

BIDDING REQUIREMENTS, CONTRACT DOCUMENTS

and

TECHNICAL SPECIFICATIONS

FOR THE CONSTRUCTION OF

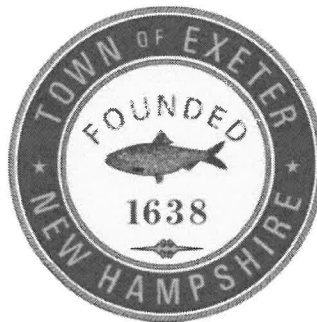
REHABILITATION OF THE STRING BRIDGE OVER THE EXETER
RIVER

NHDOT BR. NOS. 102/074 & 103/074

NHDOT PROJECT NO. 15399

for the

Town of Exeter



Rockingham County

April 2016

Prepared by:

Hoyle, Tanner
& Associates, Inc.

150 Dow Street
Manchester, New Hampshire 03101

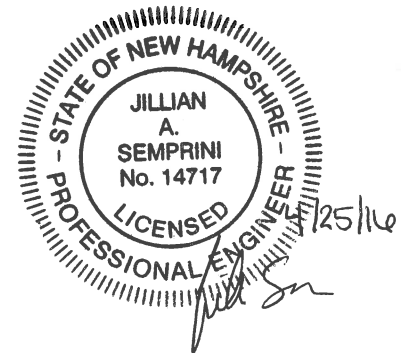


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SECTION 00111
ADVERTISEMENT FOR BIDS
(EJCDC C-111 Modified)

Rehabilitation of the String Bridge Over the Exeter River
Town of Exeter
Exeter, NH

Sealed Bids for the construction of the Rehabilitation of the String Bridge Over the Exeter River will be received, by Town of Exeter, at the office of the Town Manager at the Town Hall, 10 Front Street, Exeter, NH 03833, until 2:00 PM local time on Monday, May 23, 2016, at which time the Bids received will be publicly opened and read. The project consists of rehabilitating the two bridges that are separated by Kimball Island. The bridges are similar in construction and consist of 50' clear span buried cast-in-place reinforced concrete rigid frames. Rehabilitation includes concrete repairs, installation of a new barrier membrane, and repair/replacement of the concrete bridge railings. Roadway approach work will be limited to approximately 75' west of the west bridge, 115' east of the east bridge, and 105' between the bridges on Kimball Island. Additional improvements include relocating overhead utilities within project limits underground and adding historic lighting on the sidewalk bridge railing. The Engineer's estimate for the work is between \$1,000,000 and \$1,100,000. The anticipated project schedule is to start construction about July 2016 and complete construction about November 2017. A winter shutdown is required.

Bids shall be on a unit price basis as indicated in the Bid Form.

Bidders must be listed on the NHDOT "Prequalified Contractor's List" with a classification of bridge and/or bridge rehabilitation or provide written documentation from NHDOT as of the date and time of the Bid Opening. Bids submitted from bidders who are not on the specified classifications of the NHDOT "Prequalified Contractor's List" or who cannot provide written proof of prequalification from NHDOT prior to the time of the bid opening will be deemed unresponsive and returned unopened.

The Issuing Office for the Bidding Documents is: Hoyle, Tanner & Associates, Inc., 150 Dow Street, Manchester, NH 03101, The contact person for obtaining Bidding Documents is Donna Akerley, 603-669-5555, ext. 185 dakerley@hoyletanner.com. Bidding Documents may be obtained after April 25, 2016 for a non-refundable fee of \$50.00 per set with an additional fee of \$15.00 per set for shipping and handling if requested for mailing within the continental United States. Fee may be cash, company check, certified check or money order drawn from a U.S. bank, payable to: "Hoyle, Tanner & Associates, Inc." Partial sets of Bidding Documents will not be made available. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

Bidding Documents also may be examined at: **Town of Exeter**, 10 Front Street, Exeter, NH 03833, the Town of Exeter website <http://exeternh.gov/>, and the office of the Engineer, **Hoyle, Tanner & Associates, Inc.**, 150 Dow Street, Manchester, New Hampshire 03101, on Mondays through Fridays between the hours of **8:00 AM to 4:30 PM**. Plan holders shall purchase bidding documents from the issuing office to be eligible to submit a bid.

Bidding Documents including hard copies and electronic Portable Document Format (PDF) files saved on a compact disk and may be obtained from the Issuing Office either via in-person pick-up or via mail, upon Issuing Office's receipt of payment for the Bidding Documents.

Bidder shall submit a bid using original forms authorized and obtained from the Issuing Office (See Instructions to Bidders). An optional pre-bid conference will be held at 10:00 AM local time on May 11, 2016 at the Exeter Public Library, 4 Chestnut Street, Exeter, NH 03833. Therefore, all interested bidders are encouraged to attend in order to prepare acceptable bid submissions.

Bid security shall be furnished in accordance with the Instructions to Bidders.

Owner: Town of Exeter
By: Ms. Jennifer Mates, P.E.
Title: Assistant Town Engineer

END OF SECTION

SECTION 00200
INSTRUCTIONS TO BIDDERS
(EJCDC C-200, Modified)

ARTICLE 1 – DEFINED TERMS

1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below which are applicable to both the singular and plural thereof:

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

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office as stated in the advertisement for bids.

2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents. Failure of Bidder to obtain authorized bidding documents from the issuing office may be cause for rejection of a bid.

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

2.04 Bidding Documents provided electronically are provided as a convenience to the Bidder and are not the controlling data for the contract. The original hard copy (paper) contract plans and specifications and modifications thereto reviewed and signed by the Engineer are the legal construction documents and shall be used for interpretations and determinations for the project, overriding any alterable electronic files. Bidder agrees to accept full responsibility for their use of the electronic files and the completeness, correctness, and/or readability of the electronic media file, and shall indemnify, defend and hold harmless, Hoyle, Tanner & Associates, Inc. from any and all claims (including third party) arising from discrepancies between the electronic media file and the sealed drawings or report.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

3.01 To demonstrate Bidder's qualifications to perform the Work, after submitting its Bid and within five days of Owner's request, Bidder shall submit (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:

- A. Two Bank References
- B. List of Relevant Completed Projects

- C. Client References
 - D. Present Project Commitments, with schedules for completion
 - E. List of Proposed Subcontractors and the trades they will provide
 - F. Bidders must be listed on the NHDOT "Prequalified Contractor's List" with a classification of bridge and/or bridge rehabilitation and/or road construction as of the date and time of the Bid Opening.
- 3.02 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

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

4.01 *Site and Other Areas*

- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. All easements as shown in the Contract Documents will be obtained by the Owner. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.

4.02 *Existing Site Conditions*

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

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

3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. **Underground Facilities:** Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or contiguous to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
 - C. **Adequacy of Data:** Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

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

4.04 *Owner's Safety Program*

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

4.05 *Other Work at the Site*

- A. Reference is made to Article 7 of the Standard General Conditions of the Construction Contract for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

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

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) all drawings of physical conditions relating to existing surface or subsurface structures, if any, at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, if any, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;
- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations,

investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;

- G. 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;
- H. correlate the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents;
- I. 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;
- J. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- K. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – PRE-BID CONFERENCE

6.01 An optional pre-Bid conference will be held at the time and location stated in the invitation for bids. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference. Engineer will transmit to all prospective Bidders of record such Addenda as Engineer considers necessary in response to questions arising at the conference. Oral statements may not be relied upon and will not be binding or legally effective.

ARTICLE 7 – INTERPRETATIONS AND ADDENDA

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

ARTICLE 8 – BID SECURITY

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (on the form included in the Bidding Documents) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 8.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 9 – CONTRACT TIMES

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

ARTICLE 10 – LIQUIDATED DAMAGES

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

ARTICLE 11 – SUBSTITUTE AND "OR-EQUAL" ITEMS

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

Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of "or-equal" or substitution requests are made at Bidder's sole risk.

ARTICLE 12 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 12.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 12.02 Subsequent to the submittal of the Bid, Owner may not require the Successful Bidder or Contractor to retain any Subcontractor, Supplier, or other individual or entity against which Contractor has reasonable objection.
- 12.03 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for portions of the Work for which such identification is required.

If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. 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 an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.

- 12.04 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, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.

ARTICLE 13 – PREPARATION OF BID

- 13.01 The Bid Form is included with the Bidding Documents. A separate unbound copy of the Bid Form is included. Failure of Bidder to use the forms authorized from the Engineer will be cause for rejection of a bid. The bidder may also fill out the provided PDF form and print it for submission. Only Bid Forms purchased from the issuing office shall be used.
- A. All blanks on the Bid Form shall be completed and the Bid Form signed. Erasures or alterations shall be initialed by the person signing the Bid Form. A Bid price shall be

indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.

- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 13.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.
- 13.03 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm shall be shown.
- 13.04 A Bid by an individual shall show the Bidder's name and official address.
- 13.05 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The official address of the joint venture shall be shown.
- 13.06 All names shall be printed in ink below the signatures.
- 13.07 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 13.08 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 13.09 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.

ARTICLE 14 – BASIS OF BID

14.01 Lump Sum

- A. Not Used.

14.02 Unit Price

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid

Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.

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

ARTICLE 15 – SUBMITTAL OF BID

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

ARTICLE 16 – MODIFICATION AND WITHDRAWAL OF BID

- 16.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 16.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.
- 16.03 If within 24 hours after Bids are opened any Bidder files a duly signed written notice with Owner and promptly thereafter demonstrates to the reasonable satisfaction of Owner that there was a material and substantial mistake in the preparation of its Bid, that Bidder may withdraw its Bid, and the Bid security will be returned. Thereafter, if the Work is rebid, that Bidder will be disqualified from further bidding on the Work.

ARTICLE 17 – OPENING OF BIDS

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

ARTICLE 18 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

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

ARTICLE 19 – EVALUATION OF BIDS AND AWARD OF CONTRACT

19.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.

19.02 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.

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

19.04 Evaluation of Bids

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

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

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

ARTICLE 20 – BONDS AND INSURANCE

20.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 21 – SIGNING OF AGREEMENT

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

ARTICLE 22 – SALES AND USE TAXES

22.01 NOT USED

ARTICLE 23 – CONTRACTS TO BE ASSIGNED

23.01 NOT USED

END OF SECTION

SECTION 00410
BID FORM
(EJCDC Form C-410, Modified)

PROJECT IDENTIFICATION: Rehabilitation of the String Bridge Over the Exeter River

CONTRACT IDENTIFICATION AND NUMBER: Rehabilitation of the String Bridge Over the Exeter River
Hoyle, Tanner Project No. 095222
Client Project No. N/A

ARTICLE 1 – BID RECIPIENT

1.01 This Bid is submitted to: Town of Exeter
13 Newfields Rd
Exeter, NH 03833

1.02 Bid Delivery & Opening Location: Hoyle, Tanner & Associates, Inc.
150 Dow Street
Manchester, NH 03101

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

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

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

ARTICLE 3 – BIDDER’S REPRESENTATIONS

3.01 In submitting this Bid, Bidder represents that:

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

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

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has carefully studied all: (1) reports of explorations and tests of subsurface conditions, if any, at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures, if any, at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs.
- F. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.
- 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 correlated the information known to Bidder, information and observations obtained from visits to the Site, reports and drawings identified in the Bidding Documents, and all additional examinations, investigations, explorations, tests, studies, and data with the Bidding Documents.
- I. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- J. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.

- K. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

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

BID SCHEDULE

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	<u>UNIT PRICE</u> DOLLARS CTS	<u>TOTAL PRICE</u> DOLLARS CTS
202.6	Curb Removal for Storage, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	502		
203.1	Common Excavation, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	500		
203.6	Embankment-in-Place (F), for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	8		
206.1	Common Structure Excavation, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	17		
206.19	Common Structure Excavation Exploratory, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	15		
211.2	Crack Monitoring, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
214.	Fine Grading, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
304.201	Gravel, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	375		
304.3	Crushed Gravel (F), for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	250		
304.35	Crushed Gravel for Drives, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	24		
403.11	Hot Bituminous Pavement, Machine Method, for the unit price per ton of: _____ Dollars (words) and _____ Cents.	TON	280		
403.12	Hot Bituminous Pavement, Hand Method, for the unit price per ton of: _____ Dollars (words) and _____ Cents.	TON	49		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
403.6	Pavement Joint Adhesive, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	2,450		
417.	Cold Planing Bituminous Surfaces, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	130		
502.99	Miscellaneous Removal Items, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
503.101	Water Diversion Structures, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
503.102	Water Diversion Structures, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
504.1	Common Bridge Excavation (F), for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	360		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
512.0201	Preparation For Concrete Repairs, Class II, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	75		
512.0202	Preparation For Concrete Repairs, Class II, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	60		
512.0203	Preparation For Overhead Concrete Repairs, Class II, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	30		
512.0204	Preparation For Overhead Concrete Repairs, Class II, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	50		
520.01	Concrete Class AA, for the unit price per cubic yard of: _____ Dollars (words) and _____ Cents.	CY	15		
520.021	Concrete Bridge Rail, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	50		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
534.3	Water Repellent (Silane/ Siloxane), for the unit price per gallon of: _____ Dollars (words) and _____ Cents.	GAL	50		
535.1	Concrete Staining and Sealing, for the unit price per gallon of: _____ Dollars (words) and _____ Cents.	GAL	40		
538.2	Barrier Membrane, Peel and Stick - Vertical Surfaces (F), for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	52		
538.5	Barrier Membrane, Heat Welded (F), for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	330		
562.1	Silicone Joint Sealant (F), for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	147		
564.1	Bridge Lighting System, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
603.82206	6" PE Pipe (Type S), for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	15		
603.82208	8" PE Pipe (Type S), for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	18		
603.82210	10" PE Pipe (Type S), for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	23		
603.82212	12" PE Pipe (Type S), for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	100		
603.99	Scupper Replacement, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
604.0007	Polyethylene Liner, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	6		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
604.0008	Outlet Pipe Hood, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	6		
604.12	Catch Basins Type B, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	4.1		
604.125	Catch Basins Type B, 5-Foot Diameter, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	2.6		
604.4	Reconstructing/Adjusting Catch Basin & Drop Inlet, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	1		
604.51	Reconstructing/Adjusting Sewer Manholes, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	6		
604.52	Reconstructing/Adjusting Drainage Manholes, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	3		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
606.417	Portable Concrete Barrier for Traffic Control, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	80		
608.24	4" Concrete Sidewalk (F), for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	285		
608.54	Detectable Warning Devices, Cast Iron, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	2.5		
609.01	Straight Granite Curb, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	120		
609.02	Curved Granite Curb, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	30		
609.5	Reset Granite Curb, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	379		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
611.90001	Adjusting Water Gates and Shutoffs Set by Others, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	6		
611.99	Temporary Water & Appurtenances, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
612.99	Temporary Sewer & Appurtenances, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
615.03	Traffic Sign Type C (F), for the unit price per square foot of: _____ Dollars (words) and _____ Cents.	SF	22.75		
615.06	Traffic Sign Type CC (F), for the unit price per square foot of: _____ Dollars (words) and _____ Cents.	SF	4		
615.063	Removing Traffic Sign Type CC, for the unit price per unit of: _____ Dollars (words) and _____ Cents.	U	2		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
615.064	Relocating Traffic Sign Type CC, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
618.61	Uniformed Officers with Vehicle, for the unit price per allowance of: <u>Three Thousand</u> Dollars (words) and <u>No</u> Cents.	ALLOW	\$\$	\$3,000.00	\$3,000.00
618.7	Flaggers, for the unit price per hour of: _____ Dollars (words) and _____ Cents.	HR	1,400		
619.1	Maintenance of Traffic, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
619.25	Portable Changeable Message Sign, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	3		
628.2	Sawed Bituminous Pavement, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	275		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
632.0104	Retroreflective Paint Pave. Marking, 4" Line, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	100		
632.0112	Retroreflective Paint Pave. Marking, 12" Line, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	53		
632.0118	Retroreflective Paint Pave. Marking, 18" Line, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	99		
632.02	Retroreflect Paint Pavement Marking, Symbol or Word, for the unit price per square foot of: _____ Dollars (words) and _____ Cents.	SF	17		
645.3	Erosion Stone, for the unit price per ton of: _____ Dollars (words) and _____ Cents.	TON	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
645.44	Temporary Slope Stabilization Type D (Wildlife Friendly), for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	70		
645.51	Hay Bales for Temporary Erosion Control, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	20		
645.512	Compost Sock for Perimeter Berm, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	160		
645.52	Ryegrass for Temporary Erosion Control, for the unit price per pound of: _____ Dollars (words) and _____ Cents.	LB	1		
645.531	Silt Fence, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	160		
645.7	Storm Water Pollution Prevention Plan, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
645.71	Monitoring SWPPP and Erosion and Sediment Controls, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	40		
645.99	Turbidity Barrier, for the unit price per each of: _____ Dollars (words) and _____ Cents.	EA	1		
646.51	Turf Establishment with Mulch, Tackifiers and Loam, for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	70		
692	Mobilization, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
699	Miscellaneous Temporary Erosion and Sediment Control, for the unit price per allowance of: _____ Ten Thousand _____ Dollars (words) and _____ No _____ Cents.	ALLOW	\$\$	\$10,000.00	\$10,000.00
900.1	Remove and Reset Pavers, for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
1002.1	Repairs or Replacements as Needed - Bridge Structures, for the unit price per allowance of: <u>Thirty-Five Thousand</u> Dollars (words) and <u>No</u> Cents.	ALLOW	\$\$	\$35,000.00	\$35,000.00
1008.41	Alterations and Additions as Needed - Utility Adjustments (Power), for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
1008.411	Alterations and Additions as Needed - Utility Adjustments (Power), for the unit price per allowance of: <u>Thirty-Five Thousand</u> Dollars (words) and <u>No</u> Cents.	ALLOW	\$\$	\$35,000.00	\$35,000.00
1008.42	Alterations and Additions as Needed - Utility Adjustments (Telephone), for the price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
1008.421	Alterations and Additions as Needed - Utility Adjustments (Telephone), for the unit price per allowance of: <u>Fifteen Thousand</u> Dollars (words) and <u>No</u> Cents.	ALLOW	\$\$	\$15,000.00	\$15,000.00

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
1008.43	Alterations and Additions as Needed - Utility Adjustments (Kimball Island), for the unit price per allowance of: _____ Twenty Thousand _____ Dollars (words) and _____ No _____ Cents.	ALLOW	\$\$	\$20,000.00	\$20,000.00
1008.9	Alterations and Additions as Needed -Testing of Materials, for the unit price per allowance of: _____ Eight Thousand _____ Dollars (words) and _____ No _____ Cents.	ALLOW	\$\$	\$8,000.00	\$8,000.00

TOTAL CONTRACT PRICE BASE BID:

_____ Dollars
(words)
and _____ Cents.
(\$ _____)
(numbers)

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

ARTICLE 7 – ATTACHMENTS TO THIS BID

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

- A. Required Bid security;
- B. Contractor's License No.: _____.

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 submitted by:

If Bidder is:

An Individual

Name (typed or printed): _____

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

Doing business as: _____

A Partnership

Partnership Name: _____ (SEAL)

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 _____
(Signature of Corporate Secretary)

Date of Qualification to do business in _____ is _____ / _____ / _____
State of Territory where project is Located.

A Joint Venture

Name of Joint Venturer: _____

First Joint Venturer Name: _____ (SEAL)

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

Name (typed or printed): _____

Title: _____

Second Joint Venturer Name: _____ (SEAL)

By: _____
(Signature of second joint venturer 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.)

Bidders Business address: _____

Phone No.: _____ FAX No.: _____

SUBMITTED on _____, 20____.

State Contractor License No. _____ . (If applicable)

END OF SECTION

**SECTION 00430
BID BOND**
(EJCDC Form C-430)

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:
Description (*Project Name— Include Location*):

BOND

Bond Number:
Date:
Penal sum _____

(Words)

\$ _____

(Figures)

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

BIDDER

SURETY

(Seal)

(Seal)

Bidder's Name and Corporate Seal

Surety's Name and Corporate Seal

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

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

BIDDER (*Name and Address*):

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

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____ \$ _____
(Words) (Figures)

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

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal) _____
Surety's Name and Corporate Seal (Seal)

By: _____
Signature

By: _____
Signature (Attach Power of Attorney)

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

*Note: Addresses are to be used for giving any required notice.
Provide execution by any additional parties, such as joint venturers, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder that submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:
 - 1.1 If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and
 - 1.2 In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.
 - 1.3 Recovery under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery,

commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.

10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.

The term "Bid" as used herein includes a Bid, offer, or proposal as applicable

END OF SECTION

you in default, annul this Notice of Award, and declare your Bid security forfeited.

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

Owner: _____

Authorized Signature

By: _____

Title: _____

Copy: Hoyle, Tanner & Associates, Inc.

END OF SECTION

SECTION 00520
AGREEMENT BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT
(EJCDC FORM C-520, Modified)

THIS AGREEMENT is by and between Town of Exeter ("Owner") and

 ("Contractor").

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents. The Work is generally described as follows: The project consists of rehabilitating the two bridges that are separated by Kimball Island. The bridges are similar in construction and consist of 50' clear span buried cast-in-place reinforced concrete rigid frames. Rehabilitation includes concrete repairs, installation of a new barrier membrane, and repair/replacement of the concrete bridge railings. Roadway approach work will be limited to approximately 75' west of the west bridge, 115' east of the east bridge, and 105' between the bridges on Kimball Island. Additional improvements include relocating overhead utilities within project limits underground and adding historic lighting on the sidewalk bridge railing.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Rehabilitation of the String Bridge Over the Exeter River

ARTICLE 3 – ENGINEER

3.01 The Project has been designed by Hoyle, Tanner & Associates, Inc.

3.02 The Owner has retained Hoyle, Tanner & Associates, Inc. ("Engineer") to act as Owner's representative, assume all duties and responsibilities, and 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.

ARTICLE 4 – CONTRACT TIMES

4.01 Time of the Essence

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

4.02 Contract Times: Days

A. The Work will be substantially completed within 490 days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and finally completed and ready for final payment in accordance with

Paragraph 15.06 of the General Conditions within 505 days after the date when the Contract Times commence to run.

- B. It is anticipated that Notice to Proceed will be issued in May 2016 in order to complete shop drawing review prior to the Contractor taking the site. It is anticipated that the Contractor will be allowed to take the site on July 5, 2016.
- C. 2016 Roadway Work Completion Requirements: All work to be performed above the bridge top of deck level shall be completed in 2016 and String Bridge shall be open to pedestrians and traffic. Pavement shall be installed for the full length of the project limits. Concrete repairs to the bridge railings and west bridge curb shall be completed. New north bridge railing on the east bridge shall be completed. Overhead utilities within the project limits shall be relocated underground.
- D. A mandatory winter shutdown shall be a maximum of seven months and begin no later than November 28, 2016. The roadway work described in Paragraph C above shall be completed prior to the winter shutdown. The remaining contract work shall be completed in 2017 subject to the limitations of the project environmental permits. The Contract Times do not include the winter shutdown.

4.03 Liquidated Damages

- A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):
 - 1. Substantial Completion: Contractor shall pay Owner \$780.00 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
 - 2. Final Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Time (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$780.00 for each day that expires after such time until the Work is completed and ready for final payment.
 - 3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.
- B. Not Used.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract

Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

TOTAL OF ALL UNIT PRICES _____ \$ _____ (dollars)
(use words)

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

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

6.02 Progress Payments

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 7th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.

6.03 Final Payment

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

ARTICLE 7 – INTEREST

7.01 Not Used.

ARTICLE 8 – CONTRACTOR'S REPRESENTATIONS

8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:

- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.

- B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, 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 Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Contractor has carefully studied all: (1) all drawings of physical conditions relating to existing surface or subsurface structures, if any, at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
- E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the 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 construction to be employed by Contractor; and (3) Contractor's safety precautions and programs.
- F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
- 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.
- J. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

ARTICLE 9 – ACCOUNTING DOCUMENTS

9.01 Contractor shall check all materials, equipment, and labor entering into the Work and shall keep such full and detailed accounts as may be necessary for proper financial management under this Agreement, and the accounting methods shall be satisfactory to Owner. Owner shall be afforded access to all Contractor's records, books, correspondence,

instructions, drawings, receipts, vouchers, memoranda, and similar data relating to the Cost of the Work and Contractor's fee. Contractor shall preserve all such documents for a period of three years after the final payment by Owner.

ARTICLE 10 – CONTRACT DOCUMENTS

10.01 Contents

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to 8, inclusive).
 2. Performance bond (pages 1 to 2, inclusive).
 3. Payment bond (pages 1 to 3, inclusive).
 4. General Conditions (pages 1 to 63, inclusive).
 5. Supplementary Conditions (pages 1 to 10, inclusive).
 6. Specifications as listed in the table of contents of the Project Manual.
 7. Drawings (not attached but incorporated by reference) consisting of 42 sheets with each sheet bearing the following general title: Plans of the Proposed Rehabilitation of the String Bridge over Exeter River (NHDOT BR. NOS. 102/074 & 103/074); NHDOT Project No. 15399; April 2016.
 8. Addenda (numbers █ to █, inclusive).
 9. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages █ to █, inclusive)
 - b. Documentation submitted by Contractor prior to Notice of Award (pages █ to █, inclusive)
 - c. (List here other documents, if any)
 10. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed (pages █ to █, inclusive).
 - b. Work Change Directives.
 - c. Change Orders.
 - d. Field Orders.
- B. The documents listed in Paragraph 10.01.A are not attached to, but made part of, this Agreement (except as expressly noted otherwise above).

- C. There are no Contract Documents other than those listed above in this Article 10.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 11 – MISCELLANEOUS

11.01 Terms

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

11.02 Assignment of Contract

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

11.03 Successors and Assigns

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

11.04 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.

11.05 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 11.05:
 - 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.

11.06 Other Provisions

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

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

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

OWNER:

CONTRACTOR:

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.)

END OF SECTION

**SECTION 00550
NOTICE TO PROCEED
(EJCDC Form C-550)**

NOTICE TO PROCEED

Owner:	Town of Exeter	Owner's Contract No.:	N/A
Contractor:		Contractor's Project No.:	
Engineer:	Hoyle, Tanner & Associates, Inc.	Engineer's Project No.:	095222
Project:	Rehabilitation of the String Bridge Over the Exeter River	Contract Name:	Rehabilitation of the String Bridge Over the Exeter River
		Effective Date of Contract:	

TO CONTRACTOR:

(PROJECT MANAGER CHOOSE ONE OF THE FOLLOWING OPTIONS)

SINGLE START DATE OPTION

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 MULTIPLE START DATE OPTION

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. Work at the Site may begin on or after _____, but not before. In accordance with Article 4 of the Agreement, the date of Substantial Completion is _____, and the date of readiness for final payment is _____.

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

[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date:

Copy: Hoyle, Tanner & Associates, Inc.

END OF SECTION

SECTION 00610
PERFORMANCE BOND
(EJCDC Form C-610)

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

Town of Exeter

13 Newfields Rd

Exeter, NH 03833

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Rehabilitation of the String Bridge Over the Exeter River

BOND

Bond Number:

Date *(Not Earlier Than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 16

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

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
Contractor's Name and Corporate Seal

(seal)
Surety's Name and Corporate Seal

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

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

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

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

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

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

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

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

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

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

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

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

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

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

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

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

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety

under Paragraph 5; and

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

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

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

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

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions

conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

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

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

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

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

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

16. Modifications to this Bond are as follows:

END OF SECTION

**SECTION 00615
PAYMENT BOND
(EJCDC Form C-615)**

CONTRACTOR *(name and address):*

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

OWNER *(name and address):*

Town of Exeter

13 Newfields Rd

Exeter, NH 03833

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description: Rehabilitation of the String Bridge Over the Exeter River

BOND

Bond Number:

Date *(Not Earlier Than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 18

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

CONTRACTOR AS PRINCIPAL

SURETY

(seal)
Contractor's Name and Corporate Seal

(seal)
Surety's Name and Corporate Seal

By: _____
Signature

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

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

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

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

including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.
13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

- 16.1 **Claim:** A written statement by the Claimant including at a minimum:
 1. The name of the Claimant;
 2. The name of the person for whom the labor was done, or materials or equipment furnished;
 3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
 4. A brief description of the labor, materials, or equipment furnished;
 5. The date on which the Claimant last

performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

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

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

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

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

18. Modifications to this Bond are as follows:

END OF SECTION

**SECTION 00620
APPLICATION FOR PAYMENT
(EJCDC Form C-620, Modified)**

Contractor's Application For Payment No. _____

	Application Period:	Application Date:
To (Owner): Town of Exeter	From (Contractor):	Via (Engineer)
Project: Rehabilitation of the String Bridge Over the Exeter River	Contract: Rehabilitation of the String Bridge Over the Exeter River	
Owner's Contract No.: N/A	Contractor's Project No.:	Engineer's Project No.: 095222

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)	\$	
6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5c).....	\$	
7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application) ...	\$	
8. AMOUNT DUE THIS APPLICATION.....	\$	
9. BALANCE TO FINISH, PLUS RETAINAGE (Column G on Progress Estimate + Line 5 above)	\$	

CONTRACTOR'S CERTIFICATION

The undersigned Contractor certifies, to the best of its knowledge, the following:

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

By: _____ Date _____

Subscribed and sworn to before me this _____ day of _____

Notary Public:

My Commission expires:

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

is recommended by: Hoyle, Tanner & Associates, Inc.
(Engineer) (Date)

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

is approved by: _____
(Owner) (Date)

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

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

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 Defined Terms

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5501 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.

26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.
38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.

40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.

B. *Intent of Certain Terms or Adjectives:*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.

C. *Day:*

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

D. *Defective:*

1. The word "defective," when modifying the word "Work," refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).

E. *Furnish, Install, Perform, Provide:*

1. The word "furnish," when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
2. The word "install," when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
3. The words "perform" or "provide," when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words "furnish," "install," "perform," or "provide," then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

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

ARTICLE 2 – PRELIMINARY MATTERS

2.01 Delivery of Bonds and Evidence of Insurance

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

2.02 Copies of Documents

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

2.03 Before Starting Construction

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

2.04 Preconstruction Conference; Designation of Authorized Representatives

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.

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

2.05 Initial Acceptance of Schedules

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

2.06 Electronic Transmittals

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 Intent

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived

from such electronic or digital versions) and the printed record version, the printed record version shall govern.

- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 Reference Standards

A. Standards Specifications, Codes, Laws and Regulations

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

3.03 Reporting and Resolving Discrepancies

A. *Reporting Discrepancies.*

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

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

B. *Resolving Discrepancies:*

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

3.04 Requirements of the Contract Documents

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 Reuse of Documents

- A. Contractor and its Subcontractors and Suppliers shall not:
 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.

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

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 Commencement of Contract Times; Notice to Proceed

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

4.02 Starting the Work

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

4.03 Reference Points

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

4.04 Progress Schedule

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.
 - 2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 Delays in Contractor's Progress

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.

- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
 - 1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 - 2. abnormal weather conditions;
 - 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 - 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

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

5.01 Availability of Lands

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.

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

5.02 Use of Site and Other Areas

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

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.

- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

- D. *Loading of Structures:* Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 Subsurface and Physical Conditions

- A. *Reports and Drawings.* The Supplementary Conditions identify:
1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized.* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 Differing Subsurface or Physical Conditions

- A. *Notice by Contractor.* If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 2. is of such a nature as to require a change in the Drawings or Specifications; or
 3. differs materially from that shown or indicated in the Contract Documents; or
 4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review.* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition;

conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.

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

5.05 Underground Facilities

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.
- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with

reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 Hazardous Environmental Conditions at Site

- A. *Reports and Drawings*: The Supplementary Conditions identify:
 1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:
 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such

removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.

- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.
- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created

by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.H shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.

- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 Performance, Payment, and Other Bonds

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

- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 Insurance—General Provisions

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.
- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.

- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 Contractor's Insurance

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

37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.

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

4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 Owner's Liability Insurance

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 Property Insurance

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

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

off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.

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

6.06 Waiver of Rights

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

Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 Receipt and Application of Property Insurance Proceeds

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

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 Supervision and Superintendence

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.
- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 Labor; Working Hours

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 Services, Materials, and Equipment

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction

equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.

- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 "Or Equals"

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:
 - a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
 - B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
 - C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-

equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.

- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.
 - 2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
 - 3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.

- c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
 - C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
 - D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.
 - E. *Contractor's Expense:* Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
 - F. *Effect of Engineer's Determination:* If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 Concerning Subcontractors, Suppliers, and Others

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or

otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.

- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.
- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.

- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

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

7.08 Permits

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 Taxes

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

7.10 Laws and Regulations

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

7.11 Record Documents

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

7.12 Safety and Protection

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 Safety Representative

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

7.14 Hazard Communication Programs

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

7.15 Emergencies

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any

significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 Shop Drawings, Samples, and Other Submittals

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.
3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.

B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.

1. *Shop Drawings:*

- a. Contractor shall submit the number of copies required in the Specifications.
- b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.

2. *Samples:*

- a. Contractor shall submit the number of Samples required in the Specifications.
- b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.

3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.
 5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
 8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
 2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible

for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.

3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 Contractor's General Warranty and Guarantee

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

7.18 Indemnification

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease,

or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.

- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
 - 1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 - 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 Delegation of Professional Design Services

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

- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 Other Work

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.
- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 Coordination

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

8.03 Legal Relationships

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this paragraph.
- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER’S RESPONSIBILITIES

9.01 Communications to Contractor

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

9.02 Replacement of Engineer

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

9.03 Furnish Data

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

9.04 Pay When Due

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

9.05 Lands and Easements; Reports, Tests, and Drawings

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

9.06 Insurance

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

9.07 Change Orders

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

9.08 Inspections, Tests, and Approvals

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

9.09 Limitations on Owner’s Responsibilities

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

9.10 Undisclosed Hazardous Environmental Condition

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

9.11 Evidence of Financial Arrangements

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

9.12 Safety Programs

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

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

10.01 Owner's Representative

- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.

10.02 Visits to Site

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 Project Representative

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 Rejecting Defective Work

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

10.05 Shop Drawings, Change Orders and Payments

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

10.06 Determinations for Unit Price Work

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

10.07 Decisions on Requirements of Contract Documents and Acceptability of Work

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

10.08 Limitations on Engineer's Authority and Responsibilities

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.
- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 Compliance with Safety Program

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

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

11.01 Amending and Supplementing Contract Documents

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.

- 1. *Change Orders:*

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

11.02 Owner-Authorized Changes in the Work

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor

have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 Unauthorized Changes in the Work

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 Change of Contract Price

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 - 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 - 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or
 - 3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
 - 1. a mutually acceptable fixed fee; or
 - 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.01.C.2.a and 11.01.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that

actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;

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

11.05 Change of Contract Times

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

11.06 Change Proposals

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.
 - 1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 - 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

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

11.07 Execution of Change Orders

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

11.08 Notification to Surety

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

ARTICLE 12 – CLAIMS

12.01 Claims

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and

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

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

13.01 Cost of the Work

- A. *Purposes for Determination of Cost of the Work:* The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included:* Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.
 2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
 3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
 4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.

5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.
 - g. The cost of utilities, fuel, and sanitary facilities at the Site.
 - h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
 - i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.
- c. *Costs Excluded*: The term Cost of the Work shall not include any of the following items:
 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.

2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.
- D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.
- E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

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

13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.

- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

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

14.01 Access to Work

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

14.02 Tests, Inspections, and Approvals

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.

- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 3. by manufacturers of equipment furnished under the Contract Documents;
 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

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

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 Defective Work

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

14.04 Acceptance of Defective Work

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

14.05 Uncovering Work

- A. Engineer has the authority to require special inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.
- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 Owner May Stop the Work

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

14.07 Owner May Correct Defective Work

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

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

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.

C. *Review of Applications:*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
 - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or

- d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

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

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;

- h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
 3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 Contractor's Warranty of Title

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

15.03 Substantial Completion

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of

Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.

- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 Partial Use or Occupancy

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

15.05 Final Inspection

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

15.06 Final Payment

A. *Application for Payment:*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.
2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

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

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

same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work*: The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due*: Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 Waiver of Claims

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

15.08 Correction Period

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).

- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 Owner May Suspend Work

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 Owner May Terminate for Cause

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.

- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.
- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 Owner May Terminate For Convenience

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

16.04 Contractor May Stop Work or Terminate

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.

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

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 Methods and Procedures

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

ARTICLE 18 – MISCELLANEOUS

18.01 Giving Notice

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

18.02 Computation of Times

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

18.03 Cumulative Remedies

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

18.04 Limitation of Damages

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

18.05 No Waiver

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

18.06 Survival of Obligations

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

18.07 Controlling Law

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

18.08 Headings

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

SECTION 00800
SUPPLEMENTARY CONDITIONS
(EJCDC Form C-800, Modified)

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

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

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

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.04.A. Amend the second line of paragraph 2.04.A to read as follows:

"...others as appropriate MAY be held to establish a working....."

SC-2.05 Add the following new paragraph immediately after paragraph 2.05 A.3.

- B. If the Contractor's submitted Progress Schedule, Schedule of Submittals and Schedule of Values are acceptable to the Engineer a Conference may not be required.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC-4.01.A Delete paragraph 4.01A in its entirety and replace with the following

- A. The contract times will commence to run on the day indicated in the Notice to Proceed. In no event will the Contract Times commence to run later than the 60th day after the date of the bid opening.

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

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

- C. The following reports of explorations and tests of subsurface conditions at or adjacent to the Site are known to Owner:
1. None.
- D. The following drawings of physical conditions relating to existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities) are known to Owner:

1. Drawings dated 1935, of the bridges carrying String Bridge, prepared by the State of New Hampshire Highway Department, and entitled "Town Bridge (1935)" consisting of 7 sheets.
 - a. All of the information in such drawings constitutes Technical Data on whose accuracy Contractor may rely.
- E. Contractor may examine copies of reports and drawings identified in SC 5.03.C and SC 5.03.D that were not included with the Bidding Documents at Hoyle, Tanner & Associates, Inc., 150 Dow Street, Manchester, NH 03101 during regular business hours, or may request copies from Engineer.

SC-5.06 Hazardous Environmental Conditions

SC-5.06 Add the following subparagraphs 5.06.A.1 and 5.06.A.2:

1. The following reports regarding Hazardous Environmental Conditions at the Site are known to Owner:
 - a. Report dated November 13, 2015, prepared by RPF Environmental, Northwood, NH entitled "Re: Laboratory Analytical Results; RFP File 156891", consisting of 15 pages. The Technical Data contained in such report upon whose accuracy Contractor may rely are no asbestos detected in existing barrier membrane.
2. The following drawings regarding Hazardous Environmental Conditions at the Site are known to Owner:
 - a. None.

ARTICLE 6 – BONDS AND INSURANCE

SC-6.02 Add the following new paragraph immediately after Paragraph 6.02 J.

- K. Should any of the required insurance policies be cancelled before the expiration date thereof, notice will be delivered in accordance with the policy provisions.

SC-6.03 Contractor's Liability Insurance

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

- K. The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:
 1. Workers' Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:

State:	<u>Statutory</u>
Federal, if applicable (e.g., Longshoreman's):	<u>Statutory</u>
Jones Act coverage, if applicable:	
Bodily injury by accident, each accident	\$ <u>100,000</u>

Bodily injury by disease, aggregate	\$ <u>100,000</u>
Employer's Liability:	
Bodily injury, each accident	\$ <u>100,000</u>
Bodily injury by disease, each employee	\$ <u>100,000</u>
Bodily injury/disease aggregate	\$ <u>100,000</u>
Foreign voluntary worker compensation	<u>Statutory</u>
2. Contractor's Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:	
General Aggregate	\$ <u>2,000,000</u>
Products - Completed Operations Aggregate	\$ <u>2,000,000</u>
Personal and Advertising Injury	\$ <u>1,000,000</u>
Each Occurrence (Bodily Injury and Property Damage)	\$ <u>1,000,000</u>
3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:	
Bodily Injury:	
Each person	\$ <u>1,000,000</u>
Each accident	\$ <u>1,000,000</u>
Property Damage:	
Combined Single Limit of	\$ <u>1,000,000</u>
4. Excess or Umbrella Liability:	
Per Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>
5. Environmental Impairment Contractor's Pollution Liability:	
Each Occurrence	\$ <u>1,000,000</u>
General Aggregate	\$ <u>1,000,000</u>

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

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following:
- Town of Exeter
 - Hoyle, Tanner & Associates, Inc. and all subcontractors employed for this project.

SC-6.05 Property Insurance

SC-6.05.A.1 Add the following new subparagraph after subparagraph 6.05.A.1:

- a. In addition to Owner, Contractor, and all Subcontractors, include as insureds the following:
- Town of Exeter
 - Hoyle, Tanner & Associates, Inc. and all subcontractors employed for this project.

SC-6.05.A.2 Replace entire paragraph with the following:

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; vehicle impact; smoke; theft; vandalism and malicious mischief; 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 the Supplementary Conditions.

SC-6.05.A. Add the following to the list of items in Paragraph 6.05.A, as numbered items:

14. include for the benefit of Owner loss of profits and soft cost coverage including, without limitation, fixed expenses and debt service for a minimum of 12 months with a maximum deductible of 30 days, plus attorneys fees and engineering or other consultants' fees, if not otherwise covered, Advertising, Professional Fees, Financing, Lease Administration, Realty Taxes, General Administration, Lease Expenses, Permit Fees and Insurance premiums.
15. shall include "Extra Expenses" which may arise as a result of a "delay" resulting from direct physical loss or damage to the project that is caused by a covered peril.
16. shall include "Rental Income" payment for loss of rental income that arises out of a "delay" resulting from direct physical loss or damage to the project that is caused by a covered peril.

17. provide coverage for not less than the following:

- a. Contract Amount: See Agreement.
- b. Soft Cost, Extra Expenses and Rental Income Endorsement: \$75,000

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

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

1. Regular working hours will be Monday through Friday from 7:00 AM to 7:00 PM. Contractor will not perform work on a Saturday, Sunday or any legal holiday without permission of the Owner.
2. Owner's legal holidays are those listed in Paragraph 101.54 of the NHDOT Standard Specifications for Road and Bridge Construction 2010 Edition.
3. If there is a delay in Contractor’s progress as described in Paragraph 4.05, the Contractor shall not include non-regular working days (i.e. Saturdays, Sundays or holidays) in the contract time equitable adjustment proposal.

SC-7.06 Amend the last sentence of Paragraph 7.06.D to read as follows “...objection within thirty days.”

SC-7.08 Add the following new paragraphs immediately after paragraph 7.08.A

- B. The Owner has applied for or has obtained the following permits for this project, which are listed below.
 1. NH Department of Environmental Services Wetlands and Non-Site Specific Permit, File #2016-00354.
 2. NH Department of Environmental Services Shoreland Permit by Notification, File #2016-00414.
- C. Copies of these permits, if obtained, are included in the Appendix. The Contractor is responsible for complying with the project specific conditions outlined in the permit(s). If the CONTRACTOR intends to proceed with construction means and methods that are outside the General Conditions and Specific Conditions of the permit(s), it is the Contractor's responsibility to obtain new permit(s) for these means and methods and to bear all costs associated with applying for and obtaining new permit(s).

SC-7.16.A Add the following new paragraph immediately after paragraph 7.16.A:

Contractor shall submit the number of copies which the Contractor requires, plus two copies (which will be retained by the Engineer) of shop drawings and other submittals to Engineer for review. If the submittal is made electronically, no paper copies will be provided to the Contractor.

SC-7.16.E Delete paragraph immediately after paragraph 7.16.E.2 in its entirety and insert the following in its place:

2. Engineer shall review a maximum of two submittals of shop drawings or samples for a particular submittal item at no cost to the Contractor. The Contractor shall reimburse the Owner for costs by the Engineer relative to the review of subsequent submittals of shop drawings or samples of the same item.

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

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

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions. The duties and responsibilities of the RPR are limited to those of Engineer in the Agreement with the Owner and in the Contract Documents, and are further limited and described as follows:
 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.
 2. 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.
 3. 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 notes thereof.
 4. Liaison:
 - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
 - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
 6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.

- b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
- 7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
- 8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
- 9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.
- 10. Records:
 - a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
 - b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.

- c. Maintain records for use in preparing Project documentation.
11. Reports:
- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
 - b. 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, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.
12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.
13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.
14. Completion:
- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
 - b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.
 - c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.
- C. The RPR shall not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).

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

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

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

- c. Construction Equipment and Machinery:
 - 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - 2) Costs for equipment and machinery owned by Contractor will be paid at a rate shown for such equipment in the "*Rental Rate Blue Book for Construction Equipment*" published by *Equipment Watch*. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs. Costs will include the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, shall cease to accrue when the use thereof is no longer necessary for the changed Work. Equipment or machinery with a value of less than \$1,000 will be considered small tools.

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

- E. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
1. if the variation in the quantity of that particular item of Unit Price Work actually furnished or performed by Contractor differs by more than 25% percent from the estimated quantity of such item indicated in the Agreement; and
 2. if there is no corresponding adjustment with respect to any other item of Work; and
 3. if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may submit a Change Proposal, or if Owner believes that the quantity variation entitles Owner to an adjustment in the unit price, Owner may make a Claim, seeking an adjustment in the Contract Price.

ARTICLE 14 – TEST AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

SC-14.02 Add the following paragraph immediately after paragraph 14.02.F:

- G. Contractor shall pay all costs associated with any re-inspection and/or retesting of materials and equipment required by the Engineer as a result of failure of previous test or rejected work as determined by the Engineer. Contractor shall also pay all costs associated with any additional testing requested by the Contractor.

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

SC-15.01 Amend the first line of paragraph 15.01.D.1 to read as follows:

Thirty days after presentation of the...

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

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

SC-15.03.E Delete paragraph 15.03.E in its entirety and insert the following in its place:

- E. Not Used

END OF SECTION

**SECTION 00850
SPECIAL CONDITIONS**

The following Special Conditions apply and are hereby made part of the Agreement and Contract Documents.

1.01 PERMITS

- A. Permits applied for or obtained by the Owner, if any, are indicated in paragraph SC-7.08 of the Supplementary Conditions.

1.02 CONSTRUCTION SCHEDULE

- A. The Owner anticipates issuing a Notice to Proceed on this project by May 2016 subject to the successful bidder satisfying the requirements indicated in the Notice of Award.

1.03 RESIDENT PROJECT REPRESENTATIVE

- A. The Owner will provide a part-time Resident Project Representative at no cost to the Contractor. The Resident Project Representative is being provided for the benefit of the Owner, not the Contractor. Duties and responsibilities of the Resident Project Representative are indicated in paragraph SC-10.03 of the Supplementary Conditions.
- B. The Contractor shall notify the Engineer a minimum of 24 hours in advance of key construction activities in order to have the Resident Project Representative present and observe the work. The Contractor shall provide this advance notice for the following construction activities:
 - 1. Installation of Best Management Practices.
 - 2. All backfilling and compaction activities around, behind or over structures.
 - 3. Completion of constructing concrete formwork and placing reinforcing steel.
 - 4. Barrier membrane installation.
 - 5. Temporary utility activation.
 - 6. Temporary water diversion.
 - 7. All cast-in-place concrete placement operations.
 - 8. Placement and compaction of roadway subbase.
 - 9. All asphalt paving operations.
- C. Failure of the Contractor to provide the proper advanced notice of construction activities as indicated in paragraph 1.03-B may be cause for rejection of the work. Any work rejected shall be removed and replaced by the Contractor at no additional cost to the Owner.

END OF SECTION

SECTION 00940
WORK CHANGE DIRECTIVE
(EJCDC Form C-940)

Work Change Directive No.

Date of Issuance:	Effective Date:
Owner: Town of Exeter	Owner's Contract No.: N/A
Contractor:	Contractor's Project No.:
Engineer: Hoyle, Tanner & Associates, Inc.	Engineer's Project No.: 095222
Project: Rehabilitation of the String Bridge Over the Exeter River	Contract Name: Rehabilitation of the String Bridge Over the Exeter River

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

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

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

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

Contract Price \$	[increase] [decrease].
Contract Time days	[increase] [decrease].

Basis of estimated change in Contract Price:

- | | |
|---|-------------------------------------|
| <input type="checkbox"/> Lump Sum | <input type="checkbox"/> Unit Price |
| <input type="checkbox"/> Cost of the Work | <input type="checkbox"/> Other |

RECOMMENDED:	AUTHORIZED BY:	RECEIVED:
By: Engineer (Authorized Signature)	By: Owner (Authorized Signature)	By: Contractor (Authorized Signature)
Title:	Title:	Title:
Date:	Date:	Date:

Approved by Funding Agency (if applicable)

By:	Date:
Title:	

END OF SECTION

**SECTION 00941
CHANGE ORDER
(EJCDC Form C-941)**

Rehabilitation of the String Bridge Over the Exeter River

Change Order No. _____

Date of Issuance:	Effective Date:
Owner: Town of Exeter	Owner's Contract No.: N/A
Contractor:	Contractor's Project No.:
Engineer: Hoyle, Tanner & Associates, Inc.	Engineer's Project No.: 095222
Project: Rehabilitation of the String Bridge Over the Exeter River	Contract Name: Rehabilitation of the String Bridge Over the Exeter River

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

Description:

Attachments: *[List documents supporting change]*

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

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

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

END OF SECTION

**SECTION 00950
CONSENT OF SURETY COMPANY TO FINAL PAYMENT**

OWNER'S CONTRACT NO.: N/A

ENGINEER' PROJECT NO.: 095222

AGREEMENT DATE: _____

BOND NUMBER: _____

CONTRACT TITLE: Rehabilitation of the String Bridge Over the Exeter River

To: Town of Exeter (Owner)
 13 Newfields Rd
 Exeter, NH 03833

From: _____ (Contractor)

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the _____ (Surety) on the bond of _____ (Contractor) hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety Company of any of it's obligations to the Town of Exeter (Owner) as set forth in the said Surety Company's Bond.

IN WITNESS WHEREOF, the Surety Company has hereunto set its hand this _____ day of _____, 20__.

Surety Company

Signature of Authorized Representative

Attest: (Seal)

Name & Title

Note: Power of Attorney should be attached in instances where same applies.

END OF SECTION

SECTION 00960
CONTRACTOR'S FINAL LIEN WAIVER
(Page 1 of 2)

OWNER'S CONTRACT NO.: N/A

ENGINEER' PROJECT NO.: 095222

AGREEMENT DATE: _____

CONTRACT TITLE: Rehabilitation of the String Bridge Over the Exeter River

To: Town of Exeter (Owner)
 13 Newfields Rd
 Exeter, NH 03833

APPLICATION FOR FINAL PAYMENT

The undersigned hereby certifies that the amount owed set forth below constitutes the entire value of all work performed and services rendered by, through or under the undersigned with respect to the project not heretofore paid for up to and including the period covered by the above Application for Final Payment; that all work covered by such Application has been incorporated into the project and title thereto has passed to the Owner free and clear of all liens, claims, security, interests or encumbrances; and that no work covered by such Application has been acquired subject to an agreement under which any interest therein or an encumbrance thereon is retained by the seller or any other person. In consideration of payment of the requisition, the undersigned hereby releases the Owner from all claims of lien which the undersigned has regarding the Project.

The undersigned, in order to induce the Owner to pay the requisition, hereby represents that it has paid or will pay from the proceeds of the requisition all sums due to those parties who have performed work or provided materials to the undersigned in connection with the Project, and that it will on request of the Owner provide written evidence of the discharge by the undersigned of its obligations to such parties.

Executed under seal as of this _____ day of _____, 20__.

Amount Owed to Contractor by Owner as Final Payment:
\$ _____ (total value of project including change orders)

Amount Unpaid From Previous Application for Payment:
\$ _____

CONTRACTOR'S FINAL LIEN WAIVER
(Page 2 of 2)

From: _____ (Contractor)

Authorized Representative Signature

Name and Title (printed)

NOTARY:

Then personally appeared the above named _____ and
acknowledged the foregoing to be the free act and deed of the above-named Contractor, before
me.

Subscribed and sworn to on the _____ day of _____, 20____.

Notary Public: _____

My Commission Expires: _____

END OF SECTION

SECTION 00970
CERTIFICATE OF FINAL COMPLETION OF WORK
(Page 1 of 2)

OWNER'S CONTRACT NO.: N/A

ENGINEER' PROJECT NO.: 095222

AGREEMENT DATE: _____

CONTRACT TITLE: Rehabilitation of the String Bridge Over the Exeter River

FINAL COMPLETION DATE PER AGREEMENT AND CHANGE ORDERS: _____

ACTUAL DATE OF FINAL COMPLETION: _____

FINAL CERTIFICATION OF CONTRACTOR

I hereby certify that the Work as identified in the Final Payment Request dated _____
_____ for the above-noted construction Contract represents full compensation for the
actual value of work completed. Additionally, all work completed conforms to the terms of the
Agreement and authorized changes.

CONTRACTOR

Date

Authorized Representative's Signature

Name & Title

FINAL CERTIFICATION OF ENGINEER

I have reviewed the Contractor's Final Payment Request dated _____ and hereby
certify that to the best of my knowledge, the cost of the work identified on the Final Payment
Request represents full compensation for the actual value of work completed and that the work
has been completed in accordance with the terms of the Agreement and authorized changes.

 Hoyle, Tanner and Associate, Inc.
ENGINEER

Date

Authorized Representative's Signature

Name & Title

CERTIFICATE OF FINAL COMPLETION OF WORK
(Page 2 of 2)

FINAL ACCEPTANCE OF OWNER

I, as representative of the Owner, accept the above Final Certifications and authorize Final Payment in the amount of \$_____ and direct the Contractor's attention to the General Conditions. The guaranty for all Work completed subsequent to the date of Substantial Completion, expires _____year from the date of this Final Acceptance.

At a meeting of the _____(Town Council/Selectmen/Alderman), the Owner, _____(Name of the community) has accepted the constructed project.

Town of Exeter _____
OWNER

_____ Date

Authorized Representative's Signature

Name & Title

END OF SECTION

**SECTION 01010
SUMMARY OF WORK**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contract description.
- B. Work by Owner.
- C. Owner supplied Products.
- D. Contractor use of site.
- E. Future work.
- F. Work sequence.
- G. Owner occupancy.
- H. Construction Permits and Easements

1.2 RELATED SECTIONS

- A. Drawings and General Provisions of the Contract, including General Supplementary Conditions and other Division 1 Specifications apply to this section.

1.3 CONTRACT DESCRIPTION

- B. Contract Type: Stipulated Price as described in Agreement.

1.4 WORK BY OWNER

Not Used.

1.5 OWNER SUPPLIED PRODUCTS

Not Used.

1.6 CONTRACTOR USE OF SITE

- A. Limit use of site to allow:
 - 1. Owner access.
 - 2. Allow access to local property owners.
 - 3. Engineer access.
 - 4. Permitting agency access.

- B. Construction Operations: Limited to right-of-way and easement areas as shown on the drawings.
- C. Time Restrictions for Performing Work: The Contractor will be limited to accessing the site and performing the required work between the hours of 7:00am to 7:00pm, Monday through Friday.

1.7 FUTURE WORK

Not Used.

1.8 WORK SEQUENCE

- A. Construct Work as shown on the drawings, coordinate construction schedule and operations with Engineer.

1.9 OWNER OCCUPANCY

Not Used.

1.10 CONSTRUCTION PERMITS AND EASEMENTS

- A. The Owner shall be responsible for identifying and obtaining federal, state, and local permits as may be required due to the nature and location of construction as depicted in the drawings except those required to be obtained by the Contractor such as trench permits, building permits, waste disposal permits, etc. Should the Contractor's preferred means and methods benefit from additional impact areas for which the Owner has not obtained permits, it shall be the Contractor's responsibility to coordinate and pay for additional permitting at no cost to the Owner. Failure of the Contractor to obtain additional permits shall not relieve the Contractor from constructing the project per the Contract Documents. To the extent possible, Owner procured permits shall be obtained prior to the Advertisement for Bids for construction, and copies of all permits so obtained shall be included in the Appendix. The status of the application on each permit, including the conditions thereof, not obtained prior to the Advertisement for Bids shall also be indicated in the Supplementary Conditions.
- B. When construction permits are accompanied by regulations or requirements issued by a particular authority or agency, it shall be the Contractor's responsibility to familiarize himself and comply with such regulations or requirements as they apply to his operations on this project.
- C. The Owner shall be responsible for identifying and obtaining all easements for this contract prior to construction which are necessary for construction as depicted in the drawings. Should the Contractor's means and methods benefit from access to other property for which easements have not been obtained, it shall be the Contractor's responsibility to obtain additional easements. Failure of the Contractor to obtain the additional easements shall not relieve the Contractor from constructing the project per the Contract Documents.

D. The Owner has applied for or obtained the following permits:

1. A NH Wetlands Board permit from the NH Department of Environmental Services is required for this project. This permit has been applied for by the Owner. A copy of this permit will be provided to the Contractor prior to the beginning of construction and regulated work.
2. A Shoreland Permit by Notification from the NH Department of Environmental Services is required for this project. This permit has been applied for by the Owner and is included in Appendix B. The Contractor is responsible for meeting all of the conditions and requirements of the permit.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**SECTION 01019
CONTRACT CONSIDERATIONS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Cash allowances.
- B. Contingency allowance.
- C. Inspecting and testing allowances.
- D. Schedule of Values.
- E. Applications for Payment.
- F. Change procedures.
- G. Defect Assessment.
- H. Measurement and payment - unit prices.
- I. Alternatives.

1.2 RELATED SECTIONS

- A. Drawings and General Provisions of the Contract, including General Supplementary Conditions and other Division 1 Specifications apply to this section.

1.3 CASH ALLOWANCES

- B. Contract items which may be paid for as an allowance will be identified in the Bid Form. Payment under these items will be identified in the appropriate specification section related to this item.

1.4 CONTINGENCY ALLOWANCE

Not Used.

1.5 INSPECTING AND TESTING ALLOWANCES

- A. Contractor shall employ an independent, qualified testing laboratory approved by the Engineer for conducting all required initial test of concrete, backfill and embankment compaction and other like materials as specified and directed by the Engineer. Contractor shall review testing reports and provide results to Engineer for concurrent review.

1.6 SCHEDULE OF VALUES

- A. Submit a printed schedule of values in accordance with Section 00700, paragraph 2.05-A. for all lump sum bid items of the work. Contractor's standard form or electronic media printout will be considered.
- B. Submit Schedule of Values in duplicate within 10 days after date of Owner-Contractor Agreement established in Notice to Proceed.
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section.
- D. Include in each line item, the amount of Allowances specified in this section.
- E. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- F. Revise schedule to list approved Change Orders, with each Application For Payment.

1.7 APPLICATIONS FOR PAYMENT

- A. Submit three copies of each application on Contractor's electronic media driven form or EJCDC C-620 (Section 00620).
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: 30 days
- D. Include any forms required by Owner.
- E. Include an updated construction progress schedule.

1.8 CHANGE PROCEDURES

- A. The Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time as authorized by the General Conditions.
- B. The Owner may issue a Change Order which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within 7 days.
- C. The Contractor may propose changes by submitting a request for change to the Engineer, describing the proposed change and its full effect on the Work. Include a statement describing the reason for the change, and the effect on the Contract Sum/Price and Contract Time with full documentation and a statement describing the effect on Work by separate or other Contractors. Document any requested substitutions in accordance with Section 01600.

- D. Field Order: Engineer may issue a directive, on EJCDC Form C-942 Field Order signed by the Engineer and Contractor for minor changes in the Work without changes in Contract Price or Contract Times. Promptly execute the Field Order.
- E. Work Change Directive: Engineer may issue a directive, on EJCDC Form C-940 Work Change Directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum/Price or Contract Time. Promptly execute the change.
- F. Unit Price Change Order: For contract unit prices and quantities, the Change Order will be executed on a fixed unit price basis. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Work Change Directive. Changes in Contract Sum/Price or Contract Time will be computed as specified for Time and Material Change Order.
- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Engineer will determine the change allowable in Contract Sum/Price and Contract Time as provided in the Contract Documents.
- H. Maintain detailed records of work done on Time and Material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- I. Change Order Forms:
 - Work Change Directive Forms EJCDC C-940 (Section 00940)
 - Change Order Form EJCDC C-941 (Section 00941)
 - Field Order Form: EJCDC C-942 (Section 00942)
- J. Execution of Change Orders: Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.9 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct an appropriate remedy or adjust payment.

1.10 MEASUREMENT AND PAYMENT - UNIT PRICES

- A. Authority: Measurement methods are delineated in the individual specification sections.
- B. Take measurements and compute quantities. The Engineer will verify measurements and quantities proposed by the Contractor, or the Engineer will take measurements and compute quantities accordingly. Provide and assist in the taking of

measurements.

- C. Unit Quantities: Quantities and measurements indicated in the Bid Form are for bidding purposes only. Actual quantities provided shall determine payment.
- D. Payment Includes: Full compensation for required labor (including sales tax), products, tools, equipment, plant and facilities, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

1.11 ALTERNATIVES

Not Used.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**SECTION 01039
COORDINATION AND MEETINGS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions.
- B. Field engineering.
- C. Preconstruction meeting.
- D. Site mobilization meeting.
- E. Progress meetings.
- F. Preinstallation meetings.

1.2 RELATED SECTIONS

- A. Drawings and General Provisions of the Contract, including General Supplementary Conditions and other Division 1 Specifications apply to this section.

1.3 COORDINATION AND PROJECT CONDITIONS

- B. Coordinate scheduling, submittals, and Work of the various sections of the Specifications to ensure efficient and orderly sequence of construction elements.
- C. Verify all existing utility locations.
- C. Verify dimensions of existing structures to be maintained or rehabilitated.

1.4 FIELD ENGINEERING

- A. Employ a Land Surveyor or Professional Engineer licensed in the State of New Hampshire and acceptable to Engineer to perform all layout work. Submit Land Surveyor or Professional Engineer credentials to Engineer for review.
- B. Contractor shall locate and protect all survey control and reference points, and shall accurately replace and have verified by the Engineer any such point, which is damaged or moved, at his own expense.
- C. Control datum for survey is that shown on Drawings. The Licensed Land Surveyor shall establish certain reference points and benchmarks in the immediate vicinity of the work areas. The Contractor may lay out all additional lines and grades and otherwise do all layout and measurement necessary for the proper completion of the work.

- D. The Contractor shall verify setbacks and easements; confirm drawing dimensions and elevations.
- E. The Contractor shall provide field engineering services including establishing elevations, lines, and levels, utilizing recognized construction survey practices.
- F. Not Used
- G. The Contractor shall furnish assistance to the Engineer as requested to check the layout or otherwise control the work. Such assistance shall be understood to include the provision of suitable manpower to assist the Engineer in taping measurements, holding a survey rod for checking grades and the like.
- H. The Engineer reserves the right to inspect or check any of this work, and the Contractor shall not claim added compensation for any delay occasioned by the Engineer exercising this right, nor for any corrective work which is required as a result of the Engineer's inspections.

1.5 PRECONSTRUCTION MEETING

- A. Engineer will schedule a meeting after Notice of Award.
- B. Attendance Required: Owner, Engineer and Contractor.
- C. Sample Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of Subcontractors, schedule of values, and progress schedule.
 - 5. Submission of list of surveyor or person responsible for layout, testing agency and other parties providing services on the project.
 - 6. Designation of personnel representing the parties in Contract, and the Engineer.
 - 7. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 8. Procedures for layout of the project, establishing controls, limits of right-of-way and easements.
 - 9. Scheduling.
- D. Engineer will record notes and distribute copies to participants and those affected by decisions made.

1.6 SITE MOBILIZATION MEETING

- A. Engineer may schedule a meeting at the Project site prior to Construction start-up.
- B. Attendance Required: Engineer, Contractor's Superintendent, and major Subcontractors.

C. Sample Agenda:

1. Use of site by Owner and Contractor.
2. Owner's requirements.
3. Construction facilities provided by Contractor.
4. Temporary utilities provided by Contractor.
5. Survey layout.
6. Security and housekeeping procedures.
7. Schedules.
8. Application for payment procedures.
9. Procedures for testing.
10. Procedures for maintaining record documents.

D. Engineer will record notes and distribute copies to participants and those affected by decisions made.

1.7 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at weekly intervals or intervals agreed to by Owner/Engineer/Contractor.

B. Engineer will make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Contractor's superintendent, major Subcontractors and suppliers, Engineer, as appropriate to agenda topics for each meeting.

D. Sample Agenda:

1. Review notes of previous meetings.
2. Review of Work progress.
3. Field observations, problems, and decisions.
4. Identification of problems which impede planned progress.
5. Review of submittals schedule and status of submittals.
6. Review of off-site fabrication and delivery schedules.
7. Maintenance of progress schedule.
8. Corrective measures to regain projected schedules.
9. Planned progress during succeeding work period.
10. Coordination of projected progress.
11. Maintenance of quality and work standards.
12. Effect of proposed changes on progress schedule and coordination.
13. Other business relating to Work.

E. Engineer will record notes and distribute copies to participants and those affected by decisions made.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- B. Employ skilled and experienced installer to perform cutting and patching.
- C. Submit written request in advance of cutting or altering elements which affect:
 - 1. Structural integrity of element.
 - 2. Integrity of weather-exposed or moisture-resistant elements.
 - 3. Efficiency, maintenance, or safety of element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- D. Execute cutting, fitting, and patching including excavation and fill, to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- E. Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- F. Cut masonry and concrete materials using masonry saw or core drill.
- G. Restore Work with new Products in accordance with requirements of Contract Documents.
- H. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. Maintain integrity of structure construction; completely seal voids.
- J. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.
- K. Identify hazardous substances or conditions exposed during the Work to the Engineer for decision or remedy.

3.2 ALTERATION PROJECT PROCEDURES

- A. Materials: As specified in Product sections; match existing Products and work for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- D. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring Products and finishes to original or specified condition.
- E. Refinish existing visible surfaces to remain, to specified or renewed condition for each material, with a neat transition to adjacent finishes.
- F. Where new Work abuts or aligns with existing, provide a smooth and even transition. Patch Work to match existing adjacent Work in texture and appearance.
- G. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Engineer for review.
- H. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- I. Finish surfaces as specified in individual Product sections.

END OF SECTION

SECTION 01300 SUBMITTALS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Proposed Products list.
- D. Product Data.
- E. Shop Drawings.
- F. Samples.
- G. Design data.
- H. Test reports.
- I. Certificates.
- J. Manufacturer's instructions.
- K. Manufacturer's field reports.
- L. Erection drawings.
- M. Construction photographs.

1.2 RELATED SECTIONS

- A. Section 01400 - Quality Control: Manufacturers' field services and reports.
- B. Section 01700 - Contract Closeout: Contract warranties, bonds, manufacturers' certificates, and closeout submittals.

1.3 SUBMITTAL PROCEDURES

- A. Transmit each submittal with Engineer-accepted form.
- B. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail

number, and specification section number, as appropriate.

- D. 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 the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project, and deliver to Engineer at Hoyle, Tanner & Associates, Inc. (Hoyle, Tanner), Inc. 150 Dow Street, Manchester, NH 03101. Coordinate submission of related items.
- F. For each submittal for review, allow 21 days excluding delivery time to and from the Contractor.
- G. Identify variations from Contract Documents which may be detrimental to successful performance of the completed Work.
- H. Provide space for Contractor and Engineer review stamps.
- I. When revised for resubmission, identify all changes made since previous submission.
- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.
- L. The cost of furnishing drawings and details, calculations, product data, samples, test reports and certificates shall be included in the Contract unit price for the item involved.

1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit initial schedule in duplicate within ten days after date of Owner-Contractor Agreement established in Notice to Proceed.
- B. Revise and resubmit as required.
- C. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- D. Submit a computer generated horizontal bar chart with separate line for each major portion of Work or operation, identifying first workday of each week.
- E. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration.
- F. Indicate estimated percentage of completion for each item of Work at each submission.

- G. Indicate submittal dates required for shop drawings, product data, samples, and product delivery dates, including those furnished by Owner.

1.5 PROPOSED PRODUCTS LIST

- A. Within fifteen 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.

1.6 PRODUCT DATA

- A. Product Data For Review:
 - 1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.
- B. Submit the number of copies as indicated in the General Conditions.
- 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. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01700 - CONTRACT CLOSEOUT.

1.7 SHOP DRAWINGS

- A. Shop Drawings For Review and Approval:
 - 1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
 - 2. The Contractor or fabricator shall not begin work on the activity or fabrication involved without approval of the details and procedures. Engineer's approval of drawings and procedures does not relieve the Contractor or fabricator of compliance with all specifications and code requirements. The Engineer assumes no responsibility for error(s) and/or omission(s) of details.
 - 3. Drawings and procedures identified as "approved as noted" indicate that specific clarification or conditional changes have been identified and take precedence over submitted information. Withholding of approval by the

Engineer for selected details, calculations or procedures shall not constitute a basis for delay.

4. After approval or approval as noted of the drawings, details and procedures, no changes shall be made without written approval of the Engineer. The Contractor or fabricator shall assume risk for materials ordered or work performed prior to the approval of the Engineer.
5. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Shop drawings to be submitted are classified in two categories:

1. Fabrication Drawings: Drawings required for work performed by or in conjunction with materials furnished by a fabricator or supplier. Drawings provided to the Engineer for review and approval shall consist of complete details developed from information in the Plans and these Specifications to define dimensions, sizes, procedures, and materials necessary to complete fabrication and installation or erection of the work specified.
2. Working Drawings: Drawings submitted for review and approval shall include, but not be limited to; the following: temporary bridge plans, removal of existing bridge structure plans, cofferdam plans, water diversion structure plans, plans of precast elements to be designed by the Contractor, erection plans, temporary support systems, falsework plans, scaffolding plans and bridge analysis, detour plans, sign structure plans, traffic signal poles and mast arm plans, or any other working drawings for review and approval required by the Contract. If not specifically noted in the applicable Technical Specifications, all items listed above must be designed and sealed by a Professional Engineer licensed in the State of New Hampshire.

Shop drawings that must be submitted for review and approval are listed in Section 01300, Paragraph 3.1.C.

C. Submit the number and type as indicated in the General Conditions.

1.8 SAMPLES

A. Samples For Review:

1. Submitted to Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in Section 01700 - CONTRACT CLOSEOUT.

B. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

- C. Include identification on each sample, with full Project information.
- D. Submit the number of samples as indicated in the General Conditions.
- E. Reviewed samples which may be used in the Work are indicated in individual specification sections.
- F. Samples will not be used for testing purposes unless specifically stated in the specification section.

1.9 DESIGN DATA

- A. Submit for the Engineer's review and approval.
- B. Submit information for the purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- C. For an item or element of work which includes optional design data and calculations that affect structural capacity, safety, and/or the results of work, the Contractor shall prepare for the Engineer's review and approval detailed design data and calculations of how the work is proposed to be performed and adequately controlled.

1.10 TEST REPORTS

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

1.11 CERTIFICATES

- A. When specified in individual specification sections, submit certification by the manufacturer, installation/application subcontractor, or the Contractor using the Certificate of Compliance form at the end of this section or an approved equal, to Engineer, 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 Engineer.

1.12 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Engineer for delivery to the site in quantities specified for Product Data.
- B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

C. Refer to Section 01400 - Quality Control, Manufacturers' Field Services article.

1.13 MANUFACTURER'S FIELD REPORTS

Not Used.

1.14 ERECTION DRAWINGS

Not Used.

1.15 CONSTRUCTION PHOTOGRAPHS

Not Used.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 SUBMITTALS

A. The Contractor shall provide to the Engineer product data, shop drawings, samples, Certificates of Compliance and other submittals to the Engineer as indicated in the submittal summary provided in this section. The summary provided is not all inclusive and does not relieve the Contractor from providing all submittals identified or call for in the Contract Documents (plans and individual section specifications).

B. Product Data

Submit the following product data:

<u>Specification Section</u>	<u>Item</u>
01300, 1.6 A,B	Products List
01700, 1.9	Warranties
211.2	Crack Monitoring
403	Pavement Mix Design
503	Water Diversion Structures
512.0202	Preparation for Concrete Repairs, Class I
512.0203	Preparation for Overhead Concrete Repairs, Class II
512.0204	Preparation for Concrete Repairs, Class II
520	Concrete Mix Design
534.3	Water Repellent
535.1	Concrete Staining and Sealing

538.2	Barrier Membrane, Peel and Stick – Vertical Surfaces
538.5	Barrier Membrane, Heat Welded
562.1	Silicone Joint Sealant
645.44	Temporary Slope Stabilization, Type D (Wildlife Friendly)
645.512	Compost Sock for Perimeter Berm
645.531	Silt Fence

C. Shop Drawings

Submit fabrication drawings for review and approval for the following:

<u>Specification Section</u>	<u>Item</u>
520.021	Concrete Bridge Rail

Submit working drawings for review and approval for the following:

<u>Specification Section</u>	<u>Item</u>
503	Water Diversion Structures
619	Traffic Control Plan
645.7	Storm Water Pollution Prevention Plan

D. Samples

535.1	Concrete Staining and Sealing
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E. Design Data

Not Used.

F. Test Reports

Not Used.

G. Certificates

Submit Certificates of Compliance using the Certificate of Compliance form at the end of this section or an approved equal for the following:

<u>Specification Section</u>	<u>Item</u>
403	Asphalt Materials
520	Concrete
534	Water Repellent
538	Barrier Membrane
544	Reinforcing Steel

562	Silicone Joint Sealant
632	Retroreflective Paint Markings

H. Manufacturers Instructions

<u>Specification Section</u>	<u>Item</u>
01300, 1.13 - A&B	Manufacturers Instructions.
534.3	Water Repellent
535.1	Concrete Staining and Sealing
538.2	Barrier Membrane, Peel and Stick – Vertical Surfaces
538.5	Barrier Membrane, Heat Welded
562.1	Silicone Joint Sealant

I. Submissions Requiring Professional Engineer or Other Certifications

Profession Engineer

Not Used.

Other Certifications

<u>Specification Section</u>	<u>Item</u>
645.7	Storm Water Pollution Prevention Plan
645.71	Monitoring SWPPP and Erosion and Sediment Controls

Please note that the above list if provide for the Contractor’s convenience and may not be all-inclusive. The Contractor remains responsible for compliance with all applicable Technical Specifications.

J. Other Submittals

<u>Specification Section</u>	<u>Item</u>
00700, 2.03 – A: 01300, 1.4 A-G	Progress Schedule
00700, 2.03 A	Schedule of Value
00700, 2.03 A	List of Submittals
00700, 7.13	Safety Representative
00700, 13.01.B-1	Contractor’s Payroll Costs
01039, 1.4 –A	Land Surveyor Credentials
01039, 1.4 – F	Plan Set by Land Surveyor
01039, 1.5 – C. 4	List of Subcontractors
01400, 1.9 – B	Manufacturers Field Services
01700, 1.3 A-C	Closeout Procedures
01700, 1.6 A-G	Record Documents

3.2 ENGINEER'S REVIEW

- A. Reference Section 00800-SC-7.16 E. 2 for information regarding the Engineer's review of Contractor submittals.

CERTIFICATE OF COMPLIANCE

Date _____ 20____

WE, _____
(Manufacturer, Supplier, or Contractor)

Address: _____

HEREBY CERTIFY THAT _____
(Type of Product)

(Product Trade Name)

Manufactured by _____

Supplied by: _____

Furnished to _____
Contractor (Prime or Sub.)

Delivered and Used on:

_____ Federal No. _____ State No. _____
Project Name

Used for Item No. _____ Name of Item _____

MEETS THE REQUIREMENTS OF THE PERTINENT PROJECT PLANS, SPECIAL PROVISIONS AND SPECIFICATIONS OF THE NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION (NHDOT) IN ALL RESPECTS. PROCESSING, PRODUCT TESTING, AND INSPECTION CONTROL OF RAW MATERIALS ARE IN CONFORMANCE WITH ALL APPLICABLE SPECIFICATIONS, DRAWINGS AND STANDARDS OF ALL ARTICLES FURNISHED.

All records and documents pertinent to this certificate and not submitted herewith will be maintained available by the undersigned for a period of not less than three years from the date the Project has been completed and accepted.

Signed by _____ Title _____
(Officer of Organization)

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

Notary Public/Justice of the Peace My Commission Expires: _____

TO BE COMPLETED BY CONTRACTOR. Location information the QPL
Bridge Items _____ Roadway Items _____
Bridge No.: _____ Station: _____

END OF SECTION

**SECTION 01400
QUALITY CONTROL**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Quality assurance - control of installation.
- B. Tolerances.
- C. References and standards.
- D. Mock-up.
- E. Material testing and laboratory services.
- F. Observation Services.
- G. Manufacturers' field services.

1.2 RELATED SECTIONS

- A. Section 01300 - Submittals: Submission of manufacturers' instructions and certificates.
- B. Section 01600 - Material and Equipment: Requirements for material and product quality.

1.3 QUALITY ASSURANCE - CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Engineer before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.

1.4 TOLERANCES

- A. Monitor fabrication and installation tolerance control of Products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Engineer before proceeding.
- C. Adjust Products to appropriate dimensions; position before securing Products in place.

1.5 REFERENCES AND STANDARDS

- A. For Products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Obtain copies of standards where required by product specification sections.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.6 MOCK-UP

Not Used.

1.7 MATERIAL TESTING AND LABORATORY SERVICES

- A. Contractor shall appoint, employ, and pay for specified services of an independent firm to perform construction material testing services in accordance with Item 1008.9.
- B. The independent firm will perform testing and other services specified in individual sections and as required by the Owner or Engineer.
- C. Testing reports will be submitted by the independent firm to the Owner or Engineer indicating services and indicating compliance or non-compliance with the contract documents.
- D. Cooperate with independent firm; furnish safe access and assistance by incidental labor as requested.

1. Notify Engineer and/or independent firm 48 hours prior to expected time for operations requiring services. These operations include, but are not necessarily limited to:
 - Cast-in-place concrete placement
 - Compaction of backfill for structures and roadway
 - Bituminous pavement construction
- E. All additional testing or re-testing necessitated by the failure of initial tests as determined by the Engineer shall be conducted and paid for by the Contractor as directed by the Engineer.
 1. The Contractor shall take immediate corrective measures as suggested by the testing laboratory and/or directed by the Engineer to make the materials meet or exceed the specifications.
 2. Payment for additional testing or re-testing will be charged to the Contractor by deducting charges from the total contract sum/price.

1.8 OBSERVATION SERVICES

- A. Owner may appoint, employ, and pay for specified services of an independent firm to perform construction observation.
- B. The independent firm will perform observations and other services specified in individual specification sections and as required by the Owner.
- C. Reports will be submitted by the independent firm to the Owner, in duplicate, indicating observations and indicating compliance or non-compliance with Contract Documents.
- D. Contractor shall cooperate with independent firm; furnish safe access and assistance by incidental labor as requested.
 1. Notify Engineer and/or independent firm 48 hours prior to expected time for operations requiring services.
- E. Observations do not relieve Contractor to perform Work to contract requirements.

1.9 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to Engineer 30 days in advance of required observations. Observer subject to approval of Engineer.

- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Refer to Section 01300 - SUBMITTALS, MANUFACTURERS' FIELD REPORTS article.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

**SECTION 01500
CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities: telephone/fax service, water, and sanitary facilities.
- B. Temporary Controls: Barriers, enclosures and fencing, protection of the Work, water control and erosion controls.
- C. Construction Facilities: Access roads, parking, progress cleaning and project signage.

1.2 RELATED SECTIONS

- A. Section 01700 - Contract Closeout: Final cleaning.

1.3 TEMPORARY ELECTRICITY

- A. Contractor shall coordinate with the local electrical supplier to arrange for temporary electrical service as required for the project. Costs included in Item 692., Mobilization.

1.4 TEMPORARY LIGHTING FOR CONSTRUCTION PURPOSES

Not Used.

1.5 TEMPORARY HEATING

Not Used.

1.6 TEMPORARY COOLING

Not Used.

1.7 TEMPORARY VENTILATION

Not Used.

1.8 TELEPHONE SERVICE

- B. Provide, maintain, and pay for telephone service to field office at time of project mobilization. At the Contractor's option, telephone service to a field office can be substituted with a cell phone with voicemail assigned to the Contractor's foreman provided the cell phone reception is adequate at the project site.

1.9 FACSIMILE SERVICE

Not Used.

1.10 TEMPORARY WATER SERVICE

- A. Provide, maintain and pay for suitable quality water service required for construction operations at time of project mobilization.
- B. Contractor will pay cost of water used. Exercise measures to conserve water. Provide separate metering if obtaining from local water utility and reimburse Owner for cost of water used.
- C. Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

1.11 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. At end of construction, return facilities to same or better condition as originally found.

1.12 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.

1.13 WATER CONTROL

- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide erosion control barriers as required to protect site from soil erosion.

1.14 PROTECTION OF INSTALLED WORK

- D. Protect installed Work and provide special protection where specified in individual specification sections.
- E. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Prohibit traffic from landscaped areas.

1.15 SECURITY

- A. Provide security and facilities to protect Work, and existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.

1.16 ACCESS ROADS

- A. Construct and maintain temporary roads accessing public thoroughfares to serve construction area.
- B. Provide and maintain access to fire hydrants, free of obstructions.
- C. Provide means of removing mud from vehicle wheels before entering streets.
- D. Designated existing on-site roads may be used for construction traffic at the discretion of the Engineer.

1.17 PARKING

- A. Construction personnel shall park within the project limits so as not to obstruct local traffic and construction activities.

1.18 PROGRESS CLEANING AND WASTE REMOVAL

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Collect and remove waste materials, debris, and rubbish from site daily and dispose off-site.

1.19 FIELD OFFICES AND SHEDS

Not Used.

1.20 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities and materials, prior to Final Application for Payment.
- B. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing and permanent land and facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

1.21 DUST CONTROL

A. GENERAL

1. The Contractor shall furnish all labor, materials, tools and equipment necessary to apply water on roads or traveled surfaces within the construction site when directed by the Engineer and/or as necessary to control dust. Calcium chloride will not be allowed to be used on this project due to the potential for contaminating nearby surface water or groundwater.
2. When dust control is not included as a separate item in the Contract, the work shall be considered incidental to the appropriate items of the Contract.

B. PRODUCTS

1. Water for sprinkling shall be clean, free of salt, oil and other injurious materials.

C. EXECUTION

1. Water shall be applied by equipment approved by the Engineer. As a minimum it shall consist of a tank, a spray bar and a gauge equipped pump. Water shall be dispersed through nozzles at a minimum pressure of 20 psi.

1.22 ADVERSE CONDITIONS

A. NIGHT WORK

1. Work after dark will not be permitted except under extreme emergency, or only under special directions, and only if permitted by the Engineer.
2. Whenever the Contractor finds it necessary or expedient to do work at night, such night work shall be performed by the Contractor without additional or extra cost to the Owner, and only with the Owner's approval. The Contractor shall provide all lights required for the proper and expeditious carrying on of any work.
3. The placing of concrete shall be started early enough in the daylight hours to insure completion of the section under construction before dark.

B. WEATHER CONDITIONS

1. No work shall be done when the weather is unsuitable. The Contractor shall take necessary precautions (in the event of impending storms) to protect all work, materials or equipment from damage or deterioration due to floods, driving rain, or wind and snowstorms. The Owner reserves the right, through the opinion of the Engineer, to order that additional protective measures over and beyond those proposed by the Contractor, be taken to safeguard all components of the project. The Contractor shall not claim any compensation for such precautionary measures so ordered, nor claim any compensation from

the Owner for damage to the work from weather elements.

2. The mixing and placing of concrete or pavement courses, the laying of masonry, and installation of sewers and water mains shall be stopped during rain storms; all freshly placed work shall be protected by canvas or other suitable covering in such manner as to prevent running water from coming in contact with it. Sufficient coverings shall be provided and kept ready at hand for this purpose. The limitations and requirements for mixing and placing concrete, or laying of masonry, in cold weather shall be as described elsewhere in these specifications.

1.23 POLICING

A. GENERAL

1. When, in the opinion of the Owner, or the Engineer, public safety or convenience requires the services of police, the Engineer may direct the Contractor to request the local police department to assign uniformed officers to direct traffic within the location of work under the Contract.
2. When so directed, the Contractor shall make all arrangements in obtaining police assistance and shall pay all police officers. The police shall, at all times, be subject to the direction and control of the Contractor.
3. The intent is to ensure public safety by police direction of traffic. Police are not to serve as watchmen to protect the Contractor's equipment and materials, or to warn pedestrians of such hazards as open trenches.
4. Nothing contained herein shall be construed as relieving the Contractor of any of his responsibilities for protection of persons and property under the terms of the Contract, or for providing necessary traffic control including signs, barricades, or flagmen as required in Section 01500 of these specifications.

1.24 FENCING

Not Used.

1.25 EXTERIOR ENCLOSURES

Not Used.

1.26 INTERIOR ENCLOSURES

Not Used.

END OF SECTION

**SECTION 01600
MATERIAL AND EQUIPMENT**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products.
- B. Transportation and handling.
- C. Storage and protection.
- D. Product options.
- E. Substitutions.

1.2 RELATED SECTIONS

- A. Document 00100 - Instructions to Bidders: Substitute and "or equal" items procedures.
- B. Section 01400 - Quality Control: Quality Assurance - Control of Installation.

1.3 PRODUCTS

- A. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- B. Provide interchangeable components of the same manufacture for components being replaced.

1.4 TRANSPORTATION AND HANDLING

- A. Transport and handle Products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that Products comply with requirements, quantities are correct, and Products are undamaged.
- C. Provide equipment and personnel to handle Products by methods to prevent soiling, disfigurement, or damage.

1.5 STORAGE AND PROTECTION

- A. Store and protect Products in accordance with manufacturers' instructions.
- B. Store with seals and labels intact and legible.
- C. Store sensitive Products in weather tight, climate controlled, enclosures in an

environment favorable to Product.

- D. For exterior storage of fabricated Products, place on sloped supports above ground.
- E. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- F. Cover Products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of Products.
- G. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- H. Provide equipment and personnel to store Products by methods to prevent soiling, disfigurement, or damage.
- I. Arrange storage of Products to permit access for inspection. Periodically inspect to verify Products are undamaged and are maintained in acceptable condition.

1.6 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any Product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Products of manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named in accordance with the following article.

1.7 SUBSTITUTIONS

- A. Engineer will consider requests for Substitutions only within thirty (30) days after date of Owner-Contractor Agreement.
- B. Substitutions may be considered when a Product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed Substitution with Contract Documents.
- D. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed Product and determined that it meets or exceeds the quality level of the specified Product.
 - 2. Will provide the same warranty for the Substitution as for the specified Product.
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner.

4. Waives claims for additional costs or time extension which may subsequently become apparent.
 5. Will reimburse Owner and Engineer for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on shop drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure:
1. Submit three (3) copies of request for Substitution for consideration. Limit each request to one proposed Substitution.
 2. Submit shop drawings, product data, and certified test results attesting to the proposed Product equivalence. Burden of proof is on proposer.
 3. The Engineer will notify Contractor in writing of decision to accept or reject request.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

**SECTION 01700
CONTRACT CLOSEOUT**

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures.
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Operation and maintenance data.
- F. Spare parts and maintenance Products.
- G. Warranties and bonds.
- H. Maintenance service.

1.2 RELATED SECTIONS

- A. Section 01500 - Construction Facilities and Temporary Controls: Progress cleaning.

1.3 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Engineer's review.
- B. Provide submittals to Engineer that are required by governing or other authorities.
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.4 FINAL CLEANING

- A. Execute final clean up and restoration of all disturbed areas prior to final project assessment.
- B. Clean site; sweep paved areas, rake clean landscaped surfaces.
- C. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.5 ADJUSTING

Not Used.

1.6 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed Shop Drawings, Product Data, and Samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of footing in relation to finish ground or brook elevation.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Field changes of dimension and detail.
 - 4. Details not on original Contract drawings.
- G. Submit documents to Engineer with claim for final Application for Payment.

1.7 OPERATION AND MAINTENANCE DATA

Not Used.

1.8 SPARE PARTS AND MAINTENANCE PRODUCTS

Not Used.

1.9 WARRANTIES AND BONDS

- A. Provide duplicate notarized copies.
- B. Execute and assemble transferable warranty documents from Subcontractors, suppliers, and manufacturers.
- C. Provide Table of Contents and assemble in three D side ring binder with durable plastic cover.
- D. Submit prior to final Application for Payment.
- E. For items of Work delayed beyond date of Substantial Completion, provide updated submittal within ten (10) days after acceptance, listing date of acceptance as start of warranty period.

1.10 MAINTENANCE SERVICE

- A. Furnish service and maintenance of all work items indicated in the Contract Documents for one year from date of Substantial Completion.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

TECHNICAL SPECIFICATIONS

All work shall be in accordance with State of New Hampshire, Department of Transportation NHDOT Standard Specifications for Road and Bridge Construction, approved and adopted in August 2010 (Standard Specifications).

The NHDOT specifications are hereby amended as follows:

1. Delete Division 100-General Provisions in its entirety, with the exception of the following sections which are retained:
 - Section 101-Definitions and Terms (subsections 101.01, 101.02, 101.06, 101.09, 101.10, 101.14 through 101.18, 101.21, 101.23, 101.35 through 101.37, 101.42, 101.44, 101.45, 101.49, 101.50 101.52 through 101.54, 101.57, 101.59, 101.63 through 101.65, 101.67 through 101.69, 101.73, 101.78, 101.79, 101.80 through 101.89, 101.91 through 101.93, 101.95 through 101.97, 101.101 through 101.107, 101.110 through 101.112).
 - Section 105-Control of the Work (subsections 105.03 through 105.07 and 105.10 through 105.15 only) in accordance with the Supplemental Specifications in this section.
 - Section 106-Control of Material (subsections 106.01, 106.02, 106.04 through 106.07, 106.09 through 106.10) in accordance with the Supplemental Specifications in this section.
 - Section 107-Legal Relations and Responsibility to Public (subsections 107.01 through 107.10 and 107.15 through 107.17).
 - Section 109 Measurement and Payment (subsections 109.01 and 109.11 only).
2. Substitute "Hoyle, Tanner and Associates, Inc." for "Engineer", "Department", "State", "Bureau of Bridge Design", "Bureau of Materials and Research" or "NHDOT Compliance Review Officer" throughout the specifications.

All applicable portions of Sections 201 through 699 from the NHDOT Standard Specifications (English Units) apply to this Project, unless modified by Supplemental Specifications or Special Provisions in this document.

The NHDOT Specifications are periodically supplemented with updates posted on the NHDOT website at www.nh.gov/dot/org/projectdevelopment/highwaydesign/specifications/supplementals/index.htm. All applicable supplemental specifications for sections 201 through 699 available at the time that the bid is due will be considered part of this contract specification.

The following plans from NHDOT Standard Plans for Road and Bridge Construction are also considered a part of this contract:

CR-1	Granite Curb Details
DR-1	Grate and Frame Details
DR-2	D.I. Manhole Cover and Pavement Depression Details
DR-4	Polyethylene Liner Details
DR-5	Precast Reinforced Concrete C.B., D.I. and M.H.

These lists are not all inclusive and do not relieve the Contractor from complying with any or all NHDOT specifications or plans referred to by the contract documents or referred to by sections of the NHDOT specifications that apply. It is the contractor's responsibility to obtain copies of these specifications and plans. These plans may also be downloaded, free of charge, from the NHDOT website at

<http://www.nh.gov./dot/org/projectdevelopment/highwaydesign/standardplans/index.htm>

NHDOT Standard Specifications for Road and Bridge Construction and NHDOT Standard Plans for Road and Bridge Construction may be purchased from NHDOT, Records Section, 1 Hazen Drive, P.O. Box 483, Concord, NH 03302-0483, Phone No. 603-271-3514. These specifications may also be downloaded, free of charge, from the NHDOT website at

<http://www.nh.gov./dot/org/projectdevelopment/highwaydesign/specifications/index.htm>

SUPPLEMENTAL SPECIFICATIONS

The following Supplemental Specifications are to be used in conjunction with the NHDOT Standard Specifications and are herein made a part of the Contract Documents and apply to this project:

Supplemental Specifications

<u>Section</u>	<u>Description</u>	
109	Measurement and Payment	SS-2
214	Fine Grading	SS-3
304	Aggregate Base Course	SS-4
417	Cold Planing Bituminous Surfaces	SS-5
538	Barrier Membrane	SS-6
603	Culverts and Storm Drains	SS-7
604	Catch Basins, Drop Inlets and Manholes	SS-15
608	Sidewalk	SS-16
628	Sawed Pavement	SS-20
632	Retroreflective Pavement Markings	SS-21
645	Erosion Control	SS-22

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 109 -- MEASUREMENT AND PAYMENT****AMENDMENT TO SUBSECTION 109.11 – FINAL PAY QUANTITY**

The intent of this supplemental specification is that neither the State nor the Contractor shall be at risk for more than \$10,000 due to a quantity error in the plans/contract. In addition, in order to minimize the risk to small subcontractors who only work on a specific item, the $\pm 25\%$ criteria was also included.

Replace the third paragraph of 109.11 with the following:

The estimated quantity for each item of work designated as a final pay quantity in the Method of Measurement or Basis of Payment or Bid Schedule shall be considered as approximate only, and no guarantee is made that the quantity that can be determined by computations, based on the details and dimensions shown on the plans, will equal the estimated quantity. No adjustment will be made in the event that the actual quantity based on measurements / computations does not equal the estimated quantity except under the following conditions:

- a. **For Bridge Items:** If the actual value* of the discrepancy is either \$10,000.00 more or \$10,000.00 less than the estimated bid amount for the item, or the actual quantity is more than 125 percent or less than 75 percent of the estimated bid quantity for that bridge item on that structure, then an adjustment will be made in accordance with 109.04.3.
- b. **For Other Items:** If the actual value* of the discrepancy is either \$10,000.00 more or \$10,000.00 less than the estimated bid amount for the item, or the actual quantity is more than 125 percent or less than 75 percent of the estimated bid quantity, then an adjustment will be made in accordance with 109.04.3.

* Actual value is determined by materials, equipment, and labor (not necessarily the bid price).

01/10/13

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S U P P L E M E N T A L S P E C I F I C A T I O N
AMENDMENT TO DIVISION 200 – EARTHWORK
AMENDMENT TO SUBSECTION 214 – FINE GRADING

*The purpose of this supplemental specification is to match
the cross slope tolerance to the HMA requirement.*

Amend 3.1 as follows:

3.1 The surface of each course of material shall be fine graded to conform to the typical section of the plans prior to placing the succeeding course. Each course shall be fine graded to conform to the lines and grades as shown on the plans. When fine grading to a specific slope prior to paving, the slope tolerance will be +/-0.2%.

SUPPLEMENTAL SPECIFICATION

AMENDMENT TO SECTION 304 – AGGREGATE BASE COURSE

The purpose of this Supplemental Specification is to specify what recycled materials can be used as aggregate base course.

Replace 3.1.3 through 3.1.5 with the following:

3.1.3 Crushed stone (fine gradation) may be substituted for crushed gravel provided there is a minimum of 1 ft (0.3 m) of free draining material (sand, gravel, crushed stone coarse, or crushed stone very coarse) below the crushed stone. The substitution must be made across the entire section **at a constant depth** and will not be allowed for short or discontinuous segments.

3.1.4 Permission may be granted to use **the following recycled materials** in lieu of crushed gravel or crushed stone (fine gradation) provided the following requirements are met:

- (a) **Free draining material exists below the replacement material as described in 3.1.3.**
- (b) **Substituted materials must come from a homogenous stockpile that meets the gradation requirements of the material being replaced.**
- (c) Transitions between **replacement material** and crushed gravel or crushed stone (fine gradation) shall be made using a 50 ft (15 m) taper.
- (d) **The material shall be placed directly under the proposed pavement.**

3.1.4.1 Reclaimed asphalt pavement, blended with granular material, shall be tested in accordance with NHDOT test method S1.

3.1.4.2 Reclaimed concrete aggregate shall also meet the requirements of AASHTO M 319, except for the gradation requirements. The material shall contain no more than 5 percent reclaimed asphalt pavement.

3.1.5 Crushed stone (coarse or very coarse) may be substituted for gravel provided that all crushed gravel above the crushed stone is replaced with a combination of crushed stone coarse and fine with the top layer consisting of a minimum of six inches of crushed stone fine. The substitution must be made across the entire section and will not be allowed for short or discontinuous segments.

3.1.6 Crushed aggregate base course materials shall be produced and placed in their final location with as little segregation as possible.

3.1.7 Excess reclaimed stabilized base material substantially meeting the requirements of 2.7 may be substituted for the crushed aggregate for shoulders in 2.6. Reclaimed stabilized base material shall be mixed with loam as specified in 2.6.

3.1.7.1 Reclaimed stabilized base material shall not be substituted for crushed aggregate for shoulders in areas contiguous to residences and other existing landscaped areas where the growth of grass is desired.

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 417 – COLD PLANING BITUMINOUS SURFACES**

The purpose of this Supplemental Specification is to specify acceptable equipment for planing bituminous surfaces.

Amend 3.1.1 to read:

3.1.1 Equipment used for planing of bituminous surfaces shall be a power-operated rotary planing or milling machine capable of **producing a finished profile grade and cross slope to within 1/4" (6.4 mm) of the depth specified and shall produce a uniform surface texture, free from gouges and ridges, greater than 3/8" (9.5 mm). Surface tolerance will be tested with a 10-foot straight edge. The variation of the top of the ridges from the straight edge between any two ridge contact points shall not exceed 3/8" (9.5 mm).**

Amend 3.1.3 to read:

3.1.3 The equipment shall be capable of accurately establishing profile grades by an automatic grade control system referencing from either the existing pavement or from an established independent grade line. **The automated system shall be capable of averaging the existing grade or profile over a minimum of 30 feet, or be equipped with a sonic non-contact system with a minimum of two referencing stations mounted on the machine at a minimum length of 24 feet apart. Cross slope shall be established by an automated slope control mechanism. On projects or parts of projects where the Engineer deems that the use of automated controls are impractical, use of some or all of the controls listed above may be waived.**

Vacuum trucks or street sweepers shall be used to clean the milled surfaces. Cleaning shall continue until the surfaces are free of all material which may interfere with the bond between the applied tack coat and the milled surface.

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 538 – BARRIER MEMBRANE**

This supplemental specification adds the requirement that contractors supply and use a dew point measuring device and an infrared surface temperature measuring instrument. It also specifies the laydown temperature of pavement overlays.

Amend 3.1.1 to read:

3.1.1 Concrete shall be cured in accordance with the requirements of 520.3.10. The primer and membrane shall only be applied when the substrate surface has a moisture content of 6 percent or less, and when the temperature of the substrate exceeds the dew point by at least 5° F (3° C). The Contractor shall supply a portable electronic surface moisture meter capable of measuring the moisture content of concrete surfaces in percent. The moisture meter shall be a product that is listed on the Qualified Products List and shall be calibrated annually by the meter manufacturer. A certificate of calibration from the meter manufacturer shall accompany the moisture meter. **The Contractor shall also supply a digital weather instrument that can measure both ambient temperature and dew point, and an infrared surface temperature measuring instrument.**

Amend 3.3.1.4 to read:

3.3.1.4 The Contractor shall perform moisture testing of the deck surface using a Contractor-supplied portable electronic surface moisture meter as described in 3.1.1. Moisture tests shall be performed at locations as determined by, and in the presence of, the Engineer. **The Contractor shall determine the substrate temperature and dew point using Contractor-supplied digital instruments as described in 3.1.1.** The primer shall only be applied when the moisture content of the substrate surface is 6 percent or less and when the temperature of the substrate exceeds the dew point by at least 5° F (3° C). Special attention shall be given to assure that there is no moisture present at the interface between the deck and bridge curb. The Engineer may perform additional moisture testing of the substrate.

Amend 3.3.5 to read:

3.3.5 Application of hot bituminous overlay. The deck shall be paved within 3 days of membrane application unless otherwise permitted by the Engineer. The required laydown temperature of pavement overlays used in connection with **heat-welded** barrier membrane shall be **between 290° F and 330° F (140° C and 165° C)**. It should be noted that the laydown temperatures are extremely critical in order to preserve membrane integrity.

SUPPLEMENTAL SPECIFICATION

AMENDMENT TO SECTION 603 -- CULVERTS AND STORM DRAINS

The purpose of this SS is to revise the structure of the Materials section and add new requirements for pipe manufacturers. Also adds the requirement that manufactures of polyvinyl chloride pipe (PVC) must participate in and maintain compliance with the AASHTO National Transportation Product Evaluation Program (NTPEP) that audits producers of plastic pipe, as well as stipulate any sawed pavement required for this work shall be subsidiary.

Amend 603.1.1 to read:

1.1 This work shall consist of furnishing and installing, or removing and relaying, pipes, pipe end sections, pipe sleeves, and post installation video inspection at the locations shown or ordered, including the necessary joints, fittings, and connections as required. **Sawed pavement**, common structure excavation to the depth specified in 206.4.1, secondary excavation required in the imperfect trench method, bedding, shaping of bedding, and backfill shall be included in this work.

Replace the Materials section with the following:

2.1 Reinforced Concrete Pipe, Circular.

2.1.1 Fabricator Certification. Concrete pipe manufacturing plants shall be certified by the American Concrete Pipe Association through its “Quality Cast” plant certification program. The Fabricator shall submit proof of certification at delivery.

2.1.2 This pipe shall conform to the requirements of AASHTO M 170 (AASHTO M 170M), except as follows: When fly-ash is used, only Class F, in accordance with AASHTO M 295 will be allowed. Wall A thickness will be allowed in Class III pipe only. When the plans call for reinforced concrete pipe capable of withstanding an ultimate load greater than 3750 D (175 kPa), the design requirements of Class V shall be met with further provision that the pipe will withstand the ultimate D-load specified.

2.1.3 Basis of acceptance of concrete pipe shall conform to AASHTO M 170 (AASHTO M 170M), Section 5.1.1. Test requirements shall be as provided in Section 11 with the further provision that the pipe will withstand an additional ten percent of the D-load specified or brought to destruction. Permissible variation in pipe tolerances shall conform to AASHTO M 170 (AASHTO M 170M), Section 12.

2.1.4 Workmanship and finish shall conform to AASHTO M 170 (AASHTO M 170M), Section 12. Pipe shall be subject to rejection on account of failure to conform to any of the specification requirements of AASHTO M 170 (AASHTO M 170M), Section 15. Individual sections of pipe may be rejected for the following reasons:

- (a) Fracture or cracks passing through the wall, except for a single end crack that does not exceed the depth of a joint.
- (b) Defects that indicate imperfect proportioning, mixing, and molding.

- (c) Surface defects indicating honey-combed or open texture.
- (d) Damaged or cracked ends where such damage would prevent making a satisfactory joint.
- (e) Any continuous crack having a surface width of 0.01 in. (0.3 mm) or more and extending for a length of 12 in. (300 mm) or more, regardless of position in the wall of the pipe.
- (f) The exposure of any steel in the barrel or the outside of the pipe indicating the displacement of reinforcement. Steel exposed at the ends will not be cause for rejection if a satisfactory joint can be made.

Table 1 - Minimum Strength Requirements – English (Metric)

D Load to produce the ultimate load = Class (kPa)	D Load to produce a 0.01 crack (0.3 mm crack (kPa))	AASHTO Designation Class
1500D (75)	1000D (50)	II
2000D (100)	1350D (65)	III
3000D (150)	2000D (100)	IV
3750D (175)	3000D (140)	V
4000D (200)	----	---

2.1.5 Markings on pipe shall conform to AASHTO M 170 (AASHTO M 170M), Section 16 with the following information clearly marked on each section of pipe.

- (a) The pipe class and specification designation
- (b) The date of manufacture
- (c) The name or trademark of the manufacturer
- (d) Identification of the plant

2.1.6 Concrete pipe shall be joined by using flexible water tight gaskets conforming to AASHTO M 198.

2.2 Corrugated Metal Pipes and Pipe-Arches--Steel.

2.2.1 Except as provided below, steel pipes and pipe-arches shall conform to AASHTO M 36/M 36M, Type I or II.

2.2.1.1 To facilitate field jointing, the ends of individual pipe sections shall meet the requirements of Section 7.7.1 of AASHTO M 36/M 36M.

2.2.1.2 Section 9.1.3 of AASHTO M 36/M 36M does not apply.

2.2.2 The specified thickness in the case of steel shall be as shown on the plans. The minimum thickness of steel culvert sheets shall meet the requirements of AASHTO M 218.

Table 2 - Thickness and Equivalent Gauges -English (Metric)

Steel	
Thickness, in. (mm)*	Sheet Gauge Number
“Specified”	
0.064 (1.63)	16
0.079 (2.01)	14
0.109 (2.77)	12

0.138 (3.51)	10
0.168 (4.27)	8

*Thickness measured on tangent of corrugation.

2.2.3 Strutted pipes shall be furnished 5 percent elongated, when specified.

2.3 Plastic Pipe.

2.3.1 Manufacturers of **Polyvinyl Chloride (PVC) pipe** and Polyethylene (PE) pipe must participate in and maintain compliance with, the AASHTO National Transportation Product Evaluation Program (NTPEP) that audits producers of plastic pipe. A certificate of compliance, as required by 106.04 shall be provided for each shipment.

2.3.2 Polyvinyl chloride profile wall pipe shall conform to the requirements of AASHTO M 304. PVC pipe shall not be used in applications where it will be exposed to long term ultraviolet light without approved protection for the exposed area.

2.3.3 Polyethylene pipe shall conform to the requirements of AASHTO M 294, Type C, Type S, or Type D as specified on the plans.

2.3.4 Only soil tight pipefittings supplied or recommended by the manufacturer shall be used, unless otherwise specified.

2.3.4.1 **When watertight joints are specified, watertight pipefittings supplied or recommended by the manufacturer shall be used and shall conform to the appropriate AASHTO standard.**

2.3.5 When the item description calls for Plastic Pipe (pipe material is not specified), either polyvinyl chloride or polyethylene pipe shall be furnished and shall meet the requirements of **2.3**.

2.4 Drainage Pipe. When the Item calls for Drainage Pipe (pipe material is not specified) either concrete pipe 2000 D (100 kPa) or plastic pipe for drainage pipe shall be furnished. Reinforced concrete pipe shall meet the requirements of 2.1. Plastic pipe shall meet the requirements of **2.3**.

2.5 Pipe Sleeve (24" and under).

2.5.1 Pipe sleeves for electrical conduit shall be as specified in 614. Other pipe sleeves shall meet the load bearing requirement as well as special design considerations.

2.5.2 Steel pipe for pipe sleeve, bored, shall conform to ASTM A 53, with joints welded.

2.6 Pipe for Slope Drainage.

2.6.1 Manufacturers of polyethylene pipe for slope drain shall conform to the requirements of **2.3.1 and AASHTO M294, Type C**.

2.6.2 The pipe coupler for polyethylene pipe shall consist of a plastic coupler and 2 stainless steel bands installed on the exterior corrugations. Slope pipe coupling bands shall engage a minimum of two full corrugations of each pipe section being joined, shall be reinforced with a minimum of three high-strength nylon ties, and in all other respects shall meet the criteria for the "Downdrain Joint" category of Section 26 of the AASHTO LRFD Bridge Construction Specifications.

2.7 Pipe for Drives and Minor Approaches.

2.7.1 It shall be the Contractor's option to furnish reinforced concrete pipe or corrugated aluminized steel type 2 pipe, unless otherwise specified, for pipe for drives and minor approaches. Reinforced concrete pipe shall meet the requirements of 2.1. Corrugated aluminized steel pipe shall meet the requirements of 2.2. The strength or thickness shall meet the requirements of Table 3. **Where cover is 2' or greater, and where load requirements can be met, polyethylene pipe, meeting the requirements of 2.3, may be used.**

Table 3 - Required Strength of Culvert Pipes

Material	Diameter	Strength Concrete	Thickness, in. (mm)	
			"Specified" Steel	Pipe Stiffness Plastic
Reinforced Concrete	All	2000 D (100 kPa)		
Corrugated Metal	12"-18"(300-450mm)		0.064 (1.626)	
	24"-30"(600-750mm)		0.079 (2.007)	
	36" (900 mm)		0.109 (2.769)	
Plastic (Polyethylene)	All			Reference AASHTO M294

2.8 End Sections.

2.8.1 Metal End Sections.

2.8.1.1 Steel end sections shall be galvanized, sheet or corrugated as required, conforming to the requirements of AASHTO M 36/M 36M insofar as that specification applies. Sections shall be fabricated of the thickness of metal shown on the plans. When the item calls for metal end sections, steel shall be furnished, **with the minimum sheet thickness of 0.064 in (1.626 mm).**

2.8.1.1.1 Aluminized steel end sections shall be aluminum-coated (Type 2) conforming to the requirements of AASHTO M 36.

2.8.1.2 Galvanized bolts may be used for the assembly of end sections where more than one piece is used to form the skirt. Bolts shall conform to ASTM A 325/A 325M.

2.8.2 Concrete End Sections. Concrete end sections shall be reinforced concrete conforming to the pertinent provisions of 2.1 and to the requirements shown on the plans. Where a single cage of reinforcement is shown on the plans, sufficient steel shall be incorporated to maintain the integrity of the piece. Unless a different class is specified, end sections conforming to Class III minimum strength pipe shall be furnished.

2.8.3 Plastic End Sections. Polyethylene pipe end sections shall meet the materials requirements of AASHTO M 294.

2.9 Granular backfill shall conform to the requirements of 209.

2.10 Cement mortar shall conform to the requirements of 707.

2.11 Unsuitable material for bedding and backfilling pipes is either organic or one that cannot be placed to meet the required compaction or bearing capacity, with the effort normally required for this work. This definition shall only apply in cases where material properties, compaction or bearing requirements are not otherwise specified in the Contract documents.

2.12 Concrete class F, flowable fill may be requested in writing as a substitute for backfill material **in accordance with 520.1.2.1.1.f.**

Amend 603.2.9.1 to read:

2.9.1 Manufactures of Corrugated Polyethylene (PE) pipe **and Polyvinyl Chloride (PVC) pipe** must participate in, and maintain compliance with, the AASHTO “National Transportation Product Evaluation Program” (NTPEP) that audits producers of plastic pipe. A certificate of compliance, as required by 106.04, shall be provided for each shipment.

Add to 603.3.1:

3.1.10 Sawed pavement shall conform to 628.3.4.

Amend 603.5.1 to read:

5.1 The accepted quantities of pipe will be paid for at the Contract unit price per linear foot (linear meter) of the kind, type, and size specified complete in place, including **sawed pavement**, common structure excavation up to the depth specified in 206.4.1, secondary excavation required in the imperfect trench method, bedding, pre-shaping of bedding, and backfill, with the following stipulations:...

Replace the Key to Item Number for Pipes with the following:

KEY TO ITEM NUMBERS FOR PIPES

Item Number	Unit
603.0001 Video Inspection	Linear Foot (Linear Meter)
603 .A B C D E	Item Number
.A	Material or Use
B	Type of Material
C	Class, Thickness, or Other
D E	Diameter or span rounded to nearest inch (or 100 mm)
.0 Reinforced Concrete Pipes	Linear Foot (Linear Meter)
B Type	
0 Circular	
1 Arch	
2 Blank	
3 Blank	
4 Blank	
C Class	
1 1500 D (Class II)	
2 2000 D (Class III)	

3 3000 D (Class IV)

4 3750 D (Class V)

.1 Metal Pipes

Linear Foot (Linear Meter)

B Material

1 Corrugated Galvanized Steel

2 Blank

3 Corrugated Aluminized Steel (Type 2)

4 Blank

5 Corrugated Steel Pipe-Arch

6 Blank

8 Corrugated Steel Slotted Drain Pipe

C Thickness in Inches (Millimeters)

Steel

0 0.064 (1.63)

2 0.079 (2.01)

4 0.109 (2.77)

6 0.138 (3.51)

8 0.168 (4.27)

.2 Pipe Sleeves

Linear Foot (Linear Meter)

B Material

0 Unspecified

1 Reinforced Concrete

2 Corrugated Steel

3 Blank

4 Plastic

C Type

0 Unspecified

1 PVC

2 Polyethylene

.3 End Sections

Each

B Material

0 Reinforced Concrete

C Class

1 1500 D (Class II)

2 2000 D (Class III)

3 3000 D (Class IV)

4 3750 D (Class V)

1 Blank

2 Blank

3 Plastic

C Type

1 Blank

2 Polyethylene

3 Blank

4 Steel

5 Blank

6 Aluminized Steel

C Steel Thickness in Inches (Millimeters)

- 1 0.064 (1.63)
- 2 0.079 (2.01)
- 4 0.109 (2.77)
- 6 0.138 (3.51)
- 8 0.168 (4.27)
- 9 Resetting _____ End Section
 - C Material
 - 0 Unspecified
 - 1 Reinforced Concrete
 - 2 Corrugated Steel
 - 3 Blank
 - 4 Plastic
- .4 Pipe for Slope Drainage Linear Foot (Linear Meter)
 - B Material
 - 0 Unspecified
 - 1 Blank
 - 2 Blank
 - 3 Blank
 - 4 Plastic
- C Type
 - 1 Blank
 - 2 Polyethylene (Type C)
- .5 Pipe for Drives and Minor Approaches Linear Foot (Linear Meter)
 - B Material
 - 0 Unspecified
- .6 Laying or Relaying Drainage Pipe Linear Foot (Linear Meter)
 (Furnished by the State or Salvaged)
 - B Material
 - 0 Unspecified
 - 1 Reinforced Concrete
 - 2 Blank
 - 3 Blank
 - 4 Plastic
- .7 Pipe, Jacked or Bored Linear Foot (Linear Meter)
 - B Materials/Use
 - 1 Reinforced Concrete under Roadbed
 - 2 Reinforced Concrete under Railroad
 - C Class
 - 1 1500 D (Class II)
 - 2 2000 D (Class III)
 - 3 3000 D (Class IV)
 - 4 3750 D (Class V)
 - 3 Blank
 - 4 Blank
- .8 Plastic Pipe Linear Foot (Linear Meter)
 - B Materials
 - 0 Unspecified

- 1 PVC
- 2 Polyethylene
- 3 Blank
 - C Type
 - 1 Corrugated Interior (Type C)
 - 2 Smooth Interior, Double Wall (Type S)
 - 3 Smooth Interior, Triple Wall (Type D)
 - 4 Blank
 - 5 Corrugated Interior (Type C) (Watertight)
 - 6 Smooth Interior, Double Wall (Type S) (Watertight)
 - 7 Smooth Interior, Triple Wall (Type D) (Watertight)
- .9 Drainage Pipe (Contractor’s Option – Concrete or Plastic)) Linear Foot (Linear Meter)
- B Materials
- 0 Unspecified
 - C Type
 - 1 Blank
 - 2 Smooth Interior, Double Wall (Type S)
 - 3 Smooth Interior, Triple Wall (Type D)
 - 4 Blank
 - 5 Blank
 - 6 Smooth Interior, Double Wall (Type S) (Watertight)
 - 7 Smooth Interior, Triple Wall (Type D) (Watertight)

Examples (ENGLISH):

603.00215	15” Reinforced Concrete Pipe, 2000 D	Linear Foot
603.20004	4” Pipe Sleeve	Linear Foot
603.332__	__” Polyethylene End Section	Each
603.40012	12” Pipe for Slope Drainage	Linear Foot
603.44212	12” Polyethylene Pipe for Slope Drainage	Linear Foot
603.6	Relaying 0-24” Drainage Pipe	Linear Foot
603.60012	Relaying 12” Drainage Pipe	Linear Foot
603.821__	__” Polyethylene Pipe (Corrugated Interior)	Linear Foot
603.802__	__” Plastic Pipe (Smooth Interior)	Linear Foot
603.900__	__” Drainage Pipe	Linear Foot

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 604 – CATCH BASINS, DROP INLETS, AND
MANHOLES**

The purpose of this Supplemental Specification is to stipulate sawed pavement required for this work to be subsidiary.

Amend 604.1.1 to read:

1.1 This work shall consist of furnishing and constructing catch basins, drop inlets, and manholes; with frames, grates or manhole covers, as shown on the plans or as ordered. Sawed pavement, common structure excavation to the depth specified in 206.4.1, bedding if required, and backfill shall be included in this work.

Amend 604.3.6 to read:

3.6 Excavation and backfill shall conform to 206.3. Sawed pavement shall conform to 628.3.4.

Amend 604.5.1 to read:

5.1 The accepted quantities of catch basins, drop inlets, and manholes, which included the necessary frames and grates or covers, of the type and diameter specified will be paid for at the Contract unit price per unit complete in place, including sawed pavement, common structure excavation and setting to final grade to the depth specified in 206.4.1, bedding if required and backfill with the following stipulations:

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 608 – SIDEWALK**

This Supplemental Specification adds Detectable Warning Devices to Section 608.

Add to Description:

1.2 Detectable Warning Devices. This work shall consist of furnishing and installing a detectable warning surface and accessories on sidewalk ramps at locations shown on the plans, as specified herein, or as ordered including any and all required surface preparation. Detectable warnings shall be installed at sidewalk ramps where a sidewalk crosses a vehicular way, excluding unsignalized driveway crossings. Detectable warnings shall measure 24 in (600 mm) in the direction of travel and extend the full width of the sidewalk ramp and the edge nearest the curbline shall be located 6 to 8 in (150 to 200 mm) from the face of curbline.

Add to Materials:

2.6 Detectable Warning Devices. Material. Detectable warning devices shall be gray cast iron conforming to AASHTO M105 and AASHTO M306.

2.6.1 Color. Cast iron panels shall have no surface coating, and shall be allowed to transition to their natural patina.

2.6.2 Detectable Warning Panel Truncated Dome Geometry.

2.6.2.1 Detectable warning devices shall be in full compliance with ADAAG guidelines (Title 49 CFR Transportation, Part 37.9 Standard for Accessible Transportation Facilities, Appendix A, Section 4.29.2 – Detectable Warning on Walking Surfaces).

2.6.2.2 Size and spacing for truncated domes shall be as follows: base diameter of nominal 0.9 in (23 mm), top diameter of nominal 0.4 in (10 mm), height of nominal 0.2 in (5 mm), with a center to center spacing of nominal 2.35 in (60 mm).

2.6.2.3 The truncated domes shall be arranged in a grid pattern and shall align properly from panel to panel.

Add to Construction Requirements:

3.3 Detectable Warning Devices. The Contractor shall submit manufacturer's descriptive literature for materials specified in accordance with 105.02.

3.3.1 Transport, storage, and handling of products shall be in accordance with manufacturer’s instructions.

3.3.2 Install detectable warning devices and any anchoring hardware in accordance with manufacturer’s instructions. Panels shall be set into a bed of 4 in (100 mm) wet unreinforced concrete.

3.3.3 Use a combination of available panel widths as manufactured to cover the full sidewalk ramp width to the extent practicable. Field cutting of panels is not permitted.

3.3.4 Care shall be taken to ensure the safety of pedestrians when sidewalks must remain in service during construction.

3.3.5 The attached details are for reference only. See plan set for specific details.

Add to Method of Measurement:

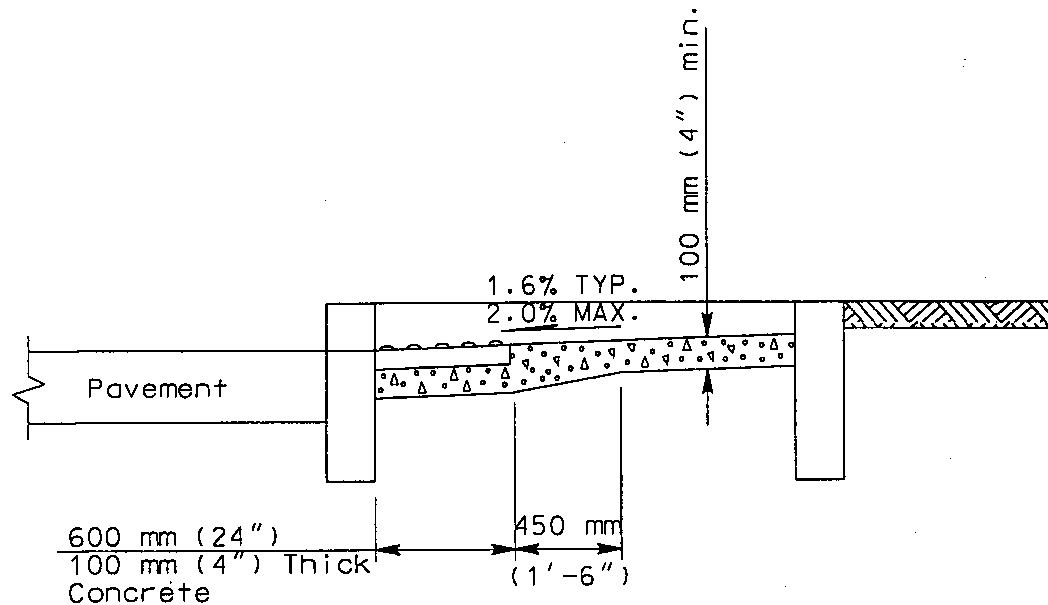
4.3 Detectable Warning Devices. Will be measured by the square yard (square meter) to the nearest 0.1 of a square yard (square meter).

Add to Basis of Payment:

5.4.1 Detectable Warning Devices. Will be paid for at the contract unit price per square yard (square meter) complete in place including accessories, anchoring hardware and any required surface preparation.

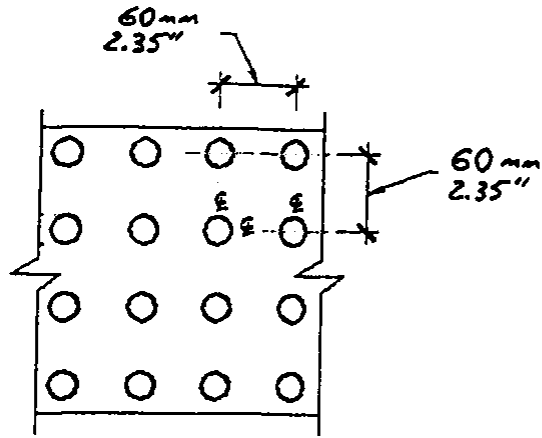
Pay Item and Unit

608.54 Detectable Warning Devices, Cast Iron Square Yard (Square Meter)

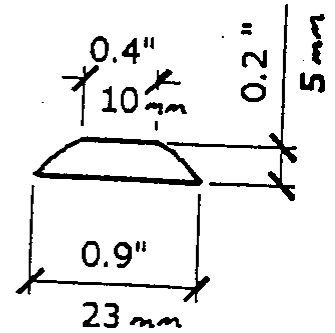


GENERAL NOTES

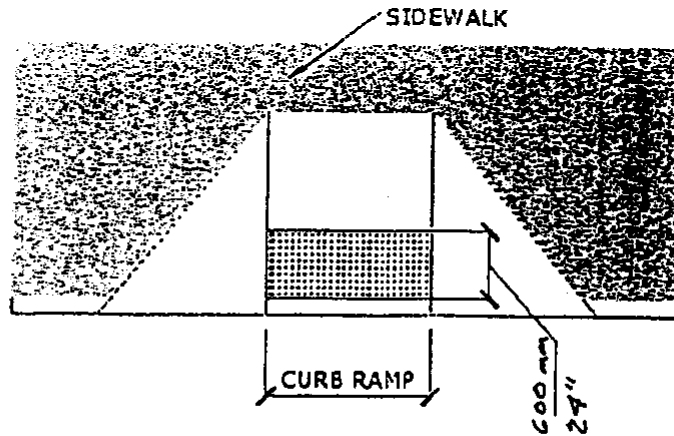
1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1. THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMPS SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 600 mm (2 FT.) FROM THE ROADWAY CURBLINE.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMPS OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMPS OR LANDINGS.
4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE, EITHER ASPHALT/LIGHT-COLORED CONCRETE OR LIGHT-COLORED CONCRETE/DARK-STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.
6. INSTALL DETECTABLE WARNINGS (TRUNCATED DOMES) AT THE LOCATIONS SHOWN. DETECTABLE WARNINGS SHALL MEASURE 600 mm (24") IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE SIDEWALK RAMP, AND THE EDGE NEAREST THE CURBLINE SHALL BE LOCATED 150 mm TO 200 mm (6"-8") FROM THE FACE OF CURBLINE.



Dome Spacing



Dome Section



Illustrates 24" deep detectable warning located near the street edge of the curb ramp.

Transition Ramp with Detectable Warning

S U P P L E M E N T A L S P E C I F I C A T I O N

AMENDMENT TO SECTION 628 – SAWED PAVEMENT

The purpose of this Supplemental Specification is to stipulate sawed pavement required for stated work to be subsidiary.

Add to 628.4:

4.2 Sawed pavement for the purpose of installing culverts, storm drains, catch basins, drop inlets, manholes and conduit will not be measured for payment.

Replace 628.5.2 with:

5.2 Sawed pavement for the purpose of installing culverts, storm drains, catch basins, drop inlets, manholes and conduit shall be subsidiary to their respective items.

Add to 628.5:

5.3 Payment will be made under Item 628.3 only when bituminous concrete pavement and concrete pavement are sawed one above the other.

SUPPLEMENTAL SPECIFICATION

AMENDMENT TO SECTION 632– RETROREFLECTIVE PAVEMENT MARKINGS

The intent of this supplemental specification is to prohibit unsafe arsenic and lead levels in glass beads per MAP-21. 11/07/12

Add to 2.2 the following:

2.2.1 Glass beads shall not contain more than 200 parts per million arsenic or lead. A certificate of compliance, as required by 106.04, shall be provided to the Engineer upon delivery of the material to the project. The certificate of compliance from the manufacturer shall include the process, batch or lot number(s); corresponding date(s) of manufacturer; and a statement of the actual levels of arsenic and lead.

AMENDMENT TO SECTION 632– RETROREFLECTIVE PAVEMENT MARKINGS

The intent of this supplemental specification is to delete duplicate language in the spec. 03/07/11

Delete 632.3.2.8.1.

Delete 632.3.2.8.2.

SUPPLEMENTAL SPECIFICATION**AMENDMENT TO SECTION 645 – EROSION CONTROL**

The purpose of this SS is to bring language in-line with the NPDES Construction General Permit (CGP) by clarifying when weekly on-site reviews of the project are to be performed by the SWPPP Monitor, what is expected to be included in the Monitoring Report, and when the Monitoring Report is to be filed; as well as when the SWPPP Monitor is to report deficiencies or non-compliant issues to the Contractor and/or Engineer.

Amend 3.2.3.1 to read:

3.2.3.1 Monitoring SWPPP and Erosion and Sediment Control shall include on-site reviews, weekly (at least once every 7 days) and within 24 hours after any storm event greater than 0.25 in. (6 mm) of rain per 24 hour period and producing meeting minutes of the weekly meetings for distribution as required. A monitoring report prepared by the SWPPP Monitor shall include the following:

- inspection date
- name
- title
- qualifications and signature of person performing the inspection
- weather information for the period since the last inspection
- weather information at the time of inspection
- list of site deficiencies or non-compliance issues
- locations and description of any discharges
- a summary of construction activities undertaken during the reporting period
- general site conditions
- erosion control maintenance and corrective actions taken

- the anticipated schedule of construction activities for the next reporting period
- any SWPPP amendments
- representative photographs

The weekly on-site review shall be conducted only when the Contractor's personnel are on site. Should any deficiencies or non-compliance issues be found, corrective action shall be performed in accordance with the USEPA and Construction General Permit (CGP). The SWPPP Monitor shall report any deficiencies or non-compliant issues to the Contractor and Engineer prior to exiting the site."

Within 24 hours of completing the on-site review, the SWPPP Monitor shall provide a formal written copy of the monitoring report to the Engineer to be maintained on file with the SWPPP at the project site.

SPECIAL PROVISIONS

The following Special Provisions are to be used in conjunction with the NHDOT Standard Specifications and are herein made a part of the Contract Documents and apply to this project:

Special Provisions

<u>Section</u>	<u>Description</u>	
211	Vibration Monitoring	SP-2
304	Aggregate Base Course	SP-4
502	Removal of Existing Bridge Structure	SP-5
512	Preparation for Concrete Repairs	SP-6
520	Portland Cement Concrete	SP-7
535	Concrete Staining and Sealing	SP-9
564	Bridge Lighting System	SP-12
603	Culverts and Storm Drains	SP-17
604	Catch Basins, Drop Inlets and Man Holes	SP-18
608	Sidewalk	SP-19
611	Temporary Water and Appurtenances	SP-23
612	Sewer Line Installation	SP-26
645	Erosion Control	SP-28
645	Erosion Control	SP-30
645	Erosion Control	SP-33
900.1	Remove and Reset Pavers	SP-36
1002	Special Work on Structures	SP-38
1008	Alterations and Additions as Needed	SP-40
1008	Alterations and Additions as Needed	SP-42

**SPECIAL PROVISION
SECTION 211 – VIBRATION MONITORING
ITEM 211.12 – CRACK MONITORING**

This special provision provides for crack monitoring only and neither amends nor modifies other provisions of 211 except as specified below.

DESCRIPTION

1.1 This work shall consist of monitoring construction related vibrations by means of crack monitoring of existing nearby structures and properties located on or near this project.

1.1.1 Sources of construction related vibrations which are covered by this specification include compaction equipment (sections 203, 304).

1.2 The work under this specification includes furnishing and installation of crack monitors and continuous crack monitoring.

1.2.1 As part of this work, pre and post construction condition surveys shall be completed.

MATERIAL REQUIREMENTS

2.1 Four weeks prior to beginning the work, the Contractor shall submit the product data to the Engineer, for approval, of the crack monitor the Contractor proposes to install. The Engineer, in consultation with the Town, will determine if the proposed crack monitor is acceptable. If the proposed crack monitor is not acceptable, then the Contractor shall repeat the process with another crack monitor.

CONSTRUCTION REQUIREMENTS

3.1 Contractor shall furnish five crack monitors to install along the east retaining foundation of Kimball Island as directed by the Engineer.

3.2 Pre and post construction conditions survey. The Contractor shall conduct a pre-construction condition survey on all structures as directed by the Engineer. Upon completion of all construction operations, the Contractor shall conduct a post-construction condition survey of all structures in which a pre-construction survey was completed.

3.3 Schedule for Crack Monitoring. The crack monitors shall be examined once a week for two months after the start of construction. If after two months, movement has not be observed, then the crack monitors shall be examined once every two weeks until the completion of the project.

3.3.1 The frequency and duration of crack monitoring is subject to change as required and directed by the Engineer.

3.4 The Contractor shall provide to the Engineer a record indicating observed movement, if any, for all crack monitors after each examination. The Contractor shall provide to the Engineer a record regardless if no movement was observed.

3.5 If movement greater than 1/4" has been observed at the crack monitors the Contractor shall cease all construction activities until directed by the Engineer to resume.

METHOD OF MEASUREMENT

4.1 Crack monitoring services will be measured by the unit. A unit shall include furnishing, installing, removing of the crack monitors, examination of crack monitors and pre and post constructions surveys.

BASIS OF PAY

5.1 Crack monitoring will be paid for at the contract unit price. Partial payments will be paid for at the contract unit price. Payment for interim stages shall not exceed 50 percent of the amount bid upon completion of the west bridge roadway work and 50 percent of the amount bid upon completion of the east bridge roadway work.

Pay Items and units:

211.12	Crack Monitoring	Unit
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END OF SECTION

**SPECIAL PROVISION
AMENDMENT TO SECTION 304 – AGGREGATE BASE COURSE
ITEM 304.201 – GRAVEL**

Add to Method of Measurement

4.5 Gravel for this project will be measured by the cubic yard of compacted materials placed within the limits shown on the plans.

Add to Basis of Payment

5.4 The accepted quantity of gravel for this project will be paid for at the Contract unit price per cubic yard complete in place.

Add to Pay items and units:

304.201	Gravel	Cubic Yard
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END OF SECTION

**SPECIAL PROVISION
AMENDMENT TO SECTION 502 – REMOVAL OF EXISTING BRIDGE STRUCTURE**

Add Description:

1.2 This work shall also include miscellaneous removal items including but not limited to removal of vegetation, brush and trees from wingwalls and the Kimball Island retaining wall, removal of laitenance from construction joints in the rigid frame top slab intrados, and removal and resetting of the chain link fence located on the northeast wingwall of the east bridge.

Add to Construction Requirements

3.4 Removing and resetting chain link fence shall be in accordance with Section 607.

Add to Pay item and unit:

502.99	Miscellaneous Removal Items	Unit
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END OF SECTION

**SPECIAL PROVISION
AMENDMENT TO SECTION 512 – PREPARATION FOR CONCRETE REPAIRS**

Amend 1.1 to read:

1.1 This work shall consist of inspecting, preparing existing deteriorated concrete surfaces at the locations shown on the plans and as directed by the Engineer. Since a significant portion of the work may involve discovering and repairing hidden deteriorated concrete, the Contractor should carefully inspect the work area before bidding.

Delete Section 512.4.2.

Add to Method of Measurement

4.1.1 Preparation for concrete repairs for the concrete bridge railings, rigid frame top slabs topside and soffit, legs and fascia, west bridge wingwalls and Kimball Island retaining wall concrete fascia shall include the repair material installed within the limits of concrete removal.

4.1.2 Concrete class AA repair material for the east bridge concrete wingwalls and west bridge concrete curb shall be paid for under Item 520.01.

Add the following Pay item and units:

512.0201	Preparation for Concrete Repairs, Class II	Square Yard
512.0202	Preparation for Concrete Repairs, Class II	Square Yard
512.0203	Preparation for Overhead Concrete Repairs, Class II	Square Yard
512.0204	Preparation for Concrete Repairs, Class II	Square Yard

END OF SECTION

**SPECIAL PROVISION
SECTION 520 – PORTLAND CEMENT CONCRETE
ITEM 520.021 CONCRETE BRIDGE RAIL**

This special provision provides for concrete bridge rail only and neither amends nor modifies other provisions of 520 except as specified below.

DESCRIPTION

1.1 This work shall consist of constructing the north concrete bridge rail and concrete curb for the east bridge, in accordance with the contract plans.

MATERIALS

2.1 Materials required shall meet the Material Requirements for the class or type of work in accordance with the Standard Specifications or as ordered

2.2 Concrete shall conform to the requirements of 520.

2.2.1 A concrete mix design shall be submitted for approval prior to commencing work in accordance with 520.2.11. The concrete shall meet the requirements for Concrete Class AAA.

2.3 Reinforcing steel shall conform to the requirements of 544.

2.3.1 Reinforcing steel shall be epoxy coated in conformance with 544.2.4.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall perform the required work as provided in the contract drawings, specification for the required work, or as directed.

3.2 Shop Drawings shall be submitted by the Contractor for approval in accordance with the procedures outlined in the applicable sections of the Standard Specifications. Drawings shall be approved prior to beginning work covered by the drawings.

3.3 Forms. Forms shall be subject to the approval of the Engineer.

3.3.1 Forms shall be made and maintained true to the shapes and dimensions shown the plans.

3.3 Placement of Concrete. The Engineer shall approve the placement of reinforcing prior to placement of concrete.

3.3.1 All reinforcing, existing and new, shall be free of direct, rust, oil, grease and other deleterious substances.

METHOD OF MEASUREMENT

4.1 Concrete bridge rail will be measured by the linear foot. Measurement will be along the top of the concrete bridge rail cap. Concrete bridge rail shall also include the construction of the concrete curb connected to the concrete bridge rail.

BASIS OF PAYMENT

5.1 The accepted quantity of concrete bridge rail will be paid for at the Contract unit price per linear foot complete in place. This unit price shall include the cost of furnishing all labor, tools and equipment to satisfactorily complete the work and shall include all materials such as concrete and reinforcing steel.

Pay items and units:

520.021	Concrete Bridge Rail	Linear Foot
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END OF SECTION

SPECIAL PROVISION
ITEM 535.1 – CONCRETE STAINING AND SEALING

DESCRIPTION

1.1 This work shall consist of applying a tinted or pigmented acrylic coating and sealant system for the sealing and protection of concrete surfaces to achieve a uniform appearance to match existing conditions as indicated in the Plans and as directed by the Engineer.

MATERIALS

2.1 Materials and coating(s) shall be a water-based, 100 percent acrylic, material that is breathable and repels water.

2.2 Materials and coating(s) systems furnished under this Section shall conform to the manufacturer's specifications. The following coating systems, or an approved equivalent, are acceptable for use:

Coating:	Tammscoat
Manufacturer:	Euclid Chemical Company 19215 Redwood Road Cleveland, OH 44110 Tel.: 1-800-321-7628 Internet: http://www.euclidchemical.com
Coatings:	Sika 550W Sika 670W
Manufacturer:	Sika Group 201 Polito Avenue Lyndhurst, NH 07071 Tel.: 1-800-933-7452 Fax: 1-952-938-8084 Internet: https://usa.sika.com/
Coatings:	MasterProtect HB 400 (Formerly: Thorocoat)
Manufacturer:	BASF Corporation Construction Chemicals 889 Valley Park Drive Shakopee, MN 55379 Tel.: 1-800-433-9517 Internet: http://www.master-builders-solutions.basf.us

SUBMITTALS

3.1 Four weeks prior to beginning the work, the Contractor shall submit between four and six color samples to the Engineer for approval. The Engineer, in consultation with the municipality, will

determine which, if any, of the samples are acceptable. If none of the samples are acceptable, then the Contractor shall repeat the process with four to six additional color samples.

3.1.1 The color of the material shall match as closely as practicable to the existing concrete color.

3.1.2 The material shall have a textured finish that matches as closely as practicable to the existing concrete texture.

APPLICATION

4.1 All surfaces that are to be stained and sealed shall be at least 30 days old and as required by the coating manufacturer. These surfaces shall also be cleaned as required by the manufacturer to remove any latency, dirt, grease, oil, efflorescence, paint, or other foreign materials and contaminants. Any solvent cleaning necessary shall meet the recommendations of the coating manufacturer.

4.1.1 Coatings shall be applied in accordance with the manufacturer's recommendations.

SURFACE PROTECTION

5.1 After application(s) of the sealer and/or stain, the concrete surfaces shall be protected as necessary in accordance with the manufacturer's recommendations.

ENVIRONMENTAL PROTECTION

6.1 During cleaning, surface preparation, and coating operations, the Contractor shall provide appropriate measures (such as suitable protective coverings) to protect the public, the bridge superstructure, work area, river, etc. from cleaning and coating contamination due to drippings, spatter, wind-blown particles, falling objects, etc. The Contractor shall be fully responsible for property damage or personal injury which may result from operations incidental to sealing and staining concrete surfaces.

PRECONSTRUCTION AND PRODUCTION OF TEST AREAS

7.1 Prior to applying the material on the existing bridge railings to remain, as shown on the Contract drawings, the Contractor shall apply the material on a test section in order to demonstrate the ability to match the materials and texture of the existing concrete. Cost for applying the material on the test section shall be included in Item 535.1.

7.2 The north bridge railing on the east bridge is to be removed and reconstructed. Therefore, the test section shall be located on the north bridge railing of the east bridge prior to its removal. The Engineer shall be present during the application of the test section. Final application to the bridge railings to remain shall not be until approved by the Engineer.

METHOD OF MEASUREMENT

8.1 The quantity of Special Provision (Concrete Staining and Sealing) to be measured for payment will be the number of gallons of stain applied in the complete and accepted work, measured to the nearest gallon.

BASIS OF PAYMENT

8.1 The accepted quantity of Special Provision (Concrete Staining and Sealing) will be paid for at the Contract unit price per gallon. Payment will be full compensation for furnishing, transporting, handling, and placing the material(s) specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

8.1.1 Any apparatus, material, and labor not specifically mentioned herein which may be found necessary to complete or perform any portion of the work in a satisfactory manner and in compliance with the requirements implied or intended in these specifications shall be furnished by the Contractor at no additional cost to the Agency.

Payment will be made under:

Pay Item and Unit

535.1	Concrete Staining and Sealing	Gallon
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END OF SECTION

**SPECIAL PROVISION
SECTION 564.1 BRIDGE LIGHTING SYSTEM**

DESCRIPTION

1.1 This work shall consist of furnishing all labor, materials, tools, equipment, and transportation necessary as required to install and test the Bridge Lighting System within project limits. This item shall include but not be limited to poles, lights and light fixtures, all conduit, conduit boxes, junction boxes, ballasts, fuses, electrical devices and feeders, supports, anchors and all backcharges from the Utility Company(s) and Manufacturer.

The Bridge Lighting System shall provide roadway lighting to provide a minimum of one foot (1') candle at any point along the sidewalk and travelway.

MATERIALS

2.1 Lighting System: The Lighting System shall consist of the following major features:

2.1.1 Outdoor fixtures and necessary conduit are to be weather proof and appropriate for wet locations.

2.1.2 An electrical interface for the Bridge Lighting System must be provided by the local utility at a location as determined by the Town, Engineer and Contractor.

2.1.3 The Bridge Lighting System shall operate via a photocell to provide navigational lighting at night. The photocell shall be located to operate lights at dusk and to prevent inadvertent operation. All accessories for a complete operating system shall be provided under these specifications.

2.1.4 Contractor shall layout the lights locations in the field for approval by the Engineer.

2.1.5 All equipment shall be new and shall be of industrial grade quality as to material and workmanship in accordance with the best engineering practice. All equipment shall be UL and/or Factory Mutual approved.

2.1.6 The Contractor shall provide one (1) replacement bulb to the owner for each light fixture installed.

2.2 Materials furnished under this Section shall conform to the manufacturer's specifications. The following light fixture and light pole are to be used:

Lighting Fixture: K56
Lantern Type: Cleveland
IES Lighting Classification: Type 3
Optical Option: P4 Rippled Acrylic
Wattage: 40
Line Voltage: 120v

Manufacturer: King Luminaire
1153 State Route 46N
Jefferson, OH 44047

Tel: 1-800-268-7809
www.kingluminaire.com
Member of the StressCrete Group of Companies

Light Pole: The Traditional
Pole Height Above Rail: 10'

Manufacturer: StressCrete
1153 State Route 46N
Jefferson, OH 44047
Tel: 1-800-268-7809
www.stresscrete.com

2.3 Conduit

2.3.1 Rigid Metal Conduit and Fittings -

- Rigid Steel Conduit - ANSI C 80.1
- Fittings and Conduit Bodies - ANSI/NEMA FB 1; Threaded Type, Material to Match Conduit

All exposed conduits will be painted with two (2) coats of an approved enamel paint. Contractor shall submit paint samples to the Owner for approval.

2.3.2 Electrical Metallic Tubing (EMT) and Fittings -

- EMT - ANSI C 80.3 Galvanized Tubing.
- Fittings and Conduit Bodies - ANSI/NEMA FB 1; Steel Compression Type.

2.3.3 Liquidtight Flexible Conduit and Fittings -

- Conduit - Flexible Metal Conduit with PVC Jacket.
- Fittings and Conduit Bodies - ANSI/NEMA FB 1.

2.3.4 Conduit Supports - Clamps, straps, and supports shall be steel or malleable iron.

2.4 Conductors, Cables and Connectors

2.4.1 Conductor Material shall be annealed copper, electrical conductor equality, and 98% conductivity. No aluminum conductors shall be allowed in any application of this project. Individual conductor insulation shall be Type THWN and shall be UL listed and labeled for the use herein intended. All wiring should be in conduit, minimum size $\frac{3}{4}$ inch.

2.4.2 Conductors sized AWG #10 and smaller shall be connected by either color coded twist-on spring loaded or color coded die compression type connectors. Connectors which pierce insulation as means of making contact with conductor shall not be allowed.

2.4.3 Branch circuit conductors shall not be smaller than AWG #12. Conductors shall have PVC insulation rated at 600 volts and the ampacity shall be sized at 60 degrees C., unless otherwise shown on the Drawings.

2.4.4 No Romex (Type NM) cable can be used on this project.

2.4 Disconnect Switches

2.5.1 Fusible Disconnect Switch Assemblies shall be NEMA KS1; Type HD quick-make, quick-break, load interrupter enclosed knife switch with externally operable handle interlocked to prevent opening front cover with switch in ON position. Handle lockable in OFF position. Fuse Clips: Designed to accommodate Class R J fuses. Acceptable Manufacturers include Square D, General Electric, Cutler-Hammer, and ITE-Siemans. Substitutions may be allowed, as determined by Engineer.

2.5.2 Enclosures: NEMA KS 1; NEMA 3R

2.5.3 References:

1. ANSI/UL 198C - High Intensity Capacity Fuses; Current Limiting Types.
2. FS W-F-870 - Fuse holders (For Plug and Enclosed Cartridge Fuses).
3. FS-W-S-865 - Switch, Box (enclosed), surface-mounted.

2.5.4 Fuses shall be 600 Amperes and Less: ANSI/UL 198E, Class RK1; as indicated on Drawings; dual element, current limiting one-time fuse, 250 volt, with an interrupting rating of 200,000 rms amperes. Acceptable manufacturers are Littelfuse, Bussman and Edison.

2.5.5 Installation

1. Install disconnect switches where indicated on Drawings.
2. Install fuses in fusible disconnect switches.

2.6 Breakers, Load & Lighting Panels

- A. Breakers shall be molded case, toggle type, thermal-magnetic with common trip for multiple pole types. Breakers shall have minimum symmetrical interrupt capacity of 10,000 amperes RMS at 240 volts.
- B. Breakers shall be either bolt-in or stab-in type.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall keep on the job site, a set of Clean Drawings on which he shall indicate changes made during his work of installation that differ from that shown on the Drawings. He shall also indicate any other information that may be pertinent to future use, modification and/or maintenance of the systems he installs. These Drawings shall be labeled "As-Builts" and the Contractor's notes shall be shown clearly and legibly in contrasting colored ink. The As-Built Drawings shall be delivered to the Engineer before the Contractor's work is considered complete.

3.2 Testing, Start-up and Inspection

3.2. During the course of this work, test all circuits for grounds and shorts and eliminate any found.

3.2.2 Provide and pay for any tests required by inspection authorities having jurisdiction. Include costs in Base Bid.

3.3 Work of this Contract shall comply with the latest edition of the following codes and standards:

1. National Electrical Code.
2. All Applicable State and Local Codes.
3. Underwriters' Laboratories.
4. National Fire Protection Association (NFPA).

3.3.1 The Contractor assumes all responsibilities for the work required to conform to current codes and completion. The Contractor should become familiar with the property, local codes and the scope of work.

3.4 The Contractor shall obtain and pay for all permits, inspections, licenses, etc., required by any authorities having jurisdiction.

3.5 Review existing grounding system in accordance with the National Electrical Code, National Electrical Safety Code, and the local requirements, and system manufacturer's recommendations. Each power and lighting circuit shall contain an equipment ground conductor.

3.5.1 Tests: Provide additional ground rods if required by utility and install additional ground rods and conductors as required until resistance to ground complies with the regulatory requirements.

3.5.2 System Grounding:

1. Circuit Grounding - Install grounding bushings, studs, jumpers, and bonding conductors as required at panel boards and system equipment.
2. Bonding - Provide bonding jumpers as required by Code.
3. Install as many ground rods as necessary to achieve a safe and adequate system ground. Ground electrical service to water service.
4. Grounding - Exothermically weld cable connection to ground rods. Bronze fitting approved for purpose is also acceptable.

3.5.3 Grounding Conductor:

1. All metallic conduit shall be grounded but shall not be used as the grounding conductor.
2. A separate green insulated grounding conductor shall be installed for every feeder, sub-feeder, and branch conduit installed in conduit.

3.6 Lighting

3.6.1 Requirements. The work to be performed shall consist of furnishing all material, installing, and testing a lighting system for the project. The system shall be complete with light fixtures, conduit, conductors, and accessories as specified herein. All equipment or components shall be listed by UL and/or by Factory Mutual for the intended use.

3.6.2 The work under this Contract shall, in general, involve but not necessarily be limited to the following:

3.6.2.1 Exterior connections to existing power pole in accordance with local and State requirements.

3.6.2.2 Installation of lighting, wiring and conduits as indicated on the drawings or as directed by the Engineer.

3.6.3 Provide all design, equipment, materials, labor, etc. required for a complete functionally integrated system as specified herein.

3.6.4 The system shall operate as specified in an environmentally wide variation of seasonal temperatures and weather conditions (-30°C to +55°C). Any adjustments required to achieve this shall be at the Contractor's expense.

3.7 The light pole shall be mounted to the existing concrete bridge rail using the full base plate option. The Hilti HIT-HY 200-AR adhesive with Hilti HAS threaded rods, or approved equal, shall be used for the connection to the existing bridge rail as shown on the drawings.

3.7.1 The color of the light pole shall match as closely as practicable to the existing concrete rail color. Town shall determine color of pole. Contractor shall submit color samples to the Engineer prior to start of work.

METHOD OF MEASUREMENT.

4.1 Bridge Lighting System shall be measured as a unit basis for the system installed as shown on the plans.

BASIS OF PAYMENT.

5.1 Bridge Lighting System will be paid for at the contract lump sum price, which price shall be full compensation for furnishing, transporting, handling and placing the materials specified, including connection to existing power source, and the furnishing of all labor tools, equipment and incidentals necessary to complete the work.

Pay item and unit:

564.1	Bridge Lighting System	Unit
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END OF SECTION

**SPECIAL PROVISION
AMENDMENT TO SECTION 603 – CULVERTS AND STORM DRAINS
ITEM 603.99 – SCUPPER REPLACEMENT**

Add to Description:

1.1 This work shall consist of the removal of the existing scuppers and furnishing and installation of new scuppers at all scupper locations on the existing bridges, including necessary joints, fittings and connections as required.

Add to Construction Requirements:

3.11 Scupper Replacement.

3.11.1 Existing scupper consists of 4½" outside diameter steel pipe. The existing scuppers are 3'-6" long at midspan of the bridges and 4'-9½" long at the end scuppers of the bridges.

3.11.2 The existing scuppers shall be cut such that the steel pipes are flush with the top side and bottom side of the rigid frame top slab.

3.11.3A 3" polyvinyl chloride (PVC) flange shall be placed such that it fits within the existing scupper. A 3" PVC pipe shall be installed inside the flange and secured in place per manufactures recommendations. The new scupper shall be water tight. The 3" PVC pipe shall extend a minimum 6" below the bottom side of the rigid frame top slab and shall be recessed 1" below the top of pavement.

Add to Method of Measurement:

4.4 Scupper replacement will be measured as a unit. A unit will include all labor, materials and equipment to complete the replacement of all scuppers on both bridges; 6 scuppers per bridge, 12 total.

Add to Basis of Payment:

5.9 The accepted scupper replacement will be paid for at the contract lump sum price complete in place.

5.9.1 Partial payments for the scupper replacement will be paid for at the contract unit price. Payment at interim stages shall not exceed 50 percent of the amount bid upon completion of the 6 scuppers located on the west bridge and 50 percent of the amount bid upon completion of the 6 scuppers located on the east bridge.

Add to Pay item and units:

603.99	Scupper Replacement	Unit
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END OF SECTION

**SPECIAL PROVISION
SECTION 604 – CATCH BASINS,
DROP INLETS, AND MANHOLES
ITEM 604.0008 – OUTLET PIPE HOOD**

DESCRIPTION

1.1 This work shall consist of furnishing and installing an outlet pipe hood as shown on plans and details.

MATERIALS

2.1 The materials shall consist of a glass reinforced resin composite outlet hood with an anti-siphon device, access port, and all necessary mounting hardware, as manufactured by Best Management Products, Inc. or approved equal.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall make submittal for approval prior to construction.

3.2 Outlet pipe hoods are to be constructed as shown on plans and details and in accordance with manufacturer's recommended installation procedure.

END OF SECTION

SPECIAL PROVISION
AMENDMENT TO SECTION 608 – SIDEWALK
ITEM 608.54 – DETECTABLE WARNING DEVICES, CAST IRON

This Special Provision adds Detectable Warning Devices to Section 608.

Add to Description:

1.2 Detectable Warning Devices. This work shall consist of furnishing and installing a detectable warning surface and accessories on sidewalk ramps at locations shown on the plans, as specified herein, or as ordered including any and all required surface preparation. Detectable warnings shall be installed at sidewalk ramps where a sidewalk crosses a vehicular way, excluding unsignalized driveway crossings. Detectable warnings shall measure 24 in (600 mm) in the direction of travel and extend the full width of the sidewalk ramp and the edge nearest the curbline shall be located 6 to 8 in (150 to 200 mm) from the face of curbline.

Add to Materials:

2.6 Detectable Warning Devices. Material. Detectable warning devices shall be gray cast iron conforming to AASHTO M105 and AASHTO M306.

2.6.1 Color. Cast iron panels shall have no surface coating, and shall be allowed to transition to their natural patina.

2.6.2 Detectable Warning Panel Truncated Dome Geometry.

2.6.2.1 Detectable warning devices shall be in full compliance with ADAAG guidelines (Title 49 CFR Transportation, Part 37.9 Standard for Accessible Transportation Facilities, Appendix A, Section 4.29.2 – Detectable Warning on Walking Surfaces).

2.6.2.2 Size and spacing for truncated domes shall be as follows: base diameter of nominal 0.9 in (23 mm), top diameter of nominal 0.4 in (10 mm), height of nominal 0.2 in (5 mm), with a center to center spacing of nominal 2.35 in (60 mm).

2.6.2.3 The truncated domes shall be arranged in a grid pattern and shall align properly from panel to panel.

Add to Construction Requirements:

3.3 Detectable Warning Devices. The Contractor shall submit manufacturer's descriptive literature for materials specified in accordance with 105.02.

3.3.1 Transport, storage, and handling of products shall be in accordance with manufacturer's instructions.

3.3.2 Install detectable warning devices and any anchoring hardware in accordance with

manufacturer's instructions. Panels shall be set into a bed of 4 in (100 mm) wet unreinforced concrete.

3.3.3 Use a combination of available panel widths as manufactured to cover the full sidewalk ramp width to the extent practicable. Field cutting of panels is not permitted.

3.3.4 Care shall be taken to ensure the safety of pedestrians when sidewalks must remain in service during construction.

3.3.5 The attached details are for reference only. See plan set for specific details.

Add to Method of Measurement:

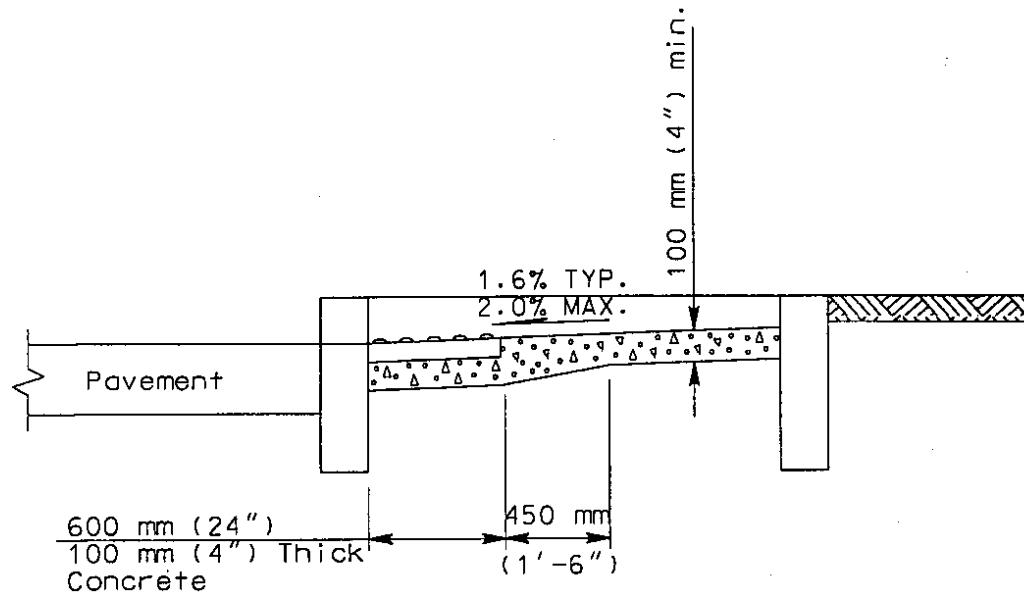
4.3 Detectable Warning Devices. Will be measured by the square yard (square meter) to the nearest 0.1 of a square yard (square meter).

Add to Basis of Payment:

5.4.1 Detectable Warning Devices. Will be paid for at the contract unit price per square yard (square meter) complete in place including accessories, anchoring hardware and any required surface preparation.

Pay Item and Unit

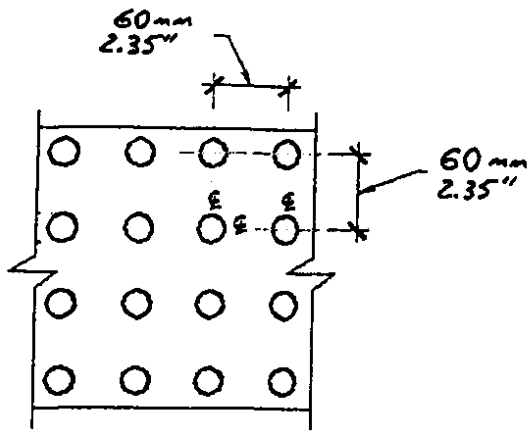
608.54	Detectable Warning Devices, Cast Iron	Square Yard (Square Meter)
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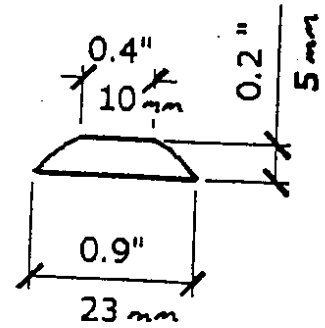
SECTION

GENERAL NOTES

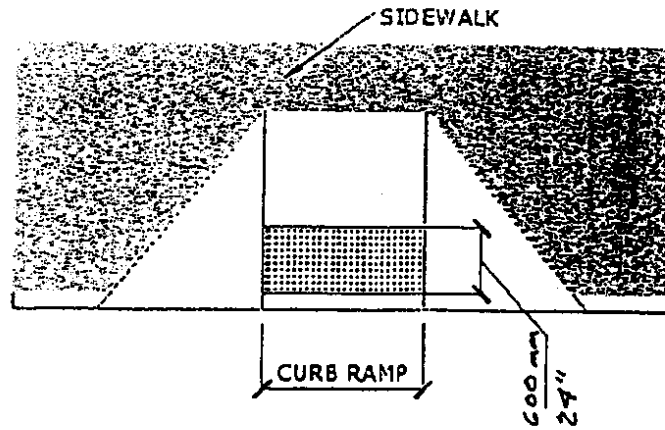
1. THE MAXIMUM RUNNING SLOPE OF ANY SIDEWALK CURB RAMP IS 12:1. THE MAXIMUM CROSS SLOPE IS 2%. THE SLOPE OF THE LANDING SHALL NOT EXCEED 2% IN ANY DIRECTION.
2. TRANSITIONS SHALL BE FLUSH AND FREE OF ABRUPT CHANGES. ROADWAY SHOULDER SLOPES ADJOINING SIDEWALK CURB RAMP SHALL BE A MAXIMUM OF 5% (FULL WIDTH) FOR A DISTANCE OF 600 mm (2 FT.) FROM THE ROADWAY CURBLINE.
3. INTERCEPT DRAINAGE ALONG THE CURB IN ADVANCE OF SIDEWALK CURB RAMP OR LANDINGS. CATCH BASINS, MANHOLES, ETC. SHALL NOT BE LOCATED IN, OR AT THE BASE OF, SIDEWALK CURB RAMP OR LANDINGS.
4. THE BOTTOM OF THE SIDEWALK CURB RAMP OR LANDING, EXCLUSIVE OF THE FLARED SIDES, SHALL BE WHOLLY CONTAINED WITHIN THE CROSSWALK MARKINGS.
5. THE SURFACE OF A PERPENDICULAR SIDEWALK CURB RAMP OR THE LANDING OF A PARALLEL SIDEWALK CURB RAMP SHALL CONTRAST VISUALLY WITH THE ADJOINING SIDEWALK SURFACE. EITHER ASPHALT/LIGHT-COLORED CONCRETE OR LIGHT-COLORED CONCRETE/DARK-STAINED CONCRETE. THE CONCRETE SURFACE SHALL BE SLIP RESISTANT.
6. INSTALL DETECTABLE WARNINGS (TRUNCATED DOMES) AT THE LOCATIONS SHOWN. DETECTABLE WARNINGS SHALL MEASURE 600 mm (24") IN THE DIRECTION OF TRAVEL AND EXTEND THE FULL WIDTH OF THE SIDEWALK RAMP. AND THE EDGE NEAREST THE CURBLINE SHALL BE LOCATED 150 mm TO 200 mm (6"-8") FROM THE FACE OF CURBLINE.



Dome Spacing



Dome Section



Illustrates 24" deep detectable warning located near the street edge of the curb ramp.

Transition Ramp with Detectable Warning

END OF SECTION

**SPECIAL PROVISION
SECTION 611 – TEMPORARY WATER & APPURTENANCES**

DESCRIPTION

1.1 General Description of Work. The purpose of this work is to install a temporary waterline bypass of an existing waterline located on the upstream side of String Bridge, as shown on the contract drawings. The Contractor is responsible for furnishing, installing and removing temporary water systems.

1.1.2 The Contractor shall furnish all materials, labor, tools and equipment, and perform all operations, testing, and incidentals necessary for setting up and maintaining a temporary water system to maintain water service at all times, except for authorized shutdowns approved by the Town.

1.2 Sequence/Maintenance of Service. The Contractor is responsible for maintaining continuous water service to affected customers via a temporary water system, except when construction requires an interruption of water service. A service interruption may last no longer than six hours. The Contractor must obtain written approval from the Town prior to interruption of water service to affected water users. The Town requires that a written notice be sent to all water customers 48 hours in advance of the scheduled shutdown. The Town will provide written notification, but it is the Contractor's responsibility to establish and address needs, and shall coordinate with the Engineer and the Town.

1.3 Reference Drawings and Information. Neither Hoyle, Tanner nor the Town guarantees the accuracy or completeness of existing conditions shown on the contract plans for location of the existing water line. Sufficient investigations shall be made by the Contractor so that the Contractor is knowledgeable of existing conditions prior to tendering a bid.

1.4 Watergates and Shutoffs. The Contractor shall adjust all Watergates and shutoffs, within the proposed work limits, to proposed grade as shown on the contract plans or as directed by the Engineer.

MATERIALS

2.1 All products and materials shall conform to the latest appropriate section of American Water Work Association (AWWA) and American National Standards Institute (ANSI) Standards and as otherwise specified hereinafter.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall be responsible for the layout of the work. The temporary water mains, service connections and appurtenances shall be built at the locations as agreed upon by the Town, Engineer and Contractor.

3.2 Notice. The Contractor shall provide a forty-eight (48) hour written notice to all water users regarding any disruption in service related to the installation and removal of by-pass and temporary service piping.

3.2.1 The temporary main shall be installed as agreed upon by the Town, Engineer and Contractor.

3.2.2 Services to be connected to the temporary main shall be identified by the Contractor.

3.3 Installation:

3.3.1 Temporary services shall be connected to existing service piping and installed in accordance with these specifications.

3.3.2 The temporary system shall be pressure and leakage tested and properly disinfected in accordance with applicable AWWA specifications.

3.4 Pipe Installation:

3.4.1 There shall be no physical connection between a public or private potable water supply system and a sewer, or sewer appurtenance which would permit the passage of any sewage or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole. Locate the new sewer line with at least 10 feet of horizontal separation distance between it and the existing water main.

3.4.2 A deviation from the separation requirements of 3.4.1 above shall be allowed where necessary to avoid conflicts, as determined by the Engineer, provided that the sewer is constructed as follows:

3.4.2.1 Joints shall be pressure tested with zero leakage at 1.5 times working pressure for force mains.

3.4.3 Whenever sewers must cross water mains, the sewer shall be constructed as follows:

3.4.3.1 Sewer pipe joints shall be located at least nine feet horizontally from the water main.

3.4.3.2 Joints shall be pressure tested with zero leakage at 1.5 times working pressure for force mains.

3.4.3.3 Vertical separation of the sewer and water man shall not be less than 18 inches.

3.4.4 Piping in place shall be subject to inspection and approval of the Engineer together with the Town.

3.4.5 Pipe and accessories shall be kept in a sound, undamaged condition. They shall, at all times, be handled with care and shall not be dropped, dumped or bumped against any other object. Damage material shall be replaced as not cost to the Town, at any time during the construction that the damage is identified or occurs.

METHOD OF MEASUREMENT

4.1 Adjusting Water Gates and Shutoffs Set by Others will be Measured by the each and include any incidental work including excavation and backfill.

4.2 Temporary Water and Appurtenances will be measured as a unit and include all necessary materials, labor and equipment to install the temporary bypass and complete all testing as shown on the contract documents.

BASIS OF PAYMENT

5.1 The accepted quantity of Adjusting Water Gates and Shutoffs Set By Others, will be paid at the contract unit price per each complete in place as shown on the plan and specified herein, and shall include excavation, bedding, blanket, backfill, appurtenances, and all other work required for or incidental to the completion of this item.

5.2 Temporary Water & Appurtenances will be paid for at the contract unit price. Partial payments will be paid for at the contract unit price. Payment for interim stages shall not exceed 50 percent of the amount bid upon completion of the west bridge roadway work and 50 percent of the amount bid upon completion of the east bridge roadway work.

Pay items and units:

611.90001	Adjusting Water Gates And Shutoffs Set By Others	Each
611.99	Temporary Water & Appurtenances	Unit

END OF SECTION

**SPECIAL PROVISION
SECTION 612 – SEWER LINE INSTALLATION**

DESCRIPTION

1.1 The purpose of this work is to install a temporary sewer line bypass of an existing sewer line located on the downstream side of String Bridge, located from Kimball Island to Water Street, as shown on the contract drawings. The Contractor is responsible for furnishing, installing and removing temporary sewer system.

1.1.2 The Contractor shall furnish all materials, labor, tools and equipment, and perform all operations, testing, and incidentals necessary for setting up, maintaining, and removal of a temporary sewer system.

1.2 Sequence/Maintenance of Service. The Contractor is responsible for maintaining continuous sewer service to affected customers via a temporary sewer system, except when construction requires an interruption of sewer service. A service interruption may last no longer than six hours. The Contractor must obtain written approval from the Town prior to interruption of sewer service to affected water users. The Town requires that a written notice be sent to all sewer customers 48 hours in advance of the scheduled shutdown. The Town will provide written notification, but it is the Contractor's responsibility to establish and address needs, and shall coordinate with the Engineer and the Town.

1.3 Reference Drawings and Information. Neither Hoyle, Tanner nor the Town guarantees the accuracy or completeness of existing conditions shown on the contract plans for location of the existing sewer line. Sufficient investigations shall be made by the Contractor so that the Contractor is knowledgeable of existing conditions prior to tendering a bid.

MATERIALS

2.1 All products and materials shall conform to the latest appropriate section of American Water Work Association (AWWA) and American National Standards Institute (ANSI) Standards and as otherwise specified hereinafter.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall be responsible for the layout of the work. The temporary sewer line, service connections and appurtenances shall be built at the locations as agreed upon by the Town, Engineer and Contractor.

3.2 Notice. The Contractor shall provide a forty-eight (48) hour written notice to all sewer users regarding any disruption in service related to the installation and removal of by-pass and temporary service piping.

3.3.2 The temporary line shall be installed as agreed upon by the Town, Engineer and Contractor.

3.3.3 Services to be connected to the temporary line shall be identified by the Contractor.

3.3 Installation:

3.3.1 Temporary services shall be connected to existing service piping and installed in accordance with these specifications.

3.3.2 The temporary system shall be pressure and leakage tested and properly disinfected in accordance with applicable AWWA specifications.

3.4 Pipe Installation:

3.4.1 There shall be no physical connection between a public or private potable water supply system and a sewer, or sewer appurtenance which would permit the passage of any sewage or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.

METHOD OF MEASUREMENT

4.3 Temporary Sewer and Appurtenances will be measured as a unit and include all necessary materials, labor and equipment to install the temporary bypass and complete all testing as shown on the contract documents.

BASIS OF PAYMENT

5.1 Temporary Sewer & Appurtenances will be measured by the unit.

Pay items and units:

612.99	Temporary Sewer & Appurtenances	Unit
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END OF SECTION

**SPECIAL PROVISION
SECTION 645 --EROSION CONTROL**

This special provision amends section 645 as follows:

Delete 1.2.1 in its entirety

Amend 3.1.1 to read:

3.1.1 Prior to the start of any land disturbance activities, the Contractor shall submit four sets of the Storm Water Pollution Prevention Plan (SWPPP) described in 3.2 for approval for clearing, grubbing, grading, drainage and bridge structures, especially in or adjacent to existing waters, water courses and wetlands. The Engineer's review time will be proportional to the complexity of the SWPPP and will be within 15 working days. No work requiring erosion/ sediment control shall commence until the SWPPP has been approved. Names of designated personnel to perform field monitoring shall be included in the submittal. The SWPPP may be submitted in phases or for specific construction areas addressing the maximum open area allowed in section 3.1.4. Only work within areas covered by an approved SWPPP will be allowed to be performed.

Amend 3.1.7 to read as follows:

3.1.7 Earth excavation and embankment slopes shall be permanently or temporarily treated for stabilization before the time the slant height of exposed slopes reaches 30 ft. (9 m), unless otherwise approved. Where construction activities are completed within the growing season, all exposed soil areas shall be permanently stabilized within 3 calendar days. Where construction activities are temporarily suspended or completed outside of the growing season, all exposed soil areas shall be treated for stabilization within 14 calendar days.

Amend 3.2.1.1 to read:

3.2.1.1 Qualifications for the SWPPP Preparer include a minimum of 5 years experience or knowledge of highway and bridge construction operations, with knowledge of methods of construction, demonstrated knowledge of erosion and sediment control and stormwater management measures.

Amend 3.2.4 to read:

3.2.4 Project work may be suspended, wholly or in part, with no extension of time or additional compensation for failure to implement and maintain the approved SWPPP, including modifications.

Replace 4.6.1 in its entirety with the following:

4.6.1 Monitoring Erosion and Sediment Control will be measured by each site visit required in 3.2.3.1 or as requested by the Engineer. Each site visit will include all travel time, time spent monitoring the construction site(s) and off-site areas specified in 3.2.2.2 and monitoring report preparation. For a site visit to be measured for payment in accordance with 5.6.2., time on site shall not be less than one half (1/2) hour. Site visits of less than (1/2) hour will not be measured or paid for. Monitoring Erosion and Sediment control will not be measured when there is no item for this work.

Replace 5.6.2 in its entirety with the following:

5.6.2 The accepted quantities of Monitoring Erosion and Sediment Control will be paid for at the contract unit price per each visit.

Replace 5.6.2.1 in its entirety with the following:

5.6.2.1 Travel time and other time not spent at the construction site(s) or off-site areas and support services (i.e. report preparation, travel expenses, clerical staff, copying, miscellaneous expenses, overhead) will be included in the contract unit price per each visit.

Delete the following Pay items and units:

645.71	Monitoring SWPPP and Erosion and Sediment Controls	Hour
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Add the following Pay items and units:

645.71	Monitoring SWPPP and Erosion and Sediment Controls	Each
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END OF SECTION

**SPECIAL PROVISION
AMENDMENT TO SECTION 645 – EROSION CONTROL
ITEM 645.512 – COMPOST SOCK FOR PERIMETER BERM**

This special provision provides for compost sock for perimeter berm and neither amends nor modifies the provision of this section except as noted below. The intent of this item is to work in conjunction with or in-lieu of silt fence where entrenched silt fence is not feasible.

DESCRIPTION

1.1 The Contractor shall furnish and install degradable compost socks for perimeter berm at locations shown on the SWPPP plans or as ordered. Removal, if necessary, will be subsidiary to the item, and will be conducted as directed by the Engineer. The compost sock for perimeter berm shall be used as such and is not intended for areas which may receive concentrated flows such as channels or restricted outlets.

MATERIALS

2.1 Compost Sock for Perimeter Berm. Sock must be:

2.1.1 A mesh tube, oval to round in cross section, 12 inches in diameter. Sock must have a minimum durability of one year after installation.

2.1.2 Composed of a knitted biodegradable or photodegradable material with 1/8 to 3/8 inch openings. Fabric must be clean; evenly woven; free of encrusted concrete or other contaminated materials; and free from cuts, tears, broken or missing yams and thin, open, or weak places.

2.2 Compost Media.

2.2.1 Compost may be derived from green material consisting of chipped, shredded, or ground vegetation; or clean recycled wood products.

2.2.2 Compost must not be derived from mixed municipal solid waste and be reasonably free of visible contaminants. Compost must not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth. Compost must not possess objectionable odors.

2.3 Chemical, Physical and Biological Parameters.

2.3.1 Compost products specified for use in this application must meet the criteria specified in Table 1, below.

2.3.2 Only compost products that meet all applicable state and federal regulations pertaining to its production and distribution may be used in this application. Approved compost products must meet related state and federal chemical contaminant (e.g., heavy metals, pesticides, etc.) and pathogen limits pertaining to the feedstocks (source materials) in which it is derived.

Table 1 - Compost Media Parameters

Parameters	Reported as (units of measure)	Characteristics
pH2	pH units	5.0-8.5
Soluble Salt Concentration (electrical conductivity)	dS/m (mmhos/cm)	Maximum 5
Moisture Content	%, wet weight basis	30-60
Organic Matter Content	%, dry weight basis	25-65
Particle Size	% passing a selected mesh size, dry weight basis	3" (75 mm), 100% passing 1" (25mm), 90% to 100% passing 3/4" (19mm), 70% to 100% passing 1/4" (6.4mm), 30% to 75% passing Maximum: particle size length of 6" (152mm) (no more than 60% passing 1/4" (6.4 mm) in high rainfall/flow rate situations)
Stability ³ Carbon Dioxide Evolution Rate	mg CO ₂ -C per g OM per day	<8
Physical Contaminants (man-made inerts)	%, dry weight basis	<1

Note: The composition of this media is similar to the vegetated filter berm media from AASHTO R 51. Very coarse (woody) composts that contain less than 30% of fine particles (1mm in size) shall be avoided, as optimum reductions in total suspended solids (TSS) is desired and berms may be seeded.

CONSTRUCTION REQUIREMENTS

3.1 Site Preparation. To ensure optimum performance, cut down or remove heavy vegetation, and level uneven surfaces to ensure that the filter sock uniformly contacts the ground surface.

3.2 Installation.

3.2.1 Prior to installation, clear the area of obstructions including rocks, clods, and debris greater than one inch.

3.2.2 Fill socks uniformly with compost to the desired length such that the logs do not deform. Secure ends.

3.2.3 When more than one compost sock is required to achieve desired length, join socks longitudinally with a 1 foot 6 inch overlap.

3.2.4 Compost sock may be installed using installation method Type 1, Type 2, or a combination.

o Installation method Type 1:

- Place directly on the ground with good contact with the finish grade.
- Secure with wood stakes every 4 feet along the length of the compost sock.
- Secure the ends of the compost sock by placing a stake 6 inches from the end

- of the compost sock.
- Drive the stakes into the soil so that the top of the stake is less than 2 feet above the top of the compost sock.
- o Installation method Type 2:
 - Place directly on the ground with good contact with the finish grade.
 - Secure with rope and notched wood stakes.
 - Drive stakes into the soil until the notch is even with the top of the compost sock.
 - Lace the rope between stakes and over the compost sock. Knot the rope at each stake.
 - Tighten the compost sock to the surface of the slope by driving the stakes further into the soil.

3.2.5 Install compost sock approximately parallel to the slope contour or as otherwise specified in the SWPPP or ordered by the Engineer.

3.3 Maintenance.

3.3.1 Inspect compost socks regularly, and after each rainfall event, to ensure that they are intact and functioning correctly. Remove sediment that builds up behind the sock before it interferes with the functionality of the sock. Deposit the removed sediment within the project limits so that the sediment is not subject to erosion by wind or by water.

3.3.2 Repair or replace split, torn, or unraveling socks. Replace broken or split stakes. Sagging or slumping compost socks must be repaired with additional stakes or replaced. Correct locations where rills and other evidence of concentrated runoff have occurred beneath the socks. Compost socks must be repaired or replaced within 24 hours of identifying the deficiency.

3.3.3 Remove sock mesh tubes when directed by the Engineer. Cut mesh and empty sock contents in place and rake to distribute evenly.

METHOD OF MEASUREMENT

4.1 Compost sock for perimeter berm will be paid for by the linear foot to the nearest 1 foot. Measurement will be along the top of each continuous run complete in place.

BASIS OF PAYMENT

5.1 The accepted quantity of compost sock for perimeter berm will be paid for at the Contract unit price per linear foot installed. No additional payment will be made for overlaps, splices or the anchoring of the system.

Add to Pay items and units:

645.512	Compost Sock for Perimeter Berm	Linear Foot
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END OF SECTION

**SPECIAL PROVISION
SECTION 645 --EROSION CONTROL
ITEM 645.99 - TURBIDITY BARRIER**

Add to Materials:

2.12 Turbidity Barrier

- A. Siltation fence shall be made of 5 mil industrial polypropylene 71g/sy (85g/m²). Coefficient of permeability shall be 0.009 cm/sec with a water flow rate of 18 gal/min/ft² (114 L/min/m). Opening size shall be a maximum of 20 (U.S. Standard Sieve) with a minimum retention efficiency of 75%. Fabric shall be stable against ultraviolet radiation. Fabric width shall be 36 in. (0.91m).
- B. The turbidity barrier shall consist of a woven and calendared polypropylene geotextile fabric suspended from a floatation device and sealed against the bottom of the water body by ballast sewn into the bottom of the geotextile. All seams shall have a minimum of 2 rows of stitches (Federal Stitch Type 401, 2 thread stitch). Stitch count shall be between 2 and 3 stitches per centimeter. Seam strength shall develop at least 50 percent of Wide Width Tensile Strength of the geotextile when tested in accordance with ASTM D4884.

The geotextile fabric shall be woven and calendared polypropylene manufactured to form a stable network such that the filaments retain their relative positions. The specific gravity of the fabric shall be 0.95 or greater.

The geotextile fabric shall have the following properties based upon minimum average roll values:

Property	Test Method	Unit	Value
Percent Open Area	CWO-22125	Percent	4 to 6
Apparent Opening Size	ASTM D4751-87	U. S. Sieve	70-100
Permittivity	ASTM D4491-92	sec-1	0.25 to 0.30
Puncture	ASTM D4833-88	kgs.	greater than 60
Mullen Burst	ASTM D3786-87	kg/centimeter ²	greater than 32
Trapezoidal Tear	ASTM D4533-91	kgs.	greater than 43 x 25
Grab/Tensile	ASTM D4632-91	kgs.	greater than 159 x 113
Wide Width Tensile	ASTM D4595	kg/centimeter	greater than 38 (MD) x 24 (XD)
UV Resistance	ASTM D4355 (after 150 hours)	percent	greater than 90

The barrier shall be assembled according to manufacturer's recommendations. High water and high wind conditions shall be considered in the determination of the necessary lengths and widths of the barrier. Connections between adjacent sections of floatation booms shall be designed to withstand all stresses and movements and shall be tightly sealed to prevent flow of turbid water through the barrier. All splices in the geotextile shall be sewn except at connections between adjacent segments of the barrier. Geotextile splices at connections must form a closure as tight as the sewn stitch specified. Open stitching or splicing through widely spaced grommets are not permitted.

- C. "Booms", logs or other types or floats that may be used to suspend flexible fabric filter membrane enclosing areas of excavation, trenching, etc., along or out into the bodies of water shall be standard products normally used in this type of work and shall be approved by the Engineer prior to their use.

Add to Construction Requirements:

3.10 Turbidity Barrier. The Contractor is advised that stream flows and water levels of resource areas may vary substantially due to climatic and seasonal conditions and shall be responsible for controlling and handling ground and/or surface water regardless of the volume of water and regardless of whether this flow is due to flood waters from storms.

3.10.1 Erosion and Turbidity Control.

- A. The Contractor shall take every precaution to minimize and control erosion and turbidity within the project area. These precautions shall be subject to approval by the Engineer and shall include, but not be limited to, the following:
 - 1. The turbidity barrier shall be installed as noted on the wetland plan to contain suspended material disturbed by the construction activities. The turbidity barrier shall be anchored to prevent significant movement resulting from wind, water currents or construction activities. The bottom of the barrier shall be held tight against the bottom by the ballast chain, supplemented by sand bags or other weights where necessary. There shall be sufficient slack in the barrier and anchorage system to allow movement with shifts in water current or wind and changes in water depth without causing submergence of the flotation devices or lifting of the bottom of the barrier off the bottom of the water body. The barrier shall be so designed and installed to prevent movement of turbid water over, under or through the barrier during all conditions of weather, construction activities or other circumstances.

The area contained by the turbidity barrier shall not be used as a sedimentation basin for site runoff.

The Contractor shall inspect the turbidity barrier and adjacent water for signs of leakage at least once per day during period of construction activities and more frequently during periods of adverse weather. The Contractor shall perform any necessary repairs immediately. If water quality outside of the barrier exceeds the maximum allowable turbidity levels specified in 107.01, the Contractor shall cease all activities which may be contributing to the excessive turbidity and notify the Engineer. The Contractor shall perform the necessary repairs to the turbidity barrier or change operations to return the turbidity to within acceptable levels. The cost of all inspection by the Contractor of the turbidity barrier shall be subsidiary to Item 699. All costs for monitoring the barrier to verify conformance to the approved Stormwater Pollution Prevention Plan shall be included in Item 645.71 and shall be conducted by the SWPPP monitor.

The turbidity barrier shall be kept in place until the turbidity is below the maximum allowable levels specified 107.01. The Contractor shall then remove all components of the barrier and dispose of them offsite.

2. If for any reason the turbidity barrier becomes damaged or drops below the water surface or is found to be lifting off the bottom, the Contractor shall immediately make all necessary repairs to insure proper turbidity control. If the Contractor fails to make immediate repairs, all work shall be stopped until repairs have been made and the Contractor shall assume all costs related to the work stoppage for nonconformance to these requirements.

Add to Method of Measurement:

4.9 The turbidity barrier will be measured by each.

Add to Basis of Payment:

5.11 The accepted quantity of the turbidity barrier will be paid for at the contract unit price for each complete-in-place. No extra payment will be made for removal, reinstallation or repairs.

Pay Items and Units:

645.99	Turbidity Barrier	Each
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END OF SECTION

**SPECIAL PROVISION
SECTION 900.1 – REMOVE AND RESET PAVERS**

This section is intended to pay for the removal, regrading, and replacement of the pavers within the Kimball Island driveway.

DESCRIPTION

1.1 The Contractor shall be required to remove the existing pavers within the driveway reconstruction limits of the Kimball Island driveway and store in a safe place for reuse. It is assumed up to 10% of the existing pavers may break or crack and become unusable. Pavers broken due to Contractor negligence shall be replaced at the Contractor's expense. This item also includes fine grading the driveway to proposed bottom of paver elevation and replacing pavers to match existing look.

MATERIALS

2.1 Pavers required to replace broken or cracked pavers shall match existing pavers in size, color, and material. If these specs cannot be met, the Contractor shall have replacement options approved by the Engineer and Town.

2.2 Additional subbase material used to fine grade the driveway below the pavers shall meet the NHDOT Standard Specification for Item 304.35 – Crushed Gravel for Drives.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall perform all necessary work to accommodate removing and resetting pavers, while maintaining access to Kimball Island and per the plans and the Engineer.

3.2 Damage to pavers due to negligence or careless operation shall be repaired at no extra cost to the Owner.

3.3 Contractor shall coordinate with the Engineer before removing existing pavers to confirm replacement pavers match existing conditions.

METHOD OF MEASUREMENT

4.1 Remove and Reset Pavers will be measured per unit and will include all design, materials, excavation, and grading required.

BASIS OF PAYMENT

5.1 The accepted quantity of Remove and Reset Pavers will be paid for at the contract unit price per unit, complete in place, as directed by the Engineer and shall include all other work required or incidental to the completion of this item.

5.4 Repair work to damaged pavers due to the negligence or carelessness of the Contractor will not be paid for.

Pay item and units:

900.1

Remove and Reset Pavers

Unit

END OF SECTION

SPECIAL PROVISION
SECTION 1002 – SPECIAL WORK ON STRUCTURES
ITEM 1002.1 – REPAIRS OR REPLACEMENTS AS NEEDED

DESCRIPTION

1.1 This section is intended to provide and pay for certain measures which may be required, during construction, to rehabilitate existing structures where work by the Contractor has revealed work necessary which could not be examined and foreseen prior to the construction period. Engineering judgment indicates that a reasonable estimated dollar allowance is in order in setting up the contract.

MATERIALS

2.1 Materials required shall meet the Material Requirements for the class or type of work in accordance with the Standard Specifications or as ordered.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall perform the required work as provided in the specification for the required work or as directed.

3.2 Work ordered under this section shall be done in accordance with the pertinent provisions of Section 00700, Article 11 and 13.

METHOD OF MEASUREMENT

4.1 Work authorized under this section will be measured as provided in 109.01; however when such work falls within the specifications for another contract item, the work will be measured according to the method of measurement for that contract item.

BASIS OF PAYMENT

5.1 Payment for work authorized under this section, to be completed by the utility companies, will be made on a dollar basis according to Section 00700, Article 11 and 13. The dollar limit set in the proposal will not limit the Engineer in the value of work performed under these items.

5.1.1 Payment of the amount set in the proposal will not be on a lump sum basis, but only the amount determined for the value of the work ordered will be paid.

5.1.2 Repair work to damaged or injured portions of a structure made necessary due to the negligence or carelessness of the Contractor will not be paid for.

5.2 The Bidder's attention is called to the price inserted in the proposal under these items, which price is the allowance the department has set up for special work. This figure must not be altered by the bidder on his proposal, and must be included to obtain the grand total of the bid.

Pay Item and Unit:

1002.1 Repairs or Replacements as Needed Dollar

The allowance for Item 1002.1 on this project has been set as shown in the Bid Form.

END OF SECTION

SPECIAL PROVISION
SECTION 1008 -- ALTERATIONS & ADDITIONS AS NEEDED
ITEM 1008.41 - ALTERATIONS AND ADDITIONS AS NEEDED – UTILITY ADJUSTMENT
(POWER)
ITEM 1008.411 - ALTERATIONS AND ADDITIONS AS NEEDED – UTILITY
ADJUSTMENT (POWER)
ITEM 1008.42 - ALTERATIONS AND ADDITIONS AS NEEDED – UTILITY ADJUSTMENT
(TELEPHONE)
ITEM 1008.421 - ALTERATIONS AND ADDITIONS AS NEEDED – UTILITY
ADJUSTMENT (TELEPHONE)

DESCRIPTION

- 1.1** This section is intended to provide and pay for certain measures to permanently relocate overhead utility lines underground.
- 1.2** The Contractor shall be required to excavate for trenches across or along String Bridge and provide and install conduit to carry existing overhead lines underground.
- 1.3** The utility companies shall be required to pull their utility lines to provide service to their customers. Engineering judgment indicates that a reasonable estimated dollar allowance for work completed by the utility companies is in order in setting up the contract.

MATERIALS

- 2.1** Materials required to relocate overhead utilities underground, or construct necessary items shall conform to those designated in the Materials section for the class of work being performed. Required utility work shall be performed using materials specified by the respective utility or municipal bureau.

CONSTRUCTION REQUIREMENTS

- 3.1** The Contractor shall perform all necessary work to accommodate permanent overhead utility line relocations, or construct items in accordance with the respective classes of work required.
- 3.2** Damage to facilities due to negligence or careless operation shall be repaired at no extra cost to the Owner.
- 3.3** Locate new underground utility conduits as shown on the drawings, or as directed by the Engineer.
- 3.4** The Town and Engineer together with the utility owners, will inspect, accept and/or reject work related to the relocation of the overhead utilities.

3.5 The Contractor shall be familiar with Unitil's Underground Electric Distribution Service provided in Appendix E.

METHOD OF MEASUREMENT

4.1 Work authorized under this section, to be completed by the Contractor, will be measured as a unit.

4.2 Work authorized under this section, to be completed by the utility companies, will be measured as provided in 109.01; however when such work falls within the specifications for another contract item, the work will be measured according to the method of measurement for that contract item.

BASIS OF PAYMENT

5.1 Payment for work authorized under this section, to be completed by the Contractor, will be paid for at the Contract unit price.

5.2 Payment for work authorized under this section, to be completed by the utility companies, will be made on a dollar basis according to Section 00700, Article 11 and 13. The dollar limit set in the proposal will not limit the Engineer in the value of work performed under these items.

5.2.1 Payment of the amount set in the proposal will not be on a lump sum basis, but only the amount determined for the value of the work ordered will be paid.

5.2.2 The Bidder's attention is called to the dollar amount inserted in the proposal under these items, which dollar amount is the allowance the Owner has set up for the special work. This figure must not be altered by the Bidder on the proposal, and must be included to obtain the grand total of the bid.

5.3 Repair work to damaged or injured portions of the existing facilities made necessary due to the negligence or carelessness of the Contractor will not be paid for.

Pay items and units:

1008.41	Alterations and Additions As Needed – Utility Adjustments (Power)	Unit
1008.411	Alterations and Additions As Needed – Utility Adjustments (Power)	Dollar
1008.42	Alterations and Additions As Needed – Utility Adjustments (Telephone)	Unit
1008.421	Alterations and Additions As Needed – Utility Adjustments (Telephone)	Dollar

The allowance for the above Items on this project has been set as shown in the Bid Form.

END OF SECTION

**SPECIAL PROVISION
SECTION 1008 -- ALTERATIONS & ADDITIONS AS NEEDED**

**ITEM 1008.43 - ALTERATIONS AND ADDITIONS AS NEEDED – UTILITY ADJUSTMENT
(KIMBALL ISLAND)**

DESCRIPTION

1.1 This section is intended to provide and pay for certain measures which may be required to provide permanent sewer and water service to Kimball Island. Engineering judgment indicates that a reasonable estimated dollar allowance is in order in setting up the contract.

1.2 The Contractor shall be required to expose the existing sewer line along String Bridge. The Contractor may be required to replace the existing sewer line, as directed by the Engineer, including removal of existing pipe, and providing and installing new pipe for sewer service to Kimball Island.

1.3 The Contractor shall be required to excavate for trenches across String Bridge and provide and install pipe for water service to Kimball Island.

MATERIALS

2.1 Materials required to provide permanent sewer and water service to Kimball Island shall conform to those designated in the Materials section for the class of work being performed. Required utility work shall be performed using materials specified by the respective utility or municipal bureau.

CONSTRUCTION REQUIREMENTS

3.1 The Contractor shall perform all necessary work to provide permanent sewer and water service to Kimball Island in accordance with the respective classes of work required.

3.2 Damage to facilities due to negligence or careless operation shall be repaired at no extra cost to the Owner.

METHOD OF MEASUREMENT

4.1 Work authorized under this section will be measured as provided in 109.01; however when such work falls within the specifications for another contract item, the work will be measured according to the method of measurement for that contract item.

BASIS OF PAYMENT

5.1 Payment for work authorized under this section will be made on a dollar basis according to Section 00700, Articles 11 and 13. The dollar limit set in the proposal will not limit the Engineer in the value of work performed under these items.

5.1.1 Payment of the amount set in the proposal will not be on a lump sum basis, but only the amount determined for the value of the work ordered will be paid.

5.1.2 Repair work to damaged or injured portions of the existing facilities made necessary due

to the negligence or carelessness of the Contractor will not be paid for.

5.1.3 Excavation and backfill outside the roadway limits will be paid for under this allowance.

5.2 The Bidder's attention is called to the dollar amount inserted in the proposal under these items, which dollar amount is the allowance the Owner has set up for the special work. This figure must not be altered by the Bidder on the proposal, and must be included to obtain the grand total of the bid.

Pay items and units:

1008.43	Alterations and Additions As Needed – Utility Adjustments (Kimball Island)	Dollar
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The allowance for Item 1008.43 on this project has been set as shown in the Bid Form.

END OF SECTION

**SPECIAL PROVISION
SECTION 1008 - ALTERATIONS AND ADDITIONS AS NEEDED**

Item 1008.9 - Testing of Materials

DESCRIPTION

1.1 The Contractor shall employ an independent, qualified testing laboratory approved by the Engineer for conducting all required initial tests of concrete, trench backfill and embankment compaction and other like materials as specified and directed by the Engineer. Test results and laboratory recommendations shall immediately be made available to the Engineer. Three (3) certified copies of the test results bearing the name of the testing company, type of test, test number, date and location test was conducted, are to be presented to the Engineer promptly enabling the Engineer to make his determination of the acceptability or unacceptability of the material to meet these specifications.

1.2 All additional tests necessitated by the failure of initial tests as determined by the Engineer shall be conducted as directed by the Engineer. The Contractor shall take immediate corrective measures as suggested by the testing laboratory and/or directed by the Engineer to make the materials meet or exceed these specifications.

CONSTRUCTION REQUIREMENTS

3.1 Concrete Testing

3.1.1 All concrete to be used in the work shall be subject to testing to determine whether it conforms to the requirements of the specifications. The methods of testing shall conform to Section 520 of the Standard Specifications. The place, time, frequency and method of sampling will be determined by the Engineer in accordance with the particular conditions of this project.

3.1.1.1 Field tests of concrete for compressive strength shall be taken, cured and tested by the approved testing laboratory as directed by the Engineer. A minimum of four (4) test specimens shall be made for each test. One specimen shall be broken at 7 days, one at 14 days, the other at 28 days. Specimens shall be made and tested in accordance with AASHTO T 22, AASHTO T 23 and AASHTO T 141 as specified in Section 520.

Where there is any question as to the quality of the concrete in the structures, the Engineer will require the Contractor at his expense, to have tests made by an approved independent testing and inspection laboratory. Such tests shall be in accordance with the "Standard Methods of Securing, Preparing and Testing Specimens of Hardened Concrete for Compressive and Flexural Strengths" (ASTM Designation C42) or Sections 202 and 203 of the current A.C.I. Building Code for Reinforced Concrete (A.C.I.318) as may be required. The criteria for acceptability of the concrete under the latter shall be that given therein. Concrete failing to meet the specification requirements shall be removed and replaced at the Contractor's expense.

3.2 Trench Backfill, Roadway Bases & Embankment Compaction Testing

3.2.1 The Contractor shall provide samples of each backfill material from the proposed sources of supply. The Contractor shall allow sufficient time for testing and evaluation of results before material is needed. Samples from alternate sources shall be submitted if required. The Engineer will be the sole and final judge of the suitability of all materials. The requirements of Section 203.3.8 apply to this section. When dual specifications are present or conflict, the more stringent shall govern.

3.2.2 Materials in question pending tests results shall not be used. Any materials rejected shall be removed and replaced with new acceptable materials whether in stockpiles or in place.

3.2.3 Compaction shall continue until the unit dry weight of the fill reaches a value of not less than the specified maximum unit dry weight attained in a laboratory compaction test performed under the specifications of ASTM D1557-64T, Method "A" (Backfill material of a stony nature shall be tested under Method "C" or "D" of the same ASTM Designation) or other approved ASTM or AASHTO Specifications. Such tests shall also be used for establishing the optimum moisture content of the material. The in-place dry unit weight of the compacted material shall be determined by methods specified under ASTM "D" 1556-58T or other approved ASTM or AASHTO Specifications. The in-place compaction test to be consistent with the approved laboratory compaction test.

3.2.4 At least one laboratory compaction test shall be performed for each distinctive type of material to be incorporated. These laboratory tests to be taken at the suggestion of the testing laboratory and/or as directed by the Engineer. A minimum of two (2) in-place moisture-density determinations shall be made for each 100 linear feet of trench backfilled, roadway base constructed per 2 lifts of granular backfill installed. The actual number of compaction tests, their locations and depth shall be determined by the Engineer. The percentage compaction of the fill at the point of the in-place moisture-density test shall be computed as follows:

Percentage compaction = $(DF / DL) \times 100$ in which:

DF= Unit dry weight in pound/cubic feet of sample in field moisture density determinations.

DL= Maximum unit dry weight in pound/cubic feet obtained in the specified laboratory compaction test on a sample of the same type of material.

3.2.5 If the percentage compaction at any point is found to be unacceptable, additional compaction with or without modification of the field moisture content as directed shall be performed and additional moisture-density determinations made. This procedure shall be repeated until satisfactory compaction is obtained.

3.2.6 The Contractor will cooperate with the testing laboratory in obtaining field samples of in-place materials after compaction. Also incidental field labor and equipment necessary to dig and backfill test holes shall be furnished by the Contractor.

BASIS OF PAYMENT

5.1 All payment for initial testing of concrete, granular bridge backfill, trench backfill, roadway bases and embankment compaction and other like materials as specified and directed by the Engineer will be made by the Owner to the Contractor based on and in the amount of submitted invoices from the testing firm. The Contractor shall not be entitled to any mark-up on the submitted invoices.

5.2 All additional tests necessitated by the failure of initial tests as determined by the Engineer shall be conducted as directed by the Engineer and all costs incurred from these additional tests shall be borne by the Contractor.

5.3 All work performed by the Contractor in connection with this Section shall be considered incidental to other contract items bid.

Pay Items and Units:

1008.9	Alterations and Additions as Needed-Testing of Materials	Dollar
--------	--	--------

The allowance for Item 1008.9 on this project has been set as shown in the Bid Form.

END OF SECTION

Appendix A

NHDES Wetlands and Non-Site Specific Permit (Pending)

Appendix B

NHDES Shoreland Permit by Notification



SHORELAND PERMIT BY NOTIFICATION (PBN)¹

Water Division/ Shoreland Program
Land Resources Management

Check the Status of your Notification: www.des.nh.gov/onestop

RSA/Rule: RSA 483-B, Env-Wq 1400



Office use only: Accepted Expires: 2/18/16 Rejected
 Check Amount \$ N/A Check No. Initials: MA Date: 2/18/16

Shoreland File Number 2016-30414 Reviewed Date: 2/18/16
Initials: MA

A. PROJECT AND OWNER INFORMATION					
1.	Project Property Address	Town/City		State	Zip code
	String Bridge	Exeter		NH	03833
2.	Waterbody Name	Tax Map	Lot	Block	Unit
	Exeter River	64, 72	N/A	N/A	N/A
3.	Property Owner Name (last, first, MI)	Phone No.	Fax No.	An email address authorizes electronic communication	
	Town of Exeter, Jennifer Mates	773-6157	772-1355	jmates@exeternh.gov	
	Mailing address	Town/City		State	Zip code
	13 Newfields Ro	Exeter		NH	03833

B. PROPOSED PROJECT DETAILS: (NOTE: This process cannot be used: a) for impacts to areas under the jurisdiction of RSA 482-A including surface waters and their banks, wetlands, tidal areas including the 100 ft tidal buffer zone, sand dunes and beaches, or; b) to expand the footprint of nonconforming primary structures within the waterfront buffer.)

TOTAL PROPOSED IMPACT AREA: 509 square feet	NEW IMPERVIOUS AREA PROPOSED: 0 square feet
---	---

DESCRIPTION: A complete description of the proposed project must be stated here. It must list all proposed temporary and permanent impacts, new pervious and impervious areas, and structures. The Town of Exeter is proposing to rehabilitate the String Bridge over the Exeter River. The existing bridge was constructed in 1935 over the lower falls where Exeter River meets the Squamscott River. Kimball Island separates the String Bridge into two bridges, one on the west side of the island, and the other on the east.

The bridges are very similar and consist of a 50'-0" clear span buried cast-in-place reinforced concrete rigid frames founded on ledge. Both bridges carry two lanes of traffic on a 21'-0" paved roadway and a 5'-0" wide sidewalk on the upstream side. The rigid frame legs of the east bridge are approximately 2'-0" shorter than the west bridge. The roadway vertical profile is relatively flat over both bridges.

The intent of this project is to address deficiencies of the existing bridges in order to meet NHDOT capacity requirements. The proposed action includes rehabilitation of the two reinforced concrete rigid frame bridges via concrete repairs, installation of a new barrier membrane, and repair/replacement of the bridge railings, as well as the associated roadway work. The existing bridge dimensions and aesthetics will be maintained. The proposed roadway horizontal alignment and vertical profile will match existing. The associated roadway work will be limited to what is necessary to rehabilitate the bridges.

One bridge will be rehabilitated at a time, while keeping the other bridge open to traffic to allow access to Kimball Island throughout the construction duration.

¹ Form is not valid unless a shoreland file number is assigned and the notification is accepted, dated and initialed by DES.

C. CONDITIONS: Agree to the following Permit by Notification conditions by initialing each one:	
<u>KRP</u> Env-Wq 1406.17(a)	Erosion and siltation control measures shall (1) Be installed prior to the start of work; (2) Be maintained throughout the project; and (3) Remain in place until all disturbed surfaces are stabilized.
<u>KRP</u> Env-Wq 1406.17(b)	Erosion and siltation controls shall be appropriate to the size and nature of the project and to the physical characteristics of the site, including slope, soil type, vegetative cover, and proximity to wetlands or surface waters.
<u>KRP</u> Env-Wq 1406.17(c)	No person undertaking any activity in the protected Shoreland shall cause or contribute to, or allow the activity to cause or contribute to, any violations of the surface water quality standards established in Env-Ws 1700 or successor rules in Env-Wq 1700.
<u>KRP</u> Env-Wq 1406.17(d)	Any fill used shall be clean sand, gravel, rock, or other suitable material.
<u>KRP</u> Env-Wq 1406.05	Upon receiving acceptance of this Permit by Notification, a copy of page one of this form shall be posted on site prior to the start of work.

D. PBN CRITERIA: In addition to meeting all requirements of RSA 483-B and Rule Chapter Env-Ws1400 the project must meet one of the following. Please check the appropriate qualifying criteria per RSA 483-B:5-b:	
<input type="checkbox"/>	1. This project will result in less than 1,500 sq ft of total impact area, of which no more than 900 square feet will be added impervious area (excluding public infrastructure projects); or
<input checked="" type="checkbox"/>	2. This is a public infrastructure maintenance or repair project (public utilities, public roadways and access facilities); or
<input type="checkbox"/>	3. This project is directly related to stormwater management improvements, erosion control projects or environmental restoration or enhancement; or
<input type="checkbox"/>	4. This project is an activity defined as qualified for a permit by notification under Env-Wq 1406.05. Identify the specific paragraph under Env-Wq 1406.05 qualifying this project: <input type="checkbox"/> Env-Wq 1406.05(a) relative to geotechnical borings <input type="checkbox"/> Env-Wq 1406.05(b) relative to monitoring wells <input type="checkbox"/> <input type="checkbox"/> Env-Wq 1406.05(c) relative to drinking water wells <input type="checkbox"/> Env-Wq 1406.05(d) relative to remediation activities

E. IMPACT AREA AND APPLICATION FEE: Indicate the project type, impact area and fee by checking the appropriate box below.		
<input type="checkbox"/>	1. The proposed project will impact _____ square feet within 250 feet of the reference line. (All areas of soil disturbance, fill, construction and structure removal shall be considered in the area of impact. Total Impact area _____ x \$0.10 per square foot + \$100 = _____ This is the project filing fee. If the result is more the \$250 you cannot use this form.	(Max \$250) \$
<input checked="" type="checkbox"/>	2. The proposed project is a public infrastructure maintenance or repair project.	Fee Exempt
<input type="checkbox"/>	3. The proposed project meets the criteria of Section D.3. above.	\$100.00

F. REQUIRED CERTIFICATIONS: Carefully read each of the statements below. By signing below, you are certifying that you understand and agree to comply with each statement.

1. I understand that any impacts completed under a Permit by Notification filed and accepted based on false, incomplete, or misleading information on the application, plans or attachments shall be subject to enforcement action.
2. I am aware that an accepted Shoreland Permit by Notification will not exempt the work I am proposing from other state, local or federal approvals.
3. I am aware of the requirements regarding impervious area thresholds and have provided all necessary materials necessary to clearly demonstrate this project meets at least the minimum standards of RSA 483-B:9, V(g) 1,2 and 3.
4. I understand that project proposals that do not meet the minimum standards of RSA 483-B and Administrative Rules Chapter Env-Wq 1400 shall be rejected.
5. I understand that failure to conduct the work in accordance with the plans and materials submitted with this Notification shall be considered work without a permit and subject to enforcement action. I agree to conduct all work under this Permit by Notification in accordance with the conditions specified in Section C, above.
6. I understand that incomplete notifications will be rejected and the notification fee will be forfeited.

G. REQUIRED SIGNATURE

Signature of Owner:



 (agent may not sign on owner's behalf)

Date:

2/16/16

H. AGENT INFORMATION: If this form has been completed by an agent or any person acting on behalf of the owner, said person shall provide the following information:

1.	Agent Name (last, first, MI)	Phone No.	Fax No.	An email address authorizes electronic communication
	Hoyle, Tanner & Associates, Inc – K. Peace	669-5555 ext. 151	669-4168	Kpeace@hoyletanner.com
	Mailing address	Town/City	State	Zip code
	150 Dow Street	Manchester	NH	03101

Appendix C

Wetlands Study with Invasive Species Information



WETLANDS STUDY

**STRING BRIDGE ROAD OVER THE SQUAMSCOTT RIVER
EXETER, NEW HAMPSHIRE**

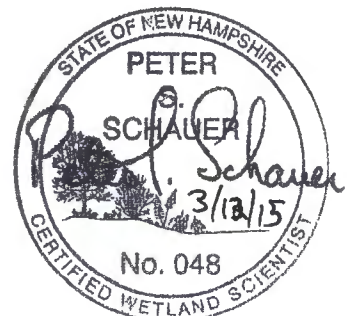
Prepared for:

Sandford Surveying and Engineering, Inc.
597 New Boston Road
Bedford, NH 03110

Prepared by:

Schauer Environmental Consultants, L.L.C.
1494 Route 3A, Unit 1
Bow, NH 03304

March 12, 2015



INTRODUCTION

Schauer Environmental Consultants, L.L.C. (SEC) has prepared this report to document the physical and biological characteristics of the wetlands in the vicinity of the bridges (two spans, NHDOT Bridge Nos. 102/074 and 103/074) on String Bridge Road at the crossing of the Squamscott River in Exeter, New Hampshire. These observations are provided in support of the Survey Scope of Services related to the proposed replacement of the bridges.

On-site investigations were performed by SEC on October 29, 2014 to characterize the wetland habitats present at the site in order to classify the wetlands in accordance with the U.S Fish and Wildlife Service's Wetlands and Deepwater Habitats Classification system (Cowardin et al., 1979). Follow-up reviews of existing published information from the sources listed below were then performed, and a wetlands functions and values assessment was performed in accordance with the U.S. Army Corps of Engineers Highway Methodology Supplement (USACE New England District 1999).

The following existing information sources were reviewed for the subject site:

- USGS Exeter – NH and MA Quadrangle topographic map
- Preliminary site survey plan of vicinity of bridge prepared by Sandford Surveying and Engineering, Inc.
- US Army Corps of Engineers The Highway Methodology Workbook – Supplement
- Aerial photographs from Google Earth and other sources
- National Wetlands Inventory map
- NH Natural Heritage Program Datacheck Program
- Exeter-Squamscott River Watershed Management Plan Update (Exeter-Squamscott River Local Advisory Committee, December 2012)

SITE CHARACTERIZATION

The String Bridge Road bridges are situated over the Squamscott River at approximately the head of tidal flow. Above tidal flow, the waterway is known as the Exeter River, and in the tidal section, it is known as the Squamscott River.

The western and eastern bridges are separated by a developed island approximately 110 feet wide that extends downriver about 100 feet from the bridges, creating an eastern channel and a western channel in this location. The eastern channel, as observed on October 29, 2014 carries the majority of the discharge of the Exeter River. Additional small, low, undeveloped islands also exist upriver from the bridges, with small, braided river channels flowing between the islands. The larger of these islands has forest cover, while the smaller and lower islands have shrub and herbaceous vegetative cover (Figure 1).

Approximately 400 and 600 feet upriver from (southeast of) the bridge are two dams (Figure 1), above which the Exeter is clearly an impounded freshwater river. Downgradient from the bridge, the Squamscott is clearly a tidal river, as evidenced by exposed banks during low tides, which are subsequently inundated during high tides (Figure 2). The boundary between freshwater river and tidal river sections was determined in part by a preponderance of salt-intolerant vegetation at the river banks, which occurs approximately beneath the upriver side of the western bridge (NH DOT Bridge No. 103/074) and just downgradient from the downriver side of the eastern bridge (NH DOT Bridge No. 102/074). Both of these breaks between tidal (Squamscott) and non-tidal (Exeter) portions of the river are also marked by small (3 – 4 feet high) falls consisting of bedrock and natural stone rubble (Figure 3). The river banks and low islands above the bridge are essentially inaccessible from the adjacent upland, since the bridge level is approximately 10 feet above the river; the banks are bounded by high concrete or stone block retaining walls (Figure 3) with concrete or chain-link fences, or outer building walls built into the river bank (Figure 4).

Wetlands

Wetlands at the String Bridge Road bridge site were not marked in the field as a means of wetland delineation, due to the inaccessibility of the river banks from adjacent uplands noted above. Rather, the edges of river bank on vertical (or nearly vertical) were located by field survey. The developed island at the downriver side of the bridge consists of uplands. Little or no vegetated wetlands exist above the river banks upriver or downriver from the bridge, although the vegetated islands upriver from the bridge are wetlands.

Vegetation along the river banks is generally sparse, in part due to the prevailing rocky substrate and in part due to the shading from high adjoining walls. An exception to this sparse vegetation is the forested island just upriver from the bridge, which has a deciduous forest cover consisting of red maple (*Acer rubrum*), white ash (*Fraxinus americana*), and American elm (*Ulmus americana*). This island has a dense shrub cover consisting mostly of silky dogwood (*Cornus amomum*), and there are numerous invasive Oriental bittersweet vines (*Celastrus orbiculatus*) draped from the island trees (Figure 5). Herbaceous cover is dominated by reed canary grass (*Phalaris arundinacea*), which is also present on small high spots within the river (along with water willow, *Decodon verticillatus*) and along the banks of the river above and below the bridge.

The forested island above the bridge would be classified under the U.S. Fish and Wildlife Service's system as Palustrine, Forested, Broad-leaved Deciduous, Seasonally Flooded (PFO1C). A core cluster of small islands adjacent to the forested island would be classified as Palustrine, Scrub-shrub, Broad-leaved Deciduous, Seasonally Flooded/Saturated (PSS1C). The Exeter River upgradient from the tidal/non-tidal divide consists of Riverine, Upper Perennial, Rock Bottom, Rubble, Permanently Flooded (R3RB2H), and the tidal (Squamscott) portion of the river (Figure 6) would be classified as Riverine, Tidal, Rock Bottom, Rubble, Regularly Exposed (R3RB2N – in intertidal zone) or Subtidal (R3RB2L – below regular tidal exposure).

No portions of any of the wetland resources in the vicinity of the String Bridge Road bridges consist of vernal pools.

Invasive Plant Species

The vicinity of the String Bridge Road bridges was investigated for the presence of invasive plants identified in the New Hampshire Department of Transportation (NHDOT) Best Management Practices for Roadside Invasive Plants. As noted in the previous section, numerous vines identified as the prohibited invasive Oriental bittersweet (*Celastrus orbiculatus*) exist on the forested island immediately upriver from the center of the bridge. In addition, the prohibited wetland species purple loosestrife (*Lythrum salicaria*) is sporadically present along the river banks both upriver and downriver from the bridge. It is not recommended that control of either of these invasive species be attempted, since neither is actually located at the “roadside,” but at the river’s edge 10 feet or more below the grade of the bridge. As such, they are present and endemic in the river corridor, and attempts at control would almost certainly be futile due to the continual seed source resupply via the river corridor. Also, herbicidal treatment (if that option were to be chosen) in immediate adjacency to, or over, the surface waters of the Exeter/Squamscott River would raise serious questions about the potential ecological damage that could result to the River and estuary habitats.

One additional example of an invasive plant species was observed in the vicinity of the bridge, a single clump of the invasive shrub commonly identified as burning bush (*Euonymus elatus*). This example is located at bridge level, but it appears to be an ornamental planting rooted in the private property abutting the northeast side of the western bridge span. Since this particular shrub is situated on private property, and is reasonably well isolated, we do not recommend attempt at control in this instance.

WETLAND FUNCTIONAL ASSESSMENT METHODOLOGY

Wetland functions and their significance were evaluated using the US Army Corps Highway Methodology guidelines. The following is a list of the 14 wetland functions and values with a brief description of each.

- 1. (1&2) Groundwater recharge/discharge:** This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where ground water can be discharged to the surface.
- 2. Floodflow Alteration:** This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events.
- 3. Fish and Shellfish Habitat:** This function considers the effectiveness of seasonal or permanent water bodies associated with the wetland in question for fish and shell fish habitat.

4. **Sediment/Toxicant/Pathogen Retention:** This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or pathogens.
5. **Nutrient Removal/Retention/Transformation:** This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries.
6. **Production Export:** This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms.
7. **Sediment/Shoreline Stabilization:** This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion.
8. **Wildlife Habitat:** This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals typically associated with wetlands and the wetland edge. Both resident and or migrating species must be considered.
9. **Recreation:** This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Consumptive opportunities consume or diminish the plants, animals or other resources that are intrinsic to the wetland, whereas non-consumptive opportunities do not.
10. **Educational/Scientific Value:** This value considers the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research.
11. **Uniqueness/Heritage:** This value relates to the effectiveness of the wetland or its associated water bodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features.
12. **Visual Quality/Aesthetics:** This value relates to the visual and aesthetic qualities of the wetland.
13. **Threatened or Endangered Species Habitat:** This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species.

Wetland Functions and Values

The wetland complex at the String Bridge Road bridge site consists of a non-tidal perennial river at the juncture of tidal influence, with small vegetated islands in the freshwater section and narrow, sparsely-vegetated banks in both the tidal (Squamscott) and freshwater (Exeter) sections of the river. Such settings are generally considered to have high levels of several wetland functions and values, as described in the following sections.

High-Rated Functions and Values:

Fish and Shellfish Habitat. This function considers the effectiveness of seasonal or permanent water bodies or waterways associated with the subject wetland for fish and shell fish habitat. The Exeter/Squamscott River junction, situated at the boundary between freshwater and brackish estuarine environments, is a very important element for fish habitat, particularly for anadromous and catadromous fisheries. Movement of fish upriver or downriver is presently blocked by two dams (the Great Dam below High Street and a lower structure just downriver) within several

hundred feet upriver from the String Bridge Road bridges. The dams have a fish ladder, although its effectiveness but the town of Exeter voted on March 11, 2014 to remove the dam. Future dam removal would allow anadromous fish such as smelt, river herring and alewives, and sea-run trout, as well as the catadromous American eel, to once again pass without man-made interference. Therefore, the potential for this section of the river to function as fish habitat is high.

Production Export. This function relates to the effectiveness of the wetland to produce food or usable products for humans or other living organisms. The section of the Exeter/Squamscott River in the vicinity of the String Bridge Road bridges does not itself produce high levels of organic detritus supportive of downgradient ecosystems, but it serves as the outlet of a large watershed (81,727 land acres, Exeter-Squamscott River Local Advisory Committee, December 2012) with significant organic production potential. This production is exported to the Squamscott River and the Great Bay, estuary habitats that support important fish and shellfish resources. As a result of this important role in production export, this resource was rated high in regards to this function.

Wildlife Habitat. This function considers the effectiveness of the wetland to provide habitat for various types and populations of animals (both resident and or migratory) typically associated with wetlands and the wetland edge. The setting of the site at the juncture of freshwater river and brackish estuary, and potential for removal of an upstream dam indicate significant wildlife habitat potential.

Recreation. This value considers the effectiveness of the wetland and associated watercourses to provide recreational opportunities such as canoeing, boating, fishing, hunting and other active or passive recreational activities. Limited active access to the river in the immediate vicinity of the bridge exists due to high artificial banks (often with fences), developed private property, and buildings having foundations in the river bank. Public access (boat launch ramp, dock, and parking) to the Squamscott River exists within several hundred feet downriver, although boat access to the reach of the river upstream of the bridge is obstructed by rapids. Future removal of the Great Dam will facilitate whitewater kayak passage. Overall, visual access to the river is excellent, with public parking downriver, and a sidewalk over the bridge. For these reasons, the recreational value of the river at this location is rated as moderate to high.

Educational/Scientific Value. This value considers the effectiveness of the wetland as a site for an “outdoor classroom” or as a location for scientific study or research. Visual access, nearby public parking, sidewalks, and proximity to a population center raise the educational value of the Exeter/Squamscott River to a high rating.

Uniqueness/Heritage: This value relates to the effectiveness of the wetland or its associated water bodies to produce certain special values. Special values may include such things as archeological sites, unusual aesthetic quality, historical events, or unique plants, animals, or geological features. The Exeter/Squamscott River in the vicinity of the String Bridge Road bridges is a prominent feature of the community, and an important natural resource within an otherwise developed urban setting that has shaped the City of Exeter from its founding. The

upland island at the outlet of the Exeter River is the site of an historical grist mill dated to 1640. For these reasons, the uniqueness/heritage value of the river in this vicinity is rated as high.

Visual Quality/Aesthetics. This value relates to the visual and aesthetic qualities of the wetland. For reasons of good visual access to the resource aided by nearby public parking and sidewalks, as well as open vistas to attractive views, the Exeter/Squamscott River in the vicinity of the String Bridge Road bridges is rated as high for visual quality and aesthetics.

Threatened or Endangered Species Habitat. This value relates to the effectiveness of the wetland or associated water bodies to support threatened or endangered species. The New Hampshire Natural Heritage Program's Datacheck web program was accessed to check for known occurrences of rare or endangered species of animals or plants, or exemplary natural communities in the vicinity of the String Bridge Road bridges over the Squamscott River. The result of this search, which identifies all such known rare species or habitats within one mile from a given location, indicated the potential for the existence of such resources in the vicinity (see attached printout from the datacheck). This outcome does not indicate that a project will impact such rare species or habitats, but that they are nearby, and an evaluation of potential project impacts would need to be further evaluated. As a result of this outcome and the parameters of the Highway Methodology, this function is evaluated as high for this vicinity.

Low-Rated Functions and Values:

Groundwater recharge/discharge. This function considers the potential for a wetland to serve as a groundwater recharge and/or discharge area. Recharge should relate to the potential for the wetland to contribute water to an aquifer. Discharge should relate to the potential for the wetland to serve as an area where ground water can be discharged to the surface. The Exeter/Squamscott River in the vicinity of the String Bridge Road bridges is rated as low for groundwater recharge, as public water supplies do not exist downriver from the bridges due to salinity (City of Exeter and private water withdrawal from the Exeter River upstream from the bridge are not affected by the resources in the vicinity of the bridges). Bedrock evident in the river bed may facilitate groundwater discharge to the river, but the large majority of river flow is due to surface flow from a large contributory watershed. As a result, the resource's functional level for groundwater recharge and discharge is rated as low.

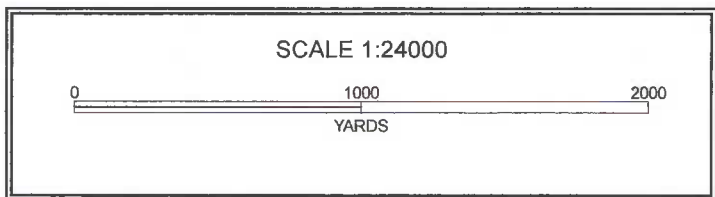
Floodflow Alteration. This function considers the effectiveness of the wetland in reducing flood damage by attenuation of floodwaters for prolonged periods following precipitation events. The Exeter/Squamscott River and associated wetlands in the vicinity of the String Bridge Road bridges have little ability to mitigate floodwaters due to the lack of low-lying areas capable of retaining surface waters and preventing property damage. Indeed, several buildings along the river have foundations that for the bank of the river. As a result the river in this location has a low rating for floodwater alteration.

Sediment/Toxicant/Pathogen Retention. This function reduces or prevents degradation of water quality. It relates to the effectiveness of the wetland as a trap for sediments, toxicants or

pathogens. Since the river in this location has a steady grade, a high flow rate and lacks a constricted outlet, it has little to no ability to retain sediment, toxicants and pathogens and rates low for this function.

Nutrient Removal/Retention/Transformation. This function relates to the effectiveness of the wetland to prevent adverse effects of excess nutrients entering aquifers or surface waters such as ponds, lakes, streams, rivers or estuaries. The Exeter/Squamscott River in the vicinity of the String Bridge Road bridges has a steady grade, a high flow rate and lacks a constricted outlet, significant vegetation, and fine sediment. Therefore it has little to no ability to remove, retain and transform nutrients.

Sediment/Shoreline Stabilization. This function relates to the effectiveness of a wetland to stabilize stream banks and shorelines against erosion. In general, this function is intended to reflect the importance of a wetland in protecting the banks of a water body or waterway. At the String Bridge Road location, there is little if any wetland between the river and its banks, therefore this function would ordinarily be considered to be absent in this location. Indeed, as the base of the bridges are the banks of the river beneath the bridges, shoreline stabilization at this location is provided by the bridge footings, and building foundations perform a similar function, forming the banks of the river upstream of the bridges.



SEC

SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C.

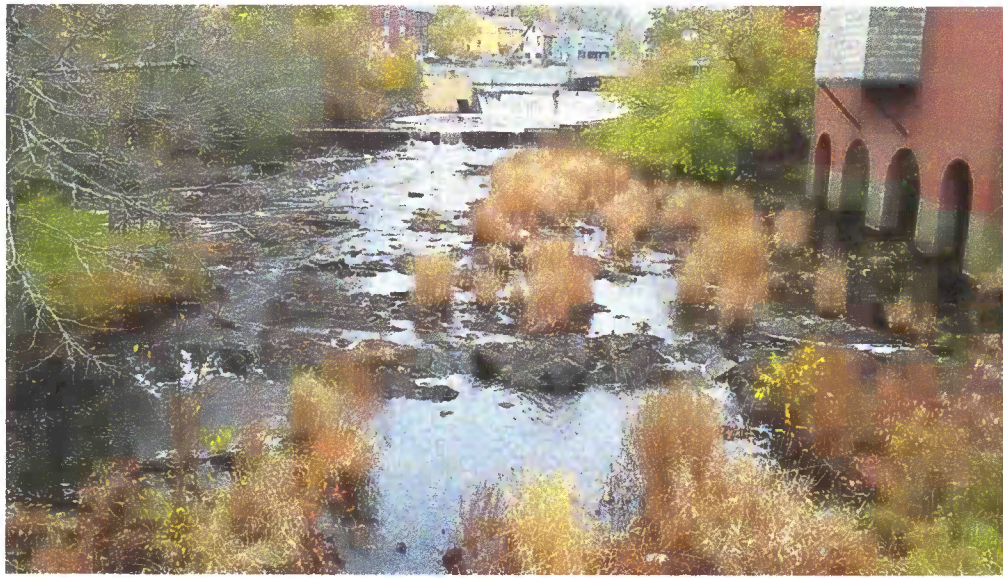


FIGURE 1

Dams Upriver from String Bridges, Small Islands in Foreground, Larger Forested Island to Left, View Southeast from Western Bridge (10/29/2014)



FIGURE 2

Squamscott River, Tidal Portion Below String Bridge, View Northwest from Eastern River Bank (10/29/2014)

Environmental Planning & Permitting

Soil & Wetland Investigations

Septic Designs

1494 Route 3A, Unit 1, Bow, NH 03304 Phone 856-8925

Email: Soilsurfer@comcast.net

SEC

SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C.



FIGURE 3

Bedrock "Falls" at Downriver Side of Eastern Bridge, Marking Boundary Between Tidal and Non-Tidal Section of Squamscott River (10/29/2014)



FIGURE 4

Buildings above Southwest side of Western Bridge, Built into Squamscott River Bank (10/29/2014)

Environmental Planning & Permitting

Soil & Wetland Investigations

Septic Designs

1494 Route 3A, Unit 1, Bow, NH 03304 Phone 856-8925

Email: Soilsurfer@comcast.net

SEC

SCHAUER ENVIRONMENTAL CONSULTANTS, L.L.C.



FIGURE 5

Forested Island Upriver from Bridge (10/29/2014)



FIGURE 6

Rocky Intertidal Shore and Stone and Mud Flats Downriver from
Western Bridge (10/29/2014)

Environmental Planning & Permitting

Soil & Wetland Investigations

Septic Designs

1494 Route 3A, Unit 1, Bow, NH 03304 Phone 856-8925
Email: Soilsurfer@comcast.net

Wetland Function-Value Evaluation Form

Total area of wetland Indefinite Human made? No Is wetland part of a wildlife corridor? Yes or a "habitat island"? No
 Adjacent land use Commercial, residential Distance to nearest roadway or other development 0 feet
 Dominant wetland systems present Riverine Contiguous undeveloped buffer zone present No

Is the wetland a separate hydraulic system? No If not, where does the wetland lie in the drainage basin? Outlet to estuary.
 How many tributaries contribute to the wetland? None Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. Squamscott River
 Latitude 42.9812 Longitude -70.9455
 Prepared by: NES Date 3/12/15
 Wetland Impact: Type Undetermined Area Undetermined

Evaluation based on: Office Field
 Corps manual wetland delineation completed? Y N

Comments (River banks located by ground survey)

Function/Value	Occurrence Y N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<input checked="" type="checkbox"/>	6,7		Not present; downstream waters brackish, not potable.
Floodflow Alteration	<input checked="" type="checkbox"/>	11,12		Open outlet; no flood storage potential.
Fish and Shellfish Habitat	<input checked="" type="checkbox"/>	1,3,4,5,6,7,9,12,14,16,17	<input checked="" type="checkbox"/>	Freshwater river at juncture of tidal estuary.
Sediment/Toxicant Retention	<input checked="" type="checkbox"/>	12,8,9,10		Sources present in watershed; little or no trapping this location.
Nutrient Removal	<input checked="" type="checkbox"/>	2,4		Flow velocity, no constructions, little or no trapping uptake.
Production Export	<input checked="" type="checkbox"/>	12,3,4,6,10,11,13	<input checked="" type="checkbox"/>	Export of production from large watershed to estuary.
Sediment/Shoreline Stabilization	<input checked="" type="checkbox"/>	2,4,8,9		Wetland does not provide this function-built environment.
Wildlife Habitat	<input checked="" type="checkbox"/>	2,6,8,12,18,24	<input checked="" type="checkbox"/>	Potential for seasonal usage variability; future stream removal.
Recreation	<input checked="" type="checkbox"/>	5,7,8,9,12	<input checked="" type="checkbox"/>	Mainly passive recreation; active recreation down river.
Educational Scientific Value	<input checked="" type="checkbox"/>	1,3,5,9,11	<input checked="" type="checkbox"/>	Access primarily via visual; down river access better.
Uniqueness/Heritage	<input checked="" type="checkbox"/>	2,1,2,3,3,2,7,28 1,3,4,8,11,12,13,14,17,19,20	<input checked="" type="checkbox"/>	Historic mill site (informational sign); uncommon setting.
Visual Quality/Aesthetics	<input checked="" type="checkbox"/>	1,2,3,6,8,9,12	<input checked="" type="checkbox"/>	Visually accessible; aesthetically pleasing in urban setting.
ES Endangered Species Habitat	<input checked="" type="checkbox"/>	1	<input checked="" type="checkbox"/>	NH MHP Datacheck indicates potential habitat in vicinity.
Other				

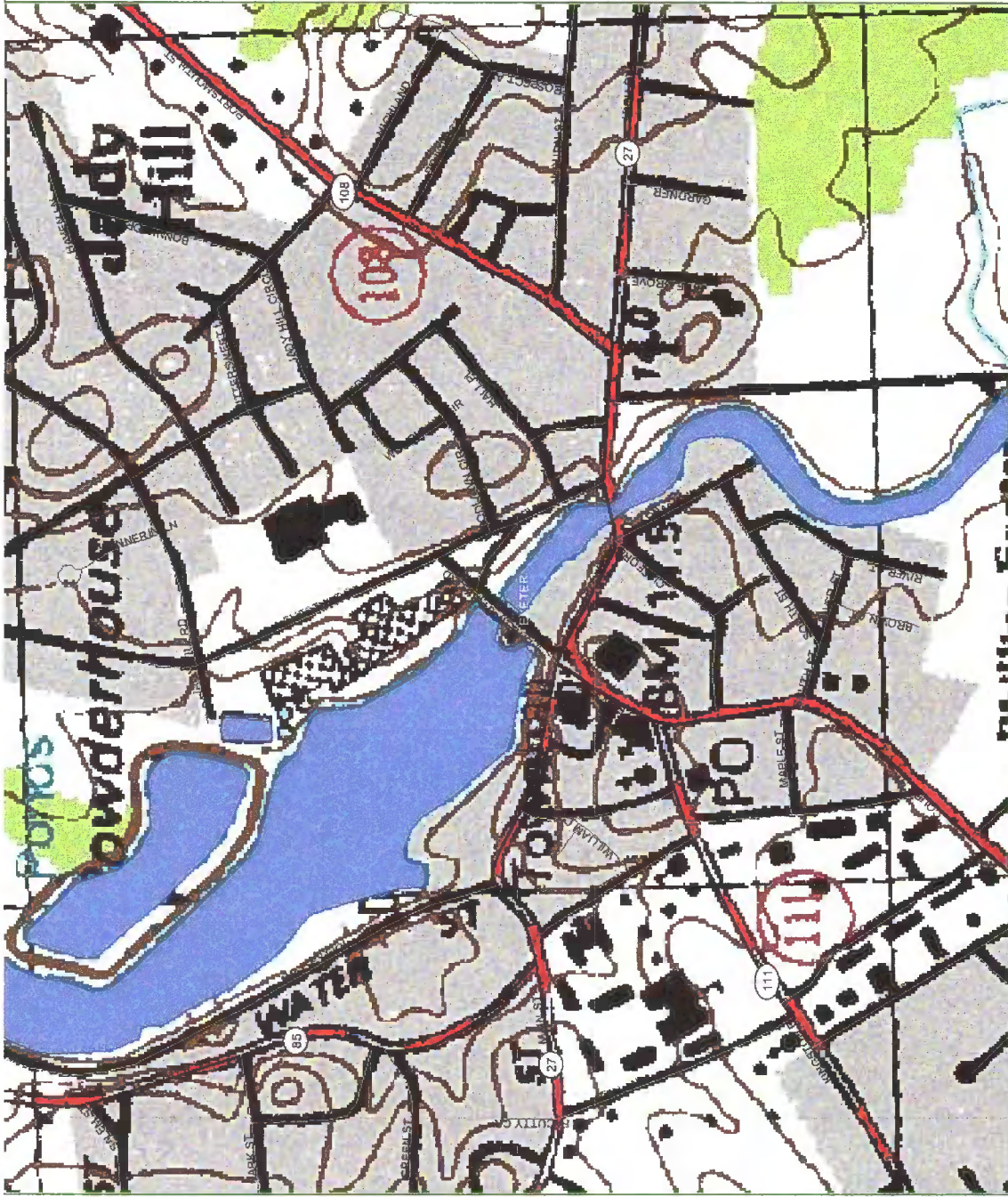
Notes: * Refer to back up list of numbered considerations.

NHB DataCheck Tool: Map Project



On Click: Map Project Boundary

Natural Heritage Bureau



Map Project Boundary

Mapped area: 0.45 acres
Reported tract area: 0.45 acres

DataCheck Results: POTENTIAL IMPACTS
There are NHB records in the vicinity of the area you drew that may be affected by this project.

To obtain an official letter to include in your permit application or funding request, please click on "Continue" below to provide additional information about the project.

Continue

Remap

Cancel

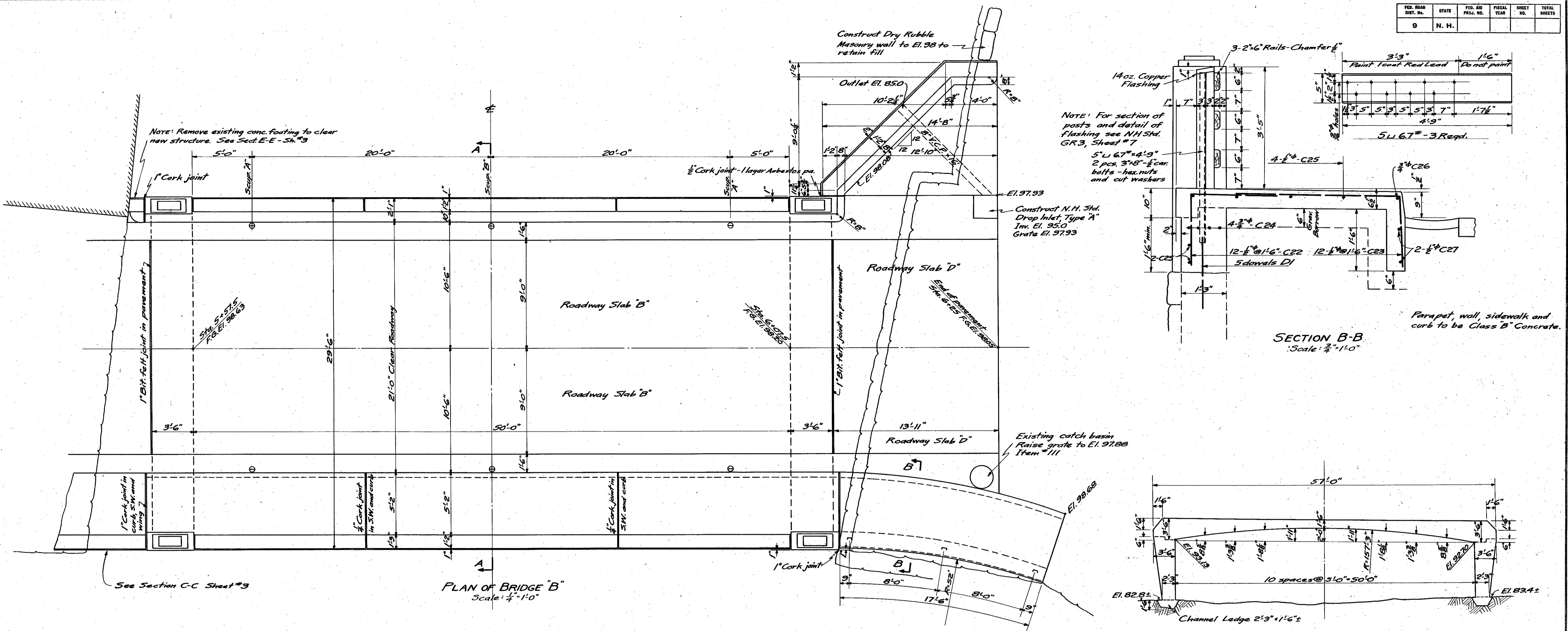
Map X: 1179500.3357 Map Y: 176492.8271

Map Scale = 1:5,453

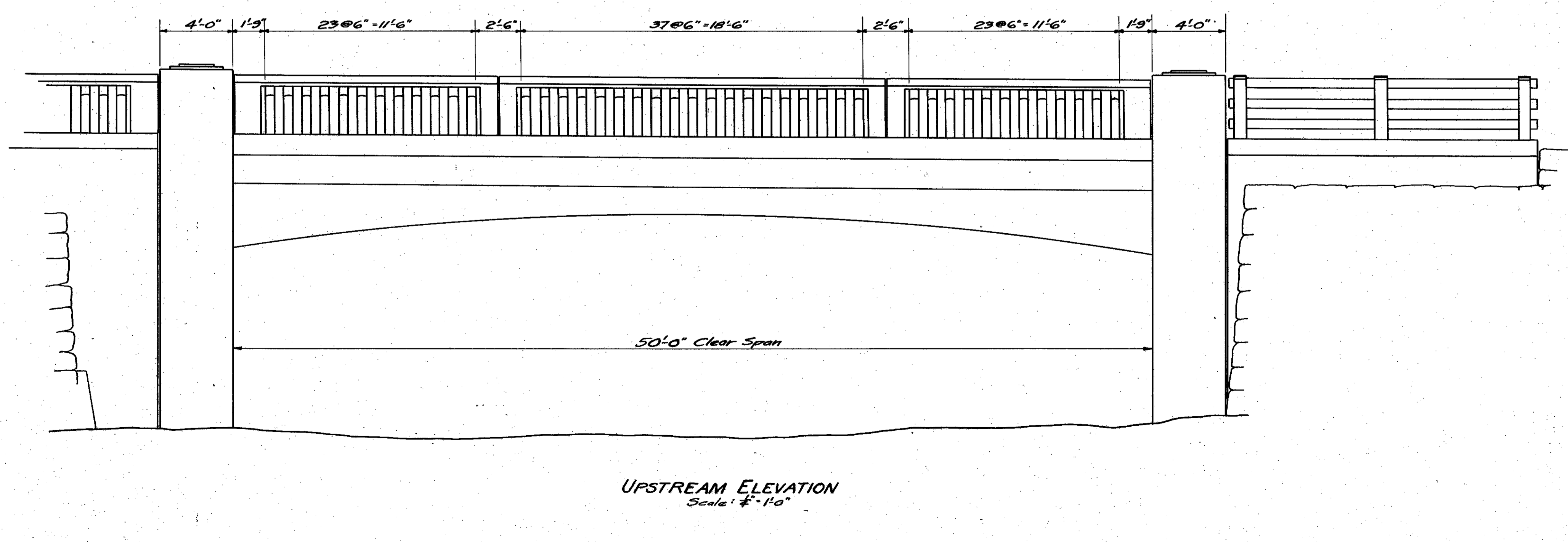
Quit

Appendix D
Existing 1935 Plans

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
9	N. H.				



REVISIONS AFTER PROPOSAL		Station	From	To
Orig.	Rev.	Date		



NOTE: For Section A-A, Scupper Detail and General Notes see Sh. #2

STATE OF NEW HAMPSHIRE
HIGHWAY DEPARTMENT

TOWN: EXETER
PROJECT: EXETER TOWN BR. (1935)
LOCATION: _____
ROAD: _____
STREAM: EXETER RIVER

DESIGNED BY: J.H.W. DATE: 4-19-35
DRAWN: J.H.W. DATE: 6-3-35
CHECKED: A.M.W. DATE: 6-25-35
CHECKED: Chenn. DATE: 6-10-35

SHEET 4 OF 7 SHEETS

Appendix E

Unitil NH Elector Operations "Underground Electric Distribution Service"



**UNDERGROUND ELECTRIC DISTRIBUTION SERVICE
Residential Developments & Single Phase Commercial
Revised June 26, 2015**

Dear Customer:

This package has been prepared to assist you in your planning. It is very important that these instructions and standards be adhered to in every detail. This will prevent delays and possible additional costs to you.

We know that you share our concern for safety and reliability and therefore, want the very best installation possible. Please read this material and share it with your electrician/contractor.

We look forward to being of service and urge you to telephone us if there are any questions.

Sincerely,
UNITIL ENERGY SYSTEMS, INC.



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Underground Electric Distribution Residential Developments & Single Phase Commercial

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UNITIL NH – Seacoast Electric Service and Meter Installation Process

The following is our process for electric service installation and meter installation.

Step 1: When Unitil is contacted regarding a new project the customer will be supplied with certain forms that will need to be completed pertaining to their specific project. Other documents such as site plans may also be required. Once the completed forms have been returned an estimate for the job will be completed and the customer notified of any payments that may be required. Once Unitil has received any payments due, easements and all documentation has been completed the project will go through the internal authorization process. Once this step is complete the material can be ordered. Any delay in supplying payments or completed documents could impact your construction schedule as some materials can take up to 4 months to arrive after they have been ordered.

Step 2: Prior to your service being installed, a work order is created in your name for a meter set and placed on hold. You are required to call in and speak with Laurie Page, our Senior Customer Projects Coordinator @ 603-777-5510 in order to set up a billing account with Unitil.

Step 3: Your electrician is required to contact the city/town electrical inspector and set up an appointment to have their work inspected. The inspector will then call an inspection permit in to Unitil authorizing us to set the meter.

Note: All existing Unitil accounts must be current on payments.

Who to call if you have questions during this process:

- Laurie Page 603-777-5510
- Cathy Gilman 603-777-5501 – Single Phase Commercial
- Serge Laprise 603-777-5512 - Residential Developments



Electric Resources Electric Service Requirements

The following information has been prepared to assist you in planning your service installations. It is very important that these policies and procedures are adhered to. This will prevent delays and possible additional costs to you. Our installation documentation provides information on:

- Application for service
- Available service types
- General requirements
- Interruptions of service
- Line extensions
- Temporary service
- Right to refuse/discontinue service
- Ownership & installation of service
- Overhead service
- Underground service
- Grounding of services

Our business hours are 7:00 AM to 3:30 PM Monday through Friday. Our automated services are available 24 hours a day 7 days a week.

We know that you share our concerns for safety. Please review this material and contact us with questions.

Application for Service

An application for electric service should be made by the customer or an authorized representative as far in advance as possible by calling the Seacoast Distribution office, 603-777-5510.

When applying for three phase service, customers, engineers or contractors shall give the Company a list of the largest electrical units, their characteristics, the total connected load and their estimated peak demand. Please refer to the enclosed Load Data Sheet.

The characteristics of proposed new equipment should be discussed with the Company prior to purchase.

All wiring must comply with the latest requirements of the National Electric Code. Where a municipal electrical inspector has jurisdiction, his approval must be received at the Company's office before electric service can be connected to either a new or modernized installation. The contractor should make arrangements with the Municipal Electrical Inspector, in advance, to avoid delays.

Customers are responsible for any damage to the Company's equipment caused by unauthorized changes in the size or nature of the loads.

In general, there shall be only one single phase or one three phase service, of any given voltage rating installed, to a building. A building is defined as "a structure which stands alone or which is cut off from adjoining structures by fire walls, with all openings therein protected by approved fire doors."



Kinds of Service Available

The Company supplies single and three phase 60 Hz alternating current, at the following voltages:

- Single phase 120/240 volt three-wire service is generally supplied for residential, commercial, and small industrial customers. Single phase services are limited to 400 amperes or less.
- Three phase service, at the following voltages, is available for large loads:
 - 208/120 volts wye - four wire
 - 480/277 volts wye - four wire
- 2400 volts and higher Company standard nominal voltages
- Where three phase service is supplied, every effort should be made to balance the load on the three phases.
- A grounded electrode conductor must be installed, with all new three phase services.
- Service entrance conductors must be identified in accordance with the National Electric Code.

General Requirements

The Company will not supply service to a customer whose wiring is designed for resale of electricity through sub-metering.

The customer or contractor shall apply, to the Company, for a service and meter location before any electrical work is started or equipment purchased. This location will be determined by the Company.

The Company requires that service entrance equipment have a minimum rating of 100 amperes.

The Company requires access to its facilities, at all reasonable times.

All unauthorized persons are forbidden to connect, disconnect, relocate, tamper with or break seals, on service or metering equipment. This does not prevent the customer from operating their own main switch or replacing blown fuses. When it is necessary to cut or remove a meter seal, for any reason, the Company must be notified promptly.

Interruption of Service and Safety Measures

The Company makes every effort to maintain its system at the highest possible standards; but assumes no liability as a result of any failure of its service or equipment.

The Company reserves the right to interrupt service to a customer without notice when repairs or changes makes such a procedure necessary and, also, to restore service without notice, when such work is completed. Any equipment which might endanger life or damage property under such conditions, or under conditions of low voltage or single phase operations, should be provided with suitable automatic protection, by the customer.

It is the responsibility of the customer or his agent to contact Unitil's Engineering Department, for information regarding the magnitude of available fault current at the service entrance.

Flagpoles, signs, antennas, and other devices shall be installed so that they will not fall across, or make contact with the Company's wires

Line Extensions – See Operations Procedure OP.00 – Line Extensions

Developers shall furnish the Company with a site plan drawn to scale and an AutoCAD drawing file showing street and property lines and, if available, building positions. Property and street lines shall be located and identified in the field.



Temporary Service

Where temporary service is supplied, the customer will pay the full cost of installing and removing the service and metering equipment.

If three phase temporary service is required, please contact the Company and arrange for a site visit with one of our field representatives. Please call the Seacoast Distribution office at 603-777-5510.

Temporary service installations must be built to Company standards. Contact us for more information regarding our construction standards at 603-777-5510 or 603-777-5501.

Right to Refuse or Discontinue Service

The Company reserves the right to refuse and/or discontinue service to a customer, where the National Electrical Code or rules of other authoritative agencies are violated or where the customer's equipment or operating methods adversely affects service to other customers. Service will again be available when the difficulty has been remedied.

Installation & Ownership of Service

The Company will supply, install, own, and maintain single phase and three phase services not exceeding 400 amperes.

Single phase overhead services not exceeding 400 amperes in size will be installed, at no cost to the customer under normal conditions.

The customer is billed a flat rate excess cost on normal, new underground service installations not exceeding 400 amperes in size.

Services exceeding 400 amperes in size are supplied, installed, owned, and maintained, by the customer. The customer should contact the Company to discuss the installation of these services. The Company will bill the customer for assistance with the installation of customer-owned services.

Overhead Service

The Company will install overhead service wires, at no charge, where the customer's point of attachment can be reached without exceeding the addition of one pole. Span distance will be determined by approved Company construction practices and field conditions.

If the customer is on the opposite side of the road, from the main pole line and cannot be reached from an existing pole, a pole for clearance purposes will be installed by the Company at no charge to the customer, providing the distance from this new pole does not exceed a normal service span. This road clearance pole will be set at a point designated by the Company.

Where a customer, who is located on the opposite side of the road from the main pole line, elects to install an underground service, and the building could not be reached from an existing pole without exceeding one span, a road clearance pole will be set, at no charge to the customer, provided that the distance from the existing pole would not have exceeded 300 feet. A customer, who is not entitled to such a road clearance pole, may have a pole installed on the customer's private property, on a full cost basis for such pole installation.

Additional poles and wires necessary for service on private property are paid for by the customer, but installed and owned by the Company.

The customer's service entrance conductors must be of sufficient length to permit drip loops in connecting to the Company's service wires. Three feet of conductor beyond the service head will usually be sufficient. The Company will specify where additional length is required.

NH ELECTRIC OPERATIONS

114 Drinkwater Road
Kensington, NH 03833



The point of attachment, on the customer's premises, will be designated by the Company and should be so located as to permit the shortest practical length of service wires from the Company's pole. Suitable anchorage for the service wires must be provided by the customer. This may require additional reinforcement, at the location designated. The Contractor should install suitable permanent anchorage for the service on brick, cinderblock or masonry construction. Eye bolts will be supplied for this purpose, by the Company, and installed by the customer or contractor. The point of attachment, of the service conductors, must be so located as to provide the following minimum clearances:

- Above roads, alleys, driveways, parking lots, and areas subject to truck traffic: 16 feet
- Above spaces and ways subject to pedestrians or restricted traffic only: 12 feet

Service conductors shall have a clearance of no less than 3 1/2 feet, from the highest point of roofs over which they pass, if the roof is not accessible to pedestrians. A clearance of 11 feet is required if the roof is accessible to pedestrians.

When a structure is too low to meet these requirements, a service mast (or pole) of a size and type approved by the Company, must be furnished and installed, by the customer, to obtain the required service entrance height.

Service entrance conductors shall be provided, by the customer, in approved conduit or service entrance cable, on the exterior wall of the building, from the point of attachment to the service entrance switch. The meter base shall also be provided and installed by the customer.

Service cable may use a corner of the customer's building, for incidental support; but in no case will the Company provide, own, or maintain a cable which is run longitudinally along the surface of the building.

Underground Service

Where underground service distribution is available, the customer shall supply, install, own and maintain all conduits. The conduits shall be installed in accordance with Company standards.

At a customer's request, or where conditions require it, an underground service may be installed from overhead supply lines. Normally, all conduits and clamps to be attached to the pole will be supplied by the customer, and installed and maintained by the Company, at the customer's expense. The Company can also supply the conduit and clamps attached to the pole and bill the customer. All other conduit will be supplied, installed and maintained by the customers. Installations shall be in accordance with Company standards.

No single conduit having an inside diameter of less than three inches or greater than five inches should be used and no more than two four-inch conduits will be permitted on any pole. The Company will specify the height of the riser, the location on the pole, and the location of the bend at the base of the pole. If more than two conduits are required (including others), they shall be supported clear of the pole, by means of approved standoff brackets.

Unauthorized people are not permitted to do work of any kind on a pole, unless the pole is owned by the customer, and the Company's supply wires have not yet been attached hereto.

Grounding of Services

The neutral wire, on all services, shall be grounded on the customer's premises in accordance with the National Electrical Code. The grounded neutral service conductor shall be identified by white or gray.



Electric Resources

Electric Meter Requirements

The following information has been prepared to assist you in coordinating electric meter installations. It is important that these policies and procedures are adhered to as it will prevent delays and possible additional costs to you.

Our meter installation policy provides information on meter locations and approvals, specifications, customer responsibilities, and Company policies.

An application for an electric meter installation should be made by the customer or an authorized representative as far in advance as possible by calling our Seacoast Distribution office at 603-777-5510.

Our business hours are 7:00 AM to 3:30 PM Monday through Friday. Our automated services are available 24 hours a day 7 days a week.

Policies & Procedures

- Self-contained socket metering is standard where the line-to-ground voltage does not exceed 150 volts and load-side capacity is not more than 400 amperes for single-phase services or 400 amperes 120/208 for polyphase services. For all other meter installations, the Meter Department will specify the type of metering.
- ALL METER LOCATIONS MUST BE PRE-APPROVED BY THE COMPANY. Outdoor locations are required unless an exception is granted by the Company. Each location shall be readily accessible to Company representatives for meter reading, testing, and maintenance. Service will not be provided if access to the meter requires company employees to use adjacent property, climb fences or other obstructions, or cause damage to the customer's shrubbery or flower beds. The meter shall not protrude over a sidewalk or driveway.
- In areas subject to vandalism or damage, meters shall be located within a suitable box furnished and installed by the customer. Hasps shall be provided on such boxes for the installation of Company padlocks. Relocation of meters and equipment because of tampering or vandalism will be at the customer's expense.
- In multiple occupancy buildings, meters may be installed in one common location with its own outside entrance.
- Outdoor meter sockets should be mounted so that the face of the meter is five feet above the ground or final grade. In no instance will any meter be installed with the top of the meter more than six feet nor the bottom of the meter less than three feet above the ground or final grade. A clear area of three feet is required in front of the meter.
- Any multiple meter sockets must be pre-approved by the company. Multiple meter sockets with ringless sockets shall have separate covers for each meter position. Single covers for two or more meter positions are not acceptable. Meter sets at locations with multiple sockets require verification by Unitil technicians to ensure the meter socket is associated with the proper tenant.
- Meter sockets shall be mounted plumb and firmly secured to supports with ample space around meters to allow for testing, reading, and repairing.
- All meter sockets and customer disconnecting means must be plainly and permanently marked for proper apartment, floor, office, etc. (identical to 911 protocols).
- The company may require verification that the main breaker is off before energizing a meter as part of a new set or reconnection.
- The Company will not combine two or more meter registrations at the same location for billing purposes. Load totalization of two electric services on the same premises, where permitted by the Company, will be at the expense of the customer.

- The customer shall equip all cabinets, switches, circuit breakers, and other enclosures giving access to unmetered wiring; for the application of sealing devices. The service switch or circuit breakers, when installed on the line side of the meter, shall be so designed that the unmetered wiring is inaccessible without breaking the seal, even during the replacing of fuses.
 - Authority to cut meter seals or other sealing devices may be delegated to other than authorized Company employees by specific request. It is the responsibility of the electrical contractor to call the Metering Supervisor or Meter Department and request permission before removing or cutting any meter seal or sealing device of the Company.
 - In General, sockets for self-contained meters shall have a UL label. Additional Company specifications are as follows:
 - Meter sockets with bypasses are required on all three phase self-contained commercial and 400 amp residential installations. Meter sockets without bypasses are required on 200 amp and smaller residential installations.
 - When an existing installation is changed to accommodate a different type of service, such as electric water heating, additional terminals must be furnished and installed by the customer at the time of change.
 - Special attention is needed to the metering details of four-wire 480 Wye/277 volt services. They must be discussed with the Meter Department Supervisor before any work is started.
 - Meter pedestals are free-standing units intended to be mounted outdoors in conjunction with underground wiring. If a free-standing meter pedestal is used, it must extend a minimum of 30 inches below the finished grade. The pedestal shall have a stabilizing means extending below the frost line to insure that the meter mounting stays in a plumb position.
 - Meter pedestals must also incorporate circuit breakers, but these are not intended to replace the service disconnection means required at the building.
 - For all installations requiring instrument transformers, the transformers will be furnished without charge by the Company. The customer will install all instrument transformers. Enclosures shall be approved by the Company but furnished and installed by the customer. Such enclosures shall conform to specifications in the National Electrical Code and all transformer enclosures shall have provisions for Company locks.
1. Instrument transformers are to be installed by the customer in separate compartments of switchgear and must have *both*:
1. A barrier which physically isolates the instrument transformers from all other equipment
 2. A separate door for the compartment with sealing facilities
- Instrument transformer primary connectors and connections to service conductors will be supplied and made by the electrical contractor.
 - Except for Company-owned metering equipment, no instruments, meters, or other equipment shall be placed in the instrument transformer compartments or connected to the secondary's of metering transformers.
 - Please contact us to review all instrument transformer installations.



Punch List for Underground Facilities Inspections

Revised July 6, 2015

This is a listing utilized by Unitil when conducting inspections of the underground conduit and structure system that the contractor installs. This can also be used as a guide for the contractor prior to requesting an inspection to ensure the applicable items listed are properly installed.

Development Name and Location: _____

- Pull rope in conduit require a 2,500 lb. test for main runs, provided by Unitil
- Conduit in splice boxes must have 2" – 3" exposure
- Conduit in transformer pad must have 2" – 3" exposure
- Splice boxes must be installed at final grade
- Transformer pad must be installed at final grade
- 2/0 ground wire and ground rods must be installed at transformer
- Riser conduit must be galvanized rigid steel
- Riser sweep or the first 10' section must be grounded and bonded with #6 copper
- Standoff bracket on the first 10' section of the galvanized steel conduit must be minimum of 8' from the ground
- Transformer too close to traveled way – need to move or install bollards for protection
- Trench depth must be a minimum of 42" of cover
- Sand/marketing tape in trench must be 18" above the conduit
- Space between electric and communications cables must have a minimum of 12" separation, including the service runs
- Other – see comments below

Prepared by: _____

Date: _____



APPLICATION FOR TEMPORARY OVERHEAD OR UNDERGROUND ELECTRIC SERVICE

Unitil Energy Systems, Inc. requires a fee of \$430 for the installation of temporary electrical services. This payment must be received before any temporary service will be installed.

Party responsible for Temporary Service Fee of \$430

Name: _____ Company Name: _____
Address: _____ Phone: _____
Fax: _____ Email: _____

Party responsible for monthly-metered billing. (If different from above.)

Name: _____ Company Name: _____
Address: _____ Phone: _____
Fax: _____ Email: _____
Tax Id: _____ SSN: _____

Physical address of service location:

Site/Job name: _____
Address: _____ Town: _____
Permanent 911 address (if known): _____

If residential construction, please fill out where appropriate.

Sub-division name: _____
Address: _____ Lot #: _____ Town: _____
Permanent 911 address (if known): _____

Electrical Contractor for this job site:

Name: _____ Phone: _____ Fax: _____
Email: _____

General Contractor / Developer for this site:

Name: _____ Phone: _____ Fax: _____
Email: _____

Desired date for service installation: ____ / ____ / ____

Type of service requested (please check one):

- 120/240 single phase overhead
- 120/240 single phase underground
- Other (please specify) Voltage: _____ Amps: _____

Payment methods:

If paying by check, please make check payable to: Unitil Energy Systems, Inc., in the amount of **\$430**

Enclose the check with this form and mail them to:

**Attn: Laurie Page/Customer Projects Coordinator
Unitil Energy Systems, Inc.
114 Drinkwater Rd., Kensington, NH 03833**

If paying by credit card, please complete the following: (by phone (603) 777-5510 or by fax (603) 777-5610)

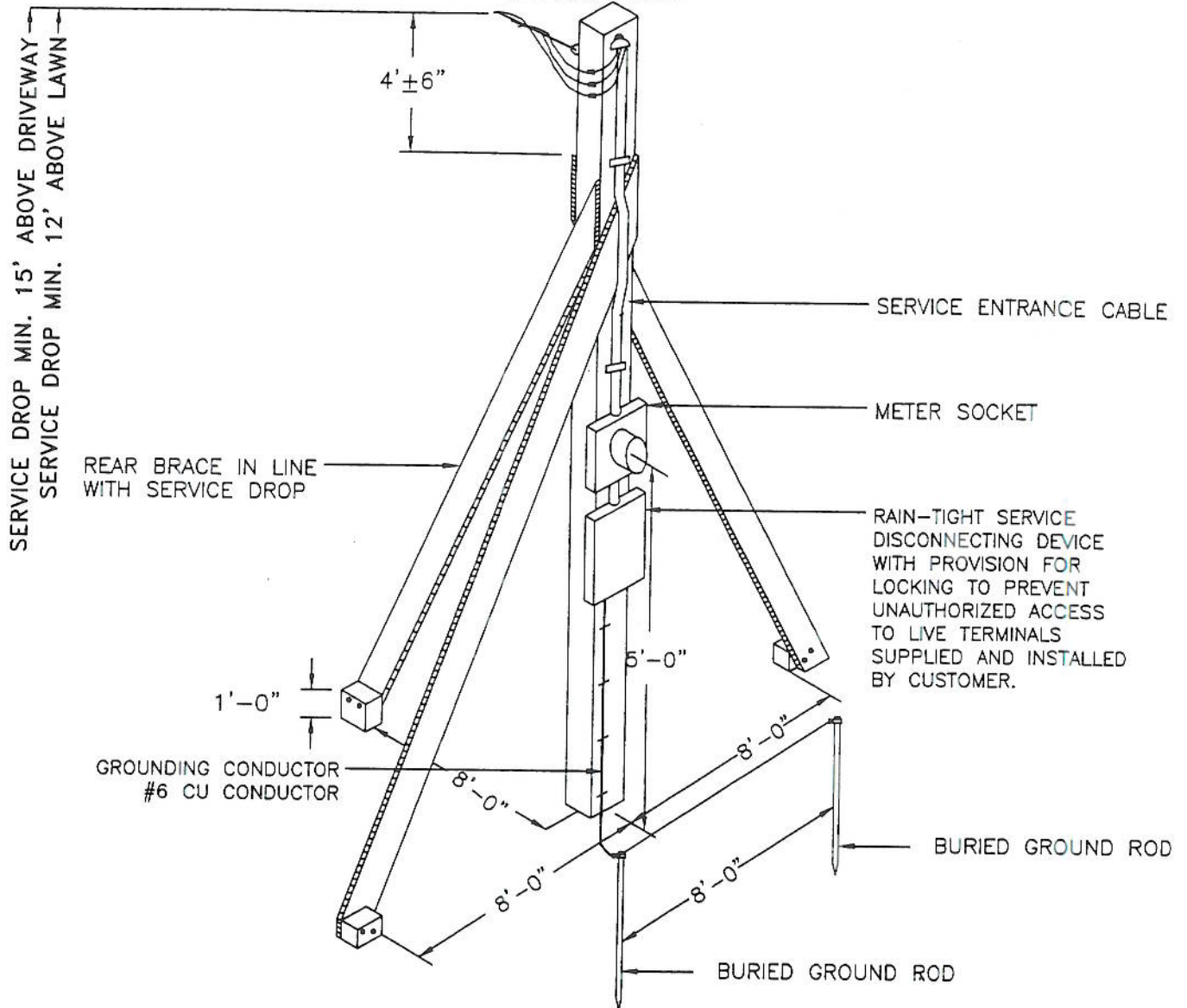
- Visa Master Card (Please Note: We do not accept American Express or Discover)

Card holder's name (please print): _____

Card # _____ Expiration Date: ____ / ____ / ____

Cardholder's Signature: _____ Date: ____ / ____ / ____

OVERHEAD DISTRIBUTION TEMPORARY SERVICE STRUCTURE



CUSTOMER SHALL FURNISH, INSTALL AND MAINTAIN THE FOLLOWING:

1. 6" X 6" X 15' MINIMUM WOOD SERVICE STRUCTURE WITH BRACES AND STAKES.
2. SERVICE ENTRANCE CABLE
3. METER SOCKET & SERVICE DISCONNECTING DEVICE
4. APPROVED GROUND RODS WITH #6 CU GROUNDING CONDUCTOR.
5. STRUCTURE SHALL BE BURIED TO A DEPTH OF 2'-6" MINIMUM BELOW GRADE.

NOTES: Keep within 100 feet of utility pole.

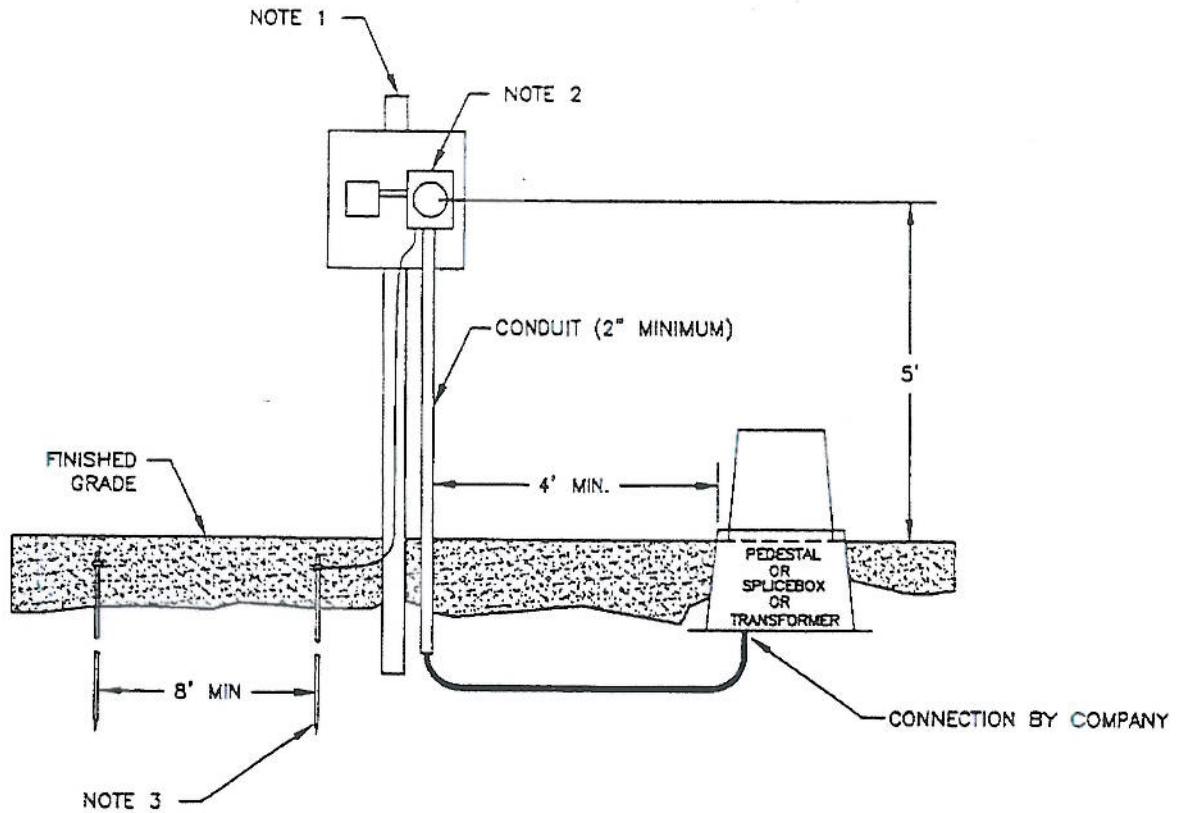
1. WHERE IT IS NECESSARY TO CROSS A TRAVELLED WAY, DISTRIBUTION LINE CONSTRUCTION AS SPECIFIED BY THE COMPANY MUST BE USED.
2. GROUNDING CONDUCTOR SHALL BE STAPLED TO TIMBER AT INTERVALS OF NO MORE THAN ONE FOOT.
3. ALL TIMBERS TO BE SOUND.
4. MIN OF FOUR 20d NAILS AT EACH JOINT.
5. ALL STAKES 2" X 4" X 3' WOOD, ALL BRACES 2" X 4" WOOD.
6. RECEPTACLE MUST HAVE GROUND FAULT PROTECTION (GFCI).



CONSTRUCTION STANDARD

APPROVED	CEC
DATE	3/6/02
STANDARD	1-50-10

UNDERGROUND DISTRIBUTION TEMPORARY UNDERGROUND SERVICE



NOTES:

1. 4"x6" TIMBER, SET MIN. 24" INTO GROUND.
2. METER SOCKET AND SERVICE DISCONNECTING DEVICE.
3. GROUNDING SHALL BE ACCORDING TO COMPANY AND N.E.C. REQUIREMENTS.
4. CUSTOMER TO PROVIDE AND INSTALL ALL MATERIALS.
5. ALL MATERIALS AND CONNECTIONS TO MEET COMPANY SPECIFICATIONS, AND N.E.C. REQUIREMENTS.
6. WHERE CONDUIT IS SUBJECT TO PHYSICAL DAMAGE, SUCH AS MOTOR VEHICLES, SCH. 80 PVC OR RIGID STEEL SHALL BE USED.
7. RECEPTACLE MUST HAVE GROUND FAULT PROTECTION (GFCI).



CONSTRUCTION
STANDARD

APPROVED	<i>CEC</i>
DATE	3/8/02
STANDARD	2-50-10

UNDERGROUND DISTRIBUTION
CONDUITS & DUCTS
TRENCH & CONDUIT GENERAL REQUIREMENTS

TRENCH:

- 1.) THE CONDUIT TRENCH SHALL BE BETWEEN 42" (MINIMUM) AND 48" (MAXIMUM) IN DEPTH AND 18" (MINIMUM) IN WIDTH.
- 2.) CONDUIT TRENCH SHALL NOT PASS THROUGH SOILS SUCH AS MUD, SHIFTING SOILS, ETC.
- 3.) THE TRENCH BOTTOM SHALL BE SMOOTH, FLAT AND WITHOUT SURFACE IRREGULARITIES. THE BOTTOM OF THE TRENCH SHALL BE FREE OF DEBRIS SUCH AS ROCKS, WOOD, GLASS, ETC.
- 4.) IF EXCAVATION IS IN LEDGE OR ROCK, A 4" (MINIMUM) LAYER OF CLEAN BACKFILL (ROCKS NOT LARGER THAN 1-1/2") IS TO BE PLACED OVER THE TRENCH BOTTOM PRIOR TO THE INSTALLATION OF CONDUITS.
- 5.) THE FIRST 12" OF BACKFILL MATERIAL SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.
- 6.) MARKING TAPE SHALL BE INSTALLED 18" ABOVE CONDUITS.

CONDUIT:

- 1.) PVC CONDUIT MEANS - GRAY ELECTRICAL GRADE CONDUIT, SCHEDULE 40 OR 80 PVC. RIGID STEEL MEANS - (HOT-DIPPED) GALVANIZED RIGID STEEL.
- 2.) FOR PRIMARY CABLE RUNS, ALL SWEEPS AND FIRST 10 FOOT SECTION THEREAFTER MUST BE RIGID STEEL. SEE RISER DETAIL, STANDARD 2-2-3 FOR CONDUIT RISER EXCEPTIONS.
- 3.) ALL METALLIC CONDUIT EXPOSED TO THE PUBLIC SHALL BE GROUNDED.
- 4.) CONDUIT SWEEPS MUST HAVE A 24" OR LARGER RADIUS.
- 5.) ONLY STEEL CONDUIT SHALL BE ATTACHED TO STEEL SWEEPS.
- 6.) ALL PVC CONDUIT JOINTS SHALL BE JOINED WITH PVC CEMENT. ALL STEEL TO PVC TRANSITIONS MUST UTILIZE A PVC THREADED ADAPTER.
- 7.) CONDUITS SHALL BE LAID IN AN ORGANIZED FASHION WITH THE USE OF CONDUIT SPACERS AS NEEDED.
- 8.) CONDUIT SHALL BE LAID IN A STRAIGHT LINE WHENEVER POSSIBLE. THE MAXIMUM CHANGE IN DIRECTION BETWEEN TWO CONTIGUOUS LENGTHS OF CONDUIT SHALL BE LIMITED TO 5 DEGREES.
- 9.) OVERALL CHANGE IN DIRECTION IN THE PLANE OF ANY CONDUIT RUN SHALL NOT EXCEED 45 DEGREES EXCLUSIVE OF VERTICAL SWEEPS. A PULL BOX MUST BE INSTALLED AT THE APPROXIMATE MIDPOINT IF THE ARC OF THE RUN EXCEEDS THIS MAXIMUM.
- 10.) FOR SECONDARY CABLE RUNS LONGER THAN 200 FEET - SWEEPS AND THE FIRST 10 FOOT SECTION THEREAFTER MUST BE RIGID STEEL, EXCEPT AT THE METER LOCATION.
- 11.) CONDUITS INSTALLED THROUGH BUILDING WALLS SHALL BE SEALED TO PREVENT THE ENTRANCE OF GASSES.
- 12.) CONDUIT RUNS SHALL BE INSPECTED BY UNITIL PRIOR TO BEING COVERED BY BACKFILL OR THE CUSTOMER WILL BE REQUIRED TO RE-EXPOSE THE CONDUIT.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	1/12/15
STANDARD	2-2-1

UNDERGROUND DISTRIBUTION
CONDUITS & DUCTS
TRENCH & CONDUIT GENERAL REQUIREMENTS

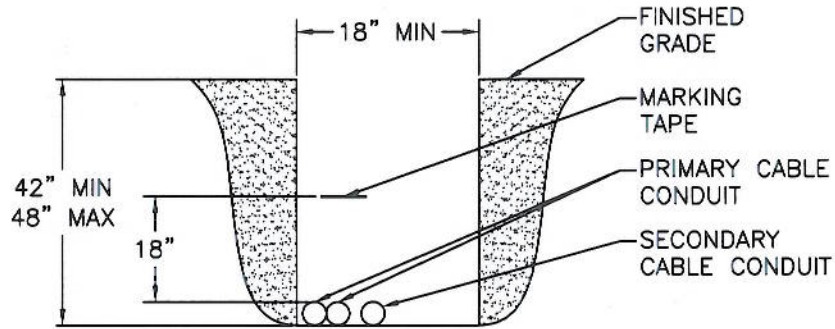
- 13.) CONDUIT RUNS SHALL BE CLEANED BY PULLING A CLEANING PLUG OR MANDREL (NO SMALLER THAN 1/4" LESS THAN THE CONDUIT) THROUGH THE CONDUIT.
- 14.) ALL CONDUIT RUNS SHALL HAVE A 2,500# FLAT, WOVEN, POLYESTER PULLING LINE INSTALLED.
- 15.) ALL CONDUITS SHALL HAVE 36" (MINIMUM) COVER.
- 16.) SPARE CONDUITS SHALL BE INSTALLED UNDER ROADWAYS, DRIVEWAYS AND PAVED AREAS AND HAVE SUITABLE APPROVED PLUGS OR CAPS INSTALLED IN ALL EXPOSED ENDS.
- 17.) CONDUITS INSTALLED UNDER ROADWAYS, DRIVEWAYS, PARKING LOTS, OR ANY TRAVELED WAY SHALL BE SCHEDULE 80 PVC OR RIGID STEEL, OR MAY BE CONCRETE-ENCASED SCHEDULE 40 PVC WITH APPROVAL BY UNITIL.
- 18.) CONDUIT RUNS THAT ARE LESS THAN THE MINIMUM DEPTH MUST BE CONCRETE ENCASED AND APPROVED BY UNITIL.
- 19.) CONCRETE ENCASED PVC MUST HAVE 4" (MINIMUM) OF CONCRETE ON ALL SIDES.
- 20.) PARALLEL RUN UTILITIES:
- WATER AND SEWER - THERE SHALL BE 4' (MINIMUM) OF HORIZONTAL DISTANCE FROM ELECTRIC CONDUITS AND 12" (MINIMUM) OF VERTICAL CLEARANCE FROM ELECTRIC CONDUITS FOR CROSSING RUNS.
 - GAS - THERE SHALL BE 3' (MINIMUM) CLEARANCE FROM ELECTRIC CONDUITS IN ALL DIRECTIONS.
 - COMMUNICATION CONDUITS - THERE SHALL BE 12" (MINIMUM) OF SEPARATION FROM ELECTRIC CONDUITS.
- 21.) CONDUIT SIZES SHALL BE:
- 3" FOR SINGLE PHASE SERVICE RUNS UP TO AND INCLUDING 200 AMPS.
 - 4" FOR SINGLE PHASE SECONDARY RUNS.
 - 4" FOR SINGLE PHASE SERVICES OVER 200 AMPS AND UP TO AND INCLUDING 400 AMPS.
 - 4" FOR THREE PHASE SERVICES UP TO AND INCLUDING 400 AMPS.
 - 4" FOR SINGLE PHASE PRIMARY RUNS
 - 5" FOR THREE PHASE PRIMARY RUNS
 - CONDUIT SIZE FOR CUSTOMER OWNED CABLES SHALL BE SIZED BY THE CUSTOMER.



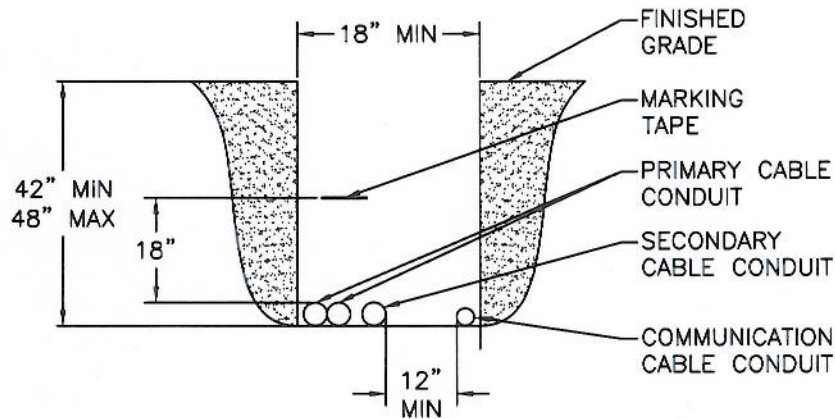
**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	1/12/15
STANDARD	2-2-1

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS TRENCH REQUIREMENTS



ELECTRIC ONLY TRENCH



JOINT TRENCH

NOTES:

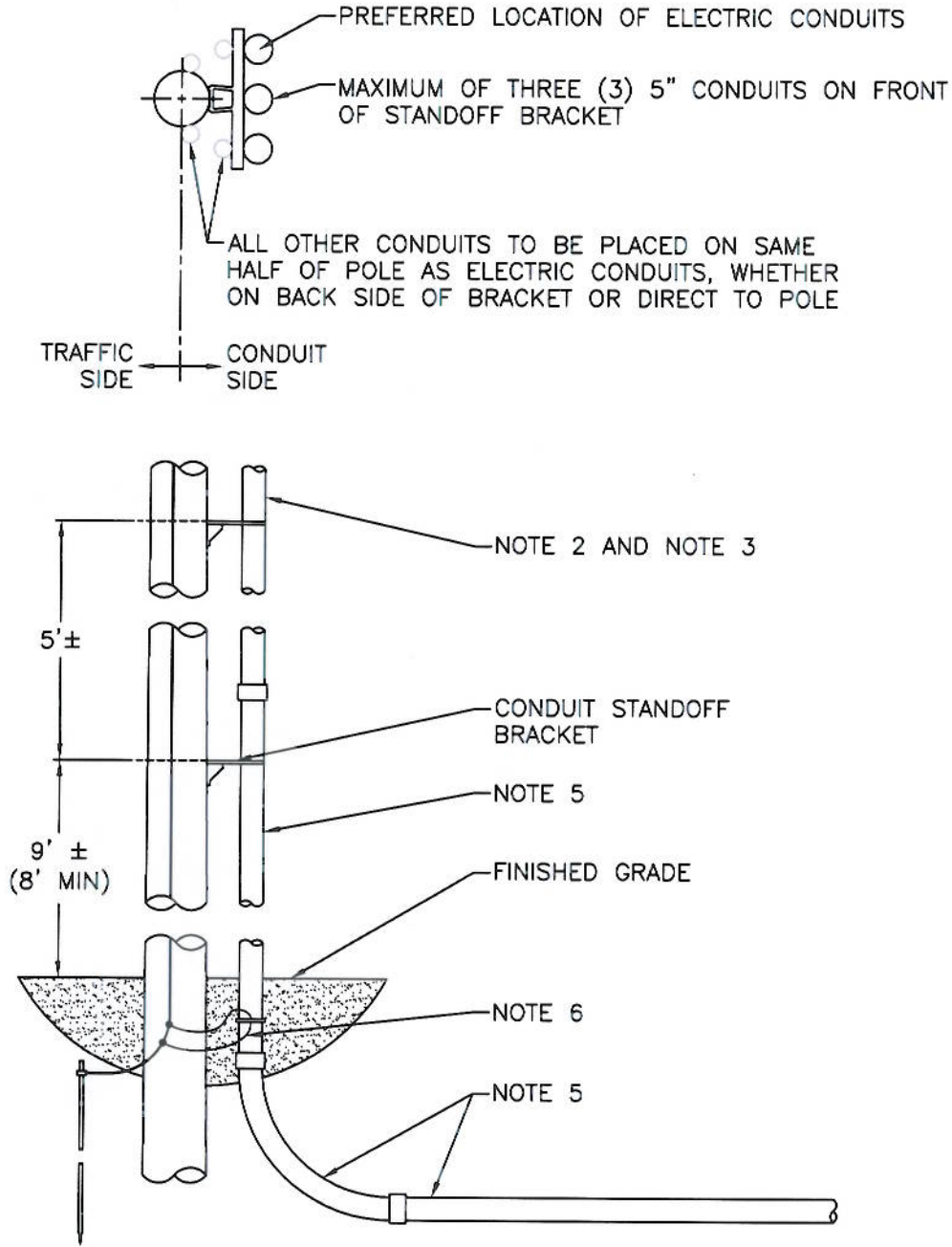
- 1.) COMMUNICATION CONDUITS SHALL HAVE A MINIMUM OF 12" OF SEPARATION FROM ELECTRIC CONDUITS.
- 2.) GAS LINES SHALL HAVE A MINIMUM OF 36" OF SEPARATION FROM ELECTRIC AND COMMUNICATION CONDUITS.
- 3.) WATER AND SEWER LINES SHALL HAVE A MINIMUM OF 48" HORIZONTAL SEPARATION FOR PARALLEL RUNS AND MINIMUM OF 12" VERTICAL SEPARATION FOR CROSSING RUNS.
- 4.) SEE STANDARD 2-2-1 FOR ADDITIONAL TRENCH AND CONDUIT REQUIREMENTS.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	11/25/14
STANDARD	2-2-2

UNDERGROUND DISTRIBUTION CONDUITS & DUCTS CONDUIT RISER DETAIL



CONSTRUCTION STANDARD

APPROVED	<i>PAK</i>
DATE	6/10/15
STANDARD	2-2-3

UNDERGROUND DISTRIBUTION
CONDUITS & DUCTS
CONDUIT RISER DETAIL

NOTES:

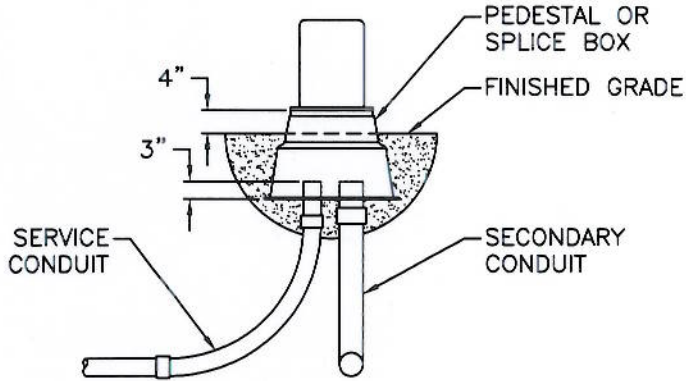
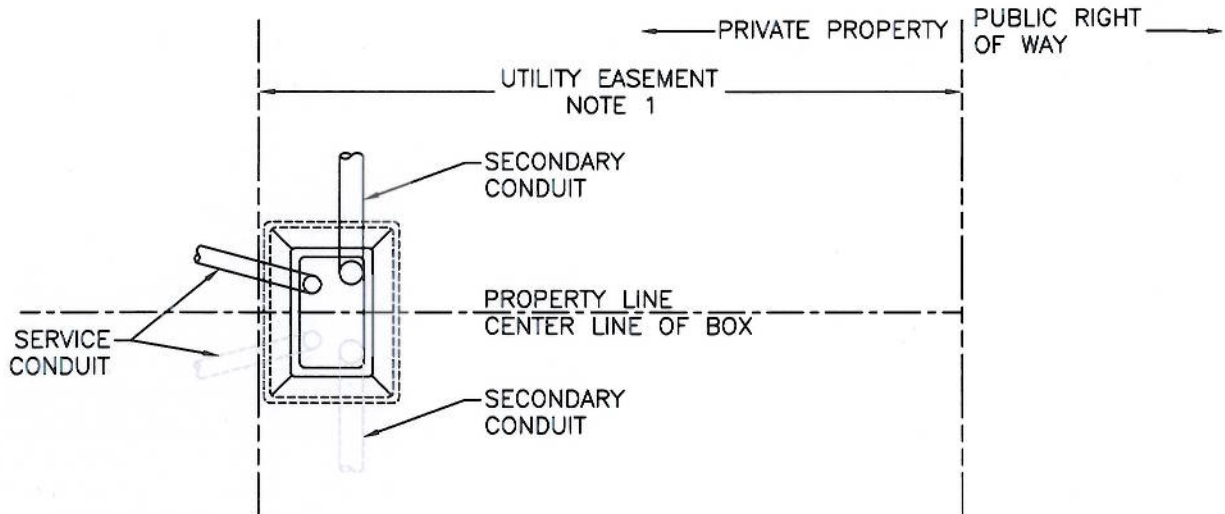
- 1.) LOCATE RISER CONDUITS ON POLE AWAY FROM TRAFFIC.
- 2.) RISER POLE SHALL BE LOCATED TO ALLOW FOR BUCKET TRUCK ACCESS.
- 3.) ELECTRIC CONDUITS SHALL EXTEND INTO THE ELECTRIC SPACE (I.E. ABOVE THE TOP OF THE COMMUNICATIONS WORKER 40" SAFETY ZONE).
- 4.) TOP END OF VERTICAL RISER CONDUIT SHALL BE WEATHER-SEALED AFTER INSTALLATION OF CABLES. UNTIL CABLES ARE INSTALLED, TEMPORARILY CAP OR TAPE THE TOP END OF THE VERTICAL RISER CONDUIT.
- 5.) RISER SWEEPS AND THE ATTACHED FIRST VERTICAL AND FIRST HORIZONTAL CONDUIT SECTIONS SHALL BE GALVANIZED RIGID STEEL.
- 6.) BOND STEEL CONDUIT TO POLE GROUND WITH A CONTINUOUS LENGTH OF #6 AWG (MINIMUM) BARE COPPER WIRE LOOPED THROUGH THE BONDING CLAMP AT THE CONDUIT END WITH BOTH ENDS CONNECTED AT THE POLE GROUND.
- 7.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	6/10/15
STANDARD	2-2-3

UNDERGROUND DISTRIBUTION
EQUIPMENT
PEDESTAL/SPLICE BOX
PREFERRED LOCATION



NOTES:

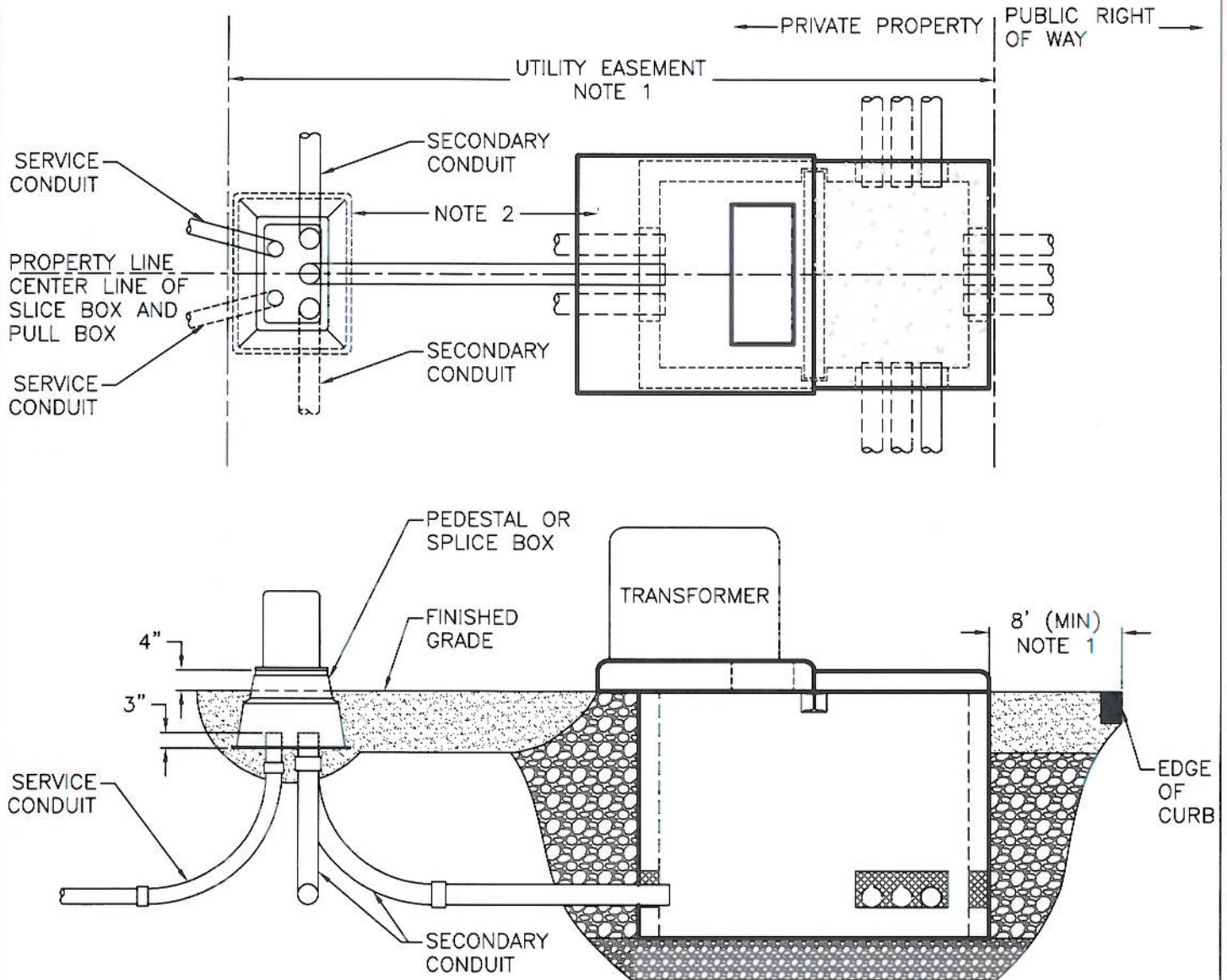
- 1.) ALL PEDESTALS/SPLICE BOXES SHALL BE PLACED OUTSIDE OF THE PUBLIC RIGHT OF WAY AND WITHIN THE UTILITY EASEMENT.
- 2.) PEDESTALS/SPLICE BOXES SHALL BE PLACED TO PROVIDE ADEQUATE ACCESS FOR MAINTENANCE.
- 3.) CONDUITS SHALL EXTEND 3" INTO THE BOTTOM OF THE PEDESTAL/SPLICE BOX.
- 4.) TOP OF SPLICE BOX (NOT INCLUDING COVER) SHALL EXTEND 4" ABOVE FINISHED GRADE.
- 5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	11/25/14
STANDARD	2-3-7

UNDERGROUND DISTRIBUTION
EQUIPMENT
SINGLE PHASE TRANSFORMER PAD W/ SPLICE BOX
PREFERRED LOCATION



NOTES:

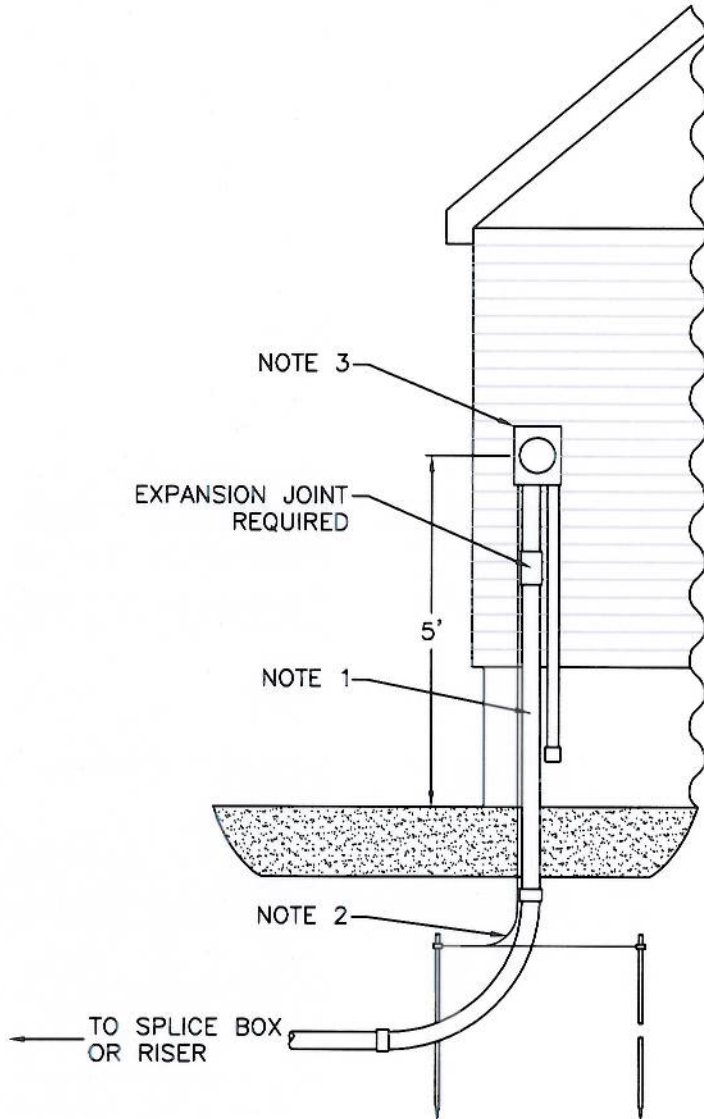
- 1.) ALL PEDESTALS/SPLICE BOXES AND TRANSFORMERS/PULL BOXES SHALL BE PLACED OUTSIDE OF THE PUBLIC RIGHT OF WAY AND WITHIN THE UTILITY EASEMENT
- 2.) PEDESTALS/SPLICE BOXES SHALL BE PLACED TO PROVIDE ADEQUATE ACCESS FOR MAINTENANCE.
- 3.) CONDUITS SHALL EXTEND 3" INTO THE BOTTOM OF THE PEDESTAL/SPLICE BOX.
- 4.) TOP OF SPLICE BOX (NOT INCLUDING COVER) SHALL EXTEND 4" ABOVE FINISHED GRADE.
- 5.) SEE STANDARD 2-3-13 FOR PULL BOX AND TRANSFORMER PAD INSTALLATION DETAILS
- 6.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	11/25/14
STANDARD	2-3-8

UNDERGROUND DISTRIBUTION EQUIPMENT BUILDING SERVICE



NOTES:

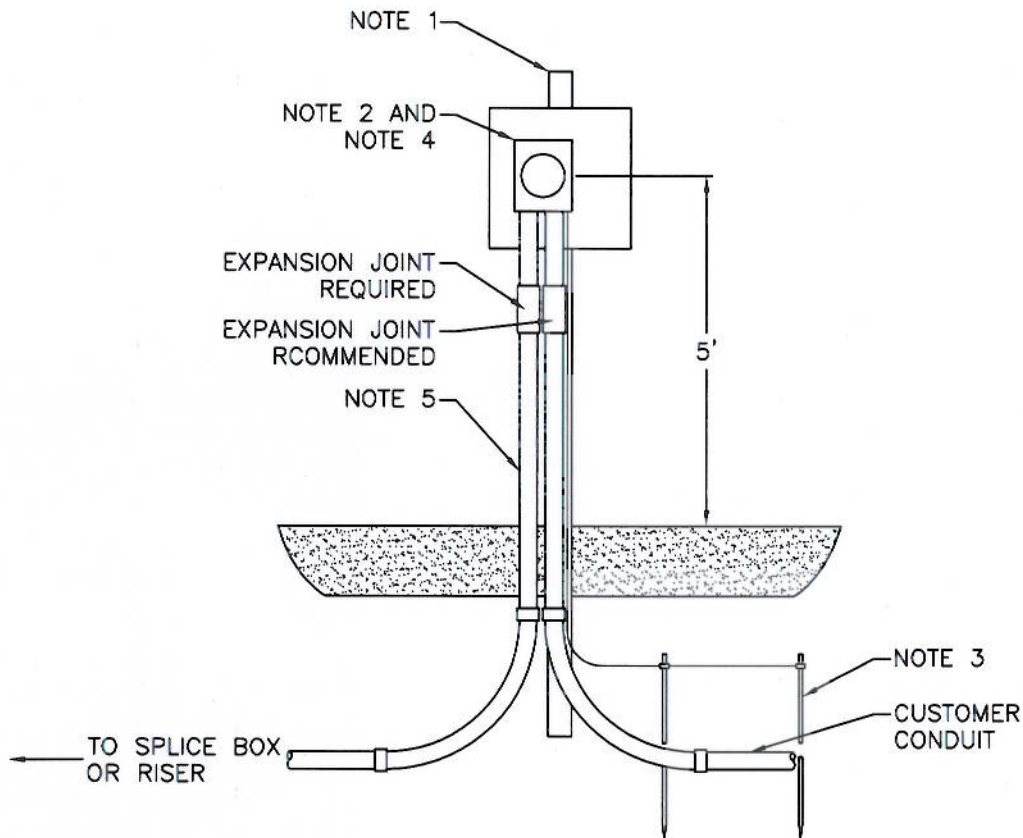
- 1.) WHERE CONDUIT IS SUBJECT TO PHYSICAL DAMAGE, SUCH AS MOTOR VEHICLES, SCHEDULE 80 PVC OR RIGID STEEL SHALL BE USED.
- 2.) METER SOCKET GROUND TO BE INSTALLED AND PROTECTED PER LATEST VERSION OF NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- 3.) METER SOCKET LOCATION SHALL BE DETERMINED BY UNITIL WITHOUT EXCEPTION.
- 4.) METER SOCKET SHALL BE 200 AMP OR GREATER UNDERGROUND TYPE PROVIDED AND INSTALLED BY THE CUSTOMER (COMBINATION BASES ARE UNACCEPTABLE).
- 5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.
- 6.) ALL MATERIALS AND CONNECTIONS SHALL MEET UNITIL SPECIFICATIONS, LATEST VERSION OF NATIONAL ELECTRICAL CODE AND LOCAL CODES.



CONSTRUCTION STANDARD

APPROVED	<i>PAK</i>
DATE	11/25/14
STANDARD	2-3-9

UNDERGROUND DISTRIBUTION EQUIPMENT METER PEDESTAL SERVICE



NOTES:

- 1.) 4"x6" PRESSURE TREATED TIMBER, SET 36" (MIN.) DEEP, OR PREFABRICATED PEDESTAL.
- 2.) METER SOCKET AND SERVICE DISCONNECTING DEVICE PER LATEST VERSION OF NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- 3.) GROUNDING PER LATEST VERSION OF NATIONAL ELECTRICAL CODE AND LOCAL CODES.
- 4.) METER SOCKET SHALL BE A 200 AMP OR GREATER UNDERGROUND TYPE PROVIDED AND INSTALLED BY THE CUSTOMER (COMBINATION BASES ARE UNACCEPTABLE).
- 5.) WHERE CONDUIT IS SUBJECT TO PHYSICAL DAMAGE, SUCH AS MOTOR VEHICLES, SCHEDULE 80 PVC OR RIGID STEEL SHALL BE USED.
- 6.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.
- 7.) CUSTOMER TO PROVIDE AND INSTALL ALL MATERIALS.
- 8.) ALL MATERIALS AND CONNECTIONS SHALL MEET UNITIL SPECIFICATIONS, LATEST VERSION OF NATIONAL ELECTRICAL CODE AND LOCAL CODES.



CONSTRUCTION STANDARD

APPROVED	<i>PAK</i>
DATE	11/25/14
STANDARD	2-3-10

200 AMP
4 & 5 TERMINAL
RINGLESS

MILBANK

600 VAC

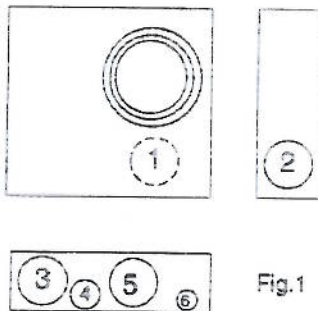
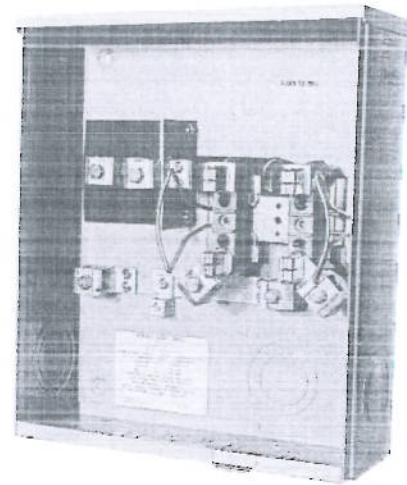


Fig.1



U1980-0



200 AMP.- 4 TERMINAL* - SIDE WIREWAY - RINGLESS

SERVICE	RINGLESS CAT. NO.	HUB	① LUG CU/AL	BY- PASS	DIMENSIONS			CONCENTRIC K.O.'S						LINE DWG FIG
					D"	W"	H"	1	2	3	4	5	6	
UNDERGROUND	U1980-0	NONE	#2-350 MCM	NONE	4½	13	15¼	2½	2½	3	1½	2½	¼, ½	1

* For field mounted fifth terminal order catalog number 5T&K2.

① Extruded aluminum connectors are tin plated.

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UNDERGROUND DISTRIBUTION
EQUIPMENT
PLACEMENT OF PAD-MOUNTED EQUIPMENT

- 1.) UNITIL EQUIPMENT SHALL BE INSTALLED IN LOCATIONS THAT PROVIDE UNENCUMBERED ACCESS FOR INSTALLATION, MAINTENANCE AND OPERATION; ACCEPTABLE ENVIRONMENTAL CONDITIONS; AND REASONABLE SECURITY AGAINST DAMAGE.
- 2.) NO STRUCTURES, OBSTRUCTIONS OR MATERIALS SHALL BE LOCATED ANY CLOSER THAN 5' FROM ANY SIDE OF THE PAD OR EQUIPMENT.
- 3.) NO PORTION OF A BUILDING OR STRUCTURE SHALL OVERHANG ANY PART OF THE PAD OR EQUIPMENT.
- 4.) A MINIMUM OF 15' OF CLEAR SPACE SHALL BE PROVIDED IN FRONT OF ANY COMPARTMENT DOORS WHERE WORK IS TO BE PERFORMED. ANY OBSTACLES IN THIS AREA MUST BE APPROVED BY UNITIL AND DESIGNED TO BE EASILY REMOVABLE BY UNITIL PERSONNEL OR DESIGNEES.
- 5.) EQUIPMENT SHOULD BE LOCATED WITHIN 15' OF VEHICLE ACCESS, TO ALLOW FOR INSTALLATION AND REMOVAL.
- 6.) AVOID PLACEMENT BENEATH WINDOWS, DOORS, BALCONIES, WALKWAYS, ETC. THAT ARE LESS THAN 10' ABOVE THE TOP OF THE EQUIPMENT.
- 7.) CLEARANCE FROM HAZARDS – MINIMUM HORIZONTAL DISTANCES TO EDGE OF EQUIPMENT PAD:
 - 5' FROM NON-COMBUSTIBLE WALLS, STRUCTURE, ETC.
 - 5' FROM SIDEWALKS OR SHRUBS.
 - 10' FROM COMBUSTIBLE WALLS, STRUCTURES, ETC.
 - 10' FROM WINDOWS.
 - 15' FROM AIR INTAKES OR VENTILATING DUCTS.
 - 15' FROM EQUIPMENT, PIPES, TANKS, METERS, ETC. WHERE NATURAL GAS, PROPANE, GASOLINE, OR OTHER FUELS ARE STORED, TRANSPORTED OR BURNED.
 - 20' FROM DOORS, FIRE ESCAPES, EMERGENCY EXITS, ETC., INCLUDING LADDERS AND STAIRS. FOR EXITS FROM A PUBLIC ASSEMBLY ROOM, SUCH AS AN AUDITORIUM, THIS MINIMUM DISTANCE SHOULD BE INCREASED TO 25'.

A NON-COMBUSTIBLE BARRIER SHALL BE INSTALLED IF THESE MINIMUM DISTANCES ARE NOT ATTAINABLE. THIS BARRIER SHALL BE A MINIMUM OF 6' IN HEIGHT AND NO CLOSER THAN 5' FROM THE EDGE OF THE EQUIPMENT PAD.

OTHER PROVISIONS AGAINST EXPOSURE TO HEAT SOURCES OR COMBUSTIBLE MATERIALS MAY BE REQUIRED DUE TO SPECIAL CIRCUMSTANCES AT THE SITE.

- 8.) EQUIPMENT SHOULD BE PLACED OUTSIDE TRAVELED WAYS, DRIVEWAYS, PARKING LOTS, OR OTHER LOCATIONS SUBJECT TO MOTORIZED TRAFFIC BY THE FOLLOWING MINIMUM DISTANCES.
 - 8' FROM EDGE OF CURB
 - 10' FROM EDGE OF VEHICLE PATH IF NO CURB IS PRESENT.

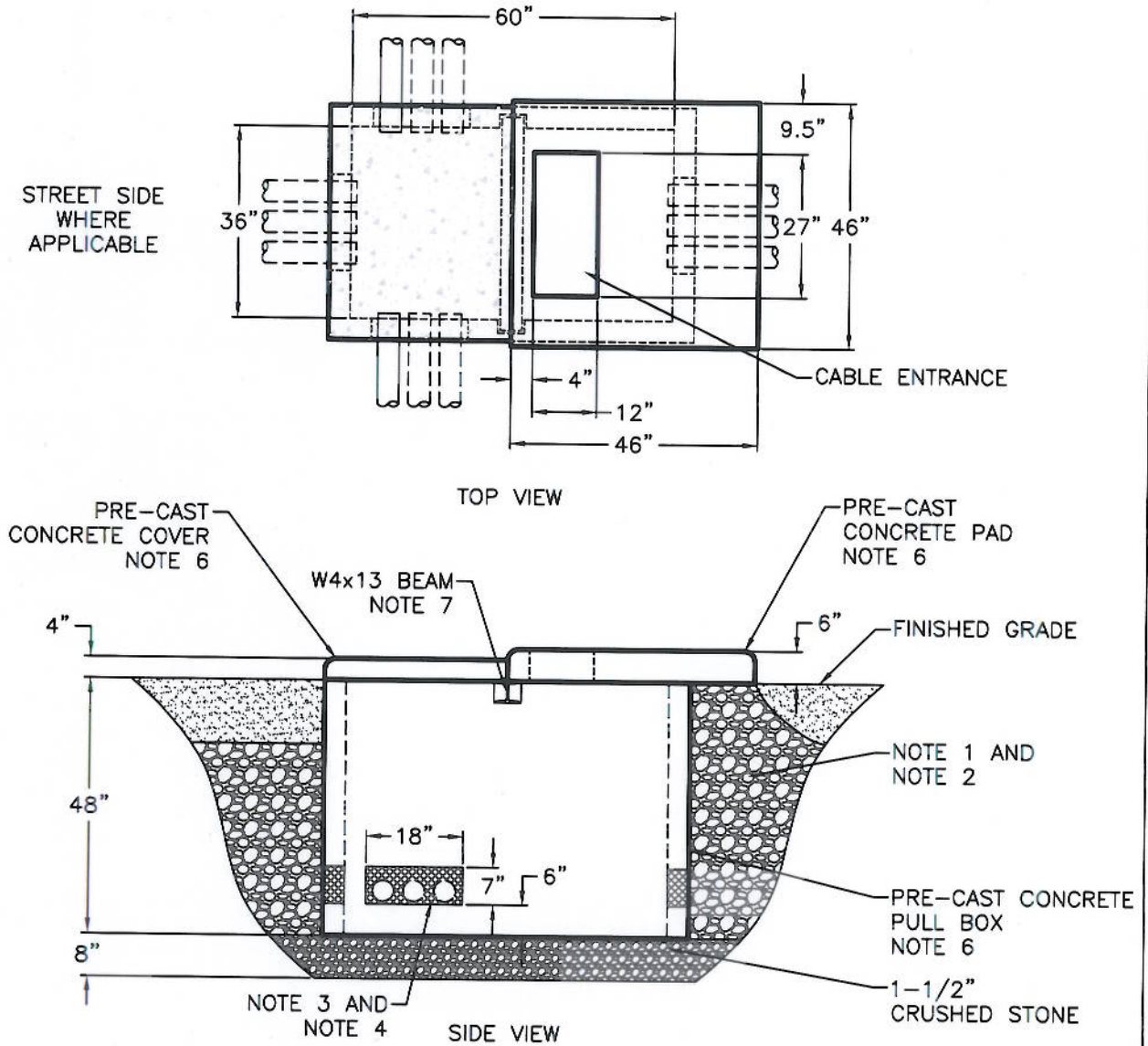
BUMPERS, BOLLARDS, GUARDRAILS, OR OTHER PROVISIONS SHALL BE INSTALLED IF THESE DISTANCES ARE NOT OBTAINABLE. ANY BUMPERS, BOLLARDS, ETC. INSTALLED IN FRONT OF ANY COMPARTMENT DOOR SHALL BE APPROVED BY UNITIL AND DESIGNED TO BE EASILY REMOVABLE BY UNITIL PERSONNEL OR DESIGNEES.



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	11/25/14
STANDARD	2-3-6

UNDERGROUND DISTRIBUTION
EQUIPMENT
PAD AND PULL BOX - SINGLE PHASE TRANSFORMER



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	1/21/15
STANDARD	2-3-13

UNDERGROUND DISTRIBUTION
EQUIPMENT
PAD AND PULL BOX – SINGLE PHASE TRANSFORMER

NOTES:

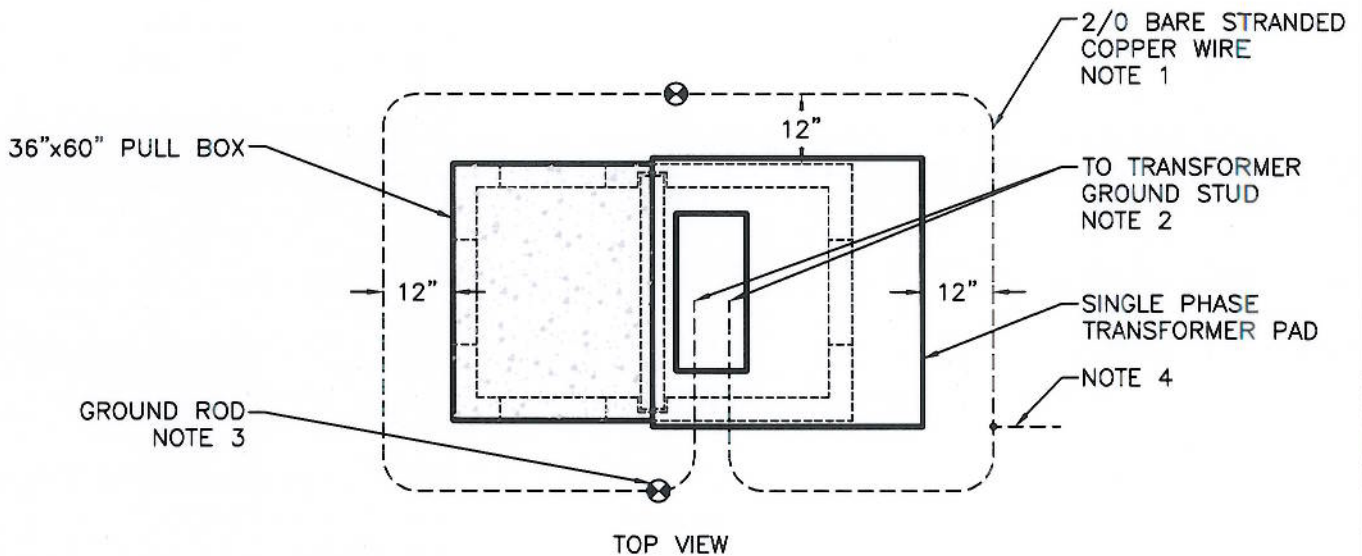
- 1.) THE FIRST 12" OF BACKFILL MATERIAL AROUND CONDUITS SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.
- 2.) COMPACTED GRAVEL UNDER ALL AREAS OF THE PAD.
- 3.) EXTEND CONDUITS FULLY THROUGH PULL BOX WALLS, BUT LESS THAN 2" BEYOND INSIDE SURFACE OF THE WALL.
- 4.) SEAL AROUND ALL CONDUIT OPENINGS IN PULL BOX WALLS WITH HYDRAULIC CEMENT.
- 5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.
- 6.) PULL BOXES, EQUIPMENT PADS AND COVERS SHALL BE FABRICATED PER UNITIL PROVIDED FABRICATION DRAWINGS AND BY UNITIL APPROVED FABRICATORS ONLY.
- 7.) SHIM BEAM AND GROUT SOLID UNDER BOTTOM FLANGE, SUCH THAT BEAM IS FLUSH WITH TOP OF PULL BOX
- 8.) THE APPROXIMATE WEIGHT OF A 36"x60" PULL BOX IS 5,500 POUNDS.
- 9.) THE APPROXIMATE WEIGHT OF A 44"x34" COVER IS 550 POUNDS.
- 10.) THE APPROXIMATE WEIGHT OF A SINGLE PHASE TRANSFORMER PAD IS 1,000 POUNDS.
- 11.) THE LOAD RATING OF A SINGLE PHASE TRANSFORMER PAD IS 10,000 POUNDS.



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	1/21/15
STANDARD	2-3-13

UNDERGROUND DISTRIBUTION
EQUIPMENT
GROUNDING – SINGLE PHASE TRANSFORMER



NOTES:

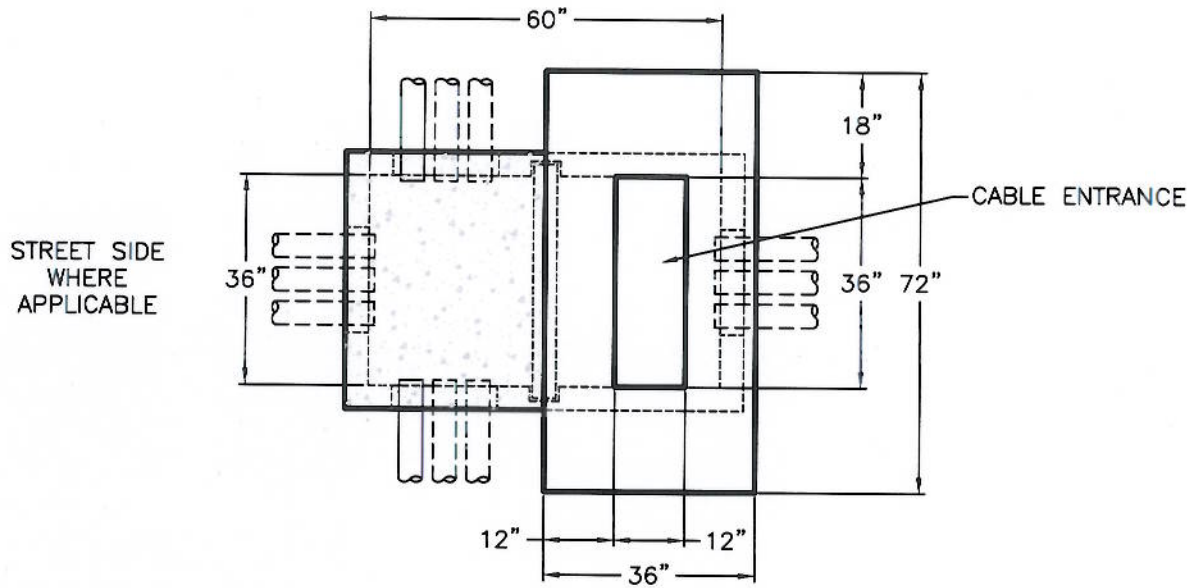
- 1.) THE GROUND RING SHALL BE 12" BELOW FINISHED GRADE.
- 2.) SIX FEET (72") OF EXTRA WIRE FOR EACH GROUND RING LEG SHALL BE LEFT EXPOSED IN THE PULL BOX FOR TRANSFORMER CONNECTIONS. THE GROUND WIRE SHALL ENTER THE PULL BOX BELOW GRADE THROUGH ONE OF THE CONDUIT ENTRANCES OR THROUGH THE OPEN BOTTOM.
- 3.) THE GROUND RODS SHALL BE 5/8" DIA. BY 8' LONG AND SHALL BE GALVANIZED STEEL OR COPPERWELD. GROUND RODS SHALL BE CONNECTED TO THE GROUND RING WITH UL APPROVED CONNECTORS.
- 4.) TWO FEET (24") OF #6 AWG BARE COPPER WIRE IS TO BE LEFT EXPOSED FOR COMMUNICATIONS TO BOND TO THE GROUND RING. THE #6 AWG WIRE SHALL BE BONDED TO THE GROUND RING WITH UL APPROVED CONNECTORS.



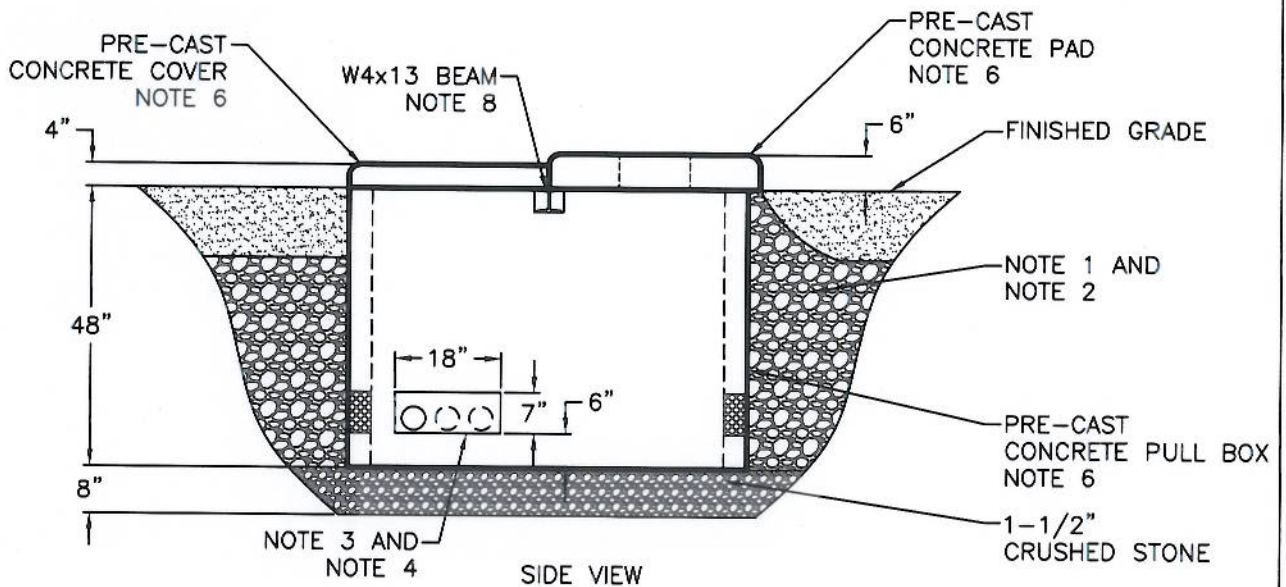
**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	1/12/15
STANDARD	2-3-20

UNDERGROUND DISTRIBUTION
EQUIPMENT
PAD AND PULL BOX - SINGLE PHASE SECTIONALIZING CABINET



TOP VIEW



SIDE VIEW



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	1/21/15
STANDARD	2-3-15

UNDERGROUND DISTRIBUTION
EQUIPMENT
PAD AND PULL BOX – SINGLE PHASE SECTIONALIZING CABINET

NOTES:

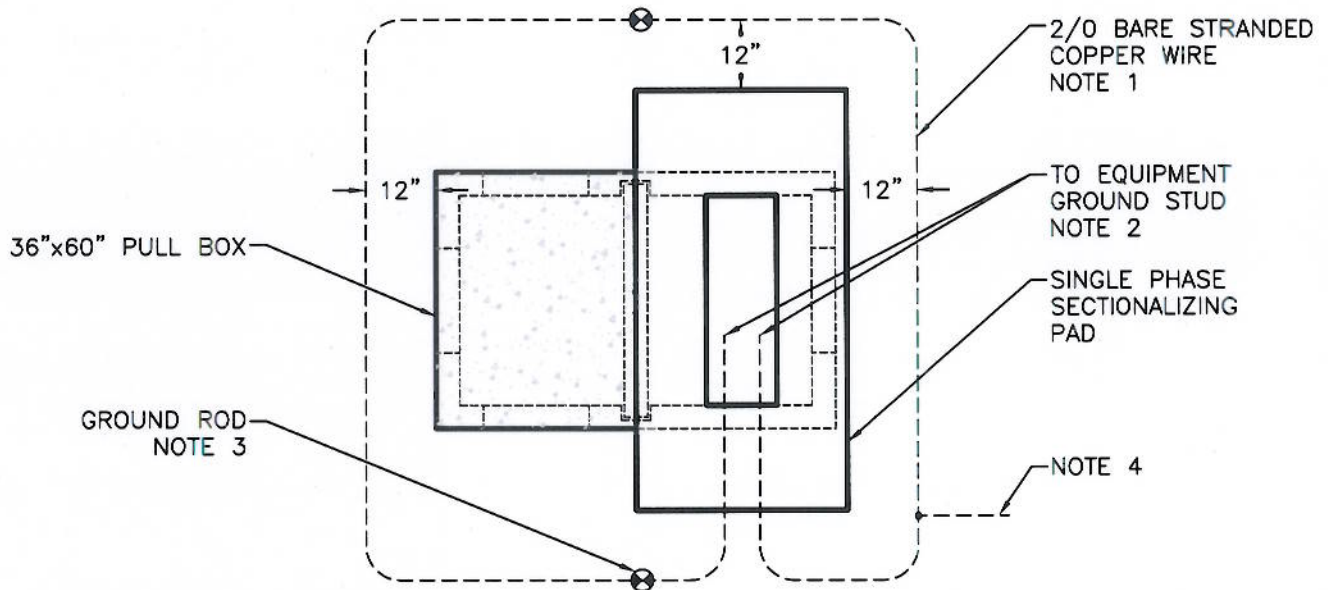
- 1.) THE FIRST 12" OF BACKFILL MATERIAL AROUND CONDUITS SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.
- 2.) COMPACTED GRAVEL UNDER ALL AREAS OF THE PAD.
- 3.) EXTEND CONDUITS FULLY THROUGH PULL BOX WALLS, BUT LESS THAN 2" BEYOND INSIDE SURFACE OF THE WALL.
- 4.) SEAL AROUND ALL CONDUIT OPENINGS IN PULL BOX WALLS WITH HYDRAULIC CEMENT.
- 5.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.
- 6.) PULL BOXES, EQUIPMENT PADS AND COVERS SHALL BE FABRICATED PER UNITIL PROVIDED FABRICATION DRAWINGS AND BY UNITIL APPROVED FABRICATORS ONLY.
- 7.) A SINGLE PHASE SECTIONALIZING CABINET PAD WILL ACCOMMODATE A 48" OR 66" SECTIONALIZING CABINET.
- 8.) SHIM BEAM AND GROUT SOLID UNDER BOTTOM FLANGE, SUCH THAT BEAM IS FLUSH WITH TOP OF PULL BOX
- 9.) THE APPROXIMATE WEIGHT OF A 36"x60" PULL BOX IS 5,500 POUNDS.
- 10.) THE APPROXIMATE WEIGHT OF A 44"x34" COVER IS 550 POUNDS.
- 11.) THE APPROXIMATE WEIGHT OF A SINGLE PHASE SECTIONALIZING CABINET PAD IS 1,200 POUNDS.
- 12.) THE LOAD RATING OF A SINGLE PHASE SECTIONALIZING CABINET PAD IS 500 POUNDS.



CONSTRUCTION
STANDARD

APPROVED	PAK
DATE	1/21/15
STANDARD	2-3-15

UNDERGROUND DISTRIBUTION
EQUIPMENT
GROUNDING – SINGLE PHASE SECTIONALIZING CABINET



NOTES:

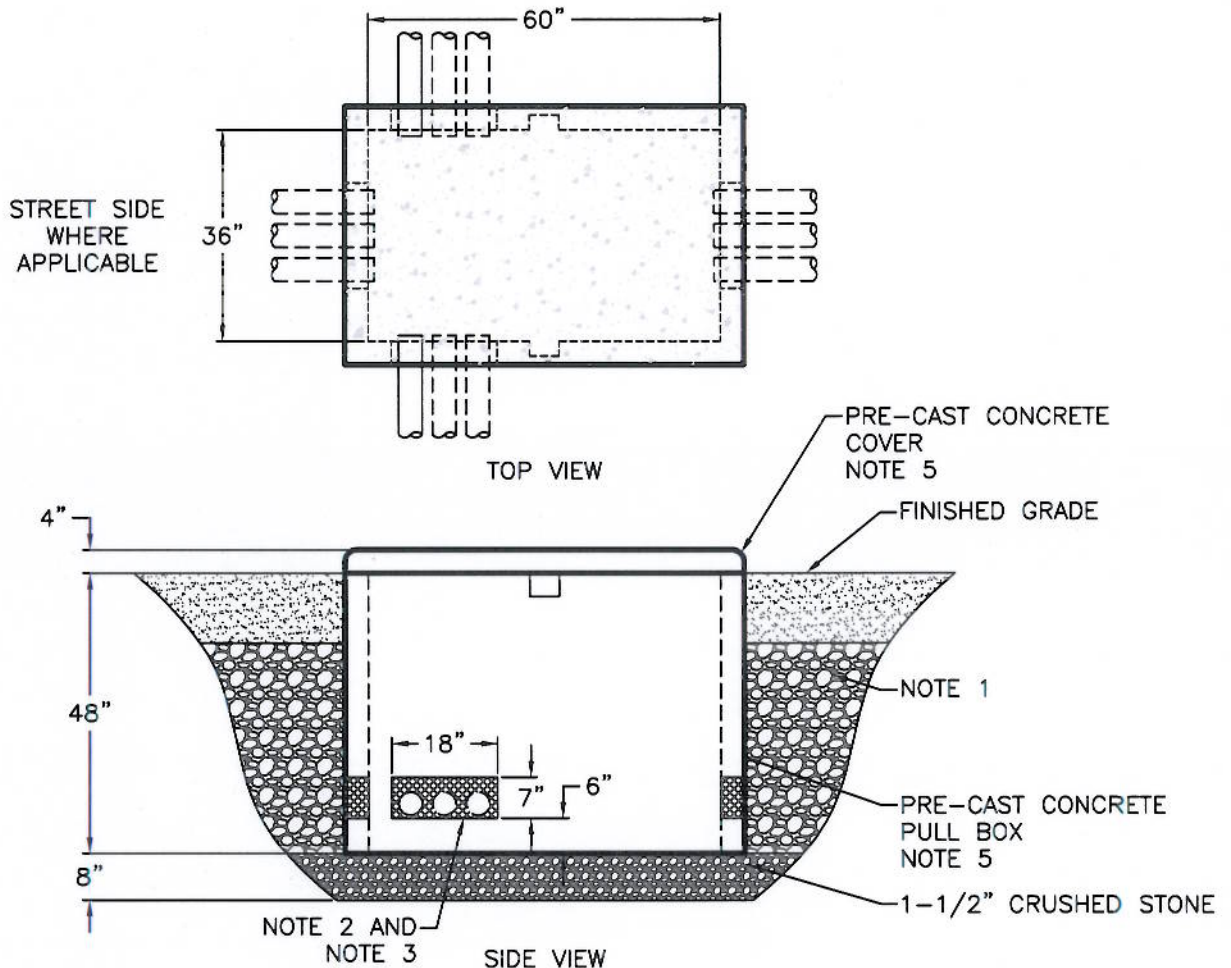
- 1.) THE GROUND RING SHALL BE 12" BELOW FINISHED GRADE.
- 2.) SIX FEET (72") OF EXTRA WIRE FOR EACH GROUND RING LEG SHALL BE LEFT EXPOSED IN THE PULL BOX FOR EQUIPMENT GROUNDING CONNECTIONS. THE GROUND WIRE SHALL ENTER THE PULL BOX BELOW GRADE THROUGH ONE OF THE CONDUIT ENTRANCES OR THROUGH THE OPEN BOTTOM.
- 3.) THE GROUND RODS SHALL BE 5/8" DIA. BY 8' LONG AND SHALL BE GALVANIZED STEEL OR COPPERWELD. GROUND RODS SHALL BE CONNECTED TO THE GROUND RING WITH UL APPROVED CONNECTORS.
- 4.) TWO FEET (24") OF #6 AWG BARE COPPER WIRE IS TO BE LEFT EXPOSED FOR COMMUNICATIONS TO BOND TO THE GROUND RING. THE #6 AWG WIRE SHALL BE BONDED TO THE GROUND RING WITH UL APPROVED CONNECTORS.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	2/12/15
STANDARD	2-3-22

UNDERGROUND DISTRIBUTION
EQUIPMENT
36"x60" PULL BOX



NOTES:

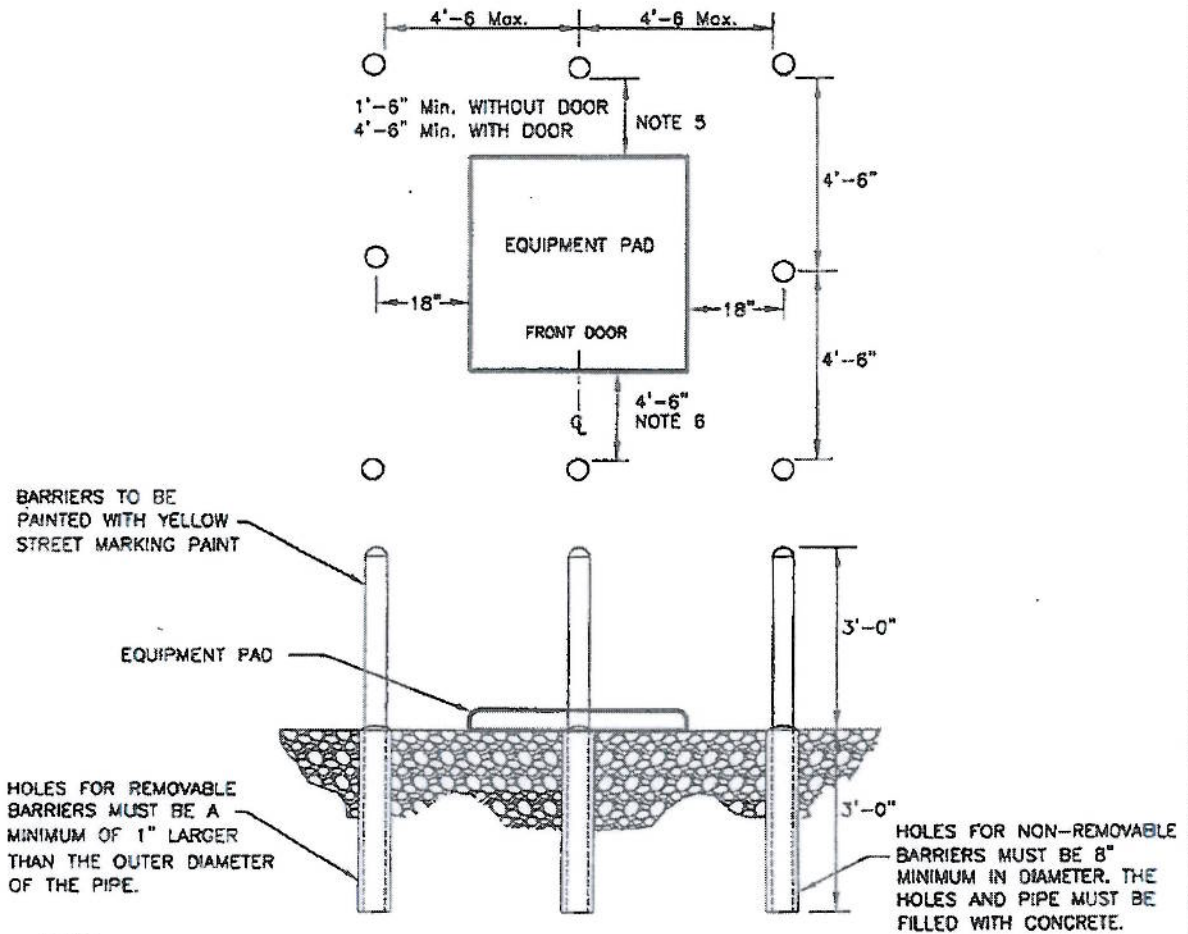
- 1.) THE FIRST 12" OF BACKFILL MATERIAL AROUND CONDUITS SHALL NOT CONTAIN ROCKS LARGER THAN 1-1/2" IN THEIR GREATEST DIMENSIONS AND SHALL CONTAIN ENOUGH FINES TO FILL ALL VOIDS. THE REMAINDER OF THE BACKFILL SHALL NOT CONTAIN ROCKS LARGER THAN 3" IN DIAMETER. ALL BACKFILL MATERIAL SHALL BE FREE OF DECOMPOSABLE (ORGANIC) MATERIAL.
- 2.) EXTEND CONDUITS FULLY THROUGH PULL BOX WALLS, BUT LESS THAN 2" BEYOND INSIDE SURFACE OF THE WALL.
- 3.) SEAL AROUND ALL CONDUIT OPENINGS IN PULL BOX WALLS WITH HYDRAULIC CEMENT.
- 4.) SEE STANDARD 2-2-1 AND 2-2-2 FOR ADDITIONAL TRENCH AND CONDUIT DETAILS.
- 5.) PULL BOXES AND COVERS SHALL BE FABRICATED PER UNITIL PROVIDED FABRICATION DRAWINGS AND BY UNITIL APPROVED FABRICATORS ONLY.
- 6.) THE APPROXIMATE WEIGHT OF A 36"x60" PULL BOX IS 5,500 POUNDS.
- 7.) THE APPROXIMATE WEIGHT OF A 44"x68" COVER IS 1,100 POUNDS.



**CONSTRUCTION
STANDARD**

APPROVED	PAK
DATE	1/21/15
STANDARD	2-3-11

UNDERGROUND DISTRIBUTION
EQUIPMENT
VEHICULAR PROTECTION BARRIERS
(INSTALLATION REQUIREMENTS)



- NOTES:
1. BARRIER TO BE 4" STEEL PIPE 6'-0" LONG AND CONCRETE FILLED.
 2. NO OVERHEAD OBSTACLES PERMITTED ABOVE UTILS EQUIPMENT, UNLESS APPROVED BY THE STANDARDS DEPARTMENT.
 3. BARRIERS ON SIDES NOT ACCESSIBLE TO VEHICLE MAY BE OMITTED.
 4. ALL MATERIALS AND LABOR FOR PROTECTIVE BARRIER INSTALLATION SHALL BE PROVIDED BY CUSTOMER.
 5. PROVIDE ADEQUATE CLEARANCE FOR ITEMS SUCH AS: COOLING COILS AND OPENING OF DOORS ON EQUIPMENT.
 6. IF THE 4'-6" CLEARANCE CAN NOT BE MAINTAINED, THE BARRIERS IN FRONT OF THE DOOR MUST BE MADE REMOVABLE.
 7. THERE SHALL BE A MINIMUM 6' CLEARANCE FROM A BARRIER TO THE CENTERLINE OF A FIRE HYDRANT.
- CAUTION:** INSTALLATION OF BARRIER MUST BE COORINATED WITH ELECTRICAL CABLES OR CONDUIT INSTALLATION.

	<h2 style="margin: 0;">CONSTRUCTION STANDARD</h2>	APPROVED
		DATE 8/21/07
		STANDARD 2-3-27-X

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Concrete Companies

Below are two local concrete companies that have Unitil's specifications and standards for the various equipment foundations. Unitil does not have any preference or recommendation as to which company is utilized to acquire the concrete foundations.

E F Shea New England Concrete
87 Haverhill Road
Amesbury, MA 01913
(800) 696-7432
(978) 388-1509

Phoenix Precast
77 Regional Drive
Concord, NH 03301
(800) 639-2199
(603) 225-5169

Construction Standard Numbers to be referenced are as follows:

2-3-11	36" x 60" Pull Box
2-3-13	Pad and Pull Box Single Phase Transformer
2-3-15	Pad and Pull Box Single Phase Sectionalizing Cabinet