BULB SEAL AND
RETAINER INSTALLATION



SECTION C-C
ABUTMENT SEAL AND
RETAINER INSTALLATION

SECTION D-D
NAPPE BREAKER INSTALLATION

FIELD SPLIT HYPALON
TO END OF GATE

FIELD TRIM J-BULB SEAL (XX-XXXX-305)
TO FIT MAIN CLAMP CHANNEL. FIELD TRIM INTER-PANEL
SEAL (XX-XXXX-303-X) TO FIT J-BULB SEAL (XX-XXXX-305)

BILL OF MATERIAL FOR GATE PANEL INSTALLATION

ITEM	PART NO.	DESCRIPTION
STEEL -121		
1	XX-XXX-200-X	GATE PANEL
2	XX-XXX-201-X	HINGE RETAINER
3	XX-XXX-202-X	INTER-PANEL RETAINER
4	XX-XXX-204-X	ABUTMENT & J-BULB SEAL RETAINER
RUBBER		
5	XX-XXX-303-X	INTER-PANEL SEAL AND INTER-PANEL SEAL (SHORT)
6	XX-XXX-304-R	ABUTMENT SEAL, RIGHT
7	XX-XXX-304-L	ABUTMENT SEAL LEFT
8	XX-XXX-305	J-BULB SEAL
FASTENERS -121		
9		HEX NUT, ABUTMENT SEALS AND INTER-PANEL SEALS
10		FLAT WASHER, ABUTMENT SEALS AND INTER-PANEL SEALS
11		HEX NUT, HINGE RETAINERS
12		FLAT WASHER, HINGE RETAINERS
NAPPE BREAKER ASSEMBLY -121		
13	OHI-NB-PL-003A	UHMW NAPPE BREAKER
14	OHI-NB-PL-003B	NAPPE BREAKER CLAMP PLATE
15		HEX HD CAP BOLT, NAPPE BREAKER
16		FLAT WASHER, NAPPE BREAKER

- NOTES:
- REFER TO OHI PROVIDED BILL OF MATERIALS FOR QUANTITIES.
 - NOT ALL OPTIONS SHOWN MAY BE RELEVANT TO EACH PROJECT.

NO	REVISION DESCRIPTION	DATE	APRVD
7			
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2			
1	NEW DRAWING	NOV 30, 2016	PAC
			DRAWN
			APRVD
			DATE APRVD

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DRAWING DESCRIPTION
OHI STANDARD
GATE PANEL ASSEMBLY OPTIONS

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SHEETS	SCALE
1 of 1	NO SCALE
JOB	
OHI	
DWG. NO.	
OHI-FLC-121	

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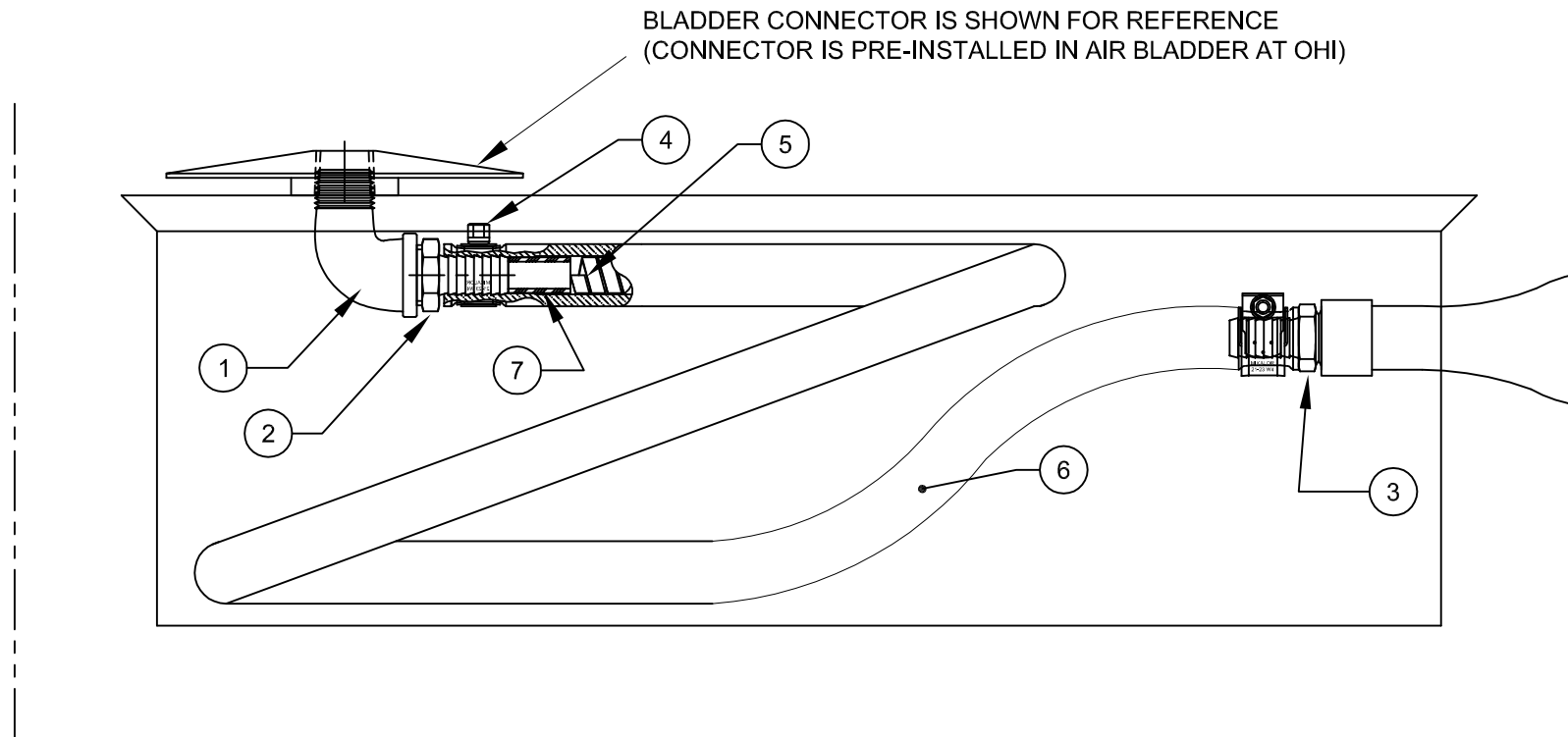
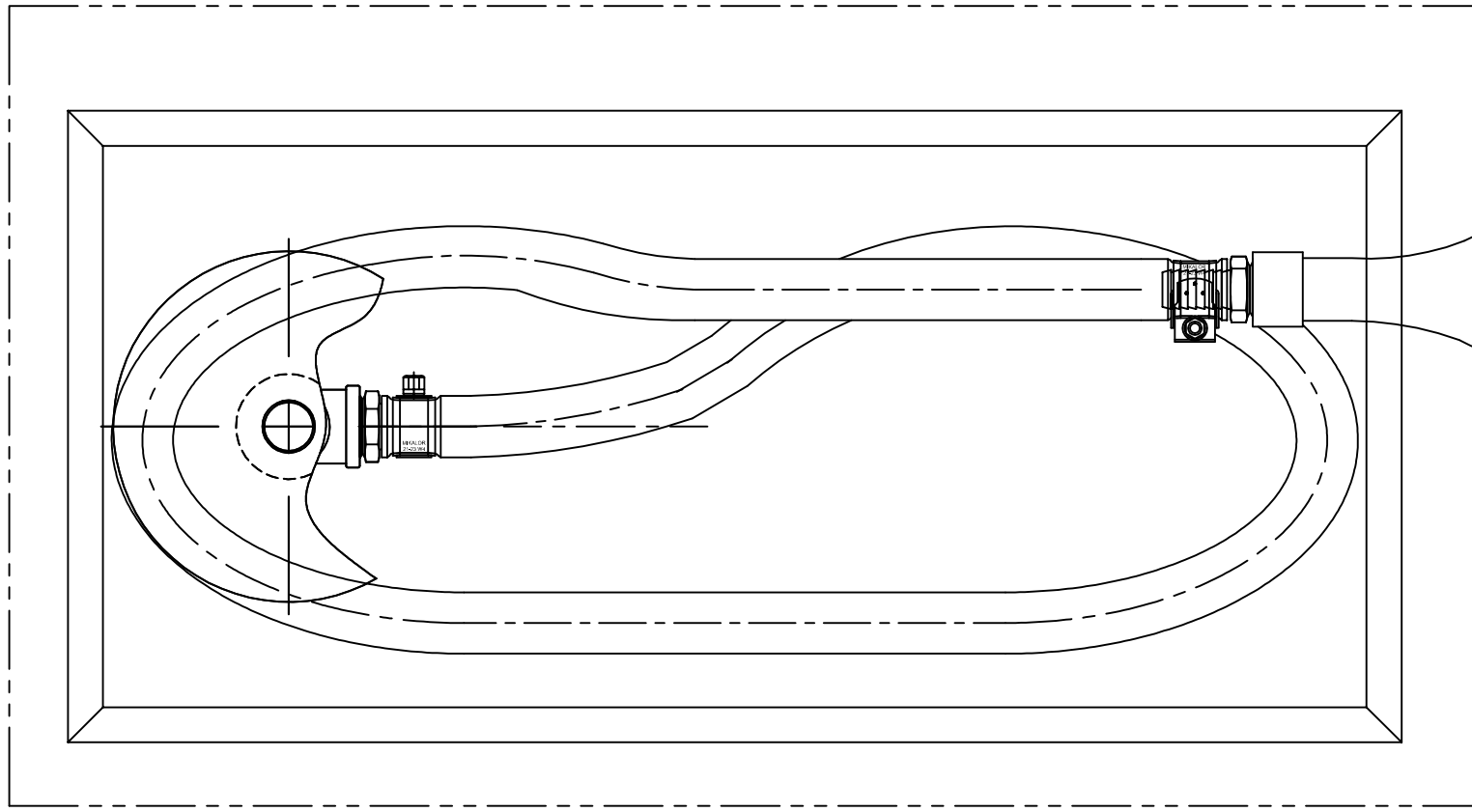
BILL OF MATERIAL EACH BLOCKOUT

ITEM	PART NO.	DESCRIPTION	QTY.
1		1/2" NPT ELBOW, SCH 40, BRASS	1
2		1/2" NPT TO 1/2" HOSE BARB, BRASS	1
3		1/2" NPT TO 1/2" HOSE BARB, STAINLESS	1
4		1/2" CLAMP TYPE, HOSE CLAMP, STAINLESS	2
5	OHI-HDW-SPI-12	1/2" HOSE INSERT, STAINLESS	34"
6		1/2" HOSE, EPDM, POLYESTER REINFORCED	36"
7	OHI-HDW-INS-12-1	1/2" DIA. x 1" LONG PLASTIC TUBE	1

NOTES:

1) REFER TO OHI PROVIDED BILL OF MATERIALS FOR QUANTITIES.

2) SPIRAL HOSE INSERT (ITEM #5), IS PUSHED THROUGH THE LENGTH OF HOSE ALLOWING 1" AT EACH END OF HOSE FOR THE BARB FITTINGS TO BE INSERTED INTO THE HOSE. (THIS IS TO INHIBIT HOSE CRIMPING AND ALLOWING MAXIMUM HOSE FLEXIBILITY).



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DRAWING DESCRIPTION
AIR BLADDER
CONNECTION DETAILS

SHEETS 1 of 1
SCALE NO SCALE

JOB OHI

DWG. NO. OHI-FLC-123

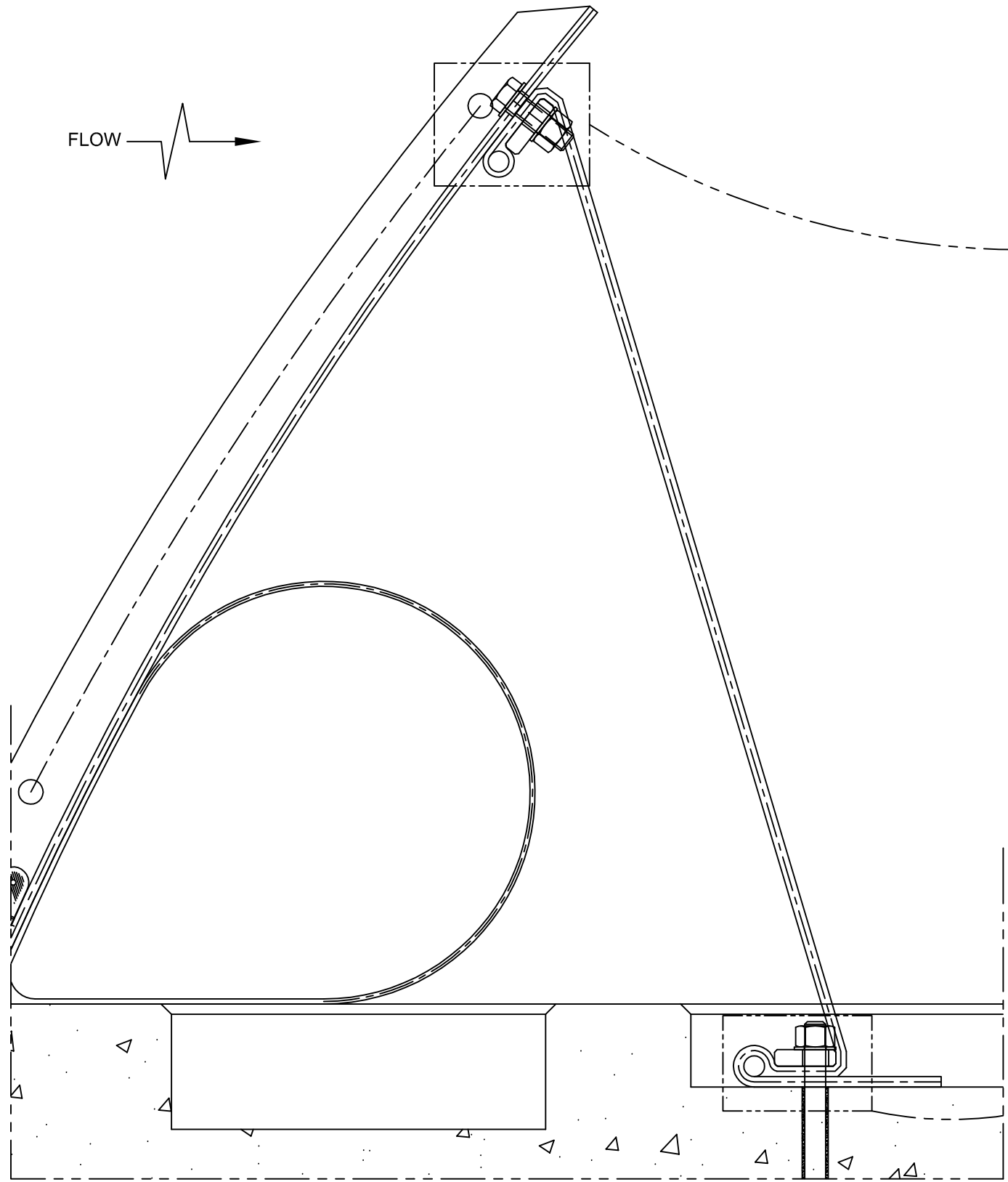
NO	REVISION DESCRIPTION	DATE APRVD	APRVD
1	NEW DRAWING	3 JUNE, 2015	JFW
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BILL OF MATERIAL FOR RESTRAINING STRAP INSTALLATION

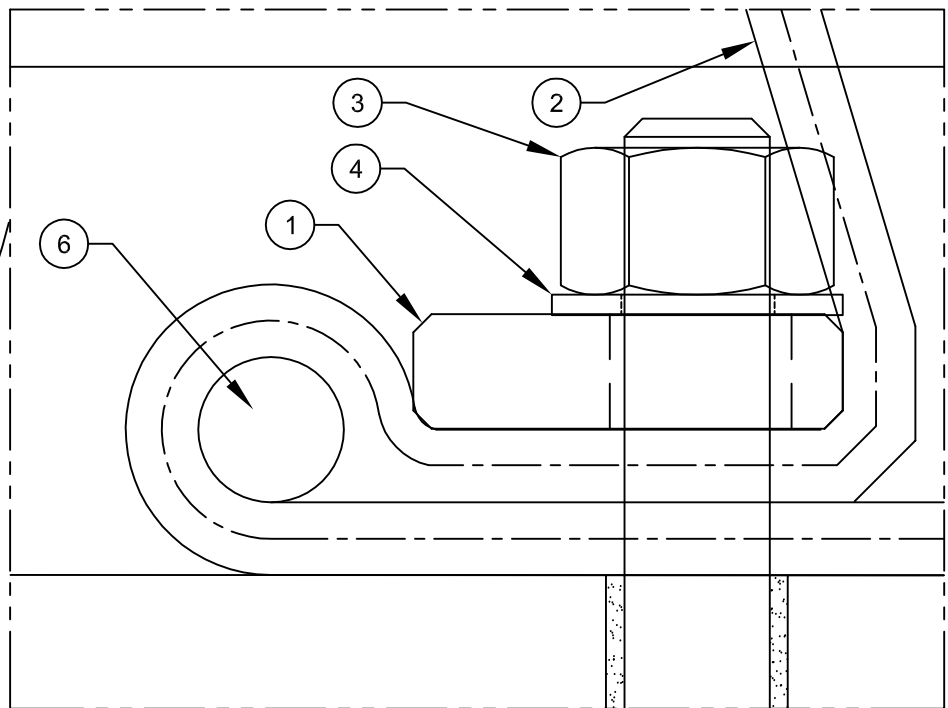
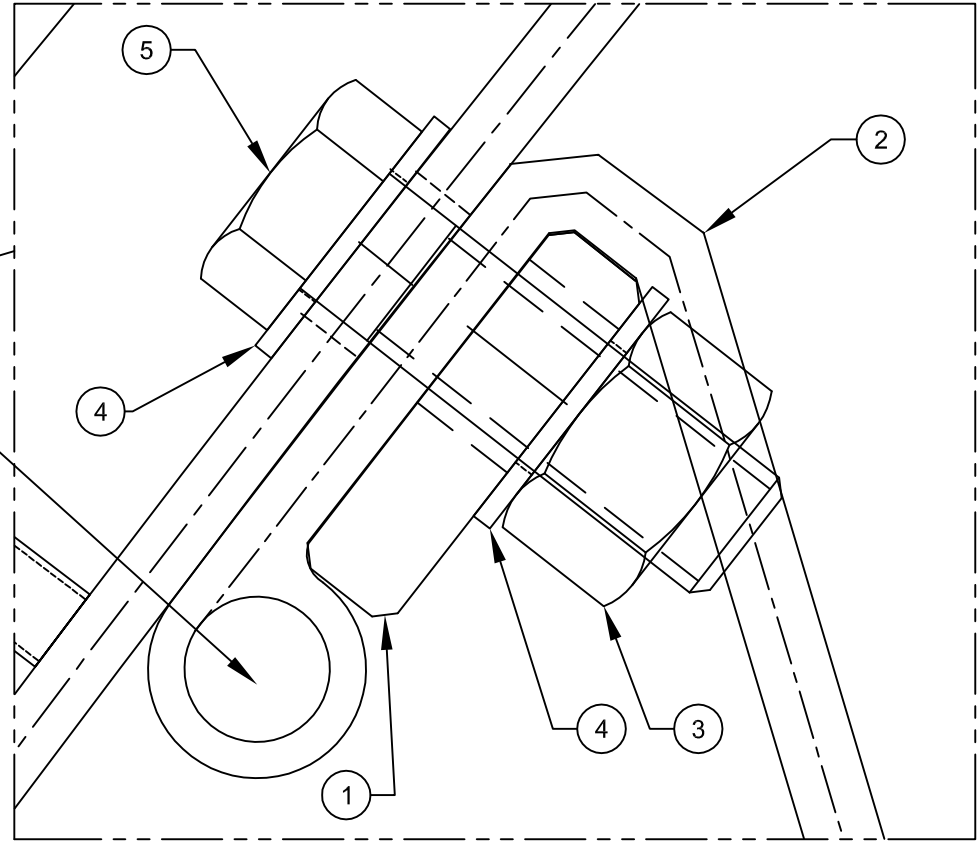
ITEM	PART NO.	DESCRIPTION
1	XX-XXXX-203	RESTRAINING STRAP CLAMP
2	XX-XXXX-302	RESTRAINING STRAP
3	AS REQUIRED	HEX NUT, UNC, STAINLESS
4	AS REQUIRED	FLAT WASHER, STAINLESS
5	AS REQUIRED	HEX HEAD BOLT, STAINLESS
6	OHI-DHW-NYR-04	Ø1" X 6" NYLON ROD

NOTE:

- 1) REFER TO OHI PROVIDED BILL OF MATERIALS FOR QUANTITIES.
- 2) DIMENSION FOR RESTRAINING STRAP IS FOR A START REFERENCE AND MAY CHANGE FOR FINAL ADJUSTED DIMENSION.
- 3) STANDARD DETAIL. PROJECT GEOMETRY MAY DIFFER.



MOLDED END OF RESTRAINING STRAP



NO	REVISION DESCRIPTION	DATE	APRVD	APRVD
1	NEW DRAWING	3 JUNE 2015	JFW	
2	ADDED NOTE 3	28 2017	BAH	
3				
4				
5				
6				
7				

OBERMEYER
ideas that hold water™
HYDRO, INC.

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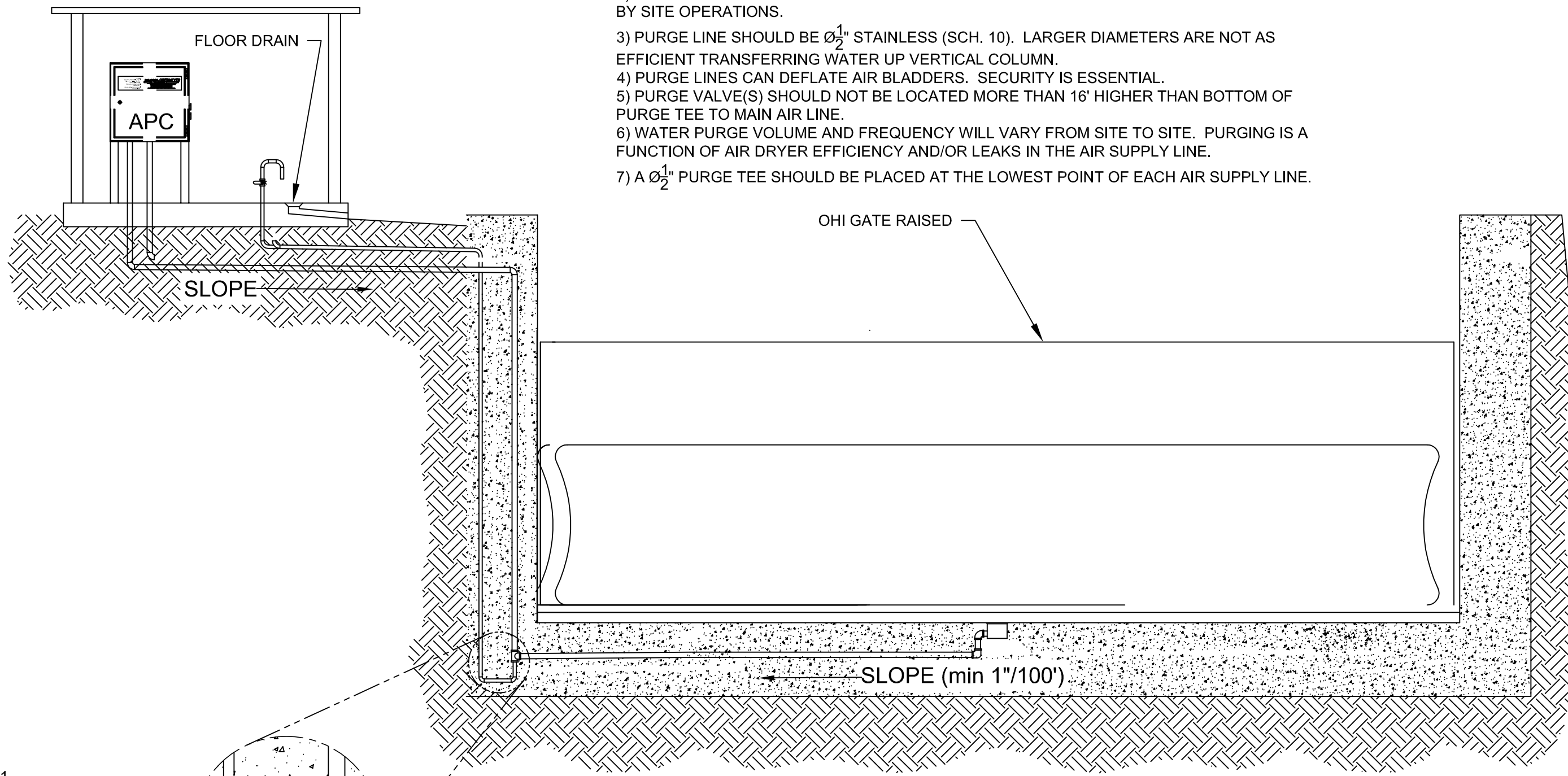
DRAWING DESCRIPTION
RESTRAINING STRAP
INSTALLATION

SHEETS	SCALE
1 of 1	NO SCALE
JOB	
OHI	
DWG. NO.	
OHI-FLC-124	

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GENERAL NOTES:

- 1) PURGE VALVES ARE ABSOLUTELY REQUIRED FOR AFFECTIVE OPERATION OF OBERMEYER BLADDERS. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING AN APPROVED PURGE SYSTEM IS INSTALLED.
- 2) OWNER APPROVAL OF PURGE VALVE LOCATION IS REQUIRED AND IS OFTEN DETERMINED BY SITE OPERATIONS.
- 3) PURGE LINE SHOULD BE $\varnothing\frac{1}{2}$ " STAINLESS (SCH. 10). LARGER DIAMETERS ARE NOT AS EFFICIENT TRANSFERRING WATER UP VERTICAL COLUMN.
- 4) PURGE LINES CAN DEFLATE AIR BLADDERS. SECURITY IS ESSENTIAL.
- 5) PURGE VALVE(S) SHOULD NOT BE LOCATED MORE THAN 16' HIGHER THAN BOTTOM OF PURGE TEE TO MAIN AIR LINE.
- 6) WATER PURGE VOLUME AND FREQUENCY WILL VARY FROM SITE TO SITE. PURGING IS A FUNCTION OF AIR DRYER EFFICIENCY AND/OR LEAKS IN THE AIR SUPPLY LINE.
- 7) A $\varnothing\frac{1}{2}$ " PURGE TEE SHOULD BE PLACED AT THE LOWEST POINT OF EACH AIR SUPPLY LINE.



7									
6									
5									
4									
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2									
1									
NO									

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DRAWING DESCRIPTION
 RECOMMENDED
 CONDENSATE PURGE
 VALVE LOCATIONS

NO			
1			
2			
3			
4			
5			
6			
7			

NO REVISION DESCRIPTION

DATE APRVD: NOV 30, 2016
 DRAWN: PAC
 APRVD: DRAWN

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SHEETS	SCALE
1 of 1	NO SCALE
JOB	OHI
DWG. NO.	OHI-FLC-125