

**BIDDING REQUIREMENTS, CONTRACT DOCUMENTS**

*and*

**TECHNICAL SPECIFICATIONS**

**FOR THE CONSTRUCTION OF**

**MONTELONA ROAD CULVERT OVER HARDY BROOK**

*for the*

**TOWN OF GOFFSTOWN, NH**

**HILLSBOROUGH COUNTY**

**February 2026**



*Prepared by:*



150 Dow Street  
Manchester, New Hampshire 03101



2/19/2026

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

**Montelona Road Culvert over Hardy Brook, Goffstown, NH**

Sealed Bids for the construction of the Montelona Road Culvert over Hardy Brook, Goffstown, NH will be received by the Town of Goffstown NH, at the **Town Hall, Select Board's Office, 16 Main Street, Goffstown, NH 03045** until **2:00 PM local time on Thursday, March 19, 2026**, at which time the Bids received will be publicly opened and read. The Project consists of replacing the existing corrugated metal culvert with a 12'-0" span by 5'-0" rise clamshell precast box culvert structure as well as partial reconstruction of Montelona Road for approximately 160'. The engineer's estimate for the work is between \$300,000 and \$350,000. The anticipated project schedule is to start construction **on July 6, 2026 and complete construction by October 30, 2026** with a maximum road closure of 12 weeks.

Bids shall be on a unit price basis, as indicated in the Bid Form. All technical questions regarding this project should be directed by email to Josif Bicja at [jbicja@hoyletanner.com](mailto:jbicja@hoyletanner.com).

Bidding Documents may be downloaded at [www.goffstownnh.gov](http://www.goffstownnh.gov) in electronic format (.pdf only) at no cost. Bidders shall check the town website for any addendum/addenda posted during the bid period and acknowledge such addendum/addenda in the Bid Form.

An optional pre-bid conference will be held at **9:00 AM local time on Thursday, March 5, 2026** at the Goffstown Public Works Building, 404 Elm Street, Goffstown, NH 03045. Therefore, all interested bidders are encouraged to attend in order to prepare acceptable bid submissions.

For all further requirements regarding bid submittal, qualifications, procedures, and contract award, refer to the Instructions to Bidders that are included in the Bidding Documents. Bid security shall be furnished in accordance with the Instructions to Bidders.

Owner: Town of Goffstown NH  
By: Scott Ozana, PE  
Title: Town Engineer

END OF SECTION

**SECTION 00112  
PROSECUTION OF WORK**

1.01 DESCRIPTION OF WORK

- A. The Montelona Road over Hardy Brook culvert replacement project consists of replacing the existing culvert, which consists of a 64-inch wide by 43-inch high corrugated metal pipe-arch culvert. The new bridge will be a 12'-0" span by 5'-0" rise precast concrete box culvert. Additional improvements consist of reconstruction of Montelona Road for approximately 160'.

1.02 CONSTRUCTION SCHEDULE

- A. The Owner anticipates issuing a Notice to Proceed on this project by late March 2026, subject to the successful bidder satisfying the requirements indicated in the Notice of Award.

1.03 COMPLETION DATES

- A. Refer to Article 4 – Contract Times of the Agreement for more information regarding the requirements of Substantial Completion, Final Completion, and the allowable bridge closure period.
- B. 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; refer to Standard General Conditions Article 4.05 in the Project Specifications regarding Delays in Contractor's Progress and Standard General Conditions Article 11.05 in the Project Specifications for Change of Contract Times.

1.04 WORK HOURS

- A. 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.

1.05 TRAFFIC CONTROL

- A. The Town will sign and maintain the detour route for the duration of the project. Contractor shall notify the Town a minimum of four weeks prior to the closure of the road.

1.06 INSURANCE REQUIREMENTS

- A. Insurance requirements are found in Section 00800 Paragraph 6.03 of the Specifications.

1.07 CONCURRENT WORK

- A. Not Used.

1.08 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 Resident Project Representative 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 behind or over structures.
3. Delivery and placement of precast box culvert and wingwalls.
4. Waterproofing membrane installation.
5. Installation of drainage pipe.
6. Placement and compaction of roadway subbase.
7. All asphalt paving operations.

#### 1.09 INSPECTING AND TESTING ALLOWANCES

- A. Owner or Engineer will appoint, employ, and pay for specified services of an independent firm to perform construction material testing services.

#### 1.10 UTILITIES

- A. There are utilities in the project area. Reference "Utility Coordination" notes on sheet 4 of the Contract Plans for utility owner information. Overhead electric lines directly over the proposed box culvert location will be de-energized for a maximum of 2 days to allow the installation of precast components.
- B. The contractor is advised to use caution when working near aerial power distribution and transmission wires. Contact the appropriate utility to provide additional clearance during construction.

#### 1.11 PERMITS/ENVIRONMENTAL COMMITMENTS

- A. The owner has applied for and obtained the permits discussed in section 00800.7.09 of the Specifications and Appendix A. The permits for this project are only for the work shown in the Proposal.
- B. If the Contractor desires to perform additional work in the wetlands that is not shown on the Plans, and which requires a wetlands permit or shoreland permit, the Contractor shall submit a separate application and provide the necessary working plans to the permitting authority in advance for their review and approval. The Contractor shall not commence with the additional work until the approved permit is in hand. In all cases, the Contractor shall adhere to the permit conditions. Prior to submission to the permitting authority, the Engineer and Town of Goffstown must review any additional impacts.
- C. Erosion and Sediment Controls: The erosion and sediments controls detailed on the Wetland Impact Plan in the Contract Documents are schematic only and are not intended to dictate construction means and methods, nor the specific erosion and sediment controls necessary to complete the work. The Contractor is encouraged to review these base plans in the preparation of the Stormwater pollution Prevention plan (SWPPP) described below. Additional information regarding SWPPP requirements can be found in the following locations within the Contract Documents:
  1. Wetland Impacts Plans
  2. Supplemental Specifications – Amendment to Section 645 – Erosion Control

3. Special Provision – Section 645 – Erosion Control – Item 645.0002, Sedimentation Basin
  4. Special Provision – Section 645 – Erosion Control – Item 645.512, Compost Sock for Perimeter Berm
  5. Special Provision – Section 645 – Erosion Control – Item 645.719. Monitoring SWPPP and Erosion and Sediment Controls
- D. The Contractor shall submit the SWPPP for review and approval to the Engineer. Upon approval by the engineer, the SWPPP will be sent to NHDES for review and approval prior to the start of work if any of the proposed erosion and sediment control measures vary from those shown in the Wetland Impact Plan.
  - E. Before beginning grubbing operations or earthwork, install BMPs along the toe of slopes in areas adjacent to wetlands or other areas as described in the Town approved SWPPP. Maintain the SWPPP BMPs throughout construction until the area is stabilized. The Contractor shall be proactive to assure that the appropriate BMPs are in place throughout the duration of the project.
- 1.12 HISTORIC / ARCHAEOLOGICAL CONSIDERATIONS
- A. Not used.
- 1.13 INVASIVE PLANTS
- A. Not used
- 1.14 VIBRATION MONITORING
- A. Not used.
- 1.15 ASBESTOS-CONTAINING MATERIALS
- A. Not used.
- 1.16 IMPACTED SOILS
- A. Not used.
- 1.17 REMOVAL OF EXISTING CULVERT
- A. The existing culvert shall be removed as shown on the plans. See “Existing Culvert Removal Notes” on sheet 4 of the Contract Plans for additional information.
- 1.18 FALSEWORK, ACCESS AND ERECTION PROCEDURES
- A. The Contractor shall submit all proposed plans, calculations and installation procedures to the Engineer for review and approval subsidiary to the appropriate items and in accordance with Project Specifications Section 01300.
- 1.19 EXISTING CULVERT PLANS
- A. Plans of the existing culvert are not available.
- 1.20 RIGHT-OF-WAY AND PROTECTION OF PROPERTY
- A. Right-of-Way agreements have been made with the property owners as shown in the easements included in Appendix B.

1.21 ACCESS TO PROPERTY

- A. The Contractor shall maintain vehicular access, including emergency vehicles, to abutting properties during the course of the work. Temporary disruptions of access necessary for roadway reconstruction and paving shall be coordinated in advance with the affected property owners. A minimum of 48 hours advanced notice is required.

1.22 CONSTRUCTION STAGING/ STORAGE AREAS

- A. Area within the Town's ROW and areas within the Easements are available for use. Reference "Work Area Notes" on sheet 4 of the Contract Plans for additional information pertaining to the work area.
- B. Any and all staging areas shall be returned to the existing condition (or better, as agreed to by property owners) following the completion of the contract (or sooner) at no extra cost to the Town of Goffstown. Erosion control required at these sites, beyond what is required for the construction of the proposed improvements, will be subsidiary to the work.

1.23 GEOTECHNICAL INFORMATION

- A. A geotechnical report was not prepared for this project. The Boring Plan and Boring Logs are included as Plan Sheets 7 and 8 of the Contract Drawings.

1.24 SALVAGE OF MATERIALS

- A. Not Used.

1.25 FIELD SURVEY

- A. Employ a Land Surveyor or Professional Engineer licensed in the State of New Hampshire and acceptable to Engineer to perform all layout work. See section 01039 in the Specifications for additional requirements and submittals.

1.26 MOCK-UP

- A. Not used.

1.27 PROJECT MEETINGS

- A. The Engineer will schedule and lead meetings prior to the start of construction and at regular intervals during construction. Reference section 01039 of the Specifications for additional information.

1.28 CONSTRUCTION PROGRESS SCHEDULE

- A. Reference section 01300.1.4 of the Specifications for more information.

1.29 STEEL ADJUSTMENT, FUEL ADJUSTMENT AND ASPHALT CEMENT ADJUSTMENT

- A. Not used.

1.30 WINTER MAINTENANCE PERIOD

- A. Not used.

1.31 CONTRACTOR'S RESPONSIBILITIES

- A. The Contractor shall take all reasonable precautions to protect all work, equipment and stored materials from theft, damage, or loss. Work necessary to complete this task shall be incidental to the Contract.

- B. The Contractor shall designate a representative to be available to respond to emergency calls by the Town or Engineer at any time, day and night, and on weekends and holidays should such a situation arise.
- C. Should the Town determine that any action is required by the Town due to the Contractor's non-responsiveness and cost are incurred, the Town reserves the right to back-charge the Contractor for the associated expenses.
- D. The Contractor shall provide appropriate onsite superintendence of all aspects of the work whether performed by the Contractor or by sub-contractors. Qualified Superintendent(s) shall be assigned for all crews. Contact information will be provided for all Superintendents. No subcontractors shall be allowed to work in the Town without Contractor superintendence.

#### 1.32 PUBLIC CONVENIENCE AND PROPERTY PROTECTION

- A. The Contractor shall maintain access to all properties within the project area or as otherwise required by the Town.
- B. The Contractor shall notify residents and businesses in a proper and timely manner should any temporary interruption of their access or services be necessary.
- C. The Contractor shall preserve all public property, private property, and structures, and shall use every precaution necessary to prevent damage thereto. If damage is done to public or private property, such property shall be promptly restored by the Contractor, at the Contractor's expense, to a condition similar or equal to that existing before the damage was done, to the satisfaction of the Engineer.
- D. Unless specifically agreed to in advance, driveway tie-ins will be paved concurrent with top course paving operations.
- E. Neither debris nor surplus material including structures (frames, covers, and grates) shall be deposited on private property or impede vehicular or pedestrian traffic ways.
- F. The Contractor shall protect trees, shrubs, and other existing landscaping. Branches, limbs, and roots shall not be cut except with permission of the Engineer. When cutting is necessary, the work shall be performed by qualified workers.

#### 1.33 LIMITS OF WORK

- A. Adjustments to the limits of proposed roadway, driveway, or sidewalk reconstruction should be considered when existing joints in the respective surfaces are near the proposed limit of work as shown on the Plans. Any proposed alterations to the limits of work shall be approved by the Engineer.

#### 1.34 BOUNDS

- A. If an existing private property bound/monument that is to remain is disturbed/destroyed by the Contractor's work, the Contractor shall either remove and replace or replace in kind the existing monument and place the new or recovered existing monument in the proper property corner location. The Contractor shall retain, at the Contractor's expense, a land surveyor registered in the State of New Hampshire to oversee and direct the operation of the placement of the new or existing bound/monument in the proper location.

1.35 SURPLUS MATERIALS

- A. The safe, legal, and satisfactory disposal of all surplus excavation removed within the project that cannot be utilized as fill material will be the responsibility of the Contractor. No additional payment will be made for this work.

1.36 GRADING AND DRAINAGE

- A. Appropriate measures will be taken to protect manholes, catch basins, and other structures as well as pipelines from debris and other materials entering the system through open or removed covers or grates.
- B. Sediment Filter Bags, or Silt Sacks shall be installed and maintained by the Contractor for milling and reclamation operations before any forecasted weather events to allow for stormwater runoff to enter the drainage system. See the NH Stormwater Manual, Volume 3, Erosion and Sediment Controls During Construction (December 2008) for guidance.
- C. Should material enter the system due to the Contractor's activities, this material shall be removed immediately at the Contractor's expense.
- D. The Contractor may be required to clean structures and pipelines downstream of the location(s) where material entered the system. The Contractor may be required to provide closed circuit television (CCTV) inspection services to verify that material has been removed. All work described shall be at the Contractor's expense.

1.37 CONTRACTOR'S GENERAL WARRANTY AND GUARANTEE

- A. Contractor warrants and guarantees to Owner, Engineer, and Engineer's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. The warranty period will be one (1) year after successful completion of work.

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;
  - 2. Normal wear and tear under normal usage.
- B. 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 thereof by Owner;
    - 4. Use or occupancy of the Work or any part thereof by Owner;
    - 5. Any acceptance by Owner or any failure to do so;
    - 6. Any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

7. Any inspection, test, or approval by others; or
8. Any correction of defective Work by Owner.

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 – Not Used

**ARTICLE 2 – BIDDING DOCUMENTS**

2.01 Complete copies of the Bidding Requirements and proposed Contract Documents (together, the Bidding Documents) may be obtained or viewed at the website of Town of Goffstown at [www.goffstownnh.gov](http://www.goffstownnh.gov) 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 [www.goffstownnh.gov](http://www.goffstownnh.gov) may be cause for rejection of a bid.

2.03 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.

2.04 Bidding Documents are made available for the sole purpose of obtaining Bids for completion of the Project and permission to download or distribution of the Bidding Documents does not confer a license or grant permission or authorization for any other use. Authorization for distribution, includes the right for plan holders to print documents solely for their use, and the use of their prospective Subcontractors and Suppliers, provided the plan holder pays all costs associated with printing or reproduction. Printed documents may not be re-sold under any circumstances.

2.05 Electronic Documents

A. Electronic (digital) copies of the Bidding Documents provided as a convenience to the Bidder in Adobe PDF (Portable Document Format) (.pdf) and are not the controlling data for the contract. These documents are made available to the Bidders as Electronic Documents in the manner specified.

1. It is the intent of the Engineer and Owner that such Electronic Documents are to be exactly representative of the paper copies of the documents. However, because the Owner and Engineer cannot totally control the transmission and receipt of Electronic Documents nor the Contractor's means of reproduction of such documents, the Owner and Engineer cannot and do not guarantee that Electronic Documents and reproductions prepared from those versions are identical in every manner to the paper copies.

- B. Unless otherwise stated in the Bidding Documents, the Bidder may use and rely upon complete sets of Electronic Documents of the Bidding Documents, described in Paragraph 2.05.A above. However, Bidder assumes all risks associated with differences arising from transmission/receipt of Electronic Documents versions of Bidding Documents and reproductions prepared from those versions and, further, assumes all risks, costs, and responsibility associated with use of the Electronic Documents versions to derive information that is not explicitly contained in printed paper versions of the documents, and for Bidder's reliance upon such derived information.

### **ARTICLE 3 – QUALIFICATIONS OF BIDDERS**

- 3.01 Bidders must submit a completed Statement of Bidders Qualifications with the Bid. Failure to submit a completed Statement of Bidders Qualifications may be deemed by the Owner as a non-responsive Bid. Refer to Section 00420.
- 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 – PRE-BID CONFERENCE**

- 4.01 A non-mandatory pre-bid conference will be held at the time and location indicated in the Advertisement or invitation to bid. Representatives of Owner and Engineer will be present to discuss the Project. Bidders are encouraged to attend and participate in the conference; however, attendance at this conference is not required to submit a Bid.
- 4.02 Information presented at the pre-Bid conference does not alter the Contract Documents. Owner will issue Addenda to make any changes to the Contract Documents that result from discussions at the pre-Bid conference. Information presented, and statements made at the pre-bid conference will not be binding or legally effective unless incorporated in an Addendum.

### **ARTICLE 5 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE**

- 5.01 Site and Other Areas
  - A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. All easements have been obtained and are included in Appendix B. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.
- 5.02 Existing Site Conditions
  - A. Subsurface and Physical Conditions; Hazardous Environmental Conditions

1. The Supplementary Conditions identify the following regarding existing conditions at or adjacent to the Site:
    - a. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data.
    - b. Those drawings known to Owner of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data.
    - c. Reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
    - d. Technical Data contained in such reports and drawings.
  2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
  3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
  4. Geotechnical Baseline Report/Geotechnical Data Report: Not Used
- B. Underground Facilities: Known underground facilities are shown or indicated on the Drawings, pursuant to Paragraph 5.05 of the General Conditions, and not in the drawings referred to in Paragraph 5.02.A of these Instructions to Bidders. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data.

#### 5.03 Other Site-related Documents

- A. In addition to the documents regarding existing Site conditions referred to in Paragraph 5.02.A, the following other documents relating to conditions at or adjacent to the Site are known to Owner and made available to Bidders for reference:
1. None.
- Owner will make copies of these other Site-related documents available to any Bidder on request.
- B. Owner has not verified the contents of these other Site-related documents, and Bidder may not rely on the accuracy of any data or information in such documents. Bidder is responsible for any interpretation or conclusion Bidder draws from the other Site-related documents.
- C. The other Site-related documents are not part of the Contract Documents.
- D. Bidders are encouraged to review the other Site-related documents, but Bidders will not be held accountable for any data or information in such documents. The requirement to review and take responsibility for documentary Site information is limited to information in (1) the Contract Documents and (2) the Technical Data.

E. No other Site-related documents are available.

5.04 Site Visit and Testing by Bidders

- A. Bidder is required to visit the Site and conduct a thorough visual examination of the Site and adjacent areas. During the visit the Bidder must not disturb any ongoing operations at the Site.
- B. Bidder must conduct the required site visit during normal working hours.
- C. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder general access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site. Bidder is responsible for establishing access needed to reach specific selected test sites.
- D. 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.
- E. 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.

5.05 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.

5.06 Other Work at the Site

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

**ARTICLE 6 – BIDDER'S REPRESENTATIONS**

6.01 Express Representations and Certifications in Bid Form, Agreement

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

## **ARTICLE 7 – INTERPRETATIONS AND ADDENDA**

- 7.01 Owner on its own initiative may issue Addenda to clarify, correct, supplement, or change the Bidding Documents.
- 7.02 Bidder shall submit all questions about the meaning or intent of the Bidding Documents to Engineer in writing. Contact information and submittal procedures for such questions are as follows:
- A. Josif Bicja, PE – [jbicja@hoyletanner.com](mailto:jbicja@hoyletanner.com)
  - B. All questions shall be submitted via email.
- 7.03 Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all registered plan holders. Questions received less than seven days prior to the date for opening of Bids may not be answered.
- 7.04 Only responses set forth in an Addendum will be binding. Oral and other interpretations or clarifications will be without legal effect. Responses to questions are not part of the Contract Documents unless set forth in an Addendum that expressly modifies or supplements the Contract Documents.

## **ARTICLE 8 – BID SECURITY**

- 8.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5 percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a Bid bond issued by a surety meeting the requirements of Paragraph 6.01 of the General Conditions. Such Bid bond will be issued in the form included in the Bidding Documents.
- 8.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract, furnished the required Contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract and furnish the required Contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited, in whole in the case of a penal sum bid bond, and to the extent of Owner's damages in the case of a damages-form bond. Such forfeiture will be Owner's exclusive remedy if Bidder defaults
- 8.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of 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 (a) substantially completed and (b) ready for final payment, and (c) Milestones (if any) are to be achieved, are set forth in the Agreement.

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

#### **ARTICLE 10 – SUBSTITUTE AND “OR-EQUAL” ITEMS**

- 10.01 The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents 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.
- 10.02 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 11 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

- 11.01 A Bidder must be prepared to retain specific Subcontractors and Suppliers for the performance of the Work if required to do so by the Bidding Documents or in the Specifications. If a prospective Bidder objects to retaining any such Subcontractor or Supplier and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 11.02 The apparent Successful Bidder, and any other Bidder so requested, must submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work within five days after Bid opening.
- 11.03 If requested by Owner, such list must be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor or Supplier. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor or Supplier, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder will 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.
- 11.04 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 and Suppliers. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor or Supplier, 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 7.07 of the General Conditions.

#### **ARTICLE 12 – PREPARATION OF BID**

- 12.01 Bids for this project will ONLY be accepted at the Town Hall, Select Board’s Office, 16 Main Street, Goffstown, NH 03045 in a closed envelope labeled “Montelona Road Culvert over Hardy Brook Bid”.

- A. All blanks on the Bid Worksheet shall be completed and the Bid Form signed. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- 12.02 The Bid Form is included with the Bidding Documents.
- 12.03 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. The printed copy of the Bid Form must be clearly legible, printed on 8½ inch by 11-inch paper and as closely identical in appearance to the Electronic Document version of the Bid Form as may be practical. The Owner reserves the right to accept Bid Forms which nominally vary in appearance from the original paper version of the Bid Form, providing that all required information and submittals are included with the Bid.
- A. All blanks on the Bid Form must be completed in ink 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.”
- 12.04 A Bid by a corporation must be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation must be shown.
- 12.05 A Bid by a partnership must be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The official address of the partnership must be shown.
- 12.06 A Bid by a limited liability company must be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the official address of the firm must be shown.
- 12.07 A Bid by an individual shall show the Bidder’s name and official address.
- 12.08 A Bid by a joint venture must be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture must have been formally established prior to submittal of a Bid, and the official address of the joint venture must be shown.
- 12.09 All names shall be printed in ink below the signatures.
- 12.10 Bidders must download all Addenda from [www.goffstownnh.gov](http://www.goffstownnh.gov) prior to submitting the Bid.
- 12.11 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 12.12 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 12.13 The Bid must contain evidence of Bidder’s authority to do business in the state where the Project is located, or Bidder must certify in writing that it will obtain such authority within the time for acceptance of Bids and attach such certification to the Bid.
- 12.14 If Bidder is required to be licensed to submit a Bid or perform the Work in the state where the

Project is located, the Bid must contain evidence of Bidder's licensure, or Bidder must certify in writing that it will obtain such licensure within the time for acceptance of Bids and attach such certification to the Bid. Bidder's state contractor license number, if any, must also be shown on the Bid Form.

### **ARTICLE 13 – BASIS OF BID**

#### **13.01 Unit Price**

- A. Bidders 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.
- D. The Owner may waive informalities or allow the bidder to correct them. If a clerical or administrative mistake is made, and the intended bid is clearly evident on the face of the bid document, the Owner may correct the mistake to reflect the intended correct bid and notify the bidder in writing of the correction. For example, if a bid proposes a unit price, but the extension of such price contains an arithmetic error and the intent of the bid is clear, such an informality may be waived.

### **ARTICLE 14 – SUBMITTAL OF BID**

- 14.01 A Bid shall be received no later than the date, time and place prescribed in the advertisement or invitation to bid.
- 14.02 With each copy of the Bidding Documents, a Bidder shall submit the Bid Bond Form. 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.
- 14.03 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.
- 14.04 Bids received after the date and time prescribed for the opening of bids or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

## **ARTICLE 15 – MODIFICATION AND WITHDRAWAL OF BID**

- 15.01 An unopened Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 15.02 A bidder may not withdraw a bid unless a mistake is clearly evident on the face of the bid document and the intended correct bid is not similarly evident.
- 15.03 After bid opening, a bidder may not change the price or any other bid provision in a manner prejudicial to the interests of the municipality or fair competition.

## **ARTICLE 16 – OPENING OF BIDS**

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

## **ARTICLE 17 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE**

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

## **ARTICLE 18 – EVALUATION OF BIDS AND AWARD OF CONTRACT**

- 18.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work which do not compromise the actual bid.
- 18.02 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.
- 18.03 Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible.
- 18.04 If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, whether in the Bid itself or in a separate communication to Owner or Engineer, then Owner will reject the Bid as nonresponsive.
- 18.05 If Owner awards the contract for the Work, such award shall be to the responsible Bidder submitting the lowest responsive Bid.
- 18.06 Evaluation of Bids
  - A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.

- B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a “Base Bid plus alternates” budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 18.07 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 18.08 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

**ARTICLE 19 – BONDS AND INSURANCE**

- 19.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner’s requirements as to performance and payment bonds, other required bonds (if any), and insurance. When the Successful Bidder delivers the executed Agreement to Owner, it must be accompanied by required bonds and insurance documentation.
- 19.02 Article 8, Bid Security, of these Instructions, addresses any requirements for providing bid bonds as part of the bidding process.

**ARTICLE 20 – SIGNING OF AGREEMENT**

- 20.01 When Owner issues a Notice of Award to the Successful Bidder, it will be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder must execute and deliver the required number of counterparts of the Agreement and any bonds and insurance documentation required to be delivered by the Contract Documents to Owner. Within 10 days thereafter, Owner will deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

**ARTICLE 21 – SALES AND USE TAXES**

- 21.01 NOT USED

**ARTICLE 22 – CONTRACTS TO BE ASSIGNED**

- 22.01 NOT USED

END OF SECTION

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

**PROJECT IDENTIFICATION:** Montelona Road Culvert over Hardy Brook, Goffstown, NH

**CONTRACT IDENTIFICATION:** Montelona Road Culvert over Hardy Brook, Goffstown, NH  
Hoyle Tanner Project No. 24.010001.02

**OWNER AND BIDDER:**

This Bid is submitted to: Town of Goffstown NH

Bid Delivery & Opening Location: Town Hall, Select Board's Office  
16 Main Street, Goffstown, NH 03045

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 1 – ATTACHMENTS TO THIS BID**

- 1.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid security;
  - B. Section 00420 - Statement of Bidders Qualifications.

**ARTICLE 2 – BASIS OF BID**

- 2.01 Unit Price Bids
- A. Bidder will perform the following Work at the indicated unit prices:

BID SCHEDULE

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
202.42	Removal of Existing Pipe Over 24" Diameter, for the unit price per linear foot of:  _____ Dollars (words) and _____ Cents.	LF	41		
203.1	Common Excavation, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	100		
203.6	Embankment-In-Place (F), for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	60		
207.3	Unclassified Channel Excavation, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	50		
209.201	Granular Backfill (Bridge) (F), for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	175		
214	Fine Grading, for the unit 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
304.3	Crushed Gravel (F), for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	70		
304.31	Crushed Gravel For Shimming, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	30		
304.99	Streambed Simulation Material, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	50		
403.11023	HBP-3/4" Binder Mix, Machine Method, for the unit price per ton of:  _____ Dollars (words) and _____ Cents.	TON	80		
403.11043	HBP-1/2" Surface Mix, Machine Method, for the unit price per ton of:  _____ Dollars (words) and _____ Cents.	TON	40		
403.16	Pavement Joint Adhesive, for the unit price per linear foot of:  _____ Dollars (words) and _____ Cents.	LF	310		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
410.22	Asphalt Emulsion For Tack Coat, for the unit price per gallon of:  _____ Dollars (words) and _____ Cents.	GAL	14		
417	Cold Planing Bituminous Surfaces, for the unit price per square yard of:  _____ Dollars (words) and _____ Cents.	SY	32		
503.101	Water Diversion Structures, for the unit 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	410		
504.2	Rock Bridge Excavation, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	50		
508	Structural Fill, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	65		

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
529.002	Precast Concrete Box Culvert (Bridge), for the unit price per unit of:  _____ Dollars (words) and _____ Cents.	U	1		
534.3	Water Repellent (Silane/Siloxane), for the unit price per gallon of:  _____ Dollars (words) and _____ Cents.	GAL	4		
538.2	Barrier Membrane, Peel And Stick - Vertical Surfaces (F), for the unit price per square yard of:  _____ Dollars (words) and _____ Cents.	SY	82		
538.5	Barrier Membrane, Heat Welded (F), for the unit price per square yard of:  _____ Dollars (words) and _____ Cents.	SY	93		
562.1	Silicone Joint Sealant (F), for the unit price per linear foot of:  _____ Dollars (words) and _____ Cents.	LF	40		
583.2	Riprap Class II, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	40		

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
583.3	Riprap, Class III, for the unit price per cubic yard of:  _____ Dollars (words) and _____ Cents.	CY	60		
592.3	Concrete Faced Retaining Wall System, for the unit price per square foot of:  _____ Dollars (words) and _____ Cents.	SF	335		
593.411	Geotextile; Perm Control CL.1, Non-Woven, for the unit price per square yard of:  _____ Dollars (words) and _____ Cents.	SY	230		
603.36112	12" Aluminized Steel End Section, for the unit price per each of:  _____ Dollars (words) and _____ Cents.	EA	1		
603.82212	12" PE Pipe (Type S), for the unit price per linear foot of:  _____ Dollars (words) and _____ Cents.	LF	50		
622.1	Steel Witness Markers, for the unit price per each of:  _____ Dollars (words) and _____ Cents.	EA	1		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
628.2	Sawed Bituminous Pavement, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	50		
632.0104	Retroreflective Paint Pave. Marking, 4" Line, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	640		
645.0002	Sedimentation Basin, for the unit price per unit of: _____ Dollars (words) and _____ Cents.	U	1		
645.44	Temporary Slope Matting Type D (Wildlife Friendly), for the unit price per square yard of: _____ Dollars (words) and _____ Cents.	SY	220		
645.512	Compost Sock For Perimeter Berm, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	300		
645.531	Silt Fence, for the unit price per linear foot of: _____ Dollars (words) and _____ Cents.	LF	300		

ITEM NO.	ITEM DESCRIPTION AND UNIT PRICE BID WRITTEN IN WORDS	UNIT	ESTIMATED QUANTITY	UNIT PRICE DOLLARS CTS	TOTAL PRICE DOLLARS CTS
645.7	Storm Water Pollution Prevention Plan, for the unit price per unit of:  _____ Dollars (words) and _____ Cents.	U	1		
645.719	Monitoring SWPPP and Erosion and Sediment Controls, for the unit price per each of:  _____ Dollars (words) and _____ Cents.	EA	20		
646.512	Turf Establishment with Mulch, Tackifiers and Loam (F), for the unit price per square yard of:  _____ Dollars (words) and _____ Cents.	SY	390		
692	Mobilization, for the unit price per unit of:  _____ Dollars (words) and _____ Cents.	U	1		
699	Miscellaneous Temporary Erosion and Sediment Control, for the unit price per dollar of:  _____ One _____ Dollar (words) and _____ Zero _____ Cents.	\$	3,000	\$1.00	\$3,000.00

B. Bidder acknowledges that:

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

**ARTICLE 3 – TIME OF COMPLETION**

3.01 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.

3.02 Not Used.

3.03 Not Used.

3.04 Bidder accepts the provisions of the Agreement as to liquidated damages.

**ARTICLE 4 – BIDDER ACKNOWLEDGEMENTS: ACCEPTANCE PERIOD, INSTRUCTIONS, AND RECEIPT OF ADDENDA**

4.01 Bid Acceptance Period:

- A. This Bid will remain subject to acceptance for 60 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

4.02 Instructions to Bidders:

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

4.03 Receipt of Addenda:

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

Addendum Number	Addendum Date

**ARTICLE 5 – BIDDER'S REPRESENTATIONS AND CERTIFICATIONS**

5.01 Bidder's Representation

- A. In submitting this Bid, Bidder represents the following:

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

5.02 Bidder's Certifications:

A. The Bidder certifies the following:

1. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation.
2. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid.
3. Bidder has not solicited or induced any individual or entity to refrain from bidding.
4. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 8.02.A:
  - a. Corrupt practice means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process.
  - b. Fraudulent practice means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition.
  - c. Collusive practice means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels.
  - d. Coercive practice means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

**BID SUBMITTAL CERTIFICATION**

BIDDER hereby submits this Bid as set forth above:

Bidder:

**The undersigned certifies under penalties of perjury that this bid is in all respects bonafide, fair and made without collusion or fraud with any other person. As used in this section the word "person" means any natural person, joint venture, partnership, corporation or other business or legal entity.**

*(typed or printed name of organization)*

By: \_\_\_\_\_  
*(individual's signature)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Date: \_\_\_\_\_  
*(typed or printed)*

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

Attest: \_\_\_\_\_  
*(individual's signature)*

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Date: \_\_\_\_\_  
*(typed or printed)*

Address for giving notices:  
\_\_\_\_\_  
\_\_\_\_\_

Bidder's Contact:

Name: \_\_\_\_\_  
*(typed or printed)*

Title: \_\_\_\_\_  
*(typed or printed)*

Phone: \_\_\_\_\_

Email: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

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

END OF SECTION

SECTION 00420  
**STATEMENT OF BIDDERS QUALIFICATIONS**

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes information related to the Contractor's qualifications to complete the work in accordance with the Specifications.
- B. List all Subcontractor's that you propose to use, with a brief description of their qualifications in Section 1.6.
- C. Refer to Document 00200 - Instructions to Bidders for additional requirements in completing this form.

1.2 GENERAL INFORMATION

A. Name: \_\_\_\_\_

Principal Office Address: \_\_\_\_\_

\_\_\_\_\_

Telephone: \_\_\_\_\_

B. If a Corporation, answer this:

When incorporated: \_\_\_\_\_

In what State? \_\_\_\_\_

Director's names (s) \_\_\_\_\_

\_\_\_\_\_

President's Name: \_\_\_\_\_

Vice President's Name: \_\_\_\_\_

Secretary's Name: \_\_\_\_\_

Treasurer's Name: \_\_\_\_\_

C. If a partnership, answer this:

Date of Organization: \_\_\_\_\_

State whether partnership is general or limited: \_\_\_\_\_

Name and Address of Partners: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

### 1.3 QUALIFICATIONS

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

A. Each Bid must contain evidence of the Contractor's qualification to do business in the State of New Hampshire or covenant to obtain such qualifications prior to award of the contract. The following shall be provided upon request:

1. Latest Financial Statement
2. Additional Bank References
3. Contact information for Client References

B. If the Contractor is pre-qualified for road work by the New Hampshire Department of Transportation and/or the New Hampshire Department of Environmental Services, then please state so in the Bid.

C. No award will be made to any Contractor who cannot meet all of the following requirements:

1. Contractor shall have not defaulted nor turned work over to the bonding company on any contract within three (3) years prior to bid date.
2. Contractor shall maintain a permanent place of business.
3. Contractor shall have adequate personnel and equipment to perform the work expeditiously and within the required time limits established by the contract.
4. Contractor shall have suitable financial status to meet obligations incidental to the work.
5. Contractor shall have the appropriate technical expertise satisfactory to the OWNER and the ENGINEER in the class of work involved.
6. Contractor shall be registered with the Secretary of State to do business in New Hampshire.
7. Contractor shall have performed to the satisfaction of the ENGINEER on previous contracts of a similar nature.
8. Contractor shall not have failed to complete previous contracts on time except for approved extensions of a contract.

1.4 EXPERIENCE

A. How many years has your organization been in business as contractor under your present business name? \_\_\_\_\_

B. What are the prior names of organization? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

C. How many years experience in this type of construction work has your organization had as a contractor? \_\_\_\_\_ As a Sub-Contractor? \_\_\_\_\_

D. List below the largest projects your organization has completed.

	<u>Contract Amount</u>	<u>Project Title</u>	<u>Owner</u>	<u>When Completed</u>
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

Name, Address and Phone Number of References for respective projects listed above:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_
4. \_\_\_\_\_
5. \_\_\_\_\_

Any other references: \_\_\_\_\_

---

E. List below two (2) completed projects which agree most similar to the proposed work.

<u>Contract Amount</u>	<u>Project Title</u>	<u>Owner</u>	<u>When Completed</u>
------------------------	----------------------	--------------	-----------------------

1. \_\_\_\_\_

2. \_\_\_\_\_

F. Have you ever failed to complete any work awarded to you? \_\_\_\_\_

If yes, give name of OWNER, name of Bonding Company and circumstances:

\_\_\_\_\_  
\_\_\_\_\_

G. State approximately the largest dollar volume of work you have done in any one year.

\_\_\_\_\_  
Remarks: \_\_\_\_\_

1.5 FINANCIAL REFERENCES

A. Name one (1) banking institution reference:

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

B. Name two (2) credit references other than the bank listed above.

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

Name: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

If requested by the OWNER, the CONTRACTOR shall authorize the named Banks to release financial information to the OWNER to the extent necessary to verify the CONTRACTOR'S financial ability.

1.6 SUBCONTRACTOR INFORMATION

List all Subcontractors you propose to use on this project. Provide a brief description of the qualifications of each proposed subcontractor, and the type of work that they will be performing.

A. Name and address of Subcontractor:

---

---

Qualifications of Subcontractor and type of work to be performed:

---

---

---

---

B. Name and address of Subcontractor:

---

---

Qualifications of Subcontractor and type of work to be performed:

---

---

---

---

(use additional sheets as needed; the number of attached sheets herewith is \_\_)

1.7 CERTIFICATION

I hereby certify that the information submitted herewith, including any attachment, is true to the best of my knowledge and belief.

\_\_\_\_\_  
Firm Name

By: \_\_\_\_\_  
Signature

Title: \_\_\_\_\_

Date: \_\_\_\_\_

END OF SECTION

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

<b>Bidder</b> Name: Address ( <i>principal place of business</i> ):	<b>Surety</b> Name: Address ( <i>principal place of business</i> ):
<b>Owner</b> Name: <b>Town of Goffstown NH</b> Address ( <i>principal place of business</i> ): <b>404 Elm Street</b> <b>Goffstown, NH 03045</b>	<b>Bid</b> Project ( <i>name and location</i> ): Montelona Road Culvert over Hardy Brook, Goffstown, NH  Bid Due Date: <b>[Enter date bid is due]</b>
<b>Bond</b> Penal Sum: Date of Bond:	
Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth in this Bid Bond, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.	
Bidder	Surety
_____ ( <i>Full formal name of Bidder</i> )	_____ ( <i>Full formal name of Surety</i> ) ( <i>corporate seal</i> )
By: _____ ( <i>Signature</i> )	By: _____ ( <i>Signature</i> ) ( <i>Attach Power of</i>
Name: _____ ( <i>Printed or typed</i> )	Name: _____ ( <i>Printed or typed</i> )
Title: _____	Title: _____
Attest: _____ ( <i>Signature</i> )	Attest: _____ ( <i>Signature</i> )
Name: _____ ( <i>Printed or typed</i> )	Name: _____ ( <i>Printed or typed</i> )
Title: _____	Title: _____
<i>Notes: (1) Note: Addresses are to be used for giving any required notice. (2) Provide execution by any additional parties, such as joint venturers, if necessary.</i>	

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond will be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder occurs upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation will be null and void if:
  - 3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
  - 3.2. All Bids are rejected by Owner, or
  - 3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions does not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action will be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety, and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond will be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder must be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Postal Service registered or certified mail, return receipt requested, postage pre-paid, and will be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond will be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute governs and the remainder of this Bond that is not in conflict therewith continues in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

END OF SECTION

**SECTION 00510**  
**NOTICE OF AWARD**  
(EJCDC Form C-510, Modified)

Date of Issuance:

Owner: Town of Goffstown NH                      Owner's Project No.: N/A  
Engineer: Hoyle, Tanner & Associates, Inc.      Engineer's Project No.: 24.010001.02  
Project: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
Contract Name: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
Bidder:  
Bidder's Address:

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

**Montelona Road Culvert over Hardy Brook, Goffstown, NH**

The Contract Price of the awarded Contract is \$[ \_\_\_\_\_ ] subject to unit prices. Contract Price is subject to adjustment based on the provisions of the Contract, including but not limited to those governing changes, Unit Price Work, and Work performed on a cost-plus-fee basis, as applicable.

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

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

1. Deliver to Owner 3 counterparts of the Agreement, signed by Bidder (as Contractor).
2. Deliver with the signed Agreement(s) the Contract security (such as required performance and payment bonds) and insurance documentation, as specified in the Instructions to Bidders and in the General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any): None

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

Within 10 days after you comply with the above conditions, Owner will return to you one fully signed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions and as amended by the Supplementary Conditions.

Owner: Town of Goffstown NH

By *(signature)*: \_\_\_\_\_

Name *(printed)*: \_\_\_\_\_

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 the **Town of Goffstown NH** (“Owner”) and \_\_\_\_\_ (“Contractor”).

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

Owner and Contractor hereby agree as follows:

**ARTICLE 1 – WORK**

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

The project consists of replacing the existing culvert with a 12'-0" span by 5'-0" rise clamshell precast box culvert structure as well as partial reconstruction of Montelona Road for approximately 160'.

**ARTICLE 2 – THE PROJECT**

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: **Montelona Road Culvert over Hardy Brook, Goffstown, NH**

**ARTICLE 3 – ENGINEER**

3.01 The Owner has retained Hoyle, Tanner & Associates, Inc. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities of Engineer, and have the rights and authority assigned to Engineer in the Contract.

3.02 The part of the Project that pertains to the Work has been designed by Engineer.

**ARTICLE 4 – CONTRACT TIMES**

4.01 Time is of the Essence

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

4.02 Contract Times: Dates

A. The Work will be substantially complete on or before October 30, 2026 and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before November 6, 2026 with a maximum road closure of 12 weeks. No work shall be done at the site until the road closure. Contractor may take the site on or after July 6, 2026.

4.03 Liquidated Damages

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

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

1. Substantial Completion: Contractor shall pay Owner \$1,500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified above for Substantial Completion, until the Work is substantially complete.
  2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$1,500 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. If Owner recovers liquidated damages for a delay in completion by Contractor, then such liquidated damages are Owner's sole and exclusive remedy for such delay, and Owner is precluded from recovering any other damages, whether actual, direct, excess, or consequential, for such delay, except for special damages (if any) specified in this Agreement.

#### **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:

- C. 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)

- D. 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

6.02 Final Payment

- 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.

6.03 Progress Payments

- A. Owner shall make progress payments 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.

6.04 Final Payment

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

6.05 Consent of Surety

- A. Owner will not make final payment unless Contractor submits written consent of the surety to such payment, return, or release.

6.06 Interest

- A. Not Used.

**ARTICLE 7 – CONTRACT DOCUMENTS**

7.01 Contents

- A. The Contract Documents consist of all of the following:
  - 1. This Agreement.
  - 2. Bonds:
    - a. Performance bond (together with power of attorney).
    - b. Payment bond (together with power of attorney).
  - 3. General Conditions.
  - 4. Supplementary Conditions.
  - 5. Specifications as listed in the table of contents of the project manual.
  - 6. Drawings (not attached but incorporated by reference) consisting of 18 sheets with each sheet bearing the following general title: Montelona Road over Hardy Brook.
  - 7. Addenda (numbers \_\_\_\_ to \_\_\_\_, inclusive).
  - 8. Exhibits to this Agreement (enumerated as follows):
    - a. Contractors Bid.
    - b. Documentation submitted by Contractor prior to Notice of Award.
  - 9. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
    - a. Notice to Proceed.
    - b. Work Change Directives.
    - c. Change Orders.
    - d. Field Orders.
- B. The Contract Documents listed in Paragraph 7.01.A are attached to this Agreement (except as expressly noted otherwise above).

- C. There are no Contract Documents other than those listed above in this Article 7.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in the Contract.

## **ARTICLE 8 – REPRESENTATIONS, CERTIFICATIONS, AND STIPULATIONS**

### **8.01 Contractor's Representations**

- A. In order to induce Owner to enter into this Contract, Contractor makes the following representations:
  - 1. Contractor has examined and carefully studied the Contract Documents, including Addenda.
  - 2. Contractor has visited the Site, conducted a thorough visual examination of the Site and adjacent areas, and become familiar with the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
  - 3. Contractor is familiar with all Laws and Regulations that may affect cost, progress, and performance of the Work.
  - 4. Contractor has carefully studied the reports of explorations and tests of subsurface conditions at or adjacent to the Site and the drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, with respect to the Technical Data in such reports and drawings.
  - 5. Contractor has carefully studied the reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, with respect to Technical Data in such reports and drawings.
  - 6. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Technical Data identified in the Supplementary Conditions or by definition, with respect to the effect of such information, observations, and Technical Data on (a) the cost, progress, and performance of the Work; (b) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (c) Contractor's safety precautions and programs.
  - 7. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
  - 8. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
  - 9. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and of discrepancies between Site conditions and the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.

10. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.
11. Contractor's entry into this Contract constitutes an incontrovertible representation by Contractor that without exception all prices in the Agreement are premised upon performing and furnishing the Work required by the Contract Documents.

#### 8.02 Contractor's Certifications

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 8.02:
  1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
  2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
  3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
  4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

#### 8.03 Standard General Conditions

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

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

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

Owner:

Contractor:

Town of Goffstown NH

\_\_\_\_\_  
*(typed or printed name of organization)*

\_\_\_\_\_  
*(typed or printed name of organization)*

By:

\_\_\_\_\_  
*(individual's signature)*

By:

\_\_\_\_\_  
*(individual's signature)*

Date:

\_\_\_\_\_  
*(date signed)*

Date:

\_\_\_\_\_  
*(date signed)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

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

Attest:

\_\_\_\_\_  
*(individual's signature)*

Attest:

\_\_\_\_\_  
*(individual's signature)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Designated Representative:

Designated Representative:

Name:

\_\_\_\_\_  
*(typed or printed)*

Name:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Title:

\_\_\_\_\_  
*(typed or printed)*

Address:

Address:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Phone:

\_\_\_\_\_

Phone:

\_\_\_\_\_

Email:

\_\_\_\_\_

Email:

\_\_\_\_\_

*(If 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.)*

License No.:

\_\_\_\_\_  
*(where applicable)*

State:

\_\_\_\_\_

END OF SECTION

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

Owner: Town of Goffstown NH Owner's Project No.: N/A  
Engineer: Hoyle, Tanner & Associates, Inc. Engineer's Project No.: 24.010001.02  
Contractor: \_\_\_\_\_ Contractor's Project No.: \_\_\_\_\_  
Project: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
Contract Name: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
Effective Date of Contract: \_\_\_\_\_

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on **July 6, 2026** pursuant to Paragraph 4.01 of the General Conditions.

On or before that date, Contractor shall start performing its obligations under the Contract Documents. No Work will be done at the Site prior to such date. Work at the Site may begin on or after **July 6, 2026**.

In accordance with the Agreement:

The date by which Substantial Completion must be achieved is **October 30, 2026** and the date by which readiness for final payment must be achieved is **November 6, 2026**.

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

- None

Owner: Town of Goffstown NH  
By (signature): \_\_\_\_\_  
Name (printed): \_\_\_\_\_  
Title: \_\_\_\_\_  
Date Issued: \_\_\_\_\_

Copy: Hoyle, Tanner & Associates, Inc.

END OF SECTION

**SECTION 00610**  
**PERFORMANCE BOND**  
(EJCDC Form C-610)

<p><b>Contractor</b></p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>	<p><b>Surety</b></p> <p>Name: _____</p> <p>Address (<i>principal place of business</i>): _____</p>
<p><b>Owner</b></p> <p>Name: Town of Goffstown NH</p> <p>Mailing address (<i>principal place of business</i>):</p> <p><b>404 Elm Street</b></p> <p><b>Goffstown, NH 03045</b></p>	<p><b>Contract</b></p> <p>Description (<i>name and location</i>):</p> <p><b>Montelona Road Culvert over Hardy Brook, Goffstown, NH</b></p> <p>Contract Price: _____</p> <p>Effective Date of Contract: _____</p>
<p><b>Bond</b></p> <p>Bond Amount: _____</p> <p>Date of Bond: _____</p> <p><i>(Date of Bond cannot be earlier than Effective Date of Contract)</i></p> <p>Modifications to this Bond form:</p> <p><input type="checkbox"/> None <input type="checkbox"/> See Paragraph 16</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Performance Bond, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.</p>	
Contractor as Principal	Surety
_____ <i>(Full formal name of Contractor)</i>	_____ <i>(Full formal name of Surety) (corporate seal)</i>
By: _____ <i>(Signature)</i>	By: _____ <i>(Signature)(Attach Power of Attorney)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
Attest: _____ <i>(Signature)</i>	Attest: _____ <i>(Signature)</i>
Name: _____ <i>(Printed or typed)</i>	Name: _____ <i>(Printed or typed)</i>
Title: _____	Title: _____
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.
2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond will arise after:
  - 3.1. The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice may indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 will be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement does not waive the Owner's right, if any, subsequently to declare a Contractor Default;
  - 3.2. The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
  - 3.3. The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.
4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 does not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.
5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:
  - 5.1. Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;
  - 5.2. Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;
  - 5.3. Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or
  - 5.4. Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:
    - 5.4.1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
    - 5.4.2. Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment, or the Surety has denied liability, in whole or in part, without further notice, the Owner shall be entitled to enforce any remedy available to the Owner.
7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner will not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety will not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:
  - 7.1. the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
  - 7.2. additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and
  - 7.3. liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.
8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.
9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price will not be reduced or set off on account of any such unrelated obligations. No right of action will accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.
10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
11. Any proceeding, legal or equitable, under this Bond must be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and must be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted therefrom and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. Definitions
  - 14.1. *Balance of the Contract Price*—The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

- 14.2. *Construction Contract*—The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.
  - 14.3. *Contractor Default*—Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.
  - 14.4. *Owner Default*—Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.
  - 14.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
  16. Modifications to this Bond are as follows:

END OF SECTION

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

<p><b>Contractor</b> Name: Address (<i>principal place of business</i>):</p>	<p><b>Surety</b> Name: Address (<i>principal place of business</i>):</p>
<p><b>Owner</b> Name: <b>Town of Goffstown NH</b> Mailing address (<i>principal place of</i> <b>404 Elm Street</b> <b>Goffstown, NH 03045</b></p>	<p><b>Contract</b> Description (<i>name and location</i>): <b>Montelona Road Culvert over Hardy Brook, Goffstown, NH</b>  Contract Price:  Effective Date of Contract:</p>
<p><b>Bond</b> Bond Amount: Date of Bond: <i>(Date of Bond cannot be earlier than Effective Date of Contract)</i> Modifications to this Bond form: <input type="checkbox"/> None <input type="checkbox"/> See Paragraph 18</p>	
<p>Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth in this Payment Bond, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.</p>	
<p><b>Contractor as Principal</b></p>	<p align="center"><b>Surety</b></p>
<p align="center"><i>(Full formal name of Contractor)</i></p>	<p align="center"><i>(Full formal name of Surety) (corporate seal)</i></p>
<p>By: _____ <i>(Signature)</i></p>	<p>By: _____ <i>(Signature)(Attach Power of</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p>Attest: _____ <i>(Signature)</i></p>	<p>Attest: _____ <i>(Signature)</i></p>
<p>Name: _____ <i>(Printed or typed)</i></p>	<p>Name: _____ <i>(Printed or typed)</i></p>
<p>Title: _____</p>	<p>Title: _____</p>
<p><i>Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party is considered plural where applicable.</i></p>	

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.

1. 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.
2. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond will arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
3. 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.
4. The Surety's obligations to a Claimant under this Bond will arise after the following:
  - 4.1. Claimants who do not have a direct contract with the Contractor
    - 4.1.1. 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
    - 4.1.2. have sent a Claim to the Surety (at the address described in Paragraph 13).
  - 4.2. 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).
5. 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.
6. 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:
  - 6.1. 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
  - 6.2. Pay or arrange for payment of any undisputed amounts.
  - 6.3. The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 will not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

7. The Surety's total obligation will not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond will be credited for any payments made in good faith by the Surety.
8. Amounts owed by the Owner to the Contractor under the Construction Contract will be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfying obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
9. 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.
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. No suit or action will be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit will be applicable.
12. Notice and Claims to the Surety, the Owner, or the Contractor must be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, will be sufficient compliance as of the date received.
13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement will be deemed deleted here from and provisions conforming to such statutory or other legal requirement will be deemed incorporated herein. When so furnished, the intent is that this Bond will be construed as a statutory bond and not as a common law bond.
14. 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.
15. Definitions
  - 15.1. *Claim*—A written statement by the Claimant including at a minimum:
    - 15.1.1. The name of the Claimant;
    - 15.1.2. The name of the person for whom the labor was done, or materials or equipment furnished;
    - 15.1.3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
    - 15.1.4. A brief description of the labor, materials, or equipment furnished;
    - 15.1.5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;

- 15.1.6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
  - 15.1.7. The total amount of previous payments received by the Claimant; and
  - 15.1.8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.
- 15.2. *Claimant*—An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic’s lien or similar statute against the real property upon which the Project is located. The intent of this Bond is to include without limitation in the terms of “labor, materials, or equipment” that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor’s subcontractors, and all other items for which a mechanic’s lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.
  - 15.3. *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.
  - 15.4. *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.
  - 15.5. *Contract Documents*—All the documents that comprise the agreement between the Owner and Contractor.
16. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond will be deemed to be Subcontractor and the term Owner will be deemed to be Contractor.
  17. 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**

<b>Owner:</b>	<u>Town of Goffstown NH</u>	<b>Owner's Project No.:</b>	<u>N/A</u>
<b>Engineer:</b>	<u>Hoyle, Tanner &amp; Associates, Inc.</u>	<b>Engineer's Project No.:</b>	<u>24.010001.02</u>
<b>Contractor:</b>	_____	<b>Contractor's Project No.:</b>	_____
<b>Project:</b>	<u>Montelona Road Culvert over Hardy Brook, Goffstown, NH</u>		
<b>Contract:</b>	<u>Montelona Road Culvert over Hardy Brook, Goffstown, NH</u>		
<b>Application No.:</b>	_____	<b>Application Date:</b>	_____
<b>Application Period:</b>	<b>From</b>	<b>to</b>	_____

1. Original Contract Price	\$	-
2. Net change by Change Orders	\$	-
3. Current Contract Price (Line 1 + Line 2)	\$	-
4. Total Work completed and materials stored to date (Sum of Column G Lump Sum Total and Column J Unit Price Total)	\$	-
5. Not Used		
6. Amount eligible to date (Line 4 - Line 5.c)	\$	-
7. Less previous payments (Line 6 from prior application)		
8. Amount due this application	\$	-
9. Balance to finish, including retainage (Line 3 - Line 4)	\$	-

**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.

<b>Contractor:</b>	_____	
<b>Signature:</b>	_____	<b>Date:</b> _____

<p><b>Recommended by Engineer</b></p> <p><b>By:</b> _____</p> <p><b>Title:</b> _____</p> <p><b>Date:</b> _____</p>	<p><b>Approved by Owner</b></p> <p><b>By:</b> _____</p> <p><b>Title:</b> _____</p> <p><b>Date:</b> _____</p>
<p><b>Approved by Funding Agency</b></p> <p><b>By:</b> _____</p> <p><b>Title:</b> _____</p> <p><b>Date:</b> _____</p>	<p><b>By:</b> _____</p> <p><b>Title:</b> _____</p> <p><b>Date:</b> _____</p>

**Progress Estimate - Unit Price Work**

**Contractor's Application for Payment**

Owner: Town of Goffstown NH  
 Engineer: Hoyle, Tanner & Associates, Inc.  
 Contractor: \_\_\_\_\_  
 Project: Montelona Road Culvert over Hardy Brook, Goffstown.  
 Contract: Montelona Road Culvert over Hardy Brook, Goffstown.

Owner's Project No.: N/A  
 Engineer's Project No.: 24.010001.02  
 Contractor's Project No.: \_\_\_\_\_

Application No.: \_\_\_\_\_ Application From \_\_\_\_\_ to \_\_\_\_\_ Application \_\_\_\_\_

A	B	C	D	E	F	G	H	I	J	K	L
Bid Item No.	Description	Contract Information				Work Completed		Materials Currently Stored (not in G) (\$)	Work Completed and Materials Stored to Date (H + I) (\$)	% of Value of Item (J / F) (%)	Balance to Finish (F - J) (\$)
		Item Quantity	Units	Unit Price (\$)	Value of Bid Item (C X E) (\$)	Estimated Quantity Incorporated in the Work	Value of Work Completed to Date (E X G) (\$)				
<b>Original Contract</b>											
<b>Original Contract Totals</b>					\$		\$	\$	\$		\$



**Stored Materials Summary**

**Contractor's Application for Payment**

<b>Owner:</b>	<u>Town of Goffstown NH</u>	<b>Owner's Project No.:</b>	<u>N/A</u>
<b>Engineer:</b>	<u>Hoyle, Tanner &amp; Associates, Inc.</u>	<b>Engineer's Project No.:</b>	<u>24.010001.02</u>
<b>Contractor:</b>	<u></u>	<b>Contractor's Project No.:</b>	<u></u>
<b>Project:</b>	<u>Montelona Road Culvert over Hardy Brook, Goffstown, NH</u>		
<b>Contract:</b>	<u>Montelona Road Culvert over Hardy Brook, Goffstown, NH</u>		
<b>Application No.:</b>	<u></u>	<b>Application Period:</b>	<b>From</b> <u></u> <b>to</b> <u></u> <b>Application Date:</b> <u></u>

A	B	C	D	E	F	G	H	I	J	K	L	M
Item No. (Lump Sum Tab) or Bid Item No. (Unit Price Tab)	Supplier Invoice No.	Submittal No. (with Specification Section No.)	Description of Materials or Equipment Stored	Storage Location	Application No. When Materials Placed in Storage	Materials Stored			Incorporated in Work			Materials Remaining in Storage (I-L) (\$)
						Previous Amount Stored (\$)	Amount Stored this Period (\$)	Amount Stored to Date (G+H) (\$)	Amount Previously Incorporated in the Work (\$)	Amount Incorporated in the Work this Period (\$)	Total Amount Incorporated in the Work (J+K) (\$)	
<b>Totals</b>						<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>	<b>\$</b>

SECTION 00700

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



Endorsed By



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# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

## ARTICLE 1—DEFINITIONS AND TERMINOLOGY

### 1.01 *Defined Terms*

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

- requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract.
- b. A demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision regarding a Change Proposal, or seeking resolution of a contractual issue that Engineer has declined to address.
  - c. A demand or assertion by Owner or Contractor, duly submitted in compliance with the procedural requirements set forth herein, made pursuant to Paragraph 12.01.A.4, concerning disputes arising after Engineer has issued a recommendation of final payment.
  - d. A demand for money or services by a third party is not a Claim.
11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), lead-based paint (as defined by the HUD/EPA standard), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to Laws and Regulations regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents.
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Electronic Document*—Any Project-related correspondence, attachments to correspondence, data, documents, drawings, information, or graphics, including but not limited to Shop Drawings and other Submittals, that are in an electronic or digital format.
21. *Electronic Means*—Electronic mail (email), upload/download from a secure Project website, or other communications methods that allow: (a) the transmission or communication of Electronic Documents; (b) the documentation of transmissions, including sending and receipt; (c) printing of the transmitted Electronic Document by the

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

22. *Engineer*—The individual or entity named as such in the Agreement.
23. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
24. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto.
  - a. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated into the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, is not a Hazardous Environmental Condition.
  - b. The presence of Constituents of Concern that are to be removed or remediated as part of the Work is not a Hazardous Environmental Condition.
  - c. The presence of Constituents of Concern as part of the routine, anticipated, and obvious working conditions at the Site, is not a Hazardous Environmental Condition.
25. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and binding decrees, resolutions, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
26. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.
27. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date, or by a time prior to Substantial Completion of all the Work.
28. *Notice of Award*—The written notice by Owner to a Bidder of Owner's acceptance of the Bid.
29. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
30. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
31. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising Contractor's plan to accomplish the Work within the Contract Times.
32. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.

33. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative (RPR) includes any assistants or field staff of Resident Project Representative.
34. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
35. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals.
36. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
37. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
38. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands or areas furnished by Owner which are designated for the use of Contractor.
39. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
40. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
41. *Submittal*—A written or graphic document, prepared by or for Contractor, which the Contract Documents require Contractor to submit to Engineer, or that is indicated as a Submittal in the Schedule of Submittals accepted by Engineer. Submittals may include Shop Drawings and Samples; schedules; product data; Owner-delegated designs; sustainable design information; information on special procedures; testing plans; results of tests and evaluations, source quality-control testing and inspections, and field or Site quality-control testing and inspections; warranties and certifications; Suppliers’ instructions and reports; records of delivery of spare parts and tools; operations and maintenance data; Project photographic documentation; record documents; and other such documents required by the Contract Documents. Submittals, whether or not approved or accepted by Engineer, are not Contract Documents. Change Proposals, Change Orders, Claims, notices, Applications for Payment, and requests for interpretation or clarification are not Submittals.
42. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion of such Work.

43. *Successful Bidder*—The Bidder to which the Owner makes an award of contract.
44. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
45. *Supplier*—A manufacturer, fabricator, supplier, distributor, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
46. *Technical Data*
- a. Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (1) existing subsurface conditions at or adjacent to the Site, or existing physical conditions at or adjacent to the Site including existing surface or subsurface structures (except Underground Facilities) or (2) Hazardous Environmental Conditions at the Site.
  - b. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then Technical Data is defined, with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06, as the data contained in boring logs, recorded measurements of subsurface water levels, assessments of the condition of subsurface facilities, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical, environmental, or other Site or facilities conditions report prepared for the Project and made available to Contractor.
  - c. Information and data regarding the presence or location of Underground Facilities are not intended to be categorized, identified, or defined as Technical Data, and instead Underground Facilities are shown or indicated on the Drawings.
47. *Underground Facilities*—All active or not-in-service underground lines, pipelines, conduits, ducts, encasements, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or systems at the Site, including but not limited to those facilities or systems that produce, transmit, distribute, or convey telephone or other communications, cable television, fiber optic transmissions, power, electricity, light, heat, gases, oil, crude oil products, liquid petroleum products, water, steam, waste, wastewater, storm water, other liquids or chemicals, or traffic or other control systems. An abandoned facility or system is not an Underground Facility.
48. *Unit Price Work*—Work to be paid for on the basis of unit prices.
49. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
50. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

## 1.02 Terminology

- A. The words and terms discussed in Paragraphs 1.02.B, C, D, and E are not defined terms that require initial capital letters, but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:* The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:* The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:* The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
1. does not conform to the Contract Documents;
  2. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
  3. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or Paragraph 15.04).
- E. *Furnish, Install, Perform, Provide*
1. The word “furnish,” when used in connection with services, materials, or equipment, means to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
  2. The word “install,” when used in connection with services, materials, or equipment, means to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
  3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, means to furnish and install said services, materials, or equipment complete and ready for intended use.
  4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words “furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. *Contract Price or Contract Times*: References to a change in “Contract Price or Contract Times” or “Contract Times or Contract Price” or similar, indicate that such change applies to (1) Contract Price, (2) Contract Times, or (3) both Contract Price and Contract Times, as warranted, even if the term “or both” is not expressed.
- G. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

## **ARTICLE 2—PRELIMINARY MATTERS**

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

- A. *Performance and Payment Bonds*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner the performance bond and payment bond (if the Contract requires Contractor to furnish such bonds).
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the signed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each additional insured (as identified in the Contract), the certificates, endorsements, and other evidence of insurance required to be provided by Contractor in accordance with Article 6, except to the extent the Supplementary Conditions expressly establish other dates for delivery of specific insurance policies.
- C. *Evidence of Owner’s Insurance*: After receipt of the signed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each additional insured (as identified in the Contract), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

### **2.02 *Copies of Documents***

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

### **2.03 *Before Starting Construction***

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise required by the Contract Documents), Contractor shall submit to Engineer for timely review:
  - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
  - 2. a preliminary Schedule of Submittals; and
  - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work

into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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

2.05 *Acceptance of Schedules*

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

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may send, and shall accept, Electronic Documents transmitted by Electronic Means.
- B. If the Contract does not establish protocols for Electronic Means, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. Subject to any governing protocols for Electronic Means, when transmitting Electronic Documents by Electronic Means, the transmitting party makes no representations as to long-term compatibility, usability, or readability of the Electronic Documents resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the Electronic Documents.

## ARTICLE 3—CONTRACT DOCUMENTS: INTENT, REQUIREMENTS, REUSE

### 3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one Contract Document is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete Project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic versions of the Contract Documents (including any printed copies derived from such electronic versions) and the printed record version, the printed record version will govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.
- F. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation will be deemed stricken, and all remaining provisions will continue to be valid and binding upon Owner and Contractor, which agree that the Contract Documents will be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.
- G. Nothing in the Contract Documents creates:
  - 1. any contractual relationship between Owner or Engineer and any Subcontractor, Supplier, or other individual or entity performing or furnishing any of the Work, for the benefit of such Subcontractor, Supplier, or other individual or entity; or
  - 2. any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity, except as may otherwise be required by Laws and Regulations.

### 3.02 *Reference Standards*

- A. *Standards Specifications, Codes, Laws and Regulations*
  - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, means the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
  - 2. No provision of any such standard specification, manual, reference standard, or code, and no instruction of a Supplier, will be effective to change the duties or responsibilities of Owner, Contractor, or Engineer from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner or Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility

inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

### 3.03 *Reporting and Resolving Discrepancies*

#### A. *Reporting Discrepancies*

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

#### B. *Resolving Discrepancies*

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

### 3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer in writing all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work.

- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly notify Owner and Contractor in writing that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

### 3.05 *Reuse of Documents*

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

## **ARTICLE 4—COMMENCEMENT AND PROGRESS OF THE WORK**

### 4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the 30th day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the 60th day after the day of Bid opening or the 30th day after the Effective Date of the Contract, whichever date is earlier.

### 4.02 *Starting the Work*

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

### 4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the

established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

#### 4.04 *Progress Schedule*

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

#### 4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Such an adjustment will be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
  - 1. Severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
  - 2. Abnormal weather conditions;
  - 3. Acts or failures to act of third-party utility owners or other third-party entities (other than those third-party utility owners or other third-party entities performing other work at or adjacent to the Site as arranged by or under contract with Owner, as contemplated in Article 8); and
  - 4. Acts of war or terrorism.

- D. Contractor's entitlement to an adjustment of Contract Times or Contract Price is limited as follows:
1. Contractor's entitlement to an adjustment of the Contract Times is conditioned on the delay, disruption, or interference adversely affecting an activity on the critical path to completion of the Work, as of the time of the delay, disruption, or interference.
  2. Contractor shall not be entitled to an adjustment in Contract Price for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor. Such a concurrent delay by Contractor shall not preclude an adjustment of Contract Times to which Contractor is otherwise entitled.
  3. Adjustments of Contract Times or Contract Price are subject to the provisions of Article 11.
- E. Each Contractor request or Change Proposal seeking an increase in Contract Times or Contract Price must be supplemented by supporting data that sets forth in detail the following:
1. The circumstances that form the basis for the requested adjustment;
  2. The date upon which each cause of delay, disruption, or interference began to affect the progress of the Work;
  3. The date upon which each cause of delay, disruption, or interference ceased to affect the progress of the Work;
  4. The number of days' increase in Contract Times claimed as a consequence of each such cause of delay, disruption, or interference; and
  5. The impact on Contract Price, in accordance with the provisions of Paragraph 11.07.
- Contractor shall also furnish such additional supporting documentation as Owner or Engineer may require including, where appropriate, a revised progress schedule indicating all the activities affected by the delay, disruption, or interference, and an explanation of the effect of the delay, disruption, or interference on the critical path to completion of the Work.
- F. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5, together with the provisions of Paragraphs 4.05.D and 4.05.E.
- G. Paragraph 8.03 addresses delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.

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

### **5.01 *Availability of Lands***

- A. Owner shall furnish the Site. Owner shall notify Contractor in writing of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.

- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

## 5.02 *Use of Site and Other Areas*

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

1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas, or to improvements, structures, utilities, or similar facilities located at such adjacent lands or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
  2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.13, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or in a court of competent jurisdiction; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris will conform to applicable Laws and Regulations.
  - C. *Cleaning:* Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment

and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.

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

### 5.03 *Subsurface and Physical Conditions*

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

1. Those reports of explorations and tests of subsurface conditions at or adjacent to the Site that contain Technical Data;
2. Those drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data; and
3. Technical Data contained in such reports and drawings.

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

- C. *Reliance by Contractor on Technical Data:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b.

- D. *Limitations of Other Data and Documents:* Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings;
3. the contents of other Site-related documents made available to Contractor, such as record drawings from other projects at or adjacent to the Site, or Owner's archival documents concerning the Site; or
4. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

#### 5.04 *Differing Subsurface or Physical Conditions*

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

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

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine whether it is necessary for Owner to obtain additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the subsurface or physical condition in question may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the condition in question has been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- E. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in

Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. Such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
  - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
  - c. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E.
2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
- a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise;
  - b. The existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or
  - c. Contractor failed to give the written notice required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.
- F. *Underground Facilities; Hazardous Environmental Conditions*: Paragraph 5.05 governs rights and responsibilities regarding the presence or location of Underground Facilities. Paragraph 5.06 governs rights and responsibilities regarding Hazardous Environmental Conditions. The provisions of Paragraphs 5.03 and 5.04 are not applicable to the presence or location of Underground Facilities, or to Hazardous Environmental Conditions.

#### 5.05 *Underground Facilities*

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

3. verifying the actual location of those Underground Facilities shown or indicated in the Contract Documents as being within the area affected by the Work, by exposing such Underground Facilities during the course of construction;
  4. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
  5. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated on the Drawings, or was not shown or indicated on the Drawings with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing regarding such Underground Facility.
- C. *Engineer's Review:* Engineer will:
1. promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated on the Drawings, or was not shown or indicated with reasonable accuracy;
  2. identify and communicate with the owner of the Underground Facility; prepare recommendations to Owner (and if necessary issue any preliminary instructions to Contractor) regarding the Contractor's resumption of Work in connection with the Underground Facility in question;
  3. obtain any pertinent cost or schedule information from Contractor; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and
  4. advise Owner in writing of Engineer's findings, conclusions, and recommendations.

During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Early Resumption of Work:* If at any time Engineer determines that Work in connection with the Underground Facility may resume prior to completion of Engineer's review or Owner's issuance of its statement to Contractor, because the Underground Facility in question and conditions affected by its presence have been adequately documented, and analyzed on a preliminary basis, then the Engineer may at its discretion instruct Contractor to resume such Work.
- F. *Possible Price and Times Adjustments*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, to the extent that any existing Underground Facility at the Site that was not shown

or indicated on the Drawings, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:

- a. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
  - b. Contractor's entitlement to an adjustment of the Contract Times is subject to the provisions of Paragraphs 4.05.D and 4.05.E; and
  - c. Contractor gave the notice required in Paragraph 5.05.B.
2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, then any such adjustment will be set forth in a Change Order.
  3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.
  4. The information and data shown or indicated on the Drawings with respect to existing Underground Facilities at the Site is based on information and data (a) furnished by the owners of such Underground Facilities, or by others, (b) obtained from available records, or (c) gathered in an investigation conducted in accordance with the current edition of ASCE 38, Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data, by the American Society of Civil Engineers. If such information or data is incorrect or incomplete, Contractor's remedies are limited to those set forth in this Paragraph 5.05.F.

#### 5.06 *Hazardous Environmental Conditions at Site*

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

1. those reports known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site;
2. drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
3. Technical Data contained in such reports and drawings.

B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data as defined in Paragraph 1.01.A.46.b. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:

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

- of construction to be employed by Contractor, and safety precautions and programs incident thereto;
2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
  3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, as a result of such Work stoppage, such special conditions under which Work is agreed to be resumed by Contractor, or any costs or expenses incurred in response to the Hazardous Environmental Condition, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off. Entitlement to any such adjustment is subject to the provisions of Paragraphs 4.05.D, 4.05.E, 11.07, and 11.08.
- H. If, after receipt of such written notice, Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court, arbitration, or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I obligates Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J obligates Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

## **ARTICLE 6—BONDS AND INSURANCE**

### **6.01 *Performance, Payment, and Other Bonds***

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of Contractor's obligations under the Contract. These bonds must remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the terms of a prescribed bond form, the Supplementary Conditions, or other provisions of the Contract.
- B. Contractor shall also furnish such other bonds (if any) as are required by the Supplementary Conditions or other provisions of the Contract.
- C. All bonds must be in the form included in the Bidding Documents or otherwise specified by Owner prior to execution of the Contract, except as provided otherwise by Laws or

Regulations, and must be issued and signed by a surety named in “Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies” as published in Department Circular 570 (as amended and supplemented) by the Bureau of the Fiscal Service, U.S. Department of the Treasury. A bond signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual’s authority to bind the surety. The evidence of authority must show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- D. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue bonds in the required amounts.
- E. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer in writing and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which must comply with the bond and surety requirements above.
- F. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner’s termination rights under Article 16.
- G. Upon request to Owner from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Owner shall provide a copy of the payment bond to such person or entity.
- H. Upon request to Contractor from any Subcontractor, Supplier, or other person or entity claiming to have furnished labor, services, materials, or equipment used in the performance of the Work, Contractor shall provide a copy of the payment bond to such person or entity.

#### 6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized in the state or jurisdiction in which the Project is located to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Alternative forms of insurance coverage, including but not limited to self-insurance and “Occupational Accident and Excess Employer’s Indemnity Policies,” are not sufficient to meet the insurance requirements of this Contract, unless expressly allowed in the Supplementary Conditions.
- D. Contractor shall deliver to Owner, with copies to each additional insured identified in the Contract, certificates of insurance and endorsements establishing that Contractor has obtained and is maintaining the policies and coverages required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies, documentation of applicable self-insured retentions (if allowed) and deductibles, full disclosure of all relevant exclusions, and evidence of insurance required to be purchased and maintained by

Subcontractors or Suppliers. In any documentation furnished under this provision, Contractor, Subcontractors, and Suppliers may block out (redact) (1) any confidential premium or pricing information and (2) any wording specific to a project or jurisdiction other than those applicable to this Contract.

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

- L. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests. Contractor is responsible for determining whether such coverage and limits are adequate to protect its interests, and for obtaining and maintaining any additional insurance that Contractor deems necessary.
- M. The insurance and insurance limits required herein will not be deemed as a limitation on Contractor's liability, or that of its Subcontractors or Suppliers, under the indemnities granted to Owner and other individuals and entities in the Contract or otherwise.
- N. All the policies of insurance required to be purchased and maintained under this Contract will contain a provision or endorsement that the coverage afforded will not be canceled, or renewal refused, until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured and Engineer.

6.03 *Contractor's Insurance*

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

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

#### 6.04 *Builder's Risk and Other Property Insurance*

- A. *Builder's Risk*: Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the Work's full insurable replacement cost (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). The specific requirements applicable to the builder's risk insurance are set forth in the Supplementary Conditions.
- B. *Property Insurance for Facilities of Owner Where Work Will Occur*: Owner is responsible for obtaining and maintaining property insurance covering each existing structure, building, or facility in which any part of the Work will occur, or to which any part of the Work will attach or be adjoined. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, providing coverage consistent with that required for the builder's risk insurance, and will be maintained until the Work is complete, as set forth in Paragraph 15.06.D.
- C. *Property Insurance for Substantially Complete Facilities*: Promptly after Substantial Completion, and before actual occupancy or use of the substantially completed Work, Owner will obtain property insurance for such substantially completed Work, and maintain such property insurance at least until the Work is complete, as set forth in Paragraph 15.06.D. Such property insurance will be written on a special perils (all-risk) form, on a replacement cost basis, and provide coverage consistent with that required for the builder's risk insurance. The builder's risk insurance may terminate upon written confirmation of Owner's procurement of such property insurance.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work, as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide advance notice of such occupancy or use to the builder's risk insurer, and obtain an endorsement consenting to the continuation of coverage prior to commencing such partial occupancy or use.
- E. *Insurance of Other Property; Additional Insurance*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, then the entity or individual owning such property item will be responsible for insuring it. If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.04, it may do so at Contractor's expense.

#### 6.05 *Property Losses; Subrogation*

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

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

1. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils, risks, or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all individuals or entities identified in the Supplementary Conditions as builder's risk or installation floater insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused.
  2. None of the above waivers extends to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Any property insurance policy maintained by Owner covering any loss, damage, or consequential loss to Owner's existing structures, buildings, or facilities in which any part of the Work will occur, or to which any part of the Work will attach or adjoin; to adjacent structures, buildings, or facilities of Owner; or to part or all of the completed or substantially completed Work, during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06, will contain provisions to the effect that in the event of payment of any loss or damage the insurer will have no rights of recovery against any insureds thereunder, or against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them, and that the insured is allowed to waive the insurer's rights of subrogation in a written contract executed prior to the loss, damage, or consequential loss.
1. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from fire or any of the perils, risks, or causes of loss covered by such policies.
- C. The waivers in this Paragraph 6.05 include the waiver of rights due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by, arising out of, or resulting from fire or other insured peril, risk, or cause of loss.
- D. Contractor shall be responsible for assuring that each Subcontract contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from fire or other peril, risk, or cause of loss covered by builder's risk insurance, installation floater, and any other property insurance applicable to the Work.

6.06 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of property insurance required by Paragraph 6.04 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.04 shall maintain such proceeds in a segregated account, and distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, Contractor shall repair or replace the damaged Work, using allocated insurance proceeds.

**ARTICLE 7—CONTRACTOR'S RESPONSIBILITIES**

7.01 *Contractor's Means and Methods of Construction*

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

7.02 *Supervision and Superintendence*

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

7.03 *Labor; Working Hours*

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

- B. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of Contractor's employees; of Suppliers and Subcontractors, and their employees; and of any other individuals or entities performing or furnishing any of the Work, just as Contractor is responsible for Contractor's own acts and omissions.
- C. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site will be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

#### 7.04 *Services, Materials, and Equipment*

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

#### 7.05 *"Or Equals"*

- A. *Contractor's Request; Governing Criteria:* Whenever an item of equipment or material is specified or described in the Contract Documents by using the names of one or more proprietary items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.
  - 1. If Engineer in its sole discretion determines that an item of equipment or material proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer will deem it an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:
    - a. in the exercise of reasonable judgment Engineer determines that the proposed item:
      - 1) is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;

- 2) will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
  - 3) has a proven record of performance and availability of responsive service; and
  - 4) is not objectionable to Owner.
- b. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
- 1) there will be no increase in cost to the Owner or increase in Contract Times; and
  - 2) the item will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal," which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request will result in any change in Contract Price. The Engineer's denial of an "or-equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of equipment or material proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer consider the item a proposed substitute pursuant to Paragraph 7.06.

#### 7.06 *Substitutes*

- A. *Contractor's Request; Governing Criteria:* Unless the specification or description of an item of equipment or material required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of equipment or material under the circumstances described below. To the extent possible such requests must be made before commencement of related construction at the Site.
1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of equipment or material from anyone other than Contractor.
  2. The requirements for review by Engineer will be as set forth in Paragraph 7.06.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.

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

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request will be final and binding, and may not be reversed through an appeal under any provision of the Contract. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.06.D, by timely submittal of a Change Proposal.

7.07 *Concerning Subcontractors and Suppliers*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner. The Contractor's retention of a Subcontractor or Supplier for the performance of parts of the Work will not relieve Contractor's obligation to Owner to perform and complete the Work in accordance with the Contract Documents.
- B. Contractor shall retain specific Subcontractors and Suppliers for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor or Supplier to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within 5 days.
- E. Owner may require the replacement of any Subcontractor or Supplier. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors or Suppliers for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor or Supplier so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor or Supplier.
- F. If Owner requires the replacement of any Subcontractor or Supplier retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor or Supplier, whether initially or as a replacement, will constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis, Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors and Suppliers.
- J. The divisions and sections of the Specifications and the identifications of any Drawings do not control Contractor in dividing the Work among Subcontractors or Suppliers, or in delineating the Work to be performed by any specific trade.
- K. All Work performed for Contractor by a Subcontractor or Supplier must be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract for the benefit of Owner and Engineer.
- L. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor for Work performed for Contractor by the Subcontractor or Supplier.
- M. Contractor shall restrict all Subcontractors and Suppliers from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed in this Contract.

7.08 *Patent Fees and Royalties*

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

#### 7.09 *Permits*

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

#### 7.10 *Taxes*

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

#### 7.11 *Laws and Regulations*

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

#### 7.12 *Record Documents*

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

### 7.13 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations.
- B. Contractor shall designate a qualified and experienced safety representative whose duties and responsibilities are the prevention of Work-related accidents and the maintenance and supervision of safety precautions and programs.
- C. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
  - 1. all persons on the Site or who may be affected by the Work;
  - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- D. All damage, injury, or loss to any property referred to in Paragraph 7.13.C.2 or 7.13.C.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).
- E. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
- F. Contractor shall notify Owner; the owners of adjacent property; the owners of Underground Facilities and other utilities (if the identity of such owners is known to Contractor); and other contractors and utility owners performing work at or adjacent to the Site, in writing, when Contractor knows that prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- G. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. Any Owner's safety programs that are applicable to the Work are identified or included in the Supplementary Conditions or Specifications.
- H. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.

- I. Contractor's duties and responsibilities for safety and protection will continue until all the Work is completed, Engineer has issued a written notice to Owner and Contractor in accordance with Paragraph 15.06.C that the Work is acceptable, and Contractor has left the Site (except as otherwise expressly provided in connection with Substantial Completion).
- J. Contractor's duties and responsibilities for safety and protection will resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.14 *Hazard Communication Programs*

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

7.15 *Emergencies*

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

7.16 *Submittals*

A. *Shop Drawing and Sample Requirements*

- 1. Before submitting a Shop Drawing or Sample, Contractor shall:
  - a. review and coordinate the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
  - b. determine and verify:
    - 1) all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect to the Submittal;
    - 2) the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
    - 3) all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto;
  - c. confirm that the Submittal is complete with respect to all related data included in the Submittal.
- 2. Each Shop Drawing or Sample must bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that Submittal, and that Contractor approves the Submittal.

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

document any such approved variation from the requirements of the Contract Documents in a Field Order or other appropriate Contract modification.

5. Engineer's review and approval of a Shop Drawing or Sample will not relieve Contractor from responsibility for complying with the requirements of Paragraphs 7.16.A and B.
6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, will not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
7. Neither Engineer's receipt, review, acceptance, or approval of a Shop Drawing or Sample will result in such item becoming a Contract Document.
8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.C.4.

*D. Resubmittal Procedures for Shop Drawings and Samples*

1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous Submittals.
2. Contractor shall furnish required Shop Drawing and Sample submittals with sufficient information and accuracy to obtain required approval of an item with no more than two resubmittals. Engineer will record Engineer's time for reviewing a third or subsequent resubmittal of a Shop Drawing or Sample, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges.
3. If Contractor requests a change of a previously approved Shop Drawing or Sample, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

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

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

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

**7.17 Contractor's General Warranty and Guarantee**

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer is entitled to rely on Contractor's warranty and guarantee.
- B. Owner's rights under this warranty and guarantee are in addition to, and are not limited by, Owner's rights under the correction period provisions of Paragraph 15.08. The time in which Owner may enforce its warranty and guarantee rights under this Paragraph 7.17 is limited only by applicable Laws and Regulations restricting actions to enforce such rights; provided, however, that after the end of the correction period under Paragraph 15.08:
1. Owner shall give Contractor written notice of any defective Work within 60 days of the discovery that such Work is defective; and
  2. Such notice will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the notice.
- C. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
1. abuse, or improper modification, maintenance, or operation, by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
  2. normal wear and tear under normal usage.
- D. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents is absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents, a release of Contractor's obligation to perform the Work in accordance with the Contract Documents, or a release of Owner's warranty and guarantee rights under this Paragraph 7.17:
1. Observations by Engineer;
  2. Recommendation by Engineer or payment by Owner of any progress or final payment;
  3. The issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
  4. Use or occupancy of the Work or any part thereof by Owner;
  5. Any review and approval of a Shop Drawing or Sample submittal;
  6. The issuance of a notice of acceptability by Engineer;
  7. The end of the correction period established in Paragraph 15.08;
  8. Any inspection, test, or approval by others; or

9. Any correction of defective Work by Owner.
- E. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract will govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, from losses, damages, costs, and judgments (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising from third-party claims or actions relating to or resulting from the performance or furnishing of the Work, provided that any such claim, action, loss, cost, judgment or damage is attributable to bodily injury, sickness, disease, or death, or to damage to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom, but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A will not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

7.19 *Delegation of Professional Design Services*

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

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

## **ARTICLE 8—OTHER WORK AT THE SITE**

### **8.01 *Other Work***

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any third-party utility work that Owner has arranged to take place at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford proper and safe access to the Site to each contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work.
- D. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or alter others' work with the written consent of Engineer and the others whose work will be affected.

- E. If the proper execution or results of any part of Contractor's Work depends upon work performed by others, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.
- F. The provisions of this article are not applicable to work that is performed by third-party utilities or other third-party entities without a contract with Owner, or that is performed without having been arranged by Owner. If such work occurs, then any related delay, disruption, or interference incurred by Contractor is governed by the provisions of Paragraph 4.05.C.3.

#### 8.02 *Coordination*

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

#### 8.03 *Legal Relationships*

- A. If, in the course of performing other work for Owner at or adjacent to the Site, the Owner's employees, any other contractor working for Owner, or any utility owner that Owner has arranged to perform work, causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment will take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract, and any remedies available to Contractor under Laws or Regulations concerning utility action or inaction. When applicable, any such equitable adjustment in Contract Price will be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times or Contract Price is subject to the provisions of Paragraphs 4.05.D and 4.05.E.

- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site.
  - 1. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due Contractor, and assign to such other contractor or utility owner the Owner's contractual rights against Contractor with respect to the breach of the obligations set forth in this Paragraph 8.03.B.
  - 2. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due Contractor.
- C. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

## **ARTICLE 9—OWNER'S RESPONSIBILITIES**

### **9.01 *Communications to Contractor***

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

### **9.02 *Replacement of Engineer***

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

### **9.03 *Furnish Data***

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

### **9.04 *Pay When Due***

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

- 9.05 *Lands and Easements; Reports, Tests, and Drawings*
- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
  - B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
  - C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.
- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
  - B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

## ARTICLE 10—ENGINEER'S STATUS DURING CONSTRUCTION

### 10.01 *Owner's Representative*

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

### 10.02 *Visits to Site*

- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe, as an experienced and qualified design professional, the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.
- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.07. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

### 10.03 *Resident Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in the Supplementary Conditions and in Paragraph 10.07.
- B. If Owner designates an individual or entity who is not Engineer's consultant, agent, or employee to represent Owner at the Site, then the responsibilities and authority of such individual or entity will be as provided in the Supplementary Conditions.

### 10.04 *Engineer's Authority*

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

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

10.05 *Determinations for Unit Price Work*

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

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

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

10.07 *Limitations on Engineer's Authority and Responsibilities*

A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, will create, impose, or give rise to any duty in contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.

C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.

D. Engineer's review of the final Application for Payment and accompanying documentation, and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Contractor under Paragraph 15.06.A, will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.

E. The limitations upon authority and responsibility set forth in this Paragraph 10.07 also apply to the Resident Project Representative, if any.

10.08 *Compliance with Safety Program*

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

## ARTICLE 11—CHANGES TO THE CONTRACT

### 11.01 *Amending and Supplementing the Contract*

- A. The Contract may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
- B. If an amendment or supplement to the Contract includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order.
- C. All changes to the Contract that involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, must be supported by Engineer's recommendation. Owner and Contractor may amend other terms and conditions of the Contract without the recommendation of the Engineer.

### 11.02 *Change Orders*

- A. Owner and Contractor shall execute appropriate Change Orders covering:
  - 1. Changes in Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
  - 2. Changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
  - 3. Changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.05, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters; and
  - 4. Changes that embody the substance of any final and binding results under: Paragraph 11.03.B, resolving the impact of a Work Change Directive; Paragraph 11.09, concerning Change Proposals; Article 12, Claims; Paragraph 13.02.D, final adjustments resulting from allowances; Paragraph 13.03.D, final adjustments relating to determination of quantities for Unit Price Work; and similar provisions.
- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of Paragraph 11.02.A, it will be deemed to be of full force and effect, as if fully executed.

### 11.03 *Work Change Directives*

- A. A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents governing adjustments, expressly including Paragraph 11.07 regarding change of Contract Price.

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

#### 11.04 *Field Orders*

- A. Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly.
- B. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

#### 11.05 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Changes involving the design (as set forth in the Drawings, Specifications, or otherwise) or other engineering or technical matters will be supported by Engineer's recommendation.
- B. Such changes in the Work may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work must be performed under the applicable conditions of the Contract Documents.
- C. Nothing in this Paragraph 11.05 obligates Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

#### 11.06 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.C.2.

#### 11.07 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment of Contract Price must comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:

1. Where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03);
  2. Where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.07.C.2); or
  3. Where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.07.C).
- C. *Contractor's Fee:* When applicable, the Contractor's fee for overhead and profit will be determined as follows:
1. A mutually acceptable fixed fee; or
  2. If a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
    - a. For costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee will be 15 percent;
    - b. For costs incurred under Paragraph 13.01.B.3, the Contractor's fee will be 5 percent;
    - c. Where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.07.C.2.a and 11.07.C.2.b is that the Contractor's fee will be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of 5 percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted Work the maximum total fee to be paid by Owner will be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the Work;
    - d. No fee will be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
    - e. The amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in Cost of the Work will be the amount of the actual net decrease in Cost of the Work and a deduction of an additional amount equal to 5 percent of such actual net decrease in Cost of the Work; and
    - f. When both additions and credits are involved in any one change or Change Proposal, the adjustment in Contractor's fee will be computed by determining the sum of the costs in each of the cost categories in Paragraph 13.01.B (specifically, payroll costs, Paragraph 13.01.B.1; incorporated materials and equipment costs, Paragraph 13.01.B.2; Subcontract costs, Paragraph 13.01.B.3; special consultants costs, Paragraph 13.01.B.4; and other costs, Paragraph 13.01.B.5) and applying to each such cost category sum the appropriate fee from Paragraphs 11.07.C.2.a through 11.07.C.2.e, inclusive.

#### 11.08 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times must comply with the provisions of Paragraph 11.09. Any Claim for an adjustment in the Contract Times must comply with the provisions of Article 12.
- B. Delay, disruption, and interference in the Work, and any related changes in Contract Times, are addressed in and governed by Paragraph 4.05.

#### 11.09 *Change Proposals*

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

- B. *Change Proposal Procedures*

- 1. *Submittal:* Contractor shall submit each Change Proposal to Engineer within 30 days after the start of the event giving rise thereto, or after such initial decision.
- 2. *Supporting Data:* The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal.
  - a. Change Proposals based on or related to delay, interruption, or interference must comply with the provisions of Paragraphs 4.05.D and 4.05.E.
  - b. Change proposals related to a change of Contract Price must include full and detailed accounts of materials incorporated into the Work and labor and equipment used for the subject Work.

The supporting data must be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event.

- 3. *Engineer's Initial Review:* Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal. If in its discretion Engineer concludes that additional supporting data is needed before conducting a full review and making a decision regarding the Change Proposal, then Engineer may request that Contractor submit such additional supporting data by a date specified by Engineer, prior to Engineer beginning its full review of the Change Proposal.
- 4. *Engineer's Full Review and Action on the Change Proposal:* Upon receipt of Contractor's supporting data (including any additional data requested by Engineer), Engineer will conduct a full review of each Change Proposal and, within 30 days after such receipt of the Contractor's supporting data, either approve the Change Proposal in whole, deny it in whole, or approve it in part and deny it in part. Such actions must be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change

Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.

5. *Binding Decision*: Engineer's decision is final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- C. *Resolution of Certain Change Proposals*: If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties in writing that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice will be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.
- D. *Post-Completion*: Contractor shall not submit any Change Proposals after Engineer issues a written recommendation of final payment pursuant to Paragraph 15.06.B.

#### 11.10 *Notification to Surety*

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

### **ARTICLE 12—CLAIMS**

#### 12.01 *Claims*

- A. *Claims Process*: The following disputes between Owner and Contractor are subject to the Claims process set forth in this article:
  1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
  2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents;
  3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters; and
  4. Subject to the waiver provisions of Paragraph 15.07, any dispute arising after Engineer has issued a written recommendation of final payment pursuant to Paragraph 15.06.B.
- B. *Submittal of Claim*: The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim rests with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge

and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.

- C. *Review and Resolution*: The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim will be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation*
  - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate will stay the Claim submittal and response process.
  - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process will resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal and decision process will resume as of the date of the conclusion of the mediation, as determined by the mediator.
  - 3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action will be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim will be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim will be incorporated in a Change Order or other written document to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

## **ARTICLE 13—COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK**

### **13.01 *Cost of the Work***

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
  - 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or

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

consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.

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

c. *Construction Equipment Rental*

- 1) Rentals of all construction equipment and machinery, and the parts thereof, in accordance with rental agreements approved by Owner as to price (including any surcharge or special rates applicable to overtime use of the construction equipment or machinery), and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs will be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts must cease when the use thereof is no longer necessary for the Work.
- 2) Costs for equipment and machinery owned by Contractor or a Contractor-related entity will be paid at a rate shown for such equipment in the equipment rental rate book specified in the Supplementary Conditions. An hourly rate will be computed by dividing the monthly rates by 176. These computed rates will include all operating costs.
- 3) With respect to Work that is the result of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price ("changed Work"), included costs will be based on the time the equipment or machinery is in use on the changed Work and the costs of transportation, loading, unloading, assembly, dismantling, and removal when directly attributable to the changed Work. The cost of any such equipment or machinery, or parts thereof, must cease to accrue when the use thereof is no longer necessary for the changed Work.

- d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
- e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
- f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of builder's risk or other property insurance established in accordance with Paragraph 6.04), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable. Such losses include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses will be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded*: The term Cost of the Work does not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals, general managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. The cost of purchasing, renting, or furnishing small tools and hand tools.
- 3. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 4. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 5. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 6. Expenses incurred in preparing and advancing Claims.
- 7. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee*

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

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

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

### 13.02 Allowances

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

### 13.03 Unit Price Work

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision

thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, and the final adjustment of Contract Price will be set forth in a Change Order, subject to the provisions of the following paragraph.

E. *Adjustments in Unit Price*

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

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

14.01 *Access to Work*

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

14.02 *Tests, Inspections, and Approvals*

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

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

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

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

#### 14.03 *Defective Work*

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

losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

#### 14.04 *Acceptance of Defective Work*

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

#### 14.05 *Uncovering Work*

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

#### 14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work,

or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work will not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

#### 14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace defective Work as required by Engineer, then Owner may, after 7 days' written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.
- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

### **ARTICLE 15—PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD**

#### 15.01 *Progress Payments*

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments for Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments*
  - 1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents.
  - 2. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment must also be accompanied by: (a) a bill of sale, invoice, copies of subcontract or purchase order payments, or other documentation

establishing full payment by Contractor for the materials and equipment; (b) at Owner's request, documentation warranting that Owner has received the materials and equipment free and clear of all Liens; and (c) evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.

3. Beginning with the second Application for Payment, each Application must include an affidavit of Contractor stating that all previous progress payments received by Contractor have been applied to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
4. ~~The amount of retainage with respect to progress payments will be as stipulated in the Agreement.~~ Not Used.

C. *Review of Applications*

1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
  - a. the Work has progressed to the point indicated;
  - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and
  - c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
  - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
  - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.

4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
  - a. to supervise, direct, or control the Work;
  - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto;
  - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work;
  - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid by Owner; or
  - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
  - a. the Work is defective, requiring correction or replacement;
  - b. the Contract Price has been reduced by Change Orders;
  - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
  - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

**D. *Payment Becomes Due***

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

**E. *Reductions in Payment by Owner***

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
  - a. Claims have been made against Owner based on Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages resulting from Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;

- b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
  - c. Contractor has failed to provide and maintain required bonds or insurance;
  - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
  - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
  - f. The Work is defective, requiring correction or replacement;
  - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
  - h. The Contract Price has been reduced by Change Orders;
  - i. An event has occurred that would constitute a default by Contractor and therefore justify a termination for cause;
  - j. Liquidated or other damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
  - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens; or
  - l. Other items entitle Owner to a set-off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed will be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.
  3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld will be treated as an amount due as determined by Paragraph 15.01.D.1 and subject to interest as provided in the Agreement.

**15.02 Contractor's Warranty of Title**

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than 7 days after the time of payment by Owner.

**15.03 Substantial Completion**

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time

submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.

- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which will fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have 7 days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.
- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

#### 15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without

significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:

1. At any time, Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through 15.03.E for that part of the Work.
2. At any time, Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.04 regarding builder's risk or other property insurance.

#### 15.05 *Final Inspection*

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

#### 15.06 *Final Payment*

##### A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.12), and other documents, Contractor may make application for final payment.
2. The final Application for Payment must be accompanied (except as previously delivered) by:
  - a. all documentation called for in the Contract Documents;
  - b. consent of the surety, if any, to final payment;
  - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.

- d. a list of all duly pending Change Proposals and Claims; and
  - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.
- B. *Engineer's Review of Final Application and Recommendation of Payment:* If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within 10 days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the final Application for Payment to Owner for payment. Such recommendation will account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.
- C. *Notice of Acceptability:* In support of its recommendation of payment of the final Application for Payment, Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to stated limitations in the notice and to the provisions of Paragraph 15.07.
- D. *Completion of Work:* The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment and issuance of notice of the acceptability of the Work.
- E. *Final Payment Becomes Due:* Upon receipt from Engineer of the final Application for Payment and accompanying documentation, Owner shall set off against the amount recommended by Engineer for final payment any further sum to which Owner is entitled, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions of this Contract with respect to progress payments. Owner shall pay the resulting balance due to Contractor within 30 days of Owner's receipt of the final Application for Payment from Engineer.

#### 15.07 *Waiver of Claims*

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

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

- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted as a Claim, or appealed under the provisions of Article 17.

#### 15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the Supplementary Conditions or the terms of any applicable special guarantee required by the Contract Documents), Owner gives Contractor written notice that any Work has been found to be defective, or that Contractor's repair of any damages to the Site or adjacent areas has been found to be defective, then after receipt of such notice of defect Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
  - 1. correct the defective repairs to the Site or such adjacent areas;
  - 2. correct such defective Work;
  - 3. remove the defective Work from the Project and replace it with Work that is not defective, if the defective Work has been rejected by Owner, and
  - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting from the corrective measures.
- B. Owner shall give any such notice of defect within 60 days of the discovery that such Work or repairs is defective. If such notice is given within such 60 days but after the end of the correction period, the notice will be deemed a notice of defective Work under Paragraph 7.17.B.
- C. If, after receipt of a notice of defect within 60 days and within the correction period, Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others). Contractor's failure to pay such costs, losses, and damages within 10 days of invoice from Owner will be deemed the start of an event giving rise to a Claim under Paragraph 12.01.B, such that any related Claim must be brought within 30 days of the failure to pay.
- D. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- E. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.

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

## **ARTICLE 16—SUSPENSION OF WORK AND TERMINATION**

### **16.01 *Owner May Suspend Work***

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

### **16.02 *Owner May Terminate for Cause***

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
  - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment, or failure to adhere to the Progress Schedule);
  - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
  - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
  - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) 10 days' written notice that Owner is considering a declaration that Contractor is in default and termination of the Contract, Owner may proceed to:
  - 1. declare Contractor to be in default, and give Contractor (and any surety) written notice that the Contract is terminated; and
  - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within 7 days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects,

attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond will govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

#### 16.03 *Owner May Terminate for Convenience*

- A. Upon 7 days' written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
  - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
  - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
  - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid for any loss of anticipated profits or revenue, post-termination overhead costs, or other economic loss arising out of or resulting from such termination.

#### 16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon 7 days' written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, 7 days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The

provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

## **ARTICLE 17—FINAL RESOLUTION OF DISPUTES**

### **17.01 *Methods and Procedures***

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full, pursuant to Article 12; and
  2. Disputes between Owner and Contractor concerning the Work, or obligations under the Contract Documents, that arise after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions;
  2. agree with the other party to submit the dispute to another dispute resolution process; or
  3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

## **ARTICLE 18—MISCELLANEOUS**

### **18.01 *Giving Notice***

- A. Whenever any provision of the Contract requires the giving of written notice to Owner, Engineer, or Contractor, it will be deemed to have been validly given only if delivered:
1. in person, by a commercial courier service or otherwise, to the recipient's place of business;
  2. by registered or certified mail, postage prepaid, to the recipient's place of business; or
  3. by e-mail to the recipient, with the words "Formal Notice" or similar in the e-mail's subject line.

### **18.02 *Computation of Times***

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

18.03 *Cumulative Remedies*

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

18.04 *Limitation of Damages*

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

18.05 *No Waiver*

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

18.06 *Survival of Obligations*

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

18.07 *Controlling Law*

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

18.08 *Assignment of Contract*

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

18.09 *Successors and Assigns*

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

18.10 *Headings*

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

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

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

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

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added—for example, "Paragraph SC-4.05."

**ARTICLE 1 – DEFINITIONS AND TERMINOLOGY**

- SC-1.01 Add or modify the list of definitions in Paragraph 1.01A by inserting or modifying the following as numbered items in their proper alphabetical positions.
- *Construction Engineer* – Acts as Owner’s representative during the construction of the project and furnishes a Resident Project Representative.
  - *Engineer* – “Engineer of Record”

**ARTICLE 2 – PRELIMINARY MATTERS**

2.01 Delivery of Bonds and Evidence of Insurance

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

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

2.02 *Copies of Documents*

SC-2.02 Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor one printed copy of the Contract Documents (including one fully signed counterpart of the Agreement), and one copy of the Contract Documents (including one fully signed counterpart of the Agreement) in electronic portable document format (PDF).

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

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..."

2.05 *Acceptance of Schedules*

SC-2.05 Add the following new paragraph immediately after paragraph 2.05 A.4.

- 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**

4.01 *Commencement of Contract Times; Notice to Proceed*

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

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.

4.02 *Starting the Work*

SC-4.02 Amend the 4.02 A to read as follows:

- A. Contractor shall start to perform their obligations under the Contract Documents when the Contract Times commence to run. No Work may be done at the Site prior to the date indicated in the Notice To Proceed.

4.05 *Delays in Contractor's Progress*

SC 4.05 Add the following new paragraph immediately after Paragraph 4.05.G:

Bidders are also encouraged to review the provisions of Article 4.05 (C) of the General Conditions (Delays in Contractor's Progress); this section allows for an equitable adjustment in Contract Times as the sole and exclusive remedy for the delays, disruption, and interference in the Contractor's performance resulting from unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible.

**ARTICLE 5 – SITE, SUBSURFACE AND PHYSICAL CONDITIONS, HAZARDOUS ENVIRONMENTAL CONDITIONS**

5.03 *Subsurface and Physical Conditions*

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

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

Report Title	Date of Report	Technical Data
None.		

- F. The following table lists the drawings of existing physical conditions at or adjacent to the Site, including those drawings depicting existing surface or subsurface structures at or adjacent to the Site (except Underground Facilities), that contain Technical Data, and specifically identifies the Technical Data upon which Contractor may rely: **[If there are no such drawings, so indicate in the table.]**

Drawings Title	Date of Drawings	Technical Data
None.		

5.06 *Hazardous Environmental Conditions*

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

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

Report Title	Date of Report	Technical Data
None.		

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

Drawings Title	Date of Drawings	Technical Data
None.		

**ARTICLE 6 – BONDS AND INSURANCE**

6.02 *Insurance—General Provisions*

SC-6.02 Delete Paragraph 6.02.B in its entirety and insert the following in its place:

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, or the NH Public Entity Risk Pool 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 with respect to the Contractor’s policies shall have an A.M. Best rating of A-VII or better.

SC-6.02 Add the following paragraph immediately after Paragraph 6.02.B:

1. Contractor may obtain worker’s compensation insurance from an insurance company that has not been rated by A.M. Best, provided that such company (a) is domiciled in the state in which the Project is located, (b) is certified or authorized as a worker’s

compensation insurance provider by the appropriate state agency, and (c) has been accepted to provide worker’s compensation insurance for similar projects by the state within the last 12 months.

6.03 *Contractor’s Insurance*

SC-6.02 Amend the first sentence of Paragraph 6.03A to read as follows:

“...and maintain Worker’s Compensation (meeting the State of New Hampshire limits)...”

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

- D. *Other Additional Insureds:* As a supplement to the provisions of Paragraph 6.03.C of the General Conditions, the commercial general liability, automobile liability, umbrella or excess, pollution liability, and unmanned aerial vehicle liability policies must include as additional insureds (in addition to Owner and Engineer) the following:
- E. *Workers’ Compensation and Employer’s Liability:* Contractor shall purchase and maintain workers’ compensation and employer’s liability insurance, including, as applicable, United States Longshoreman and Harbor Workers’ Compensation Act, Jones Act, stop-gap employer’s liability coverage for monopolistic states, and foreign voluntary workers’ compensation (from available sources, notwithstanding the jurisdictional requirement of Paragraph 6.02.B of the General Conditions).

<b>Workers’ Compensation and Related Policies</b>	<b>Policy limits of not less than:</b>
<b>Workers’ Compensation</b>	
State	Statutory*
Applicable Federal (e.g., Longshoreman’s)	Statutory*
Foreign voluntary workers’ compensation (employer’s responsibility coverage), if applicable	Statutory*
<b>Employer’s Liability</b>	
Each accident	\$ 1,000,000
Each employee	\$ 1,000,000
Policy limit	\$ 1,000,000

\* Meeting the State of New Hampshire Required Limits.

- F. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against claims for:
  1. damages because of bodily injury, sickness or disease, or death of any person other than Contractor’s employees,
  2. damages insured by reasonably available personal injury liability coverage, and
  3. damages because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- G. *Commercial General Liability—Form and Content:* Contractor’s commercial liability policy must be written on a 1996 (or later) Insurance Services Organization, Inc. (ISO) commercial

general liability form (occurrence form) and include the following coverages and endorsements:

1. Products and completed operations coverage.
    - a. Such insurance must be maintained for three years after final payment.
    - b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
  2. Blanket contractual liability coverage, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
  3. Severability of interests and no insured-versus-insured or cross-liability exclusions.
  4. Underground, explosion, and collapse coverage.
  5. Personal injury coverage.
  6. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together). If Contractor demonstrates to Owner that the specified ISO endorsements are not commercially available, then Contractor may satisfy this requirement by providing equivalent endorsements.
  7. For design professional additional insureds, ISO Endorsement CG 20 32 07 04 "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- H. *Commercial General Liability—Excluded Content:* The commercial general liability insurance policy, including its coverages, endorsements, and incorporated provisions, must not include any of the following:
1. Any modification of the standard definition of "insured contract" (except to delete the railroad protective liability exclusion if Contractor is required to indemnify a railroad or others with respect to Work within 50 feet of railroad property).
  2. Any exclusion for water intrusion or water damage.
  3. Any provisions resulting in the erosion of insurance limits by defense costs other than those already incorporated in ISO form CG 00 01.
  4. Any exclusion of coverage relating to earth subsidence or movement.
  5. Any exclusion for the insured's vicarious liability, strict liability, or statutory liability (other than worker's compensation).
  6. Any limitation or exclusion based on the nature of Contractor's work.
  7. Any professional liability exclusion broader in effect than the most recent edition of ISO form CG 22 79.

I. *Commercial General Liability—Minimum Policy Limits*

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

- J. *Automobile Liability*: Contractor shall purchase and maintain automobile liability insurance for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy must be written on an occurrence basis.

<b>Automobile Liability</b>	<b>Policy limits of not less than:</b>
<b>Bodily Injury</b>	
Each Person	\$ 1,000,000
Each Accident	\$ 1,000,000
<b>Property Damage</b>	
Combined Single Limit (Bodily Injury and Property Damage)	\$ 1,000,000

- K. *Umbrella or Excess Liability*: Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer’s liability, commercial general liability, and automobile liability insurance described in the Paragraphs above. The coverage afforded must be at least as broad as that of each and every one of the underlying policies.

<b>Excess or Umbrella Liability</b>	<b>Policy limits of not less than:</b>
Each Occurrence	\$ 1,000,000
General Aggregate	\$ 1,000,000

- L. *Using Umbrella or Excess Liability Insurance to Meet CGL and Other Policy Limit Requirements*: Contractor may meet the policy limits specified for employer’s liability, commercial general liability, and automobile liability through the primary policies alone, or through combinations of the primary insurance policy’s policy limits and partial attribution of the policy limits of an umbrella or excess liability policy that is at least as broad in coverage as that of the underlying policy, as specified herein. If such umbrella or excess liability policy was required under this Contract, at a specified minimum policy limit, such umbrella or excess policy must retain a minimum limit of \$1,000,000 after accounting for partial attribution of its limits to underlying policies, as allowed above.

- M. *Contractor’s Pollution Liability Insurance*: Contractor shall purchase and maintain a policy covering third-party injury and property damage, including cleanup costs, as a result of pollution conditions arising from Contractor’s operations and completed operations. This insurance must be maintained for no less than three years after final completion.

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

- N. *Contractor's Professional Liability Insurance:* Not used.
- O. Contractor shall, at its sole expense, obtain and maintain the following types of insurance, on a primary and non-contributory basis, with an insurance company licensed to do business in the State of New Hampshire with a financial rating of A- or better in "Best's Insurance Guide".
- P. Insurance cannot be cancelled without a minimum of 30 days' notice to Owner.

6.04 *Builder's Risk and Other Property Insurance*

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

- F. *Builder's Risk Requirements:* The builder's risk insurance must: Not Used.

**ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES**

7.03 *Labor; Working Hours*

SC-7.03 Add the following new subparagraphs immediately after Paragraph 7.03.C:

1. Regular working hours will be 7:00 AM to 7:00 PM.
2. Owner's legal holidays are those listed in Paragraph 101.56 of the NHDOT Standard Specifications for Road and Bridge Construction 2016 Edition.

SC-7.03 Amend the first and second sentences of Paragraph 7.03.C to state "...all Work at the Site must be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday without permission of the owner."

7.07 *Concerning Subcontractors and Suppliers*

SC-7.07.D Amend the last sentence of Paragraph 7.07.D to read as follows "...objection within thirty days."

SC-7.07.N Add the following new subparagraph immediately after Paragraph SC-7.07.M:

- N. The Contractor's organization shall perform work amounting to not less than 50 percent of the Contract Amount. Items designated in the Special Provision for Section 108 as "specialty items" may be subcontracted and the cost of specialty items performed by subcontract may be deducted from the Contract Amount before computing the amount of work required to be performed by the Contractor's own organization.

7.09 *Permits*

SC-7.09 Add the following new paragraphs immediately after paragraph 7.09.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, Permit #2025-03132.
  2. US Army Corps Permit (Pending) – This permit is expected to be issued prior to awarding the project to a contractor.
- C. Copies of these permits are included in the Appendix A. 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).

#### 7.16 *Submittals*

SC-7.16.A Add the following new paragraph immediately after paragraph 7.16.A.3:

4. 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.

### **ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION**

#### 10.03 *Resident Project Representative*

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

- C. The Resident Project Representative (RPR) will be Engineer's representative at the Site. RPR's dealings in matters pertaining to the Work in general will be with Engineer and Contractor. RPR's dealings with Subcontractors will only be through or with the full knowledge or approval of Contractor. The RPR will:
1. *Conferences and Meetings:* Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings (but not including Contractor’s safety meetings), and as appropriate prepare and circulate copies of minutes thereof.
  2. *Safety Compliance:* Comply with Site safety programs, as they apply to RPR, and if required to do so by such safety programs, receive safety training specifically related to RPR’s own personal safety while at the Site.
  3. *Liaison*
    - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.
    - b. Assist Engineer in serving as Owner’s liaison with Contractor when Contractor’s operations affect Owner’s on-Site operations.
    - c. Assist in obtaining from Owner additional details or information, when required for Contractor’s proper execution of the Work.
  4. *Review of Work; Defective Work*

- a. Conduct on-Site observations of the Work to assist Engineer in determining, to the extent set forth in Paragraph 10.02, if the Work is in general proceeding in accordance with the Contract Documents.
  - b. Observe whether any Work in place appears to be defective.
  - c. Observe whether any Work in place should be uncovered for observation, or requires special testing, inspection or approval.
5. *Inspections and Tests*
- a. Observe Engineer-arranged third party inspections required by Laws and Regulations, including but not limited to those performed by public or other agencies having jurisdiction over the Work.
  - b. Accompany visiting inspectors representing public or other agencies having jurisdiction over the Work.
6. *Payment Requests: Review Applications for Payment with Contractor.*
7. *Completion*
- a. Participate in Engineer's visits regarding Substantial Completion.
  - b. Assist in the preparation of a punch list of items to be completed or corrected.
  - c. Participate in Engineer's visit to the Site in the company of Owner and Contractor regarding completion of the Work, and prepare a final punch list of items to be completed or corrected by Contractor.
  - d. Observe whether items on the final punch list have been completed or corrected.
- D. The RPR will not:
- 1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
  - 2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
  - 3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
  - 4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of construction.
  - 5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
  - 6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
  - 7. Authorize Owner to occupy the Project in whole or in part.

## **ARTICLE 13 - COST OF WORK; ALLOWANCES, UNIT PRICE WORK**

### **13.03 Unit Price Work**

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

E. *Adjustments in Unit Price*

1. The unit price of an item of Unit Price Work shall be subject to reevaluation and adjustment under the following conditions:
  - a. 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
  - b. if there is no corresponding adjustment with respect to any other item of Work; and
  - c. 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.
2. The adjustment in unit price will account for and be coordinated with any related changes in quantities of other items of Work, and in Contractor's costs to perform such other Work, such that the resulting overall change in Contract Price is equitable to Owner and Contractor.
3. Adjusted unit prices will apply to all units of that item.

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

14.02 *Tests, Inspections, and Approvals*

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; COMPLETIONS; CORRECTION PERIOD**

15.01 *Progress Payments*

SC-15.01.B.4 Delete Paragraph 15.01.B.4 in its entirety.

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

Thirty days after presentation of the...

15.03 *Substantial Completion*

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, will be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to

agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under this Article 15.

SC-15.03.E Delete the second sentence of paragraph 15.03.E in its entirety.

END OF SECTION

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

Owner:	Town of Goffstown NH	Owner's Project No.:	N/A
Engineer:	Hoyle, Tanner & Associates, Inc.	Engineer's Project No.:	24.010001.02
Contractor:		Contractor's Project No.:	
Project:	Montelona Road Culvert over Hardy Brook, Goffstown, NH		
Contract	Montelona Road Culvert over Hardy Brook, Goffstown, NH		
Date	Effective Date of Work Change		

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

Description:

Attachments:

Purpose for the Work Change Directive:

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

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

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

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

Contract Time: \_\_\_\_\_ days [increase] [decrease] [not yet estimated].

Basis of estimated change in Contract Price:

Lump Sum  Unit Price  Cost of the Work  Other

Recommended by Engineer

Authorized by Owner

By:

\_\_\_\_\_

\_\_\_\_\_

Title:

\_\_\_\_\_

\_\_\_\_\_

Date:

\_\_\_\_\_

\_\_\_\_\_

END OF SECTION

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

Owner: Town of Goffstown NH                      Owner's Project No.: N/A  
 Engineer: Hoyle, Tanner & Associates, Inc.      Engineer's Project No.: 24.010001.02  
 Contractor:    Contractor's Project No.:  
 Project: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
 Contract Name: Montelona Road Culvert over Hardy Brook, Goffstown, NH  
 Date Issued: \_\_\_\_\_ Effective Date of Change Order: \_\_\_\_\_

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

Description:

Attachments:

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

<b>Recommended by Engineer (if required)</b>		<b>Accepted by Contractor</b>	
By: _____	_____	_____	_____
Title: _____	_____	_____	_____
Date: _____	_____	_____	_____
<b>Authorized by Owner</b>		<b>Approved by Funding Agency (if applicable)</b>	
By: _____	_____	_____	_____
Title: _____	_____	_____	_____
Date: _____	_____	_____	_____

END OF SECTION

**SECTION 00942**  
**FIELD ORDER**  
(EJCDC Form C-942)

Owner:	Town of Goffstown NH	Owner's Project No.:	N/A
Engineer:	Hoyle, Tanner & Associates, Inc.	Engineer's Project No.:	24.010001.02
Contractor:		Contractor's Project No.:	
Project:	Montelona Road Culvert over Hardy Brook, Goffstown, NH		
Contract Name:	Montelona Road Culvert over Hardy Brook, Goffstown, NH		
Date Issued:	Effective Date of Field Order:		

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

**Reference:**

Specification Section(s):

Drawing(s) / Details (s):

**Description:**

**[Description of the change to the Work]**

**Attachments:**

**[List documents supporting change]**

**Issued by Engineer**

By: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

Copy to: Town of Goffstown NH

END OF SECTION

**SECTION 00943**  
**CERTIFICATE OF SUBSTANTIAL COMPLETION**  
(EJCDC Form C-943, Modified)

Owner:	Town of Goffstown NH	Owner's Project No.:	N/A
Engineer:	Hoyle, Tanner & Associates, Inc.	Engineer's Project No.:	24.010001.02
Contractor:		Contractor's Project No.:	
Project:	Montelona Road Culvert over Hardy Brook, Goffstown, NH		
Contract Name:	Montelona Road Culvert over Hardy Brook, Goffstown, NH		

This  Preliminary  Final Certificate of Substantial Completion applies to:

All Work  The following specified portions of the Work:

Date of Substantial Completion: \_\_\_\_\_

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

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

Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work must be as provided in the Contract, except as amended as follows:

Amendments to Owner's Responsibilities:  None  As follows:

Amendments to Contractor's Responsibilities:  None  As follows:

The following documents are attached to and made a part of this Certificate:

**[List attachments such as punch list; other documents]**

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

Engineer

By (*signature*): \_\_\_\_\_

Name (*printed*): \_\_\_\_\_

Title: \_\_\_\_\_

END OF SECTION

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

OWNER'S CONTRACT NO.:   N/A    
ENGINEER'S PROJECT NO.:   24.010001.02    
AGREEMENT DATE: \_\_\_\_\_  
BOND NUMBER: \_\_\_\_\_

CONTRACT TITLE:   Montelona Road Culvert over Hardy Brook, Goffstown, NH  

To:   Town of Goffstown NH   (Owner)  
  404 Elm Street    
  Goffstown, NH 03045    
\_\_\_\_\_

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 Goffstown NH   \_\_\_\_\_ (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.: 24.010001.02

AGREEMENT DATE: \_\_\_\_\_

CONTRACT TITLE: Montelona Road Culvert over Hardy Brook, Goffstown, NH

To: Town of Goffstown NH (Owner)  
404 Elm Street  
Goffstown, NH 03045

**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'S PROJECT NO.: 24.010001.02

AGREEMENT DATE: \_\_\_\_\_

CONTRACT TITLE: Montelona Road Culvert over Hardy Brook, Goffstown, NH

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 Goffstown NH  
OWNER \_\_\_\_\_

\_\_\_\_\_  
Date

\_\_\_\_\_  
Authorized Representative's Signature

\_\_\_\_\_  
Name & Title

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

Not Used.

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. Pre-Paving meeting.
- G. Guardrail preinstallation meeting.
- H. 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**

- A. Coordinate scheduling, submittals, and Work of the various sections of the Specifications to ensure efficient and orderly sequence of construction elements.
- B. 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.
- A. The Licensed Land Surveyor shall provide periodic services to set horizontal and vertical control of the work, as outlined below. Letters shall be provided to the Engineer from the Licensed Land Surveyor stating that the following at a minimum are in accordance with the Contract Documents:
  - Corners of precast concrete box culvert, wingwall footings, including working points, and top of wingwall footing elevations.
  - Tops of wingwalls and headwalls.

Letters shall be submitted on the Licensed Land Surveyor's letterhead and signed by the Licensed Land Surveyor prior to the Contractor proceeding with the work which was verified. If the work is found to not be in accordance with the Contract Documents, or within acceptable tolerance (+/- 1/8" for concrete elevations), it shall be brought to the Engineer's and Contractor's attention immediately.

- 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.
- I. Easement and Rights-of-Way (ROW). The Licensed Land Surveyor shall layout the limits of all easements and Town's ROW within the project limits prior to commencement of construction.
  1. Confine construction operations within limits indicated on Drawings and/or within limits of easements or public ways.
  2. Place construction tools, equipment, excavated materials, and supplies, so as to cause least possible damage to property.
  3. Mobilization areas required beyond the Town's ROW and easements obtained for this project shall be coordinated by the contractor with the affected property owners and shall be at the contractor's expense.

## 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 monthly 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.

#### 1.8 PRE-PAVING MEETING

- A. A pre-paving meeting will be held a minimum of one week prior to the start of paving operations of any kind with the representatives of the Owner, Engineer, Contractor and Paving Sub-Contractor.

#### 1.9 GUARDRAIL PREINSTALLATION MEETING

- A. Not Used

#### 2.0 PREINSTALLATION MEETINGS

- A. Preinstallation meetings may be required for the following construction items:
  - Precast Bridge and Wingwall Components
  - Membrane Installation
  - Paving

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

- Item 529.002, Precast Concrete Box Culvert (Bridge)

1.15 CONSTRUCTION PHOTOGRAPHS

- A. Provide electronic photographs and video of the project site and adjacent properties to the Owner for approval prior to the start of construction.

PART 2 PRODUCTS

Not Used.

PART3 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 B	Warranties
403	Pavement Mix Design
403.16, 403.26	Pavement Joint Adhesive
410.22	Asphalt Emulsion for Tack Coat
529.002	Concrete Mix Design
534.3	Water Repellent (Silane/Siloxane)
538.2, 538.5	Barrier Membrane
562.1	Silicone Joint Sealant
592.3	Concrete Mix Design
593.411	Geotextile
603	PE Pipe and End Sections
632	Retroreflective Paint Pavement Marking

645.44	Temporary Slope Matting 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>
529.002	Precast Concrete Box Culvert (Bridge)
592.3	Concrete Faced Retaining Wall System

Submit working drawings for review and approval for the following:

<u>Specification Section</u>	<u>Item</u>
503	Water Diversion Structures
529.002	Precast Concrete Box Culvert (Bridge) Erection Plan
592.3	Concrete Faced Retaining Wall Erection Plan
645.7	Stormwater Pollution Prevention Plan

D. Samples

Submit samples of the following:

<u>Specification Section</u>	<u>Item</u>
Not Used.	

E. Design Data

Submit design data of the following:

<u>Specification Section</u>	<u>Item</u>
403	Pavement Mix Design
503	Water Diversion Structures
529, 592	Concrete Mix Designs

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
529.002	Precast Concrete Box Culvert (Bridge)
534	Water Repellent
538	Barrier Membrane
544	Reinforcing Steel
562	Silicone Joint Sealant
583	Riprap
593	Geotextiles
603	PE Pipe, End Sections
632	Retroreflective Paint Markings
645	Temporary Slope Matting

H. Manufacturer's Instructions

<u>Specification Section</u>	<u>Item</u>
534.3	Water Repellent (Silane/Siloxane)
538.2, 538.6	Barrier Membrane
562.1	Silicone Joint Sealant

I. Submissions Requiring Professional Engineer or Other Certifications

Professional Engineer

<u>Specification Section</u>	<u>Item</u>
529.002	Precast Concrete Box Culvert (Bridge) Erection Plan
592.3	Concrete Faced Retaining Wall System and Erection Plan
645.7	Stormwater Pollution Prevention Plan

Other Certifications

<u>Specification Section</u>	<u>Item</u>
645.7	Storm Water Pollution Prevention Plan
645.719	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: \_\_\_\_\_

<b>TO BE COMPLETED BY CONTRACTOR.</b> Location information for products listed on 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. Owner or Engineer may appoint, employ, and pay for specified services of an independent firm to perform construction material testing services.
- 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:

- All backfilling and compaction activities underneath footings and in, around, behind or over structures.
  - Placement and compaction of roadway subbase.
  - All asphalt paving operations.
- 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

Not Used.

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**

- A. 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

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. 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

- A. Protect installed Work and provide special protection where specified in individual specification sections.
- B. Provide temporary and removable protection for installed Products. Control activity in immediate work area to prevent damage.
- C. 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.

- D. 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

- A. Office: Provide temporary field office in accordance with Item number 698.13.
- B. Provide space for Project meetings, with table and chairs to accommodate four (4) persons.
- C. Provide separate work area or workstation, similarly equipped and furnished, for use of Engineer.
- D. Locate offices and sheds a minimum distance of 30 feet from existing structures.

#### 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 00200 - 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 March 2016 (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 changes:
  - Section 101-Definitions and Terms
    - **Retain** 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, 101.44, 101.46, 101.47, 101.51, 101.52, 101.54 through 101.56, 101.58, 101.59, 101.61, 101.66 through 101.69, 101.71 through 101.73, 101.77, 101.79, 101.82 through 101.88, 101.90 through 101.102, 101.104, 101.106 through 101.112, 101.115 through 101.118.
  - Section 103-Award and Execution of Contract
    - **Retain** subsections 103.05 and 103.06 only (federally funded projects only).
  - Section 104-Scope of Work
    - **Retain** subsection 104.03 only and:
      - **Replace** the reference to “105.02” with Standard General Condition Article 7.16 in the fourth sentence of the first paragraph.
      - **Delete** the third to last sentence and last sentence of the first paragraph.
      - **Delete** subsections B, C, and D.
      - **Replace** “Department” with “Owner” in subsection A.
  - Section 105-Control of the Work
    - **Retain** subsections 105.03 through 105.07 and 105.10 through 105.15 only.
    - **Delete** the second sentence in the second paragraph of 105.04 which references Section 104.02 in its entirety.
    - **Delete** “...104.03...” from the last sentence in 105.14.
    - **Replace** “...as provided for in 109.04.” at the end of the second sentence of the second paragraph of 105.10 with “...in accordance with Article 13 of the Standard General Conditions of the of the Construction Contract.”
    - **Replace** 105.02 with Section 01300 Submittals.
  - Section 106-Control of Material
    - **Retain** subsections 106.01, 106.02, 106.04 through 106.07, 106.09 through 106.10.
    - **Delete** the second sentence in 106.06.
  - Section 107-Legal Relations and Responsibility to Public
    - **Retain** subsections 107.01 through 107.10 and 107.15 through 107.17.
  - Section 108-Prosecution and Progress
    - **Replace** 108.07 with Standard General Conditions Articles 4.05 and 11.05.
    - **Replace** 108.07 with Standard General Conditions Articles 4.05 and 11.05.
  - Section 109-Measurement and Payment
    - **Retain** subsections 109.01 and 109.11 only.
    - **Delete** the 25<sup>th</sup> paragraph referencing “rental of equipment....” of 109.01.
    - **Replace** 109.04 with Standard General Conditions Article 11.
    - **Delete** the 25<sup>th</sup> paragraph referencing “rental of equipment....” of 109.01.
    - **Replace** 109.04 with Standard General Conditions Article 11.

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: <https://www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/contracts-and-specifications/2016>.

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:

- See General Note 10 on Sheet 4 of the Contract Plans

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 <https://www.dot.nh.gov/doing-business-nhdot/contractors/standard-plans-road-construction>

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 <https://www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/highway-standard-specifications/2016>

END OF SECTION

## SPECIAL ATTENTIONS

The following Special Attentions 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:

### Description

<u>Description</u>	<u>Page</u>
2016 Notice of NHDOT Supplemental Specifications	SA-2
Errata Sheet	SA-7
New Hampshire Department of Employment Security Employment of New Hires	SA-10
Historic and Archaeological Resources	SA-11
Qualified Products List	SA-15
2010 Standard Specifications for Road and Bridge Construction, Standard Plans for Road Construction & Bridge Detail Sheets	SA-16

**SPECIAL ATTENTION****THIS PROJECT IS TO BE BID AND CONSTRUCTED UNDER THE  
2016 STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION****NOTICE OF SUPPLEMENTAL SPECIFICATIONS**

The following table is a list of all of the Supplemental Specifications that have been adopted as additions or revisions to the *Standard Specifications for Road and Bridge Construction*, **March 2016** Edition as of the date of this Proposal. The Bidder is responsible to examine each item to determine its effect, if any, upon the Contract.

**Note:** Due to the limited scope of some projects, not all Supplemental Specifications will be included in all Proposals. All Supplemental Specifications are available on-line: [www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/contracts-and-specifications/2016](http://www.dot.nh.gov/about-nh-dot/divisions-bureaus-districts/highway-design/contracts-and-specifications/2016).

Section	Description	Revision	Previous Revision Date	Current Revision Date
<b><i>DIVISION 100</i></b>				
101	Definitions and Terms	101.79 – Revises Frequency of QPL Updates (06/06/17) 101.116-119 – Revises Definitions of Weather Days and Working Days (04/02/18)	06/06/17	04/02/18
105.02	Plans and Working Drawings	Section Rewrite-Approval/Acceptance/Documentation (NHDOT: 12/07/23; FHWA: 11/16/23)	-	12/04/23
106.04	Qualified Products List	Revises Frequency of Updates		06/06/17
107.01	Legal Relations and Responsibility to Public	107.01 – Revises References to DES Rules and Regulations		07/06/18
108.09	Prosecution and Progress	108.09 – Amends the Requirements for Liquidated Damages		07/06/18
109.04	Differing Site Conditions, Changes and Extra Work	Revises Rental Rate Blue Book Online Requirements (04/02/18) Allows Positions above the Grade of Forman to be included in Certain Work Associated with Revisions to the Contract (02/28/24)	04/02/18	02/28/24
<b><i>DIVISION 200</i></b>				
211.3.4	Vibration Monitoring	Adds reference to pre- and post-construction survey requirements		04/05/17
<b><i>DIVISION 300</i></b>				

***DIVISION 400***

401	Plant Mix Pavements - General	<p>2.2.3 – Requires Suppliers to participate in NTPEP Asphalt Binder Suppliers (ABS) program (12/15/23) <small>(NHDOT: 03/02/22; FHWA 12/15/23)</small></p> <p>3.9 – Asphalt Release Agents must be listed on QPL (12/15/23) <small>(NHDOT: 03/02/22; FHWA 12/15/23)</small></p> <hr/> <p>Complete reorganization of Section 401, including incorporating all supplemental specifications thus far (01/28/21) <small>(NHDOT: 12/02/20/FHWA: 01/28/21)</small></p> <hr/> <p>2.5.1 - Adds winter binder to the design control points (04/05/17)</p> <p>2.10 – No greater than 1% TRB (06/06/17)</p> <p>3.1.12.2 – Adds Pycnometer (4,000g) to equipment list (06/18/24)</p> <p>3.4.1 – Revises Cold Feeder Requirements (07/06/18)</p> <p>3.4.7.1 – Revises Recycled Materials Weighing Procedures (07/06/18)</p> <p>3.4.11 - 3.4.15 – Describes Introduction of Recycled Materials at a Batch Plant and Controls Minimum Dry Time for Recycled Aggregates (07/06/18)</p> <p>3.5.2 &amp; 3.5.2.1 – Revises Recycled Materials Requirements (07/06/18)</p> <p>3.10.10.1 – Removes penalty for failing tack (06/06/17)</p> <p>3.12 – Allows a reduction in use of pneumatic-tired rollers (06/06/17)</p> <p>3.17.1.3 - Revise NETTCP QA Technologist requirements (11/07/18)</p> <p>3.17.3.1.1 – Revises HMA gradation specification limits, completes addition of winter binder, removes allowance for Aim change after two sub-lots (06/06/17)</p> <p>4.1.1 – Removes reference to Night Items (06/06/17)</p>	12/15/23	06/18/24
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		403.1.3, 403.5.1.1 & Item Key - Removes all references to Night Items and removes “percent wear” items. (06/06/17)		
403	Pavement Item Numbers	403 Item Key - Total overhaul of Item Numbers and Descriptions to allow for type of mix in item description (07/27/20) 403 Item Key & 5.2 - Further Update of Item Descriptions to allow for type of mix (07/01/21) <small>(NHDOT: 12/02/20/FHWA: 01/28/21)</small>	07/27/20	07/01/21
410	Bituminous Surface Treatment	2.1- Adopts new AASHTO Specifications for Emulsions (04/13/16) 3.4.1.1 – Revises pavement conditions, application rate for tack (01/04/17) 2.1.1, 2.1.2, 3.2, 3.3, 3.4 – Identifies tack sampling and penalties for non-conformance (06/06/17) 3.2 & 3.5.2 – Amends Distribution Equipment and Initiates an Annual Tack Truck Inspection Program (07/06/18)	06/06/17	07/06/18
411	Pneumatic Tired Roller/Remove “AC”	2.1.2/3.4.7 – Update language to remove references to “AC” and ¾” PMST (01/11/24) 3.5.5 – Requires the use of pneumatic tired rollers on all Section 411 paving (06/06/17). 5.1.1 – Ensures Tack Used for PMST and Leveling Course is a Pay Item (07/06/18) Update Pay Item Description (Remove “AC”) (01/11/24) Removes Pay Items (04/02/18 & 01/11/24)	07/06/18	01/11/24
417	Rumble Strip Inlay	2.1 & 3.7 – Specifies PMST as the asphalt inlay to fill in rumble strips		04/02/18
<b><i>DIVISION 500</i></b>				
520	Portland Cement Concrete	3.8.1.1 – Revises the acceptable concrete delivery temp to 90° F (04/02/18) 3.1.6.2.1.2 A - Revise NETTCP QA Technologist requirements (11/07/18)	04/02/18	11/07/18

530	Waterproofing Concrete Surfaces	Deletes Section 530		05/21/18
538	Barrier Membrane	3.3.5 – Updates the laydown temperature range.		09/15/16
550	Structural Steel-Shim Plates	3.15.5.5 – Eliminate the use of weathering steel as a bearing shim plate (NHDOT: 01/08/20/FHWA: 03/18/20)		01/28/21
563	Bridge Fence	2.8 – Allows aluminum ties for attaching bridge fence		09/15/16
568	Structural Timber	2.2, 3.4.4 & 3.4.5 – Adds specific references to AWPA Standards & wooden piles		04/02/18
582	Preformed Joint Filler	2.4 – Revises Preformed Joint Filler Requirements		04/02/18
<b><i>DIVISION 600</i></b>				
603	Plastic Pipe	2.3, 2.6 & 2.7 – Updated to include Polypropylene Pipe as well as associated UV Requirements (04/13/16) 2.13 – Adds Contractor's Option (06/02/16)	04/13/16	06/02/16
605	Plastic Pipe	2.1 & 2.2 – Updated to include Polypropylene Pipe		04/13/16
606	Guardrail	2.2 – Adds specific references to AWPA Standards & wooden piles		04/02/18
608	Detectable Warning Devices	2.6 – Updates Detectable Warning Device Requirements		04/02/18
609	Curbs	2.4.1.1 – Allows the substitution of PG 76-28 binder in lieu of fibers		04/02/18
615	Cofferdam for Sign Installation	5.1.5 – Revises payment for sheeting and shoring for sign structures		04/02/18
645	Erosion Control	1.1 – Matting Section Revised and Pay Items Revised (04/02/18) 1.1 – 'Stabilization' changed to 'matting' (02/01/17) Incorporates BFM, FRM and SMM into the Standard Specs (07/06/18) 1.2.1 – Add Erosion Control Plans to furnish for SWPPP (11/07/18) 3.1.5 – Update construction dates for allowable area of exposed, unstabilized soil (11/07/18)	07/06/18	11/07/18

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***DIVISION 700***

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702	Bituminous Materials	Amends/Corrects Table 702-1 & 702-2 (04/13/16 & 01/11/24) Amends Tables, and Adds Test Method (05/11/16)	05/11/16	01/11/24
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03/21/18

SSD: 03/01/16, 06/10/16, 6/11/16, 06/27/16, 08/03/16, 10/31/16, 11/28/16, 06/19/17, 11/30/17

Page 1 of 3

**SPECIAL ATTENTION****ERRATA SHEET**

The following table is a list of corrections to the 2016 *Standard Specifications for Road and Bridge Construction*, as of the date of this Proposal.

<b>Section</b>	<b>Description</b>	<b>Correction</b>	<b>Date</b>
<b><i>DIVISION 100</i></b>			
104.03	Maintenance of Traffic	Amend 'winter work suspensions' in 104.03 to read 'Winter Suspension'.	06/07/07
<b><i>DIVISION 200</i></b>			
<b><i>DIVISION 300</i></b>			
<b><i>DIVISION 400</i></b>			
<b><i>DIVISION 500</i></b>			
		Insert the following footnotes under Table 520-1A:	
		<sup>1</sup> See 3.1.6 TESTING	
		<sup>2</sup> For mixes containing fly-ash, silica fume, slag, or any other pozzolanic or cementitious material, the water/cement ratio of the concrete mix shall be based on the water cementitious (cement + pozzolanic or cementitious material) ratio of the mix. This water to cementitious ratio shall not exceed those listed in Table 1A. The maximum water/cement ratios listed for Concrete Class B and T are for design purposes only.	
		<sup>3</sup> Deck Overlays.	
520	Classes of Concrete	<sup>4</sup> <u>Maximum</u> 84 day Compressive Strength for Flowable Fill, Excavatable shall not exceed 200 psi.	06/11/16
		<sup>5</sup> These are recommended values that may be used as a starting point for a mix design that has shown ability to meet the requirements. The amount of cement shall be adjusted and fly-ash or ground granulated blast furnace slag shall be used provided the mix design meets the minimum and does not exceed the maximum compressive strength in accordance with 2.11.1.	
		<sup>6</sup> Target values shown are for mix design approval only and are not intended for use as quality control or quality assurance requirements.	

Section	Description	Correction	Date
520	Classes of Concrete – Performance Requirements (QC/QA)	Amend the title of <i>Table 420-1B - Class of Concrete – Performance Requirements (QC/QA)</i> to <i>Table 520-1B - Class of Concrete – Performance Requirements (QC/QA)</i>	11/28/16
528	Shear Key Grout for Butted Beams	Amend 528.2.9.1 to read: <i>Grout for shear keys shall be an approved grout as listed in Section 528A of the Qualified Products List.</i>  Amend 528.2.9.2 to read: <i>For testing, 3 neat 2” cubes shall be molded and cured in accordance with AASHTO T 106 (ASTM C 109). The average compressive strength of the 3 cubes at 7 days shall be a minimum of 6000 psi.</i>	06/10/16
528	Installation of Deck Panels	Replace last sentence of 528.3.22.6.4 to read: <i>If leveling screws are used, they shall be completely removed and the holes filled with grout listed in Section 528A of the Qualified Products List prior to placement of deck concrete.</i>	06/10/16
550	PTFE Surfaces for Bearings	Amend the first sentence of 550.2.10 to read: <i>PTFE for use in expansion bearing assemblies shall be 100 percent virgin (unfilled) <b>polytetrafluoroethylene</b> polymer...</i>	08/03/16
550	Anchor Rods	Amend 550.3.15.4.1 to read: <i>Anchor rods shall be set in one of the following materials:</i> <i>(a) Non-shrinking, non-ferrous, cement-base grout listed in Section 550A of the Qualified Products List. This grout shall be used only when both the temperature of the masonry and the ambient temperature are kept at 40 °F or above until the grout has cured.</i> <i>(b) Sulfur.</i>  Amend the first sentence of 550.3.15.4.2 to read: <i>Non-shrinking, non-ferrous, cement base grout shall be a product as included in Section 550A of the Qualified Products List.</i>	06/10/16
563	Bridge Rail	Amend 4.1 to read: <i>Bridge rail, of the type specified, will be measured by the linear foot to the nearest tenth of a foot.</i>	06/27/16
<b><i>DIVISION 600</i></b>			
606	Handrail	Amend 606.2.8.2 to read: <i>Grout for anchoring the pipe posts shall be High Strength, Impact Resistant, Non-shrink Grout as included in Section 528A of the Qualified Products List.</i>	06/10/16

Section	Description	Correction	Date
606	Temporary Impact Attenuators	Amend in 606.2.10.2 the reference to 2.12.4 to 2.10.4.	11/28/16
	Repair of Hardened Concrete	Amend in 606.3.7.12.A the reference to <i>Fast Set Non-shrink Patching Mortar</i> to <b><i>Rapid-Hardening Patching Material</i></b> .	03/21/18
609	Curbing	Amend the 2 <sup>nd</sup> sentence of 609.2.5 to read: <i>The non-shrink, non-metallic grout shall be a product as included in Section 550A of the Qualified Products List.</i>	06/10/16
609	Curb anchors	Amend 609.3.1.5.1 to read: <i>Curb anchors shall be set and grouted using non-shrink, non-metallic grout as shown on the plans.</i>	06/10/16
621	Delineators	Add the following to the end of 621.3.1.3: <i>Grout shall be as listed in Section 550A of the Qualified Products List or as directed by the Engineer.</i>	06/10/16
632	Pavement Markings	Amend the AASHTO reference in 3.2.3.1 to read: <b><i>AASHTO M248 Type F</i></b>	
<b><i>DIVISION 700</i></b>			
707	Cement Mortar	Amend 2.3 to read: <i>Testing for impurities shall comply with AASHTO T 21. Results that are darker than the standard shall be cause for rejection, except as provided in 2.3.1.</i>	10/31/16
		Amend 2.3.1 to read: <i>Sand for mortar not conforming to 2.3 shall be tested in accordance with AASHTO T 71 and shall meet the requirements of 5.2.3 of AASHTO M 45.</i>	

**NEW HAMPSHIRE DEPARTMENT OF EMPLOYMENT SECURITY  
EMPLOYMENT OF NEW HIRES**

The following is a list of the local State Employment Security Offices from which the Contractor may secure the unskilled labor for this project:

Department of Employment Security  
151 Pleasant Street, PO Box 159  
Berlin, NH 03570-2006  
Telephone: (603) 752-5500

Department of Employment Security  
404 Washington Street, PO Box 180  
Claremont, NH 03743-0180  
Telephone: (603) 543-3111

Department of Employment Security  
10 West Street, PO Box 1140  
Concord, NH 03302-1140  
Telephone: (603) 228-4100

Department of Employment Security  
518 White Mountain Hwy.  
Conway, NH 03818-4205  
Telephone: (603) 447-5924

Department of Employment Security  
109 Key Road  
Keene, NH 03431-3926  
Telephone: (603) 352-1904

Department of Employment Security  
426 Union Avenue, Suite 3  
Laconia, NH 03246-2894  
Telephone: (603) 524-3960

Department of Employment Security  
646 Union Street, Suite 100  
Littleton, NH 03561-5314  
Telephone: (603) 444-2971

Department of Employment Security  
300 Hanover Street  
Manchester, NH 03104-4957  
Telephone: (603) 627-7841

Department of Employment Security  
6 Townsend West  
Nashua, NH 03063-1217  
Telephone: (603) 882-5177

Department of Employment Security  
2000 Lafayette Road  
Portsmouth, NH 03801-5605  
Telephone: (603) 436-3702

Department of Employment Security  
29 South Broadway  
Salem, NH 03079-3026  
Telephone: (603) 893-9185

Department of Employment Security  
6 Marsh Brook Road  
Somersworth, NH 03878  
Telephone: (603) 742-3600

05/13/09

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SSD: 1/19/95, 4/6/99, 2/14/03 &amp; 7/14/08

## **SPECIAL ATTENTION**

### **HISTORIC AND ARCHAEOLOGICAL RESOURCES**

In order to avoid impacts to archaeological resources, the Contractor shall obtain and submit to the Engineer a written certification from either: 1) the State Archaeologist, or 2) a qualified archaeologist as defined below prior to any offsite excavation or other work at any disposal site, haul road, storage area, staging area, or other areas located outside the right-of-way limits of the project. Such certification shall be made on one of the attached forms. One is intended for site clearance by the state archaeologist and the other for investigation by a qualified archaeologist. Any work in such areas may only commence after receipt of this certification and upon written authorization to proceed by the Engineer.

This Special Attention does not apply to natural materials obtained from pre-existing (i.e., owned and operated by the Contractor prior to bidding on the subject contract) and/or commercially available sources. Commercially available sources is meant to include licensed or permitted sources where anyone could purchase natural materials.

If the State Archaeologist determines that further field investigation is necessary the Contractor must decide whether to pursue alternative locations or to have the site(s) in question evaluated. If the latter is decided, it will be necessary for the Contractor and the Engineer to meet with the NHDOT Bureau of Environment, the Division of Historic Resources and the Federal Highway Administration to determine the appropriate course of action. Note that the latter parties meet twice a month on the first and second Thursdays of each month.

#### **Professional Qualifications for Principal Investigators in Archaeological Investigations**

All archaeologists contracting with NHDOT as principal investigators will be qualified for such work, as determined by NHDHR. **See list of qualified archaeological firms at [www.nh.gov/nhdhr/consultants\\_archaeology.html](http://www.nh.gov/nhdhr/consultants_archaeology.html).** According to NHDHR guidelines, principal investigators must meet the minimum standards presented in 36 CFR 61.

These regulations require a graduate degree in archaeology, anthropology, or related field; at least one year full-time professional experience or an equivalent period of training in archaeological research, administration, or management; at least four months of supervised field and analytical experience in general North American archaeology; and demonstrated capability to complete archaeological research through all its phases. These standards distinguish between the prehistorian and historical archaeologist. Each must have a specialization in his/her respective areas and at least one year of full-time professional experience at the supervisory level in the study of the Native American cultural traditions or the historic period.

NHDHR also requires the following additional qualifications. All prehistorians will have at least one year of supervisory experience in the region encompassing the glaciated Northeast. Historical archaeologist will have a least one year of supervisory experience in New England, New Jersey, New York, or Pennsylvania. Historical archaeologists specializing in submerged nautical resources will possess at least one year's experience in the study of such resources along the Atlantic seaboard. NHDOT requires that the principal investigator has successfully completed one or more projects in New Hampshire in a timely manner. Principal investigators will be knowledgeable about the federal and state cultural resources management laws and regulations including those relating to the treatment of human remains in marked and unmarked graves. As soon as research or initial investigations indicate the likely presence of Native American or historic deposits, a principal investigator with training and experience in that area shall supervise the work.

The principal investigator is responsible for each aspect of the project. The principal investigator will maintain sufficient presence in repositories, the field, and laboratory to set up the study, ensure appropriate collection and accurate documentation of data, direct needed modifications as investigations proceed, field-check accuracy of field data, establish and direct analysis, and oversee documentation and preparation of recommendations at its close. In phases II and III as the intensity of excavation increases, it is anticipated that this presence will proportionately rise. All research, field investigations, analysis, and report preparation will be completed within the schedule set in the authorization of work unless notification is given and adequate justification is provided to NHDOT.

Depending on the nature of the site, the prehistoric or historic archaeologist may require additional qualifications or additional personnel qualified in other fields that may not be specified under 36CFR61. For example, projects for NHDOT encounter situations in which personnel with expertise and/or demonstrated experience in geomorphology, botany, faunal analysis, forensic anthropology, and industrial and urban archaeology are needed. These individuals will possess graduate training in their field, two years of professional experience in the area of expertise for which they are being consulted, and the demonstrated ability to complete a research project with a report of findings. Principal investigators may also need to add architectural historians, historians, historical landscape architects, etc. to their team whose professional qualifications will follow those provided in 36 CFR 61.

**CERTIFICATION BY NHDHR**

For the purpose of compliance with the Special Attention, Historic and Archeological Resources, dated February 14, 2003, relative to Federal-Aid Highway Project No. \_\_\_\_\_, NHDOT Project No. \_\_\_\_\_, I certify the following:

1. That I have reviewed the maps, plats, photographs or other identifying geographical information supplied to me by the Contractor.
2. That the areas located on these maps, etc. are to be utilized by the Contractor \_\_\_\_\_ for the following purposes:
  - a. Excavation area \_\_\_\_\_.
  - b. Waste material area \_\_\_\_\_.
  - c. Storage or staging area \_\_\_\_\_.
  - d. Haul road \_\_\_\_\_.
  - e. Other (describe) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_.
3. That I have reviewed the NHDHR site files relative to these locations and proposed uses.
4. On the basis of the above information, I have concluded that:
  - a. The location(s) have been previously reviewed, no resources have been identified, and there is no need for further archaeological evaluation \_\_\_\_\_.
  - b. The location(s) are such that no further archaeological evaluation is necessary \_\_\_\_\_.
  - c. The location(s) are such that further field investigation is necessary \_\_\_\_\_.

\_\_\_\_\_  
NHDHR Review and Compliance Coordinator

\_\_\_\_\_  
Date

Received:

\_\_\_\_\_  
NHDOT Contract Administrator

\_\_\_\_\_  
Date

cc: FHWA  
NH Division of Historical Resources  
NHDOT, Bureau of Environment

**CERTIFICATION BY ARCHAEOLOGICAL CONTRACTOR**

For the purpose of compliance with the Special Attention, Historic and Archeological Resources, dated February 14, 2003, relative to Federal-Aid Highway Project No. \_\_\_\_\_, NHDOT Project No. \_\_\_\_\_, I certify the following:

- 1. That I have examined the areas identified on the attached plans, maps, or property plats.
- 2. That these areas are to be utilized by the Contractor \_\_\_\_\_ for the following purposes:
  - a. Excavation area \_\_\_\_\_.
  - b. Waste material area \_\_\_\_\_.
  - c. Storage or staging area \_\_\_\_\_.
  - d. Haul road \_\_\_\_\_.
  - e. Other (describe) \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_.

- 3. That I have used the following techniques in my examination:
  - a. Literature search \_\_\_\_\_
  - b. Walkover (describe methodology) \_\_\_\_\_  
 \_\_\_\_\_
  - c. Subsurface testing (if appropriate) \_\_\_\_\_  
 \_\_\_\_\_

4. That in my professional opinion, there is minimal or no likelihood that there are cultural resources (either historic or pre-historic) present or that any such resources present have integrity, and that there is no need for any other evaluative measures prior to the use of the areas described above for the purposes noted.

\_\_\_\_\_  
Archaeological Contractor \_\_\_\_\_  
Date

Review by: \_\_\_\_\_  
NHDHR Review and Compliance \_\_\_\_\_  
Date  
Coordinator

Received:  
  
\_\_\_\_\_  
NHDOT Contract Administrator \_\_\_\_\_  
Date

cc: FHWA  
NH Division of Historical Resources  
NHDOT, Bureau of Environment

02/22/24

SSD: 1/7/00, 3/22/00, 6/14/00, 2/8/01, 4/2/01, 1/25/02, 4/1/02, 04/15/03, 04/20/04, 05/06/05, 05/19/06, 09/17/07, 06/12/08, 03/04/09, 08/26/09, 06/28/10, 06/10/11, 04/12/12, 04/18/13, 01/02/14, 10/22/14, 01/16/15, 01/15/16, 09/12/16, 02/09/17, 04/27/17

## **SPECIAL ATTENTION**

### **QUALIFIED PRODUCTS LIST**

The Qualified Products List is available online at [www.dot.nh.gov](http://www.dot.nh.gov) on the *Doing Business with DOT>Contractors* webpage. A link to the Qualified Product List (QPL) is shown under the *Engineering Information* heading of this webpage. The QPL is now considered a live document and periodic updates will occur. The QPL in effect on the date of project advertisement shall apply to this contract.

Products added to the QPL can be used under this contract upon issuance of the updated QPL. The Contractor shall not use the anticipated addition of a product to the QPL as a basis for use of a product. A product removed from an updated QPL can still be used under this contract unless specifically directed by the Department that the removed product shall not be used.

**SPECIAL ATTENTION****THIS PROJECT IS TO BE BID AND CONSTRUCTED UNDER THE  
2010 STANDARD PLANS FOR ROAD CONSTRUCTION****NOTICE OF STANDARD PLANS**

The following table is a list of all of the Standard Plans that have been adopted as additions or revisions to the *Standard Plans for Road Construction*, June 2010 Edition as of the date of this Proposal. The Bidder is responsible to examine each standard to determine its effect, if any, upon the Contract.

**Note:** All Standard Plans are available on-line:

[www.nh.gov/dot/org/projectdevelopment/highwaydesign/standardplans/index.htm](http://www.nh.gov/dot/org/projectdevelopment/highwaydesign/standardplans/index.htm).

**Note:** See also Standard Plans for Road Construction List of Revisions on-line:

[www.nh.gov/dot/org/projectdevelopment/highwaydesign/standardplans/documents/errata\\_2010\\_standards.pdf](http://www.nh.gov/dot/org/projectdevelopment/highwaydesign/standardplans/documents/errata_2010_standards.pdf).

Note: See also Highway Design Detail Sheets on-line:

[www.nh.gov/dot/org/projectdevelopment/highwaydesign/detailsheets/index.htm](http://www.nh.gov/dot/org/projectdevelopment/highwaydesign/detailsheets/index.htm)

**2010 Highway Standard Plans**

<b>Standard Plan</b>	<b>Description</b>	<b>Previous Revision Date</b>	<b>Current Revision Date</b>
CR-1	Granite Curb Details		06/16/10
CR-2	Curb Details		06/16/10
DL-1	Roadside Delineation	06/16/10	<b>03/05/15</b>
DL-2	Interchange Delineation	06/16/10	<b>03/05/15</b>
DL-3	Milled Rumble Strips (Shoulders)		<b>Under Revision</b>
DL-4	Milled Rumble Strips (Shoulders)		<b>Under Revision</b>
DL-5	Milled Rumble Strips (Shoulders)		<b>Under Revision</b>
DL-6	Milled Rumble Strips (Centerline)	06/16/10	<b>1/25/16</b>
DL-7	Milled Rumble Strips (Centerline)	06/16/10	<b>1/25/16</b>
DL-8	Milled Rumble Strips (Centerline)	06/16/10	<b>1/25/16</b>
DP-1	Drainage Pipe Details		06/16/10

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DR-1	Grate and Frame Details	06/16/10	<b>8/14/15</b>
DR-2	Grate and Frame, M.H.Cover and Pavement Depression Details	11/5/10	<b>8/14/15</b>
DR-3	Precast Concrete Median Barrier Drainage Details		06/16/10
DR-4	DI-DB, Underdrain Flushing Basin and Polyethylene Liner Details	06/16/10	<b>8/14/15</b>
DR-5	Precast Reinforced Concrete C.B., D.I. and M.H.		06/16/10
ES-1	End Sections for Corrugated Steel and Reinforced Concrete Pipes		06/16/10
EW-1	Earthwork - Muck Excavation		06/16/10
FN-1	Woven Wire Fence		06/16/10
FN-2	Chain Link Fence		06/16/10
GR-1	31" Mid-Splice Beam Guardrail Standard Section - Steel Posts and Hardware Details	06/16/10	<b>8/19/15</b>
GR-2	Beam Guardrail Standard Section - Steel Posts and Hardware Details	05/03/11	<b>8/19/15</b>
GR-2A	Beam Guardrail Standard Section - Wood Posts and Hardware Details	06/16/10	<b>8/19/15</b>
GR-3	Preferred Platform for Energy Absorbing Guardrail Terminal (EAGRT)		Superseded (08/19/15) - See Detail Sheets
GR-4	Alternative Platform for Energy Absorbing Guardrail Terminal (EAGRT)		Superseded (08/19/15) - See Detail Sheets
GR-5	Beam Guardrail Terminal Section Type E-2		06/16/10
GR-6	Beam Guardrail - Terminal Section Type E-2 Hardware Details		06/16/10
GR-7	Beam Guardrail - Terminal Section Type E-2 Modified 30		06/16/10
GR-8	Beam Guardrail - Terminal Section Type E-2 Modified 40		06/16/10
GR-9	Beam Guardrail - Terminal Section Type E-2 Modified 45		06/16/10
GR-10	Beam Guardrail - Terminal Unit Type G-2		06/16/10
GR-11	Beam Guardrail - Thrie Beam Double Faced (Wood Posts)	06/16/10	<b>11/05/10</b>
GR-12	Beam Guardrail - Thrie Beam Double Faced (Steel Posts)	11/05/10	<b>05/03/11</b>
GR-13	Beam Guardrail - Thrie Beam Single Faced (Wood Posts)	06/16/10	<b>11/05/10</b>
GR-14	Beam Guardrail - Thrie Beam Single Faced (Steel Posts)	11/5/10	<b>05/03/11</b>
GR-15	Precast Concrete Barrier 42" F-Shape (Double-Faced)	06/16/10	<b>11/05/10</b>
GR-16	Transition F-Shape Barrier	06/16/10	<b>11/05/10</b>
GR-17	Transition F-Shape Barrier and Guardrail (Wood Posts)	11/05/10	<b>10/30/12</b>

GR-18	Transition F-Shape Barrier and Guardrail (Steel Posts)	11/05/10	<b>10/30/12</b>
GR-19	Single Slope Barrier	11/05/10	<b>04/03/14</b>
GR-20	Transition Single Slope Concrete Barrier, Precast	10/30/12	<b>04/03/14</b>
GR-21	Transition Single Slope Concrete Barrier and Guardrail (Wood Posts)	11/05/10	<b>10/30/12</b>
GR-22	Transition Single Slope Concrete Barrier and Guardrail (Steel Posts)	11/05/10	<b>10/30/12</b>
GR-23	Portable Concrete Barrier 10 foot	06/16/10	<b>10/03/13</b>
HR-1	Handrail Details		06/16/10
HR-2	Concrete Bound and Steps		06/16/10
HW-1	Headwall Details		06/16/10
HW-2	Headwall Details (45° Wings)		06/16/10
HW-3	Headwall Details (2 Pipes 45° Wings)		06/16/10
MB-1	Mailbox Details	06/16/10	<b>02/25/16</b>
PL-1	Planting Details		02/26/10
PL-2	Planting Details		06/16/10
SL-1	Pull Boxes and Conduit Trench Detail		06/16/10
SL-2	Concrete Foundations and Light Pole Base, Type B		06/16/10

### 2010 Traffic Standard Plans

<b>Standard No.</b>	<b>Description</b>	<b>Previous Revision Date</b>	<b>Current Revision Date</b>
PM-1	Layout Details		02/26/10
PM-2	Tolerances for Pavement Marking Lines		02/26/10
PM-3	Divided Roadway Multiple Lanes with Entrance and Exit Ramps Striping Layout	02/26/10	<b>11/05/10</b>
PM-4	Divided Roadway Multiple Lanes with Entrance and Exit Ramps Striping Layout		<b>Superseded See Detail Sheets (3/21/17)</b>
PM-5	Divided Roadway Multiple Lanes with Entrance and Exit Ramps Striping Layout		02/26/10
PM-6	Painted Island Details		02/26/10
PM-7	Intersection Details	02/26/10	<b>11/05/10</b>
PM-8	Word and Symbol Lane Layout		<b>Superseded See Detail Sheets (3/21/17)</b>

PM-9	Pavement Marking at Minor Intersections	02/26/10
PM-10	Turning Lane Extension Details	02/26/10
PM-11	Accessible Parking Details	02/26/10
PM-12	Words and Symbols	02/26/10
PM-13	Words and Symbols	02/26/10
PM-14	Speed Zone Pavement Markings (Divided Highway)	02/26/10
PS-1	Aluminum Plank Details	02/26/10
PS-2	Aluminum Plank Details	02/26/10
PS-3	Aluminum Sheet Details	02/26/10
PS-4	Tubular/ U-Channel Post Detail	02/26/10
PS-5	Steel Beam Details (Non-Breakaway)	02/26/10
PS-6	Steel Beam Details (Non-Breakaway)	02/26/10
PS-7	Steel Beam Details (Breakaway)	02/26/10
PS-8	Steel Beam Details (Breakaway)	02/26/10
PS-9	Breakaway Mounts	02/26/10
PS-10	Breakaway Mounts	02/26/10
SG-1	Route Marker Details	02/26/10
SG-2	Regulatory Signs	02/26/10
SG-3	Regulatory Signs	02/26/10
SG-4	Regulatory Signs	02/26/10
SG-5	Regulatory Signs	02/26/10
SG-6	Regulatory Signs	02/26/10
SG-7	Warning Signs	02/26/10
SG-8	Warning Signs	02/26/10
SG-9	Warning Signs	02/26/10
SG-10	Warning Signs	02/26/10
SG-11	Warning Signs	02/26/10
SG-12	Miscellaneous Signs	02/26/10
SG-13	Informational Signs	02/26/10
SG-14	Informational Signs	02/26/10
TS-1	Traffic Signal Mast Arm Foundation - Type 1A	<b>Superseded (03/05/18) See Detail Sheets</b>

TS-2	Traffic Signal Mast Arm Foundation - Type 1B and 1C	<b>Superseded (03/05/18) See Detail Sheets</b>
TS-3	Traffic Signal Mast Arm Foundation - Type 2	<b>Superseded (03/05/18) See Detail Sheets</b>
TS-4	Quadrupole Loop Detector 2-4-2 Turns	02/26/10
TS-5	Rectangular Loop Detector 3 Turns	02/26/10

### Work Zone Traffic Control Standard Plans

<b>Standard No.</b>	<b>Description</b>	<b>Previous Revision Date</b>	<b>Current Revision Date</b>
TC-1	Text Amendment Note Sheet	11/28/18	<b>05/17/19</b>
TC-2	Permanent Construction Signing	08/03/04	03/16/17
TC-3	Two-Way Traffic Lane Shift	08/03/04	03/16/17
TC-4	Bridge Rehabilitation: Stop/Yield Control	11/28/18	<b>05/17/19</b>
TC-5	Single Lane Shift (Divided Highway)	08/03/04	See Detail Sheets
TC-6	Lane Closure with Lane Shift for Speed Reduction (Divided Highway)	03/16/17	<b>11/28/18</b>
TC-7	Multi-Lane Closure (Divided Highway)	11/28/18	<b>05/17/19</b>
TC-8	Construction Signing for Cold-Planed Surfaces	03/16/17	<b>11/28/18</b>

## 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:

<u>Section</u>	<u>Description</u>	<u>Page</u>
101	Definitions and Terms	SS-2
105	Control of the Work	SS-3
106.	Control of Material	SS-5
107	Legal Relations and Responsibility to Public	SS-6
109	Measurement and Payment	SS-7
401	Plant Mix Pavements	SS-9
403	Hot Bituminous Pavement	SS-39
410	Bituminous Surface Treatment	SS-41
520	Portland Cement Concrete	SS-44
538	Barrier Membrane	SS-45
603	Culverts and Storm Drains	SS-46
645	Erosion Control	SS-49
702	Bituminous Materials	SS-52

## 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 101 – DEFINITIONS AND TERMS

*The intent of the Supplemental Specification is to revise:*

- *the frequency of QPL updates (06/06/17)*
- *the definitions of weather days and working days (04/01/18)*

**Amend** 101.79 to read:

**101.79    Qualified Products List (QPL).** A list of products prequalified by the Engineer as meeting the Contract requirements for specified materials to be incorporated into the Work. The list is maintained and updated by the Bureau of Materials and Research.

**Amend** 101.116-119 to read:

**101.116    Wear.** The percent of wear of aggregate as determined by the AASHTO T 96 (Los Angeles Abrasion Test). The grading shall be Grading A unless otherwise specified.

**101.117    Weather Day.** Days on which weather conditions beyond the Contractor’s control would prevent Work on the Controlling Activities for at least five hours with a work force consistent in size and type for the work to be performed. Should the Contractor prepare to begin work on any day on which inclement weather, or the conditions resulting from the weather, prevent the work from beginning at the usual starting time, and the crew is dismissed as a result, the Contractor will not be charged for a working day whether or not conditions change during the day and the rest of the day becomes suitable for construction operations.

**101.118    Wetland.** “ An area that is inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal conditions does support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands include, but are not limited to swamps, marshes, bogs, and similar areas.” (NH Code of Administrative Rules, Env-Wt 101.113)

**101.119    Winter Suspension.** Winter Suspension shall be such time that the Contractor, utilizing conventional means and methods, is unable to proceed in an efficient manner with construction activity due to unfavorable weather conditions and suspends operations until such time that conditions are favorable for sustained construction activity.

**101.120    Winter Work.** Winter work is any work that is done in December, January, February, and March. The Contract may require winter work on all or portions of the project, in which case time will be determined as specified in 108.07 unless otherwise amended.

**101.121    Work.** The furnishing of all labor, materials, equipment, and incidentals necessary or convenient to the successful completion of the Project, and the carrying out of the duties and obligations imposed by the Contract.

**101.122    Working Day.** Any calendar day, except Saturdays, Sundays, Contract designated Holidays and Weather Days. Days in December, January, February, and March are not considered working days even if the Engineer allows the Contractor to work and the Contractor so chooses except when:

- (1) The Contract requires Winter Work;
- (2) The Contract Completion Date gets extended into this period and the weather conditions are favorable for the continuation of the remaining Work; however, should weather or site conditions change during the Winter Work period and the Contractor suspend operations as a result, Working Days will not be charged until April 1 whether or not the conditions become suitable for construction operations during the remainder of the Winter Work period.

**101.123    Working Drawings.** Working Drawings may be submitted for approval or documentation. See 105.02.

**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**  
**A M E N D M E N T   T O   S E C T I O N   1 0 5 – C O N T R O L   O F   T H E   W O R K**

*The purpose of this Supplemental Specification is to update Section 105.02  
to correspond with the updated NHDOT standard stamps.*

**Replace** Section 105.02 – Plans and Working Drawings with the following:

**105.02 Plans and Working Drawings.**

Plans shall be supplemented by Contractor-prepared Working Drawings as found necessary to control the Work and its prosecution. Working Drawings consisting of details that are not included in the Plans but are required for the Work shall be furnished to the Department. Working Drawings that include deviations from that which are shown in the Contract including, but not limited to, changes in dimensions, material, fabrication process, and specific design requirements shall be flagged on the drawings and/or accompanied by a written narrative specifically requesting such changes.

The Contractor shall submit the required Working Drawings to the Engineer for approval, acceptance, or documentation. All information the Engineer used in preparation of the Working Drawings shall be furnished in the submittal including, but not limited to, calculations, catalog cuts, sketches or drawings, narrative of work, design assumptions, and manufacturer’s engineering data for prefabricated items, including falsework and forms. The Working Drawings shall be furnished well in advance of the Work to allow the Engineer time to review or distribute the Working Drawings. Any work done or materials ordered for work shown on the Working Drawings prior to approval or distribution of the drawings shall be at the Contractor’s risk.

- A. Approval.** Working Drawings submitted for approval are typically fabrication shop drawings for permanent installations that provide additional detailing to Department designs and do not require a PE stamp. The Department “approval” is for general conformity with the contract plans, proposal, addenda, special provisions, and standard specifications.

Working Drawings submitted for approval shall include, but are not limited to, the following:

- Bending diagrams when required for reinforcing steel
- Bridge mounted sign supports
- Expansion joints (compression seal, strip seal, finger joints)
- Bridge railing
- Bridge bearings (elastomeric, steel)
- Structural steel
- Drilled shafts and micropiles
- Partial-depth precast deck panels
- Full-depth deck panels
- Pipe lining
- Welding procedures

- B. Acceptance.** Working Drawings submitted for acceptance are typically fabrication shop drawings for permanent installations that are designed by the Fabricator/Contractor and are stamped, prepared, and signed by a Licensed Professional Engineer registered in the State of New Hampshire. Calculations for the design shall be submitted for documentation. The Department will perform a review of both the Working Drawings and design calculations. The Department “acceptance” is for general conformity with the contract plans, proposal, addenda, special provisions, and standard specifications.

Working Drawings submitted for acceptance shall include, but are not limited to, the following:

- Overhead sign structures and foundations
- Traffic signal structures
- ITS supports and foundations
- Precast culverts, arches, frames, or other precast elements
- Retaining walls
- Prefabricated bridges
- Bridge bearings (high load multi-rotational, isolation)
- Expansion joints (modular)
- Railroad crossing structures
- Storm Water Pollution Prevention Plan and other environmental plans
- Detour plans (The Contractor may propose detours not shown on the Plans by submitting proposed locations, layout, grade, typical cross-sections, protective fixtures, and signing.)

**C. Documentation.** Working Drawings submitted for documentation are typically documents for temporary works that are designed by the Contractor and are stamped, prepared, and signed by a Licensed Professional Engineer registered in the State of New Hampshire. The Department will perform a review of both the Working Drawings and design calculations for general conformity with the contract plans, proposal, addenda, special provisions, and standard specifications. The Engineer's receipt of documentation or distribution of the Contractor's Working Drawings for documentation does not relieve the Contractor from responsibility under the Contract for errors in dimensions, incorrect fabrication and erection processes, design requirements specified, or successful completion of the Work.

Working Drawings submitted for documentation shall include, but are not limited to, the following:

- Progress schedules
- Temporary bridges
- Removal of existing bridge structures
- Cofferdams
- Water diversion structures
- Erection procedures
- Temporary support systems
- Falsework plans
- Scaffolding
- Bridge analysis

The Contractor shall submit the Working Drawings for approval and/or acceptance to the Engineer for review. The Engineer will be allowed up to fifteen (15) Working Days for review of each submission. If the Engineer has not responded to the Contractor after fifteen Working Days, the Contractor shall contact the Engineer to inquire about the status of the submittal. If the Engineer requires more time for review and the Contractor believes that an extension of the Contract Time is warranted due to this additional review time, the Contractor shall request a time extension and proceed as required by 104.02 and 108.07. A delay caused by additional time required for review is an Excusable, Non-compensable Delay. Each resubmission including requests for additional information will be treated as a new submission and may require up to fifteen (15) Working Days for review by the Engineer. The fifteen Working Days will begin upon receipt at the Bureau of Construction's main office. The review will be considered complete when the date and status has been placed on the submittal. One set of the drawings will be returned to the Contractor marked with a response. The Department reserves the right to return the Working Drawings for revisions based on the content and non-conformance with the Plans and Specifications.

If the submittal is a paper copy, after approval/acceptance has been given, the Contractor shall supply the Engineer with four sets of the revised Working Drawings. The Contract Amount shall include the cost of furnishing all Working Drawings.

**SUPPLEMENTAL SPECIFICATION****AMENDMENT TO SECTION 106 – CONTROL OF MATERIAL**

*The purpose of this Supplemental Specification  
is to revise frequency of updates.*

**Amend** the last paragraph of 106.04 to read:

Products that have been prequalified by Materials and Research and are included on the Qualified Products List (QPL) may be used on projects without further testing, unless otherwise noted on the QPL, but a Certificate of Compliance for the qualified products will be required. The QPL is updated as warranted, and is available online at the Department's Website. A product that is not listed will not be used until qualified through a written request to Materials and Research. Such request should be made with sufficient lead-time to allow necessary testing or research.

**SUPPLEMENTAL SPECIFICATION****AMENDMENT TO SECTION 107 – LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC**

*The intent of the Supplemental Specification is to revise references to DES rules and regulations*

**Amend** the last 3 paragraphs in Section 107.01 as follows:

The Contractor shall also protect the atmosphere from particulate and gaseous pollutants in conformance with rules promulgated by the New Hampshire Department of Environmental Services, Air Resources Division.

The Contractor's attention is called to Chapter Env-A 1000 Prevention, Abatement and Control of Open Source Air Pollution, in particular the regulations concerning open burning (Env-A 1001) and the control of fugitive dust (Env-A 1002).

The Air Resources Division may order unauthorized burning to cease and may order authorized burning creating a nuisance to cease. The order may be issued directly to the Contractor or to the Contractor through the Engineer.#

## SUPPLEMENTAL SPECIFICATION

### AMENDMENT TO SUBSECTION 109 – MEASUREMENT AND PAYMENT

*The purpose of this Supplemental Specification is to amend the Rental Rate Blue Book for Construction Equipment requirements.*

**Amend** 109.04.4.4 to read:

#### **109.04.4.4** Equipment and Plant.

For any Contractor-owned machinery or special equipment (other than small tools), the use of which is approved by the Engineer, the hourly rate will not exceed that determined from the Rental Rate Blue Book online at “equipmentwatch.com” used in the following manner:

- a. The hourly equipment rental rate R will be determined by formula as follows:

$$R = (A \times B \times C) + D$$

Where A = Monthly rate divided by 176. The listed weekly, hourly, and daily rates will not be used.

B = Regional adjustment factor for New Hampshire.

C = Model year adjustment for the year of equipment manufacture.

D = Estimated operating costs per hour.

This formula is equal to the **FHWA Rate** that is shown in the Rental Rate Blue Book at “equipmentwatch.com”.

- b. The number of hours to be paid for will be the number of hours that the equipment or plant is actually used on a specific Force Account activity and, in addition, shall include the time required to move the equipment to the location of such Force Account activity and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used during the move on work other than the specific Force Account activity.
- c. The “Rate Effective Date” to be selected online will be the actual date that the work was performed.
- d. Overtime shall be charged at the same rate indicated in subparagraph (a) above.
- e. The estimated operating costs per hour will be used for each hour that the equipment or plant is in operation on the Force Account work. Operating costs are not reimbursable for the time the equipment is idle.
- f. The maximum rental period to be paid for per day shall not exceed eight hours unless the equipment operates for eight or more hours.
- g. If equipment is idled solely due to the responsibility of the Department, then the Contractor may be compensated for such idle equipment at 50% of the rate defined in “A” above (monthly rate divided by 176).
- h. The rates established above shall include the cost of fuel, oil, lubrication, supplies, small tools, necessary attachments, repairs, overhauls, and maintenance of any kind, depreciation, storage, field and home office overhead, profits, insurance, and all incidentals.

The Contractor shall provide the Engineer with the following: the manufacturer’s name, equipment type, year of manufacture, model number, type of fuel used, horsepower rating, attachments required, together with their size or capacity, and any further information necessary to ascertain the proper rate. Unless otherwise specified, manufacturer’s ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer. The Contractor is not required to purchase an online subscription, as the equipment rental rates will be provided by the Department.

Equipment used by the Contractor shall be in good working condition and shall be of suitable size and suitable capacity required for the work to be performed. The rate for the basic equipment with the appropriate attachments shall include only the rate for the combined equipment necessary to perform the Extra Work. In case the Contractor

elects to use equipment of a higher rental value than that suitable for the work, payment will be made at the rate applicable to the suitable equipment. The equipment actually used and the suitable equipment to be paid for will be recorded as a part of the record for Force Account work. The Engineer will determine the suitability of the equipment. If there is a differential in the rate of pay of the operator of oversize or higher rate equipment, the rate paid for the operator will likewise be that for the suitable equipment.

Payable time periods will not include:

- (1) time elapsed while equipment is inoperative due to breakdowns,
- (2) time spent repairing equipment, or
- (3) time elapsed 24 hours after the Engineer has advised the Contractor that the equipment is no longer needed.

If a piece of equipment is needed that is not listed in the above stated rental rate guide, a rate will be established by the Engineer in writing before the equipment is used. The Contractor may furnish any cost data which might assist the Engineer in the establishment of such rate.

If the Contractor does not own a specific type of equipment or if the Department orders the Contractor to utilize a specific type of equipment and the equipment must be obtained by rental, the Contractor shall inform the Contract Administrator of the need to rent the equipment and of the rental rate for that equipment before using it on the work. Provided that the rate is reasonable, the Contractor will be paid the actual rental cost for the equipment for the time that the equipment is actually used to accomplish the work, plus the cost of moving the equipment onto and away from the job. A 5 percent mark-up will be added to the actual rental cost, provided the total cost does not exceed the *Rental Rate Blue Book for Construction Equipment* rate (in accordance with 109.04.4.4(a)). The Contractor shall provide a copy of the paid receipt or canceled check for the rental expense incurred.

Transportation charges for each piece of equipment, whether owned or rented, moved to and from the site of the work will be paid provided:

- (1) the equipment is obtained from the nearest approved source,
- (2) the return charges do not exceed the delivery charges,
- (3) haul rates do not exceed the established rates of licensed haulers,
- (4) charges are restricted to those units or equipment not already available and not on or near the Project, and
- (5) equipment is not used elsewhere on the project.

**SUPPLEMENTAL SPECIFICATION**

**AMENDMENT TO SECTION 401 – PLANT MIX PAVEMENTS – GENERAL**

*This Supplemental Specification is a rewrite of Section 401 to remove redundancies and inconsistencies due to many revisions throughout the years. Previous supplemental specifications thus far have been incorporated (01/28/21). Additions include:*

- *requiring producers and suppliers to participate in and maintain compliance with the AASHTO NTPEP Asphalt Binder Suppliers (ABS) audit program (12/15/23);*
  - *requires asphalt release agents be listed on the QPL (12/15/23); and*
  - *requires 4,000 g pycnometer (3.1.12.2) (xx/xx/xx).*

**Description**

**1.1** These specifications include general requirements that are applicable to all types of plant mix asphalt pavements irrespective of the gradation of aggregate, kind and amount of asphalt binder, or pavement use. Deviations from these general requirements will be indicated in the specific requirements for each type.

**1.2** These specifications provide for the use of reclaimed asphalt pavement material in certain specified mixtures.

**1.3** This work shall consist of the construction of one or more courses of asphalt pavement constructed on a prepared foundation in accordance with these specifications and the specific requirements of the type under Contract. The work shall be in reasonably close conformance with the lines, grades, thickness, and typical cross-sections shown on the plans, within the tolerances specified or established by the Engineer.

**1.4** These specifications provide for both method and quality control/quality assurance (QC/QA) specification work. Sections under the heading Performance Requirements (QC/QA) are applicable on QC/QA items only. Sections marked Method Requirements are applicable for non-QC/QA items and those portions of QC/QA items that are not measured for pay adjustment. All sections under the heading General are for use with all items.

**1.5 Performance Requirements (QC/QA).**

**1.5.1** The work will be accepted under Performance Requirements (QC/QA) provisions in accordance with these Specifications and the applicable requirements of [Section 106](#).

- (a) The QC/QA Tier 1 item is to be used on specified projects that are on new locations, interstate projects, full depth reconstruction projects in rural areas, or on reclamation projects in rural areas.
- (b) The QC/QA Tier 2 item is to be used on specified projects that are inlay type projects, full depth reconstruction projects with maintenance of traffic phasing, projects with intersecting streets, projects with pavement tapers, bridge projects with short approach paving, projects where there are many manhole/drainage structures or driveways (generally in urban and suburban areas).

**QUALITY/PAY FACTORS TO BE ASSESSED**

	<b>Tier 1</b>	<b>Tier 2</b>
Asphalt Content and Gradation	X	X
Cross Slope	X	
Density	X	X
Ride Quality	X	
Thickness	X	

## Materials

### 2.1 Aggregates – General.

**2.1.1** Aggregates shall be uniform quality durable pebbles or fragments of rock, with or without sand or other inert finely divided mineral aggregate. All material shall be free from clay balls, organic matter, deleterious substances, and an excess of flat or elongated pieces as specified in ASTM D 4791. Washing will not be required, except when aggregate plants do not produce clean material by the dry process method. In order to obtain uniformity of color and appearance of the pavement throughout the project, the aggregate for all the surface mixes shall be obtained from the same material source. Sufficient material shall be on hand prior to starting daily operations to ensure uninterrupted processing for the working day.

**2.1.2** Fine aggregate shall consist of sound durable particles of sand, crushed stone, or a combination thereof. Stone screening shall be produced from stone at least equal in quality to that specified for coarse aggregate.

**2.1.2.1** Fine aggregate may be 100 percent manufactured aggregate.

**2.1.3** Mineral filler shall conform to AASHTO M 17 except that 100 percent shall pass the No 16 sieve, waiving the requirement for the No. 30 sieve.

**2.1.4** Coarse aggregate shall be crushed stone or crushed gravel and shall have a percentage of wear as determined by AASHTO T 96 of not more than 45 percent unless otherwise specified by Contract item. In each stockpile, not less than 50 percent by weight of the particles retained on the No. 4 sieve shall have at least one fractured face. Stockpiles consisting of a blend of crushed stone and crushed gravel will be permitted so long as the overall consistency of the stockpile is reasonably maintained and the lesser portion of coarse aggregate material does not exceed 10 percent of the total. This percentage shall be determined on the portion of the total sample by weight that is retained on the No. 4 laboratory sieve.

### 2.2 Bituminous Materials – General.

**2.2.1** Bituminous materials used for asphalt cement binder shall meet the properties specified in AASHTO M 320. The grade of asphalt cement binder to be used will be specified in a Special Provision contained in the Proposal. Asphalt cement shall not be air blown or contain any form of used, recycled or re-refined oil.

**2.2.1.1** The unit bid price for hot bituminous pavement containing failing asphalt binder shall be assessed a 10% reduction for one temperature grade below the specified high temperature grade or one temperature grade above the specified low temperature grade. The penalty will be applied to all tonnage produced with the non-compliant binder. When the binder failure is non-compliant by two grades or more, as described above, the Contractor shall be required to remove and replace all non-compliant material at the Contractor's expense, or at the Engineer's discretion, may be allowed to leave the tonnage in place at a unit price reduction of 50%.

**2.2.2** Liquid binder samples shall be obtained by plant personnel in the presence of the Inspector/Technician. Samples shall be obtained during each day's production.

**2.2.3** Producers and suppliers of asphalt binders shall have a Quality Control (QC) plan approved by the Bureau of Materials and Research that complies with AASHTO R 26. Producers and suppliers shall also participate in and maintain compliance with the AASHTO National Transportation Product Evaluation Program (NTPEP) Asphalt Binder Suppliers (ABS) audit program. They shall further provide audit information from their facilities in compliance with the QC plan and product testing requirements of the ABS audit program.

**2.2.3.1** All suppliers of PG binder shall certify that the PG binder supplied for use on Department projects does not contain used, recycled or re-refined oil.

### 2.3 Approval of Materials - Method Requirements.

**2.3.1** At least five working days in advance of the date of starting operations, the Bureau of Materials & Research may request that representative samples of all materials proposed for use be submitted for testing.

### 2.4 Composition of Mixtures - General.

**2.4.1** Hot bituminous pavement shall be composed of a mixture of aggregate, filler if required, and asphalt binder. The several aggregate fractions shall be sized, uniformly graded, and combined in such proportions that the resulting mixture meets the grading requirements of the job mix formula. The Contractor shall use the Volumetric Mix Design Method in AASHTO Standard Practice R 35 as modified herein.

**2.4.2** The Contractor shall have the option of utilizing asphalt pavement removed under the Contract, if any, or old asphalt pavement from an existing stockpile or supplying all new materials for the production of asphalt pavement or any combination of the foregoing. If the job mix formula uses recycled materials, the mix shall meet the requirements of Reclaimed Asphalt Pavement as specified in 2.9.

**2.4.3** The Department allows the use of recycled binder in mix designs, up to 1.0% Total Reused Binder (TRB), without any change in asphalt binder requirements as long as the mix design meets all volumetric mix design criteria. When a design has been completed using the maximum allowable percentage of TRB, one point verifications may be performed using decreasing percentages of TRB. If the design is not validated using a decreased amount of TRB, a new design will be required.

**2.5 Job Mix – General.**

**2.5.1** When a new volumetric mix design is required, the Contractor shall use the Volumetric Mix Design Method in AASHTO Standard Practice R 35 to develop a mix that meets the associated design criteria. The Mix design shall follow the procedure detailed in AASHTO with the following exceptions: Amend Table 1 Superpave Gyrotory Compaction Effort to read as follows:

Design ESALs (Million)	N initial	N design	N max
0 < 5	6	50	75
≥5	7	75	115

Add the following:

**Minimum Binder Content**

50 Gyration	75 Gyration
3/8"	6.0%
5.8%	1/2"
5.5%	Winter Binder 3/4"
4.9%	3/4"
4.6%	1"
4.6%	4.3%

This required minimum asphalt content is based on the use of aggregate with a specific gravity of 2.65 to 2.70. The minimum asphalt content requirement may be adjusted when aggregate with a higher specific gravity is used, or the minimum may be adjusted at the discretion of Materials and Research if it is believed to be in the best interest of the Department.

Amend Table 4 in AASHTO M 323, referenced in AASHTO R 35, to read as follows:

**Table 401-1 –Design Control Points\***

Standard	Nominal Maximum Aggregate Size											
	1"		3/4"		3/4" Winter Binder		1/2"		3/8"		No. 4	
Sieves	Max.	Min.	Max.	Min.	Max.	Min.	Max	Min.	Max.	Min.	Max.	Min.
Inch	Percentage by Weight Passing Criteria (Control Points)											
2												
1-1/2		100.0										
1	100.0	90.0		100.0		100.0						
3/4	90.0		100.0	90.0	100.0	90.0		100.0				
1/2			90.0		90.0		100.0	90.0		100.0		
3/8							90.0		100.0	90.0	100.0	99.0
No. 4									90.0		97.0	90.0
No. 8	45.0	19.0	42.0	32.0	48.0	38.0	52.0	42.0	56.0	46.0	75.0	65.0
No. 16											55.0	45.0
No. 30											36.0	26.0
No. 50											30.0	20.0
No. 100											13.0	8.0
No. 200	7.0	1.0	8.0	2.0	8.0	2.0	10.0	2.0	10.0	2.0	8.0	4.0

All mix designs shall be submitted to the Department for verification and approval.

\* Superpave designs will be accepted through the restricted zone, pending verification and approval by the Bureau of Materials & Research. The Contractor shall submit compaction data from trial blends at the optimum asphalt content and at 0.5% below and above the optimum asphalt content. The data shall include the temperature at which the hot bituminous pavement was aged.

**2.5.1.1** All 25 mm base course mixes shall be designed using the 50 gyration  $N_{design}$ .

**2.5.2** The Design Information shall include:

- (a) Asphalt Binder
- (b) PG Test Data
- (c) Specific Gravity
- (d) Laboratory Mix/Compaction Temperature
- (e) Aggregate
- (f) Dry and Washed Gradation
- (g) Bulk and Apparent Specific Gravity
- (h) All appropriate consensus properties
- (i) Blends
- (j) Baghouse material from the plant shall be incorporated into the mix design. The amount of baghouse material should be based on estimated usage or experience.
- (k) Moisture susceptibility according to AASHTO T 283.

Along with the design information, Materials & Research (M&R) requires 2 quarts of the designated asphalt binder, 4 pre-blended aggregate specimens for gyratory and 2 pre-blended aggregate specimens, suitable for AASHTO T-209 when mixed with the appropriate asphalt, in order to verify the design. M&R will accept the mix design based on the submitted information meeting the mix requirements and on verification of the mix volumetrics of the submitted specimen. If the verification samples indicate voids between 3.0 and 5.5 percent, and the Voids in Mineral Aggregate (VMA) and Voids Filled with Asphalt (VFA) fall within the specified limits, then the design will be accepted. Once accepted, the approved mix design is the job mix formula (JMF). If the voids are outside the aforementioned range or the VMA or VFA are outside the specified limits, the design will be rejected. M&R may elect to verify the design again.

**2.5.3** The proposed mix designs and materials shall be submitted to the Engineer a minimum of 20 working days before placement for approval. It shall be the responsibility of the Contractor to ensure all approved mix designs have been entered into the plant automation system before production begins. The Contractor will also be required to post a copy of the JMF in the DOT testing laboratory.

**2.5.4** Whenever the aggregate properties change enough to negate the project's existing design, a new design shall be submitted.

**2.5.5** If it becomes necessary to change the asphalt binder grade or the source of aggregate, a new mix design shall be developed. Up to 14 calendar days will be required to evaluate a change. Approved changes in target values will not be applied retroactively for acceptance or payment. If it becomes necessary to change the source of asphalt binder, the Contractor must submit recent quality test results from the manufacturer for the asphalt binder including a temperature viscosity curve.

**2.5.6** The Contractor shall perform a single point verification of an existing project mix design at the beginning of a new construction season to determine if the design remains valid. If the design is validated, the data from the single point verification shall be submitted to the Department. If the design cannot be validated, a new design shall be developed.

**2.5.7** The Bureau of Materials and Research may require the use of certain chemical additives.

**2.5.8** The laboratory performing the design shall be approved by the Department. To obtain the Department's approval, a laboratory must demonstrate that it is equipped, staffed, and managed so as to be able to produce job mix formulas and test hot asphalt mix in accordance with these Specifications. Approval for each laboratory shall remain in effect for a period of one year.

## **2.6 Method Requirements.**

**2.6.1** Stockpiled coarse aggregate shall meet the requirements of Table 401-2.

**Table 401-2 -- Percent Passing**

Sieve Size	Base Mix 1-1/2"	Binder Mix 3/4"	Surface Mix 1/2"	Surface Mix 3/8"
1-1/2"	100			
1-1/4"	90.0 - 100			
1"	50.0 - 85.0	100		
3/4"	10.0 - 50.0	90.0 - 100	100	
1/2"		15.0 - 55.0	90.0 - 100	100
3/8"			20.0 - 60.0	95.0 - 100
# 4				22.0- 55.0
No. 8	0 - 5.0	0 - 5.0	0 - 10.0	0 - 10.0

**2.6.2** After the job mix formula (JMF) is established, all mixtures furnished for the project shall conform within the following ranges of tolerances:

Passing No. 4 and larger sieves	±7.0 percent
Passing No. 8 No. 100 sieves (inclusive)	±4.0 percent
Passing No. 200 sieve	±1.0 percent
Asphalt binder	±0.4 percent
Temperature of mixture	± 20 °F (11 °C)

**2.6.3** When Non-compliant test results or other conditions make it necessary, it shall be the responsibility of the Contractor to make all adjustments required to ensure the mix conforms to the JMF.

If two consecutive non-compliant results occur, the Engineer may stop production until satisfactory corrective action has been taken. A 5% reduction in unit price will be assessed to all tonnage represented by consecutive gradation failures and a 10% reduction will be assessed to all tonnage represented by consecutive asphalt binder content failures. At the Engineer's discretion, the Contractor may be required to remove non-compliant material (no payment will be made for this material or its removal).

Contractor quality control personnel will not be required to be on site during production of non-quality control projects, but contract information shall be posted in the testing lab.

**2.7 Plant Mix Surface Treatment - General.**

**2.7.1** The general composition limits given in [Table 411-1](#) indicate target value ranges of mixtures permissible under [Section 411](#). The job mix formula shall lie within the target value ranges indicated for the particular type of hot asphalt mix.

**2.8 Bridge Pavement Bases Course – General.**

**2.8.1** Bridge pavement base course shall be 3/8" surface mix.

**2.9 Non-modified Asphalt Binder – General.**

**2.9.1** Non-modified asphalt binder shall contain silicone additive with the concentration being 3 parts per million plus or minus 1 part per million of silicone to asphalt binder, unless otherwise directed. Silicone additive shall be in liquid form and have a viscosity of 1,000 centipoises (1 Pas) at 77 °F. Asphalt binder containing silicone shall meet the requirements of [401.2.2](#)

**2.10 Allowed Recycled Materials – General.**

**2.10.1** Reclaimed asphalt pavement (RAP) may be used in the production of hot bituminous pavement. The allowed dust to asphalt ratio shall be as identified in AASHTO M 323. The maximum allowable total reused "asphalt" binder (TRB) in hot bituminous mixes shall be 1.0%. Any changes in the combination of recycled materials shall require a new mix design unless otherwise approved by the Bureau of Materials & Research.

### **2.10.2 Reclaimed Asphalt Pavement (RAP).**

**2.10.2.1** RAP shall consist of recycled asphalt pavement and shall be processed by crushing, cold milling, or other approved sizing techniques approved by the Bureau of Materials and Research to meet the required gradation specifications. The mixture of RAP and new aggregate shall meet the requirements specified in [Table 401-1](#) for aggregate gradation. The RAP shall be tested every 1,000 tons for gradation and asphalt binder content as a stockpile is being built. These test results shall remain on file by the Contactor until such time as the entire RAP stockpile has been utilized.

**2.10.2.2** The PG grade of added asphalt shall be as specified by the Bureau of Materials and Research. The aggregate component of the RAP shall meet the requirements of [401.2.1](#). The bitumen component of the RAP shall be asphalt cement and shall be free of significant contents of solvents, tars, and other volatile organic compounds or foreign substances that will make the RAP unacceptable for recycling as determined by the Bureau of Materials and Research.

**2.10.2.3** RAP materials may be rejected if deemed unsuitable for any reason or require an increase or decrease in the mix asphalt content. The Contractor shall submit representative samples, and gradation and asphalt cement content test results of the RAP to be incorporated into the Recycled Mixture for approval by the Bureau of Materials and Research at least 30 calendar days prior to the start of paving.

### **2.11 Asphalt Modifiers - General.**

**2.11.1** The generic type of each asphalt binder admixture, modifier and/or additive shall be identified on the certificate of analysis, which shall be furnished by the manufacturer for each load of asphalt delivered. Modifiers shall be pre-blended with the asphalt binder.

**2.11.2** Asphalt binder modification to produce high-strength mix shall utilize either a styrene-butadiene or a styrene-butadiene-styrene polymer to achieve the specified performance grade of asphalt. The Section 401 contract Special Provision specifying the asphalt binder grade shall also identify the AASHTO test method by which the binder grade shall be determined. The modified binder shall be pre-blended, storage-stable and homogeneous.

**2.11.3** The use of Warm Mix Technologies will be permitted in mix production. Qualified technologies are listed on the Qualified Warm Mix Asphalt (WMA) Technologies List.

**2.12 Pavement Joint Adhesive - General.** Pavement Joint Adhesive shall be a product listed on the [Qualified Products List](#).

## **Construction Requirements**

### **3.1 Mixing Plants - General.**

**3.1.1** Coarse aggregates shall be furnished in at least two nominal sizes for mix types containing top size aggregates of 1/2" and larger.

**3.1.2** RAP shall be fed into the plant by equipment specifically designed for recycling and approved by the Bureau of Materials and Research. In addition, all requirements pertaining to aggregates shall apply to RAP. Scalping screens, grizzlies, or similar devices shall be installed on the RAP feed bin(s) to remove any debris or other foreign materials in excess of 2". If a drum mix plant is used, the RAP shall be fed into the drum so that it will not come in direct contact with the burner flame. Mixing of RAP with the new aggregate shall occur before the bituminous material introduction point. The final mix produced shall be visually free from any chunks of RAP.

**3.1.3** Plants shall be approved at least five days prior to operations and will be capable of maintaining an adequate supply of mixture to the project.

**3.1.4** The site shall have ample storage space for the required separate bins, stalls, or stockpiles to allow delivery of uncontaminated sized aggregates to the feeder. To prevent spillage from one pile or bin to the next, aggregate assigned to different stockpiles shall be separated by bulkheads or other satisfactory means.

**3.1.5** Stockpiles of coarse aggregate produced for use in drum mix plants having top size aggregates greater than 3/4" shall be constructed in layers not to exceed 4 ft.

**3.1.6** All blending of aggregates shall be accomplished through separate bins at the cold elevator feeders and not in stockpiles.

**3.1.7** The plant shall be provided with a dust collector or collectors, designed to waste or return uniformly to the hot elevator all or part of the material collected, as directed. All plants shall have adequate covers and housing as may be necessary to ensure the proper collection of dust and the general cleanliness of the plant operation. The Contractor shall comply with all State and Federal environmental regulations.

**3.1.8** Mixing plants shall conform to AASHTO M 156. An efficient dust collecting system shall be provided to prevent the loss of fine material. The material collected may be returned to the mixture at a uniform rate or discarded.

### **3.1.9 Safety Requirements for Inspection**

**3.1.9.1** Adequate and safe stairways to the mixer platform shall be provided, and guarded ladders to other plant units shall be located where required for accessibility to plant operations.

**3.1.9.2** All gears, pulleys, chains, sprockets, and other dangerous moving parts shall be thoroughly guarded and protected.

**3.1.9.3** Ample and unobstructed space shall be provided on the mixing platform. The plant operator shall have a clear and unobstructed view of the plant operations.

**3.1.9.4** A platform shall be located in close proximity to the inspector's laboratory for the purpose of easily obtaining samples of the mixture from the trucks.

**3.1.9.5** When the plant is to be operated in other than daylight hours, adequate lighting shall be provided in all areas frequented by the inspector during his normal routine. Specific areas to be illuminated include the truck loading zone and sampling location. A light or lights shall also be located so as to allow the clear observance of the truck body lubrication operation.

### **3.1.10 Scheduling Inspection Personnel**

**3.1.10.1** The Contractor shall notify the Bureau of Materials and Research at least three working days in advance of starting paving operations to allow sufficient time to schedule required plant inspection personnel. When paving bridge decks that have barrier membranes, this notice shall include the name of the membrane product so that the mix temperature may be established.

### **3.1.11 Access to Production Facilities**

**3.1.11.1** The Engineer shall have access at any time to all parts of the plant for inspection of the conditions and operations of the plant, for confirmation of the adequacy of the equipment in use, for verification of proportions and character of materials, and for determination of temperatures being maintained in the preparation of the mixtures. The Contractors shall provide a suitable building, room, or trailer for exclusive use by the DOT Technician as a testing laboratory in which to house and use the testing equipment. Laboratories shall be in an approved location, with one laboratory provided for each plant.

### **3.1.12 Field Laboratories**

**3.1.12.1** Field laboratories shall meet the following minimum requirements:

Size:	Laboratory shall consist of a minimum of 200 ft <sup>2</sup> of floor space, laid out to accommodate shelves, benches, desk, equipment and personnel movement.
Windows:	Two, with locks and screens, providing cross ventilation.
Doors:	One, with lock and screen.
Electrical:	Adequate lighting and power outlets.
Air Conditioner:	Unit size shall be as recommended for size of the facility.
Heat:	Thermostatically controlled to maintain a minimum temperature of 68°F (20°C).
Weatherproofing:	Roof, sides, and floor shall be maintained weatherproof at all times.
Appurtenances:	<ol style="list-style-type: none"> <li>An exhaust fan and hood over the extractor. The hood shall be large enough to cover the extractor. The fan shall be a high-volume axial-flow fan, at least 10" in diameter, and of sufficient capacity to vent the fumes adequately.</li> <li>Free wall space of at least 12 ft<sup>2</sup>; or a bulletin board of equal area for posting notices and job mix formulas.</li> <li>Suitable shelves and benches. Bench space shall be approximately 24" wide by 36" high. There shall be a minimum total length of 19 ft of bench space.</li> </ol>

**3.1.12.2** The following office furnishings and testing equipment shall be provided:

- (a) Electronic balance with tray, at least 300 oz net capacity, sensitive to 0.003 oz.
- (b) Desk and chair in good working condition.
- (c) Set of U.S. Standard brass sieves, each sieve being 12" in diameter and 1- 1/2" high. The set shall consist of one each of the following sizes: 1- 1/2", 1-1/4", 1", 3/4", 1/2", 3/8", No. 4, No. 8, No. 16, No. 30, No. 50, No. 100, No. 200, with pan and cover.
- (d) Motor driven shaker for 12" diameter sieves. Shaker shall meet the following requirements: Rotating turntable, tilt to 45-degree angle and have hammers to tap each sieve during operation.
- (e) Motor driven centrifuge extractor, 100 oz capacity with variable speed up to 3600 rpm, with filter rings and non-toxic solvent approved by the Bureau of Materials and Research.
- (f) Tachometer readily available to check the speed of the extractor.
- (g) Automatic timer with interval of 0 to 30 minutes.
- (h) Bristle brush for cleaning No. 200 sieve.
- (i) Brass brush for cleaning 8" diameter sieves.
- (j) Five pans or bowls, approximately 4" high, 15" round or square.
- (k) Spatula, large spoon, garden trowel, measuring scoop, and 1-quart pitcher.
- (l) Fire extinguisher, minimum five pound dry chemical.
- (m) Desk brush and floor broom.
- (n) Sample splitter (riffle type), chute width 1- 1/2 to 2"
- (o) Microwave oven when drum mix plant is used.
- (p) Minimum of one metal sample pail for each hot bin.
- (q) Lavatory with toilet (See 698.3.1.4) and wash basin, unless approved otherwise.
- (r) Water, hot and cold, and water suitable for drinking. (Fountain style will be acceptable).
- (s) Telephone with private line.
- (t) Drying oven, minimum of 3.5 ft<sup>3</sup>.\*
- (u) Equipment sufficient to perform AASHTO T 209.\*
- (v) Water-cooled diamond saw capable of cutting 6" road cores.
- (w) High Speed Internet Connection - Each laboratory (on State-bid projects) will be provided with bi-directional Internet access having a minimum data rate of 256K bps.
- (x) Wheelbarrow when a drum mix plant is used.
- (y) Pycnometer, 4,000 g.

\*All ovens other than microwaves shall be vented to the outside.

**3.1.12.3** All of the foregoing testing equipment shall be in good condition and shall be replaced or repaired by the Contractor if, during the duration of the project, it becomes unsuitable for testing purposes. Testing equipment shall be calibrated by the Contractor in accordance with 106.03. The above mentioned equipment is for operation of a single plant.

**3.2 Storage of Asphalt Binder – General.**

**3.2.1** Tanks for storage of asphalt binder shall be of minimum 10,000-gallon capacity and equipped for heating the material under effective and positive control at all times, to the temperature requirements set forth in the specifications for the paving mixture. Heating shall be accomplished by steam or oil coils, electricity, or other means such that no flame shall come in contact with the heating tank.

**3.2.2** A complete system providing for continuous circulation of the asphalt binder between the storage tank and the proportioning units shall be employed. The discharge end of the circulating pipe shall be maintained below the surface of the asphalt binder in the storage tank to prevent discharging the hot asphalt binder into the open air.

**3.2.3** The Contractor shall provide an in-line valve that is conveniently located between the storage tank and the mixing plant. The valve shall be installed in such a manner that samples may be withdrawn from the line slowly at any time during plant operation. A drainage receptacle shall be provided for flushing the outlet prior to sampling.

### 3.3 Control of Asphalt Binder – General.

**3.3.1** Satisfactory means either by weighing or metering shall be provided to obtain the proper amount of bituminous material in the mix within the tolerance specified. Means shall be provided for checking the quantity or rate of flow of bituminous material into the mixer as follows:

- (a) Metering devices for asphalt binder shall indicate accurately to within 1.0 percent the amount of asphalt binder delivered. The section of the asphalt binder flow line between the charging valve and the spray bar shall be provided with a three-way valve and outlet whereby the quantity delivered by the meter may be checked by actual weight. The valve controlling the flow of asphalt binder to the mixer shall close tightly to prevent asphalt binder from leaking into the pug mill during the mixing cycle. The meter shall be constructed so that it may be locked at any dial setting to 0.1 gal and will automatically reset to this reading after the addition of asphalt binder to each batch. The dial shall be in full view of the mixer operator. The size and spacing of the spray bar openings shall provide a uniform application of asphalt binder the full length of the mixer in a thin uniform sheet or in multiple sprays.
- (b) If a bucket is used for weighing the asphalt binder, the bucket shall be of sufficient capacity to hold and weigh the amount required for a batch in a single weighing. The filling system and bucket shall be of such design, size, and shape that asphalt binder will not overflow, splash, or spill outside the confines of the bucket during filling and weighing. The filling system and bucket shall be so arranged as to deliver the asphalt binder in a thin uniform sheet or in multiple sprays over the full length of the mixer. The time required to add the asphalt binder shall be not more than 15 seconds.
- (c) Asphalt binder scales shall conform to the requirements for aggregate scales as specified in 3.4.10. Beam type scales shall be equipped with a tare beam or adequate counter-balance for balancing the bucket and compensating periodically for the accumulation of asphalt binder on the bucket.

**3.3.2** Suitable means shall be provided, by either steam or oil jacketing or insulation, for maintaining the specified temperatures of the asphalt binder in the pipelines, meters, weigh buckets, spray bars, and other containers or flow line.

### 3.4 Batching Plants – General.

**3.4.1** All aggregate shall be delivered by belt driven feeders. All feeders shall provide for adjustment of the cold feed and shall be capable of being secured in any position. The cold feeder for recycled materials shall be equipped with an oversize particle scalper.

**3.4.2** Dryers shall continuously agitate the aggregate during the heating and drying process without leaving any visible unburned oily residue on the aggregate when it is discharged from the dryer. If unusually wet aggregate is being used, the input to the dryer shall be reduced to that amount which the dryer is capable of drying. Aggregates shall be free from coatings of dust after drying.

**3.4.3** Plant screens shall be constructed and operated in such manner that all aggregates will be uniformly separated into the sizes required for proportioning. They shall have sufficient capacity to furnish the necessary quantity of each aggregate size required for continuous operation. Screen cloth that has become broken or has worn sufficiently to affect the gradation shall be replaced.

**3.4.4** Thermometric equipment shall be provided as follows:

- (a) An armored thermometer of suitable range shall be fixed in the asphalt binder feed line at a suitable location near the discharge at the mixer unit.
- (b) The plant shall be further equipped with an approved thermometer, pyrometer, or other approved thermometric instrument that continuously indicates the temperature of the heated aggregate at the discharge chute of the dryer.

**3.4.5** Hot bins shall consist of at least four separate aggregate compartments. One compartment shall be reserved for fine aggregate, and when required, one additional compartment shall be added for dry storage of mineral filler. Alternate bin systems may be utilized with prior approval from the Department. Provision shall be made for accurate proportioning. Each compartment shall contain the following features:

- (a) Sufficient volume to supply the mixer at full rated capacity.
- (b) An overflow pipe that shall be of such size and at such a location as to prevent any backing up of material into other bins or into contact with the screen. Overflow apparatus shall be equipped with a telltale device that alerts the operator and the inspector when the overflow equipment is full.

- (c) Adequate telltale devices to indicate the position of the aggregate in the bins at the lower quarter points.
- (d) Gates that cut off quickly and completely with no leakage.
- (e) Adequate and convenient facilities including safe platforms for obtaining representative samples from each bin.

**3.4.6** Weigh boxes shall be of sufficient size to hold the maximum required weight of aggregate for one batch without hand raking or running over. The weigh box shall be supported on fulcrums and knife edges so constructed that they remain in alignment or adjustment. All parts of the weigh box shall be free from contact with any supporting rods, columns, or other equipment that affects the proper functioning of the hopper or scale. Gates on both bins and weigh hopper shall be constructed to prevent leakage when closed.

**3.4.7** Aggregate scales for any weigh box or hopper shall be of standard make and design and shall be accurate to 0.5 percent of the indicated load. The weight shall be indicated on a digital display. Scales shall be substantially constructed and shall be installed in such a manner as to be free from vibration. The display shall be in full view of the operator, and the numerals shall be of such a size that the inspector can easily read them. If the digital display is so located that it is not easily accessible to the inspector, a duplicate display will be required for exclusive viewing by the inspector. The job mix formula target weights shall continuously be part of the digital display during plant operations. The digital scale weight indications shall be displayed adjacent (in juxtaposition) to each target weight for easy comparison to the job mix formula. It shall be the responsibility of the Contractor to ensure that all scales are tested and sealed according to provisions as shown in the National Institute of Standards and Technology Handbook 44, at least on an annual basis. The work shall be accomplished by a competent commercial scale company prior to the start of the construction season. Scales shall be re-tested prior to use, after they have been moved. The Contractor shall have readily available at least ten standard 50 lb. weights, for checking the scales during operations.

**3.4.7.1** Recycled materials weighed separately from the materials in the virgin weigh hopper shall be weighed on a dedicated scale with digital display at the accuracy described in 3.4.7.

**3.4.8** The batch mixer shall be of an approved pug mill type, hot oil or steam jacketed, or heated by other approved means and capable of producing uniform mixtures within the specified tolerances. The mixer shall have a batch capacity of not less than 4,000 lb. and be constructed so as to prevent leakage during the mixing cycle. The amount of material that may be mixed per batch shall not exceed the manufacturer's rated capacity. If the mixer does not mix properly at the rated capacity, or if its production does not coordinate with the other plant units, the Department reserves the right to reduce the size of the batch until the desired efficiency is obtained. The pug mill shall be equipped with a sufficient number of paddles operated at such speed as to produce a properly and uniformly mixed batch. If, in the course of mixing, two adjacent paddle tips become broken, immediate repair will be called for. If the paddle tips become broken at widely separated points, repair may be delayed until the end of the working day. The clearance of the tips from all fixed and moving parts shall not exceed 3/4". Badly worn or defective tips shall not be used in mixing operations. The mixer shall be covered to prevent loss of fine material. The discharge gate shall be so designed that no uncoated material is retained at the gate opening during the mixing operation. Leakage from the pug mill gate during operation will not be permitted.

**3.4.9** Each plant shall be equipped with an accurate time lock to control the operations of a complete mixing cycle. A mixing cycle shall consist of two periods, the dry mixing period and the wet mixing period. The dry mixing period shall be the interval of time between the opening of the aggregate weigh hopper gate and the start of the application of asphalt binder. The wet mixing period shall be the interval of time between the start of the application of asphalt binder and the opening of the mixer gate. The time lock shall be capable of being set at intervals of five seconds or less throughout the mixing cycle and shall have a suitable case equipped with an approved lock. The setting of time intervals shall be performed in the presence and under the direction of the Engineer who may lock the case until such time as a change is to be made in timing periods. The time lock shall lock the asphalt binder bucket throughout the dry mixing period and shall lock the mixer gate throughout the dry and wet mixing period.

**3.4.10** The use of a fully automatic batching plant will be required and shall meet the following requirements:

- (a) The automatic proportioning controls shall include equipment for accurately proportioning batches of the various components of the mixture by weight in the specified sequence and for controlling and timing the mixing operation. Interlocks shall be provided that delay, stop, or lock out the automatic batch cycling whenever the batched quantity of any component weight or the total batch is not within the specified weight tolerance, or when there is a malfunction in any portion of the control system.

- (b) The automatic control for each batching scale system shall be equipped with a device for stopping the automatic cycle in the underweight check position and in the overweight check position for each material so that the tolerance setting may be checked.
- (c) Each dial scale system shall be equipped with a removable dial puller that can be attached to the dial lever system so that the dial can be moved smoothly and slowly through its range to check the settings of the automatic control system. The plant operator shall perform this automatic control system checkout procedure periodically as requested by the Engineer.
- (d) The weigh batching controls shall meet the following tolerances for the various components weighed in each batch:

<b>Component Weighed</b>	<b>Percentage of Total Batch Weight</b>
Tare weight of aggregate weigh box	±0.5
Tare weight of asphalt binder weigh bucket	±0.1
Each aggregate component	±1.5
Mineral filler	±0.5
Asphalt	±0.1

- (e) The total weight of the batch shall not vary by more than ±2.0 percent of the designated batch weight.
- (f) Recording equipment shall be provided in all plants employing automatic proportioning. Each recorder shall include an automatic printer system. The printer shall be positioned so that the scale reading and the printer can be readily observed from one location by the plant inspector. The printer shall produce, in digital form, a weight slip conforming to the requirements of 109.01 and 401.3.8.1.
- (g) If at any time the automatic proportioning or recording system becomes inoperative, the plant will not be allowed to operate.

**3.4.11** Each size of hot aggregate, the mineral filler if required, recycled material if applied, and the bituminous cement shall be measured separately and accurately to the proportions in which they are to be mixed.

**3.4.12** The virgin aggregate shall be dried and heated to a minimum temperature of 260° F. The asphalt binder shall be heated to a temperature between 260° and 325° F. The weigh hopper shall be charged with the hot aggregate, coarse sizes first, unless otherwise directed.

**3.4.13** Virgin Aggregates shall be dry mixed for 5 to 15 seconds.

**3.4.14** Recycled materials can only be introduced to the weigh hopper or to the mixer.

**3.4.14.1** Recycled materials that are introduced in the weigh hopper shall be dry mixed per 3.4.13.

**3.4.14.2** When recycled materials are delivered to the mixer separately from the virgin aggregates, wet mixing time shall not begin until all recycled material is introduced to the mixer and is moisture free. The duration shall be determined based on field/plant conditions, and by agreement of the Contractor and Engineer.

**3.4.15** The asphalt binder shall be added and the mixing continued until a uniform coating is obtained and all particles of the aggregate are thoroughly coated. The total dry and wet cycle shall not be less than 35 seconds for base and binder mixtures and not less than 40 seconds for the surface mix. In no case shall the total mixing period exceed 75 seconds. If the aggregate in the hot bins contains sufficient moisture to cause foaming in the mixture, such aggregate shall be removed from the bins, and production rate shall be reduced so as not to exceed the capacity of the dryer. Material having once gone through the mixing plant shall not be returned to the stockpiles.

**3.5 Drum Mix Plants – General.**

**3.5.1** The plant shall be specifically designed for the process and shall be capable of satisfactorily heating, drying, and uniformly mixing the bituminous material and aggregate in accordance with the job mix formula. The rate of flow through the drum shall be controlled in order that a homogeneous mixture is obtained with all particles uniformly coated. In no case shall the quantity of mix produced exceed the manufacturer’s rated capacity. If the percent of moisture in the mixture exceeds 1.0 percent by weight, the right is reserved to decrease the rate of production. The plant shall be equipped with automatic burner controls.

**3.5.2** The cold bins shall be divided in at least five compartments and shall be designed to prevent the overflow of material from one bin to another. Each cold bin shall be equipped with an orifice to feed the aggregate accurately and uniformly. The feeding orifice shall be adjustable, and indicators shall be provided to show the gate opening. An automatic plant shutoff device shall be provided to operate when any aggregate bin becomes empty or the flow from

any bin gate becomes restricted. A vibrator or other suitable means may be required in order to ensure a uniform flow of materials. The order of aggregate feed onto the composite cold feed belt shall be from coarse to fine. Aggregate shall pass through a scalping screen prior to the weigh belt.

**3.5.2.1** When recycled material is used, an additional bin, equipped with its own oversize particle scalper, shall be required. In event of an emergency, this bin may be used to feed aggregate in an amount not to exceed 15% of material to complete the day's production.

**3.5.3** The total cold aggregate feed shall be weighed continuously by an approved belt scale. The weighing system shall register within +0.5 percent of the indicated load.

**3.5.4** Proportioning controls for aggregate and asphalt binder shall be located at the panel that also controls the mixture and the temperature. The panel shall be equipped with automatic controls that shall display, in digital form, the percentages of asphalt binder, mineral filler if required, and each aggregate in the job mix formula. The panel shall also be equipped to raise and lower the production rate without having to reset the individual controls for each change in production rate. The controls shall maintain aggregate flow accuracy such that the total variation of all materials being drawn per interval of time shall not exceed an amount equal to 1.5 percent of the total weight of bituminous mixture per interval of time.

**3.5.5** Provisions shall be made for introducing the moisture content of the total cold feed into the belt weighing system and correcting the wet aggregate weight to dry aggregate weight. The system shall be capable of adjusting the flow of bituminous material to compensate for any variation in the dry weight of the aggregate flow. It shall be the responsibility of the Contractor to monitor and determine accurate moisture contents of the aggregate and RAP stockpiles used for production of hot bituminous pavement. Accurate moisture contents shall be determined at a minimum every other day of production. In the event of rain, moisture contents shall be determined for all aggregates and RAP to be utilized before the next day's production.

**3.5.6** The dry weight of the aggregate flow shall be displayed by automatic digital readout in units of weight per interval of time.

**3.5.7** When mineral filler is specified, a separate bin and feeder shall be provided with a variable drive interlocked with the aggregate feeders. Mineral filler shall be introduced and uniformly dispersed into the mixture without loss to the dust collection system. A device shall be provided to indicate when the flow of filler into the delivery system stops or its specified volume is out of job mix tolerance. The rate of flow shall be accurate to within 0.5 percent by weight, of the total mix. Means shall be provided to readily divert the flow of mineral filler into a container for measurement.

**3.5.8** The asphalt binder shall be introduced through a continuously registering cumulative indicating meter by a pump specifically designed for the plant. The meter shall be located in the asphalt line so that it continuously registers the asphalt discharge to the mixer and so that the discharge through the meter can be readily diverted into a suitable container for measurement by actual weight. The meter shall indicate accurately to within 1.0 percent the amount of asphalt binder being delivered. The accuracy of the pump and meter shall be verified at periodic intervals as designated by the Engineer.

**3.5.9** Satisfactory means shall be provided to ensure positive interlock between dry weight of aggregate flow and the flow of bituminous material through an approved meter.

**3.5.10** The flow of bituminous material shall be displayed by automatic digital readouts in terms of volume or intervals of weight and time.

**3.5.11** The plant shall have a means of diverting mixes at start up and shut down or where mixing is not complete or uniform.

**3.5.12** A surge or storage system complying with 3.7 shall be provided.

### **3.6 Mixing Temperature - General.**

**3.6.1** The Engineer may adjust the job mix formula temperature within the limits of 260° and 350°F according to the existing conditions. Material with a temperature at discharge outside the job mix formula tolerance may be rejected. In no case will a mixture be accepted with a discharge temperature in excess of 375°F.

**3.6.2** During hot weather, the temperature of the mixture when discharged shall be as low as is consistent with proper mixing and placing. During cold weather, a temperature approaching the upper limit is desirable.

### 3.7 Hot Storage System – General.

3.7.1 Material may be placed in a storage silo for a period not to exceed 24 hours from the time of mixing. The upper and lower gates when closed shall create an airtight seal. The silo shall be filled to capacity. 24-hour storage will not be allowed if there is reason to believe there is a problem with the gate seals or excessive heat loss.

3.7.2 The hot storage system shall be capable of conveying the hot mix from the plant to insulated and enclosed storage bins and storing the hot mix without appreciable loss in temperature, asphalt migration, segregation, or oxidation.

3.7.3 The conveyer system may be a continuous type or skip bucket type. If the continuous type is used, it shall be enclosed to prevent a drop in mix temperature. If the skip bucket type is used, the bucket must be of sufficient capacity to transport an entire batch and mass dump it into the bins.

3.7.4 The storage bins shall be designed in such a manner as to prevent segregation of the hot mix during discharge from the conveyor into the bins and shall be equipped with discharge gates that do not cause segregation of the hot mix while loading the mix into the trucks. The storage bin heating system shall be capable of maintaining the mix temperature without localized heating (hot spots).

3.7.5 The bin shall be equipped with a light or indicator to show when the level of material reaches the top of the discharge cone. The bin shall not be emptied below the top of the discharge cone until the use of the bin is completed each day. The material remaining in the discharge cone may be rejected if there is evidence of segregation.

### 3.8 Weighing and Hauling – General.

3.8.1 The Contractor shall provide an approved automatic printer system that prints the weights of the material delivered, provided the system is used in conjunction with an approved automatic batching and mixing control system. Such weights shall be evidenced by a weight slip for each load.

3.8.2 Weight slips shall include requirements as shown in 109.01 and the following for batch plants with automatic proportioning equipment:

- (a) Tare weight of aggregate weigh box.
- (b) Tare weight of asphalt binder weigh bucket.
- (c) Accumulative weights as batched for each aggregate (total of last aggregate will be aggregate total).
- (d) Weight of asphalt binder.
- (e) Accumulated total weight of batch.

3.8.3 Each weight slip will show a consecutive load number and shall include an accumulative total of material delivered for each day.

### 3.9 Vehicles – General.

3.9.1 **Asphalt Release Agent (ARA).** ARAs used to facilitate the release of hot bituminous mixes from truck beds shall be as included in the Qualified Products List. In addition, ARA usage is permissible in lubricating and cleaning of production plant equipment, and roadway paving equipment (pavers, rollers, and hand tools).

3.9.2 The mixture shall be transported from the paving plant to the project in trucks having tight, smooth, metal beds previously cleaned of all foreign materials. Truck beds may be lined with a polyethylene type material designed and installed for hauling hot bituminous mixes. Each load shall be covered with canvas or other suitable material of sufficient size and thickness to retain heat and to protect it from weather conditions. The cover material when new shall weigh a minimum of 18 oz/yd<sup>2</sup> and it shall be a tightly woven or solid material. When necessary, so that the mixture can be delivered on the project at the specified temperature, truck beds shall be insulated, and covers shall be securely fastened.

3.9.3 Equipment that leaks oil, diesel fuel, gasoline, or any other substance detrimental to the pavement will not be allowed on the project.

### 3.10 Placing

#### 3.10.1 General.

3.10.1.1 Prior to placing of any mix, a pre-paving conference shall be held to discuss and approve the paving schedule, source of mix, type and amount of equipment to be used, sequence of paving pattern, rate of mix supply, traffic control, and general continuity of the operation. Special attention shall be made to the paving pattern sequence to minimize cold joints. The field supervisors of the above mentioned operations shall attend this meeting.

**3.10.1.2** The Contractor shall notify the Engineer at least five working days in advance of paving operations to allow sufficient time to schedule required site inspection and testing. All paving and compaction equipment shall be approved and on site prior to start up each day.

**3.10.1.3** Base course pavement lifts shall not exceed the maximum compacted thickness of 5 inches. Any course exceeding 5 compacted inches shall be placed in 2 passes.

**3.10.1.4** When performing paving operations at night, in addition to the requirements of 3.1.4.5, the Contractor shall provide sufficient lighting at the work site to ensure the same degree of accuracy in workmanship and conditions regarding safety as would be obtained in daylight.

**3.10.1.5** When patching existing pavement, the material shall be placed on the prepared clean underlying surface at the locations designated and shall be spread to produce a smooth and uniform patch. The patch material shall be thoroughly compacted and shall match the line and grade of the adjacent pavement.

**3.10.1.6** Relatively small areas not accessible to the paver may be spread by hand, but extreme care shall be taken to create a surface texture similar to the machine work. Surface material shall be spread by lutes and not by rakes.

**3.10.1.7** Unless otherwise authorized, the final surface course shall not be placed until guardrail posts have been set and general cleanup has been completed.

**3.10.1.8** When hot bituminous bridge pavement is to be placed over barrier membrane, the placing temperature shall be as specified in [538.3.3.5](#). A paver, mounted on rubber tracks or tires, shall be used to place the 1" base course unless this procedure is found to cause damage to the membrane. When such damage is found to be evident, the hand method may be allowed. The hand method may also be allowed if the Engineer determines that the use of a paver for this work is impracticable. During warm weather, the above paving shall be done during the cool period of the day. A paver shall be used to place the surface course.

**3.10.1.9** Where pavement is placed adjacent to structural members such as expansion joints, the material in the top course shall be placed so that the compacted grade of the pavement is 1/4 to 3/8" above the grade of the structural member.

**3.10.1.10** When paving on aggregate base courses and/or base course pavement, the first pass paved shall be on the travel way and not on the shoulders.

**3.10.1.11** Drainage and utility structures within the limits of the pavement shall be set and raised in accordance with the provisions of [604.3.4](#). Contact surfaces of the drainage and utility castings as ordered shall be painted with a thin coating of suitable bituminous material.

**3.10.1.12** At the beginning and end of the project or project section, the existing pavement shall be removed to a sufficient depth to allow the placing of the new pavement and construction of a transverse joint, which shall be painted with a suitable bituminous material. The underlying course shall be clean and free from foreign materials and loose bituminous patches and must present a dry, unyielding surface.

**3.10.2 Performance Requirements (QC/QA).** The Contractor shall provide the following equipment for testing and sampling at the project site. The equipment shall be in good condition and shall be replaced by the Contractor if, during the duration of the project, it becomes unsuitable for testing or sampling purposes.

**3.10.2.1** Metal plate 12" minimum each side, flat bottom scoop 3000-gram capacity minimum, and sample containers to perform NHDOT Test Procedure B-7 (see Appendix A) sampling.

### **3.10.3 Weather Limitations - General**

**3.10.3.1** Mixtures shall be placed only when the underlying surface is dry and frost free. The Engineer may permit, in case of sudden rain, the placing of mixture then in transit from the plant, if laid on a base free from pools of water, provided motorist visibility is not impaired and all other specifications are met. No load shall be sent out so late in the day that spreading and compaction cannot be completed during the daylight, unless the requirements of 3.10.1.5 are met. The Engineer may suspend operations for the day when the Contractor is unable to meet specifications.

**3.10.3.2** Surface course shall not be scheduled for placement after October 1<sup>st</sup> and before May 1<sup>st</sup> without written approval by the Engineer.

**3.10.3.3** All mix placed after October 1<sup>st</sup> and before May 1<sup>st</sup> shall be modified by a qualified warm mix technology.

**3.10.3.4** In special instances, when the Engineer determines that it is in the best interest of the State, the Engineer may waive the requirements of 3.10.3, provided that 3.10.3.1 shall always remain in effect.

**3.10.4 Sweeping - General.** Existing pavement or previously laid courses shall be thoroughly dry and free from all dust, dirt, and loose material. Sweeping with a power broom, supplemented by hand brooming, may be necessary.

**3.10.5 Tack coat - General.** Surfaces of any pavement course shall have a tack coat of emulsified asphalt applied in accordance with the requirements of 410.3.4.

### **3.11 Pavers and Material Transfer Vehicles (MTV) – General.**

#### **3.11.1 Pavers shall be:**

- (a) Self-contained, power-propelled units with adjustable vibratory screeds and full-width screw augers that reach within 18” of the end plate for fixed-width paving.
- (b) Heated for the full width of the screed.
- (c) Capable of spreading and finishing courses of hot asphalt mix in widths at least 12” more than the width of one lane.
- (d) Equipped with a receiving hopper having sufficient capacity to ensure a uniform spreading operation.
- (e) Equipped with automatic feed controls, which are properly adjusted to maintain a uniform depth of material ahead of the screed.
- (f) Capable of being operated at forward speeds consistent with satisfactory laying of the mix.
- (g) Capable of producing a finished surface of the required smoothness and texture without segregating, tearing, shoving, or gouging the mixture.
- (h) Equipped with the following automatic screed controls:
  - 1. Two 24 ft. ski type devices or floating beams.
  - 2. Two grade sensors.
  - 3. Two short skis (joint matchers).
  - 4. Slope sensing control for transverse slope

**3.11.1.1** Pavers used for all machine method work shall have a minimum weight of 28,000 lbs. and a minimum 8-foot wheelbase, unless otherwise approved by the Engineer.

**3.11.1.2** All courses shall be spread and finished to the required thickness by approved, self-contained, self-propelled spreading and finishing machines (pavers). Pavers shall be provided with an adjustable, activated screed and shall be capable of spreading the mixtures with a finish that is smooth, true to the required cross-section, uniform in density and texture, and free from hollows, tears, gouges, corrugations, and other irregularities. Broadcasting behind the paver shall be held to a minimum. Pavers shall be capable of spreading and finishing courses of the required thicknesses and lane widths. Horizontally oscillating strike-off assemblies will not be approved.

**3.11.1.3** The activated screed shall be of the vibrating or tamping bar type or a combination of both and shall operate without tearing, shoving, or gouging the mixture. The activated portion of the screed shall extend the full width of the mixture being placed in the traveled way and other areas with sufficient width to accommodate a paver. In other locations as permitted such as narrow shoulders, tapers, and areas adjacent to curbs, non-activated extensions to the screed will be allowed. The paver shall be equipped with a screed heater. The screed heater shall be used when starting a cold machine and for maintaining a suitable screed temperature when needed.

**3.11.1.4** The paver hopper gates shall be adjusted to pass the correct amount of mix to the augers so that they operate more or less continuously. The height of material shall be maintained at a constant level in front of the screed, to a point where approximately half of the auger shall be visible at all times.

**3.11.1.5** The sensors for either or both sides of the paver shall be capable of sensing grade from an outside reference line or from the surface using a ski type device. A slope control sensor, mounted on the slope beam of the paver shall be capable of sensing transverse slope of the screed. The sensors shall provide automatic signals that operate the screed to maintain the desired grade and transverse slope. Pavers shall not be used until the automatic controls have been checked and approved by the Engineer.

**3.11.1.6** The use of automatic grade and slope controls shall be required on all pavers. On projects or parts of projects where the Engineer deems that the use of automatic controls are impracticable, some or all of the controls listed in 3.11.1(h) may be waived.

**3.11.1.7** Whenever a breakdown or malfunction of the automatic controls occurs, the equipment may be operated manually for the remainder of the normal working day on which the breakdown or malfunction occurred. This method of operation must meet all other specifications.

**3.11.1.8** The forward speed of the paver shall be adjusted to the rate of the supply of materials so that the paver operates without having to make stops except for emergencies. If the Engineer determines that the paving operations result in excessive stopping of the paver, the Engineer may suspend all paving operations until the Contractor makes arrangements to synchronize the rate of paving with the rate of delivery of materials.

### **3.11.2 Material Transfer Vehicle (MTV)**

**3.11.2.1** An approved MTV shall be used to transfer the bituminous mix from the hauling equipment to the paver. The MTV shall operate independently from the paver and shall be a commercially manufactured unit specifically designed for the transfer of mix from the hauling equipment to the paver without depositing the mix on the roadway. It shall have the ability to swing the discharge conveyor to reach the paver hopper. The MTV shall be designed so that the mix is internally remixed. The minimum storage capacity of the MTV shall be 12 tons.

**3.11.2.2** The MTV will only be required for mainline construction and straight ramps (does not include loop ramps, interim connections, interim crossovers and side roads) when the section is a minimum of 600 tons per paver mobilization unless otherwise approved by the Contract Administrator.

**3.11.2.3** When the MTV passes over a bridge that is not a fill over structure, it shall be as near to empty as possible. The MTV also shall not exceed 5 miles per hour while on the bridge. If the Contractor proposes moving the MTV over a bridge with more than a minimal amount of material in it, a proposal must be submitted to and approved by the Bureau of Bridge Design prior to the placing of any mix. The submittal needs to show in detail the wheel and axle loading that will be placed on the bridge deck.

## **3.12 Compaction.**

### **3.12.1 General.**

**3.12.1.1** Immediately after the hot asphalt mix has been spread, struck off, and surface irregularities adjusted, it shall be thoroughly and uniformly compacted by rolling. The completed course shall be free from ridges, ruts, humps, depressions, objectionable marks, visible segregation, or irregularities and in conformance with the line, grade, and cross-section shown in the Plans or as established by the Engineer.

**3.12.1.2** All compaction units shall be operated at the speed, within manufacturers recommended limits, that will produce the required compaction. The use of equipment, which results in excessive crushing of the aggregate, will not be permitted. Any asphalt pavement that becomes loose, broken, contaminated, shows an excess or deficiency of asphalt binder, or is in any way defective, shall be removed and replaced at no additional cost with fresh hot asphalt mix, which shall be immediately compacted to conform to the surrounding area. Hot asphalt mix shall not be permitted to adhere to the roller drums during rolling.

**3.12.1.3** When a vibratory roller is being used, the vibration shall stop automatically when the roller is stopped or reversing direction of travel. Vibratory rollers shall not be operated in the vibratory mode under the following conditions: When checking or cracking of the mat occurs, when fracturing of aggregate occurs, and on bridge decks.

**3.12.1.4** Pneumatic-tire rollers shall be self-propelled and shall be equipped with smooth tires of equal size and diameter. The wheels shall be so spaced that one pass of a two-axle roller accomplishes one complete coverage. The wheels shall not wobble and shall be equipped with pads that keep the tires wet. The rollers shall provide an operating weight of not less than 2,000 lb. per wheel. Tires shall be maintained at a uniform pressure between 55 and 90 psi with a 5 psi tolerance between all tires. A suitable tire pressure gauge shall be readily available.

**3.12.1.5** Pneumatic-tired rollers shall be used on all pavement leveling courses.

**3.12.1.6** Rollers must be in good mechanical condition, free from excessive backlash, faulty steering mechanism, or worn parts. The empty weight and the ballasted weight shall be properly marked on each roller.

**3.12.1.7** To prevent adhesion of the mixture to the rollers, the wheels shall be kept properly moistened with water or water mixed with very small quantities of detergent or other approved material. Excess liquid will not be permitted. All steel rollers shall be equipped with adjustable wheel scrapers.

**3.12.1.8** A minimum of three rollers shall be used. Unless an alternate compaction package is approved at the project pre-pave meeting, roller trains shall consist of the equipment describe herein.

### **3.12.2 Method Requirements.**

**3.12.2.1** The initial rolling shall be done with a static or vibratory steel-drum roller. Intermediate rolling shall be performed by a pneumatic-tired roller and/or a vibratory/oscillatory roller. Final rolling shall be performed with a static steel-drum roller. The minimum weight of static steel-drum rollers shall be 8 tons.

**3.12.2.2** Unless otherwise directed, rolling shall begin at the sides and proceed longitudinally parallel to the roadway centerline, gradually progressing to the crown of the roadway. The overlap shall be one-half the roller width for wheeled rollers and 6 inches for vibrating rollers. No overlap is required for pneumatic-tired rollers. When paving in echelon or abutting a previously placed lane, the longitudinal joint shall be rolled first followed by the regular rolling procedure. On superelevated curves, the rolling shall begin at the low side and progress to the high side by overlapping of longitudinal passes parallel to the centerline.

**3.12.2.3** Rollers shall move at a slow but uniform speed with the drive roll or drive wheels nearest the paver, except on steep grades. Static and pneumatic-tired rollers shall not operate at speeds in excess of 6 mph. All courses shall be rolled until all roller marks are eliminated.

**3.12.2.4** Cores shall be collected by the Contractor at locations as determined and witnessed by the Engineer. One core per lane mile, but no less than two, shall be taken for each roadway segment paved. When shoulders are overlaid, cores shall be collected solely for density information at a frequency of one core for every 750 tons of mix.

The Contractor will deliver the cores to the designated testing laboratory once Department chain of custody measures have been applied.

The minimum compaction requirement shall be 91% of maximum theoretical density as determined in accordance with AASHTO T 209. The following reductions in unit price shall apply for all tonnage placed that is represented by any core (excluding shoulder cores) that does not meet the minimum requirement: for results below 91% but equal to or greater than 90%, a 5% reduction will be assessed; for any results below 90%, a 10% penalty for all tonnage placed will be assessed. At the Engineer's discretion, the Contractor may be required to remove noncompliant material below 90% (no payment will be made for this material or its removal).

**3.12.2.4.1** All cores need not be cut at the same time. The Contractor will be allowed the option to collect cores through all placed lifts at once, provided cores are collected within two working days of placing the first course. Corrective action to any covered course is at the Contractor's risk.

**3.12.2.5** Any displacement occurring as a result of reversing the direction of a roller, or from other causes, shall be corrected at once by the use of lutes and the addition of fresh mixture when required. Care shall be exercised in rolling so as not to displace the line and grade of the edges of the bituminous mixture.

**3.12.2.6** Along forms, curbs, headers, and similar structures and other places not accessible to a normal full-sized roller, sidewalk rollers weighing at least 2,000 lb (900 kg) shall be used. Where rollers are impracticable, the mixture shall be thoroughly compacted with heated or lightly oiled hand tamps or vibrating plate compactors.

**3.12.2.7** Unless the Engineer determines that for the weight and placement conditions a lesser number will be satisfactory to obtain the desired pavement densities, the following is the list of required compaction equipment. The output of each paver placing surface course (Table 1) materials shall be compacted by the use of one each of the following complement of rollers as a minimum: a static or vibratory steel-wheel roller, a pneumatic-tired roller and a three-axle roller or a static steel-wheeled roller. If the required density is not being obtained with the rollers supplied, the use of additional rollers of the specified type may be ordered. Paving widths in excess of 16 ft will require additional rollers as ordered.

### **3.12.3 Performance Requirements (QC/QA).**

**3.12.3.1** As agreed upon at the Pre-Pavement meeting, the type of rollers to be used and their relative position in the compaction sequence shall be the Contractor's option, provided specification densities are attained.

### **3.13 Joints - General.**

**3.13.1** Unless otherwise shown on the plans, the longitudinal surface course joints shall be at the edge of lane placed, where the edge line, lane line and centerline pavement markings will be applied, and joints of other courses shall be offset approximately 2".

**3.13.2** The material being placed next to a previously paved lane shall be tightly crowded against the face of the abutting lane. The paver shall be positioned so that during spreading, the material will overlap the edge of the first lane by 1 to 2" and shall be left sufficiently high such that finish pavement of the lane being placed is approximately 1/8" higher than the previously paved lane after compaction. The overlapped material shall be rolled without luting. Longitudinal joint compaction shall be achieved by rolling from the hot side to within 6" of the previously placed mat. The next roller pass will overlap onto the previously placed paved lane by 6". Further compactive effort shall be applied to all joints during the intermediate and final rolling.

**3.13.3** Placing of the course shall be as continuous as possible while complying with Contract Traffic Control Plans. Transverse joints will be allowed at the end of each work shift or as required to provide properly bonded longitudinal joints.

**3.13.3.1** No longitudinal joints greater than 1-1/2" height shall be left open to traffic unless a tapered overlapping ("wedge") joint is used. Joints between traveled way and shoulder greater than 3/4" shall be delineated by barrels. Barrels shall meet the requirements of [Section 619](#).

**3.13.3.2** Unless otherwise precluded by weather conditions, longitudinal joints shall not remain open to traffic longer than 30 hours.

**3.13.4** If a bulkhead is not used to form the transverse joint, the previously laid material shall be cut back to the designed slope and grade of the course. The joint face shall be coated with approved bituminous bonding material meeting the requirements of [410.2.1](#) before the fresh mixture is placed against it. Extreme care shall be taken to ensure that no unevenness occurs at the joint. If unsatisfactory riding qualities are obtained at the transverse joint in the surface course, the joint shall be corrected by an approved method.

**3.13.4.1** Prior to opening any lane(s) to traffic, transverse joints shall be ramped by means of an asphalt fillet at a minimum of 5 ft. horizontal to 1" vertical slope.

**3.13.4.2** When paving into a permanent transverse joint, a full head of material shall be carried into the joint.

**3.13.5** When specified, a bituminous pavement joint adhesive, Item 403.x6, shall be applied to the longitudinal joint. If joint adhesive has not been specified, an approved bituminous bonding material meeting the requirements of [410.2.1](#) shall be applied to completely cover all joint contact surfaces.

**3.13.5.1** Joint adhesive shall be applied to the longitudinal joints so that the entire joint surface is covered with a minimum 1/8" thick layer of material. If a wedge joint is used the upper 4" of joint surface shall be covered with joint adhesive. In lieu of using joint adhesive, the Contractor may elect, with the approval of the Engineer, to use multiple pavers in echelon to eliminate the longitudinal joint. Echelon paving shall be performed as stated in 3.13.8.

**3.13.5.2** The joint face on which the joint adhesive is to be applied shall be dry, free from loose material, dust, or other debris that could interfere with adhesion. If dust or debris adheres to the joint adhesive, it shall be cleaned or recoated as directed by the Engineer.

**3.13.5.3** Trucks or traffic shall not drive across the joint adhesive until it has cooled sufficiently to prevent damage from tracking.

**3.13.5.4** Joint adhesive shall be melted in a melting kettle that meets the requirements of [413.2.2\(b\)](#). The joint adhesive shall be applied at the temperature specified by the manufacturer and shall not be heated above the safe heating temperature specified by the manufacturer.

**3.13.5.5** Joint adhesive shall be applied using a pressure feed wand applicator system equipped with an applicator shoe as recommended by the manufacturer. A pour-pot applicator will be allowed on wedge joints only.

**3.13.5.6** Joint adhesive (Bridge Base) shall be applied to curbs, concrete armoring, and pavement matches so that the entire joint is covered with a minimum 1/8" thick layer of material.

**3.13.6** A tapered overlapping ("wedge") joint may be used on all longitudinal joints provided that the adjacent lane can be placed when the existing surface temperature is above 50° F.

**3.13.6.1** An inclined face (3:1) on the joint shall be formed in the first bituminous mat placed. The inclined face may be for the entire height or an inclined face with a 1/2" maximum vertical face at the top of the mat.

**3.13.6.2** After the initial mat is placed, the mat shall be rolled to the edge of the unconfined face.

**3.13.6.3** When the adjoining mat is placed, the initial longitudinal wedge shall be treated as in 3.13.5.

**3.13.7** The Contractor shall furnish and have available a 10 ft, lightweight metal straightedge with a rectangular cross-section of 2 by 4" at the paver at all times during paving operations. All courses shall be tested with the straightedge laid across the transverse joint parallel to the centerline and any variations from a true profile exceeding 3/16" shall be satisfactorily eliminated. The finished surface of the pavement shall be uniform in appearance, shall be free from irregularities in contour, and shall present a smooth-riding surface.

**3.13.8 Echelon Paving.** Echelon paving, when specified or approved, shall be defined as multiple pavers paving simultaneously and adjacent to one another such that all rolling of both mats is performed concurrently.

**3.14 Variations in Profile and Cross Slope – Method** (See 3.18.4.4.1).

**3.15 Replacement – General.** If unsatisfactory areas are found in any course, the Contractor shall remove the unsatisfactory material and replace it with satisfactory material.

**3.16 Finished Appearance – General.** Any bituminous material remaining on exposed surfaces of curbs, sidewalks, or other structures shall be removed.

**3.17 Quality / Process Control - General.**

**3.17.1** The Contractor shall operate in accordance with a Quality Control Plan, hereinafter referred to as the “Plan”, sufficient to assure a product meeting the Contract requirements. The plan shall meet the requirements of 106.03.1 and these special provisions.

**3.17.2** The Plan shall address all elements that affect the quality of the Plant Mix Pavement including, but not limited to, the following:

- (a) Job mix formula(s).
- (b) Hot asphalt mix plant details.
- (c) Stockpile Management.
- (d) Make & type of paver(s).
- (e) Make & type of rollers including weight, weight per inch (centimeter) of steel wheels, and average ground contact pressure for pneumatic tired rollers.
- (f) Name of Plan Administrator.
- (g) Name of Process Control Technician(s).
- (h) Name of Quality Control Technician(s).
- (i) Mixing & Transportation.
- (j) Process Control Testing.
- (k) Placing sequence and placing procedure for ride quality.
- (l) Paving and Weather Limitations.
- (m) Sequence for paving around catch basins, under guardrail, around curb, at bridges, and intersections, drives and minor approaches, to ensure a proper finish and drainage.
- (n) Procedure for fine grading the top of the surface to be paved.
- (o) Binder supplier(s)

**3.17.3** The Plan shall include the following personnel performing the described functions and meeting the following minimum requirements and qualifications:

**A. Plan Administrator** shall meet one of the following qualifications:

- (a) Professional Engineer licensed in the State of NH with one year of highway experience acceptable to the Department and proof of past certification as a NETTCP QA Technologist.
- (b) Engineer-In-Training with two years of highway experience acceptable to the Department and hold current certification as a NETTCP QA Technologist.
- (c) An individual with three years highway experience acceptable to the Department and with a Bachelor of Science Degree in Civil Engineering Technology or Construction and hold current certification as a NETTCP QA Technologist.
- (d) An individual with five years of paving experience acceptable to the Department and hold current certification as a NETTCP QA Technologist.

**B. Process Control Technician(s) (PCT)** shall utilize test results and other quality control practices to assure the quality of aggregates and other mix components and control proportioning to meet the job mix formula(s). The PCT shall periodically inspect all equipment used in mixing to assure it is operating properly and that mixing conforms to the mix design(s) and other Contract requirements. The Plan shall detail how these duties and responsibilities are to be accomplished and documented and whether more than one PCT is required. The Plan shall include the criteria utilized by the PCT to correct or reject unsatisfactory materials. The PCT shall be certified as a Plant Technician by the New England States Technician Certification Program or be a Materials Testing Technician in Training, working under the direct observation of a NETTCP certified Plant Technician.

**C. Quality Control Technician(s) (QCT)** shall perform and utilize quality control tests at the job site to assure that delivered materials meet the requirements of the job mix formula(s). The QCT shall inspect all equipment utilized in transporting, laydown, and compacting to assure it is operating properly and that all laydown and compaction conform to the Contract requirements. The plan shall detail how these duties and responsibilities are to be accomplished and documented, and whether more than one QCT is

required. The Plan shall include the criteria utilized by the QCT to correct or reject unsatisfactory materials. The QCT shall be certified as a HMA Paving Technician as certified by the North East Transportation Training and Certification Program or be a Materials Testing Technician in Training, working under the direct observation of a NETTCP certified HMA Paving Technician.

**3.17.4** The Plan shall detail the coordination of the activities of the Plan Administrator, the PCT and the QCT. The Plan shall also detail who has the responsibility to reject material, halt production or stop placement.

**3.17.4.1** All project-specific Appendices and issues agreed to at the Pre-Paving meeting shall be considered to be part of the Plan.

**3.17.5 Rejection by Contractor.** The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material at no expense to the Department.

**3.17.5.1** No surface course pavement shall be removed or repaired without prior approval of the Engineer.

**3.18 Performance Requirements (QC/QA)**

**3.18.1** Asphalt pavement shall be sampled, tested, evaluated and recorded by the Contractor in accordance with the minimum process control guidelines in Table 401-3.

**3.18.1.1** Cross slope shall be measured on every pavement lift using the method described in 3.18.5.5.1 prior to placement of subsequent lifts. Particular emphasis on the first pavement lift shall be required when correcting existing substandard cross slopes. Cross slope measurements exceeding 0.5% from the specified cross slope for that location shall require an adjustment in ongoing or subsequent paving operations to correct the deficiency. If two or more consecutive measured sublots are greater than 0.5% from the specified cross slope, paving operations shall cease until the Contractor submits a corrective action satisfactory to the Engineer.

**Table 401-3 - Minimum Process Control Guidelines**

Properties	Test Frequency	Test Method
Temperature of Mix	6 per day at paver hopper and plant	
Surface Temperature	As needed	
Temperature of Mat	4 per day	
Density	1 per 500 tons (500 metric tons) or min. 2 per day	AASHTO T 343 or ASTM D 2950
Maximum Theoretical Specific Gravity	1 per day of operation	AASHTO T-209
Fractured Faces	1 per 2000 tons (1800 metric tons) for Gravel Sources only	AASHTO T 11 & AASHTO T 27
Aggregate Gradation & Asphalt Binder content	1 per 750 tons (700 metric tons) recommended	AASHTO T 130 & 164
Asphalt Binder	As needed	AASHTO M 226 M 320
Thickness	Contractor Defined	Contractor Defined
Cross Slope	1 per 5 full stations	Per 3.18.5.5.1

**3.18.2** The Contractor may utilize innovative equipment or techniques not addressed by the specifications or these provisions to produce or monitor the production of the mix, subject to approval by the Engineer.

**3.18.3 Quality Assurance.**

**3.18.3.1** Asphalt pavement designated for acceptance under Quality Assurance (QA) provisions will be sampled once per subplot on a statistically random basis, tested, and evaluated by the Department in accordance with 106.03.2 and the acceptance testing schedule in Table 401-4. Testing shall not take place until the material has been placed and deemed acceptable by the Contractor.

**Table 401-4 - Acceptance Testing Schedule**

PROPERTIES	POINT OF SAMPLING	LOT SIZE	SUBLOT SIZE	TEST METHOD
Gradation	Behind paver & before rolling <sup>(4)</sup>	401.3.17.2.2	750 tons	AASHTO T 30 NHDOT B-1
Asphalt Binder content	Behind paver & before rolling <sup>(4)</sup>	401.3.17.2.2	750 tons	AASHTO T 164 NHDOT B-2 NHDOT B-6
Maximum theoretical specific gravity	Compacted Roadway <sup>(1)</sup> Core		750 tons	NHDOT B-8 AASHTO T 209
In Place Air Voids in total mix <sup>(5,6,7)</sup>	Compacted roadway <sup>(1)</sup> core	401.3.17.2.2	750 tons	NHDOT B-8 AASHTO T 269
Ride Smoothness <sup>(7)</sup>	Completion of surface course	Total project	0.1 lane mile	401.3.17.3.4
Cross Slope <sup>(7)</sup>	Completion of surface course	Total project	1 per 5 full stations	401.3.17.3.5
Thickness <sup>(2)(5) (7)</sup>	Compacted roadway <sup>(1)</sup> core	Total project	750 tons	NHDOT B-8 ASTM D 3549

1. Excluding bridge pavements.
2. Measurements taken from full depth cores obtained for in place air voids determination.
3. For leveling course, samples to be taken at the plant.
4. Sampling and testing will not be performed for leveling course.
5. Not including leveling course.
6. When the Contractor is supplying mix to more than one paver simultaneously, Contractor's personnel shall keep a running total of tonnage supplied to each paver on each paver.
7. Tier 1 Item only.

**3.18.3.2 Lot Size.** For purposes of evaluating all acceptance test properties, a lot shall consist of the total quantity represented by each item listed under the lot size heading in the table above, up to 15,000 tons. For Items with quantities in excess of 15,000 tons, lot sizes will be determined at the pre-placement meeting. Each lot will be broken down into at least three (3) sublots.

The Contractor may request a change in the job mix formula. If the request is approved, all of the material produced prior to the change will be evaluated on the basis of available tests and a new lot will begin. Three sublots must be sampled and tested before a new lot may begin.

**3.18.3.2.1** A lot for Gradation, Asphalt Content and In Place Air Voids shall be the total quantity represented by the job mix formula with the following exception; the shoulders will be evaluated as a separate lot for in place air voids.

**3.18.3.3 Sublot Size.** The quantity represented by each sample will constitute a sublot. The size of each sublot shall be as listed under the sublot size heading in Table 401-4. If there is insufficient quantity in a lot to make up at least three sublots of the designated size in Table 401-4, then the lot quantity will be divided into three equal sublots.

If there is less than one-half of a sublot remaining at the end, then it shall be combined with the previous sublot. If there is more than one-half of a sublot remaining at the end, then it shall constitute the last sublot and shall be represented by test results.

**3.18.3.4 Test Results.** The Engineer may calculate pay factors and pay adjustments at any time while a lot is being produced. This may be necessary for a partial estimate or to see if quality is falling to a point where immediate attention is required. Pay factors will be determined from all available acceptance tests for the lot being evaluated.

### 3.18.4 Acceptance Testing

**3.18.4.1 Gradation and Asphalt Binder Content.** Samples for gradation and asphalt binder content shall be obtained from behind the paver in conformance with NHDOT Test Procedure B-7 (see Appendix A) and taken from each pavement layer by the Contractor in the presence of the Engineer. The sample locations will be established by selecting a random location within each sublot in accordance with [Section 106](#). Sample locations (center of sample) will not be within 1 foot from an edge of pavement or within 4 feet from any structure. Sample locations falling within 4 feet from any structure will be relocated 4 feet from the structure along station at the same offset.

Where samples have been taken, new material shall be placed and compacted to conform to the surrounding area immediately after the samples are taken. Samples shall be accompanied by a sample tag containing the following information:

- a) Project name and number.
- b) Lot and subplot number.
- c) Material type.
- d) Date placed.
- e) Location in station and offset, tonnage
- f) Contract Administrator
- g) Sampler
- h) Item number

When the project exceeds 30 minutes travel time from the testing laboratory location, material samples will be taken and identified by Department project personnel and shall be transported before cooling by the Contractor and delivered to Department testing technicians at the testing Laboratory. Samples lost in transit will incur a penalty of 5% of the bid price for the entire subplot represented by that sample. Sublots with no test results due to a lost sample will not be evaluated and the total quantity represented by that subplot shall not be included in any positive pay factor.

**3.18.4.1.1 Testing.** Target values shall be as specified in the job mix formula. All sieve sizes specified in the job mix formula will be evaluated for gradation. The specification limits in Table 401-5 will be used for calculating pay factors for gradation and asphalt binder content.

**Table 401-5 - Gradation and Asphalt Binder Specification Limits**

Property	Maximum Aggregate Size				
	1"	3/4"	3/4" winter	1/2"	3/8"
	USL and LSL (Target +/- %)				
1 1/2"	0	0	0	0	0
1-1/4"	0	0	0	0	0
1"	8.0	0	0	0	0
3/4"	8.0	6.0	6.0	0	0
1/2"	7.0	6.0	6.0	5.0	0
3/8"	7.0	6.0	6.0	5.0	5.0
No. 4	4.5	4.5	4.5	4.0	4.5
No. 8	4.5	4.5	4.5	3.5	3.5
No. 16	2.5	2.5	2.5	2.5	2.5
No. 30	2.5	2.5	2.5	2.5	2.5
No. 50	2.5	2.5	2.5	2.5	2.5
No. 100	2.5	2.5	2.5	2.5	2.5
No. 200	1.0	1.0	1.0	1.0	1.0
Asphalt Binder	0.4	0.4	0.4	0.4	0.4

Any subplot with a gradation or asphalt binder content falling outside the ranges of the reject limits in Table 401-6 will be either removed and replaced at the expense of the Contractor or require corrective action to the satisfaction of the Engineer. After replacement or correction, new samples will be taken and the old test results from that subplot will be discarded.

**Table 401-6 - Gradation and Asphalt Binder Content Reject Limits (Deviation from Target)**

SIEVE SIZE	1"	3/4"	3/4" Winter	1/2"	3/8"
	Percent Passing By Weight – Combined Aggregate				
1-1/4"					
1"					
3/4"	±12	(1)	(1)		
1/2"	(1)	±10	±10	(1)	
3/8"	(1)	(1)	(1)	±10	(1)
No. 4	±9	±9	±9	±9	±9
No. 8	±7	±7	±7	±7	±7
No. 16	±6	±6	±6	±6	±6
No. 30	(1)	(1)	(1)	(1)	(1)
No. 50	(1)	(1)	(1)	(1)	(1)
No. 100	(1)	(1)	(1)	(1)	(1)
No. 200	±3	±3	±3	±3	±3
Asphalt Binder: % of Mix	±1.0	±1.0	±1.0	±0.8	±0.8

(1) Reject limits will be waived for these sieves.

The Contractor shall have the option of requesting a change in job mix formula (aim change) values used for calculating quality level to reflect actual production values after the placement of two sublots as long as no change in plant production values are made. A new lot is not needed for this change.

**3.18.4.2 In Place Air Voids.** In place air voids shall be determined in accordance with AASHTO T 269 using 6" diameter cores taken from each pavement layer by the Contractor in the presence of the Engineer. Core sampling shall be in conformance with ASTM D 5361 and NHDOT Test Procedure B-8 (see Appendix A). Full depth cores containing all new pavement layers shall be required. Core locations (center of core) will be established by selecting a random location within each subplot in accordance with [Section 106](#). When shoulders are overlaid, cores shall be collected solely for density information at a frequency of one core for every 750 tons of mix. Cores will not be located in the following areas:

- (a) Within 1 foot from an edge of pavement.
- (b) Within 4 feet from any structure. Core locations falling within this area will be relocated 4 feet from the structure along station at the same offset.
- (c) Within shoulders 4 feet or less in width.
- (d) Within 1 foot from any break in slope across the mat surface.

Cores shall be taken before opening pavement to traffic, except when location of core is within the last hour of that day's placement. Cores shall be taken within 24 hours after placement. Where cores have been taken, new material shall be placed and compacted to conform to the surrounding area the same day the samples are taken. Core samples shall be accompanied by a sample tag containing the following information:

- (a) Project name & number.
- (b) Lot and subplot number.
- (c) Material Type.
- (d) Date placed.
- (e) Date sampled.
- (f) Location in station and offset, and/or tonnage.
- (g) Plan thickness.
- (h) Contract Administrator
- (i) Sampler
- (j) Item number

The complete sample(s) (unseparated) shall be protected against damage, transported, and delivered by the Contractor within one working day to Department testing technicians at the Laboratory. Sublots where the core becomes lost or damaged will be resampled at the direction of the Engineer at the Contractor's expense.

The specification limits in Table 401-7 will be used for calculating pay factors for in place air voids for each lot:

**Table 401-7 - In Place Air Voids Acceptance Limits**

TARGET (%)	LSL	USL
Average of Samples	- 2.0% <sup>1</sup>	+2.0% <sup>2</sup>

<sup>1</sup> But not less than 2.5%

<sup>2</sup> But not more than 9%

When a core is less than 80% of the nominal thickness, a new core will be taken in the same subplot at a random location for the determination of in place air voids.

A subplot with a test result less than 2.0% for in place air voids will be rejected and subject to removal and replacement.

**3.18.4.2.1 Maximum Theoretical Density (MTD).** MTD shall be determined in conformance with AASHTO T 209 once per subplot from the core obtained for determining in place air voids.

**3.18.4.2.2 Disputed Cores.** If a Contractor believes that a core result is invalid for whatever reason, the Contractor shall notify the Engineer of this in writing within 24 hours of being informed of the test result. After being informed of the disputed core result, the Engineer will select three random core locations, one in each three sections of the disputed subplot at the same offset as the disputed core. The Contractor shall cut the cores at the selected locations in the presence of the Engineer who shall place them in secured containers for delivery and testing at the Bureau of Materials and Research laboratory in Concord, NH. If there are 10 or more cores already tested to date, the pay factor for voids in the lot will be calculated (without using the result of the disputed core). If less than ten cores have been tested in the disputed lot, the three cores shall be held until ten cores have been tested or the lot is complete, whichever comes first, at which time the pay factor will be calculated.

If the pay factor for the lot that contains the disputed result is 0.95 or greater, and the disputed test result is outside three standard deviations from the mean value of the lot (calculated without using the result of the disputed core), the three cores shall be tested and the average value of the three will be calculated.

If any of these three cores falls outside three standard deviations from the mean value for the lot (calculated without using the result of the disputed core), the original core test value will stand. If the three cores fall within three standard deviations of the mean value the average of the three cores will be used as the core result for the disputed subplot.

If the three cores are not used, the Contractor shall pay for the cost of testing.

**3.18.4.3 Pavement Thickness.** The thickness requirements contained herein shall apply only when each pavement layer is specified to be a uniform thickness greater than 3/4" The thickness of each layer of hot asphalt mix will be measured in conformance to ASTM D 3549 to determine compliance with the acceptance tolerance. Measurements shall be obtained from cores taken for determining in place air voids of each pavement layer. A leveling course, or the first layer over a gravel or stone base, a milled surface or an existing surface, shall be excluded from thickness measurement.

**3.18.4.3.1** Once each thickness measurement has been taken, a thickness index will be calculated. The thickness index is the actual deviation from target divided by the allowable tolerance. This will allow statistical comparisons to be made among measurements based on varying specified thickness. Thickness indexes will be established for the sole purpose of calculating pay factors. Thickness index shall be calculated under the following equation using the specification limits in Table 401-8.

$$TI = (M - ST)/T$$

where: TI = Thickness Index  
 ST = Specified Thickness  
 M = Measured Layer Thickness from Core  
 T = 15% x ST, but no less than 1/4"

**Table 401-8 -Thickness Index Acceptance Limits**

	TARGET	LSL	USL
Thickness Index	0.00	-1.00	+1.00

**3.18.4.3.2 Disputed Thickness** If a Contractor believes that a thickness result is invalid for whatever reason, the Contractor shall notify the Engineer of this in writing within 24 hours of being informed of the test result. After being informed of the disputed result, the Engineer will select three random core locations in the disputed subplot. In the presence of the Engineer, the Contractor shall cut the cores at the selected locations and place them in secured containers for testing. The Contractor shall deliver these cores to the Department testing technicians at the Laboratory. If there are 10 or more cores already tested to date, the pay factor for thickness in the lot will be calculated (without using the result of the disputed core). If less than ten cores have been tested in the disputed lot, the three cores shall be held until ten cores have been tested or the lot is complete, whichever comes first, at which time the pay factor will be calculated.

If the pay factor for the lot that contains the disputed result is 0.95 or greater, and the disputed test result is outside three standard deviations from the mean value of the lot (calculated without using the result of the disputed thickness), the three cores shall be measured and the average value of the three will be calculated.

If any of these three cores falls outside three standard deviations from the mean value for the lot (calculated without using the result of the disputed core), the original thickness test value will stand. If the three cores fall within three standard deviations of the mean value, the average of the three measurements will be used as the thickness for the disputed subplot.

If the three cores are not used, the Contractor shall pay for the cost of testing.

#### **3.18.4.4 Ride Smoothness.**

**3.18.4.4.1** The Contractor shall furnish and have available a 10 ft., light weight metal straightedge with a rectangular cross section of 2" x 4" at the paver at all times during paving operations. All courses shall be tested with the straightedge laid parallel or perpendicular to the centerline and any variations from a true profile or cross slope exceeding 3/16" shall be satisfactorily eliminated. The finished surface of the pavement shall be uniform in appearance, free from irregularities in contour and shall present a smooth-riding surface.

**3.18.4.4.2** A GM type profilometer will be furnished by the Department for determination of pavement smoothness. This device provides a Ride Number in both wheel paths that are averaged to produce a ride number for the surface tested. In the event the Engineer feels that there is a significant difference in the wheel path profiles, a Ride Number evaluation of the individual wheel paths will be made. The surface will be tested within 30 days after the surface course and pavement markings for each discrete section of the project are complete. Immediately before testing, the Contractor will ensure the surface is entirely free from any foreign matter that may affect the test results. No special considerations will be given to criteria such as degree of curve and vertical geometry. Ride Number will be calculated to the nearest one hundredth for each 0.1-mile segment.

**3.18.4.4.3** Profilometer testing will include all mainline paving including bridges with lanes at least 11 feet wide. Testing will begin 20 feet after the approach joint and end 20 feet before the departure joint. The pavement will not be evaluated over bridge expansion joints, tapers, raised pavement markings, and sections less than 0.1 mile in lane length.

**3.18.4.4.4** All areas with bumps or high points exceeding 0.3" in 25 feet shall be corrected by removal of a minimum of 1" of the full lane width by the length required (a minimum of 100 feet) and replaced at the Contractor's expense.

**3.18.4.4.5** The Ride Number average of all sublots will be used to determine the final pay factor. The final pay factor shall not exceed 1.05 and will be computed as follows:

**For Level 1 Projects:** (Ride Number 4.20)  
Pay Factor =  $RN (0.5) - 1.1$

**For Level 2 Projects:** (Ride Number 4.14)  
Pay Factor =  $RN (0.5682) - 1.3523$

**3.18.4.4.6** A final Ride Number shall be established after the surface course is completed and striped. Separate completed sections of a project will be evaluated before the entire surface course is completed. Any subplot with a ride number less than 3.7 shall be repaired or replaced.

**3.18.4.4.6.1** Any subplot that has an individual wheel path ride number less than 3.7 shall be repaired or replaced. The repair treatment shall be for the full width of the lane. Sublots that have been repaired or replaced shall be reevaluated for ride smoothness and then averaged with all other sublots to determine the final project pay factor. Construction joints resulting from repairs or replacement will be included.

**3.18.4.4.6.2** Level 1 will generally be all interstate and limited access highways with the following exception:

- (a) A single course overlay that has a before ride number average of less than 4.00.

**3.18.4.4.6.3** Level 2 will generally be all other highways with the following exceptions:

- (a) Where the surface course must be constructed in short sections (< 3 sublots).
- (b) Projects shorter than one half mile in length.
- (c) Projects with a posted speed of 35 MPH or less.
- (d) Projects with many driveways and/or cross roads with constant traffic.
- (e) District resurfacing projects.

**3.18.4.5 Cross Slope.**

**3.18.4.5.1** Cross slope will be measured once per subplot (see Table 401-4) behind the paver after final rolling of the surface course has taken place. Cross slope will only be evaluated when specific slopes and superelevations are shown on the plans for the entire project. Only travel lanes will be evaluated for cross slope. Measurements will be taken only in areas of normal tangent or full bank curves on even stations. Measurement shall take place utilizing one of the following methods, and shall be agreed upon by both parties: “digital read” level and 10 to 12 foot straightedge; “bubble” level, ruler, and 10 to 12 foot straightedge; transit; or electronic positioning equipment as approved by both Contractor and Department. If a straightedge is employed, perpendicularity shall be assured with the use of a right angle prism or other method acceptable to both parties. If a “bubble” or “digital read” level is employed, a second reading 180 degrees to the first shall be made and recorded, and the two shall be averaged for the test result. Measurement data shall be shared between parties within 24 hours of measurement.

**3.18.4.5.2** Once a cross slope percentage has been measured, a cross slope index (CSI) will be calculated. The target cross slope shall be defined as the cross slope shown on the plans or as ordered to the nearest tenth of a percent. The CSI is the actual deviation from the target divided by **0.40** percent, which is the tolerance used for pay factor calculation only. This will allow statistical comparisons to be made among measurements based on varying specified cross slopes. The CSI will be established for the sole purpose of calculating pay factors. The CSI shall be calculated under the following equation using the specification limits in Table 401-10.

$$CSI = \frac{(M - SCS)}{T}$$

where: CSI = Cross Slope Index  
 SCS = Specified Cross Slope in percent  
 M = Measured Cross Slope in percent  
 T = 0.40

**Table 401-10 - Acceptable Quality Level Limits**

	TARGET	LSL	USL
Cross Slope Index	0.00	-1.00	+1.00

**3.18.4.5.3** If three or more consecutive cross slope subplot measurements on the pavement lift used to calculate the pay factor deviate more than 0.5 (in percent) from the specified cross slope value at those locations, those sublots will be considered to exceed the engineering limit of 0.5%. The Contractor shall submit a corrective action plan for approval by the Engineer for cross slope sublots that exceed this limit.

**3.18.4.5.4** After the approved corrective action plan is implemented, the sublots will be measured to ensure compliance, but will not be re-measured for the purpose of re-calculating pay factor. Alternatively, the Contractor may submit a written request for acceptance of the material at a negotiated price. The Engineer will determine whether the material may remain in place at the negotiated price.

**3.18.4.6 Rejection of Material.**

**3.18.4.6.1 An Individual Sublot.** For any sublots with any test results exceeding the specified reject limits, the Engineer will:

- (a) Require complete removal and replacement with hot asphalt mix meeting the Contract requirements at no additional expense to the department, or

- (b) Require corrective action to the satisfaction of the Engineer at no additional expense to the Department.

**3.18.4.6.2 A Lot in Progress.** The Engineer will shut down paving operations whenever:

- (a) The pay factor for any property drops below .90 and the Contractor is taking no corrective action, or
- (b) Three consecutive tests show that less than 50 percent by weight of the particles retained on the No. 4 sieve have at least one fractured face.

Paving operations shall not resume until the Engineer determines that material meeting the Contract requirements can be produced. Corrective action will be considered acceptable by the Engineer if the pay factor for the failing property increases. If it is determined that the resumption of production involves a significant change to the production process, the current lot will be terminated and a new lot will begin.

**3.18.4.6.3 Remeasure and Retest.** All requests to the Engineer to remeasure and retest a subplot shall be in writing.

#### Method of Measurement

**4.1** Asphalt pavement mixture will be measured by the ton to the nearest 0.1 ton, and in accordance with 109.01. Batch weights will be permitted as a method of measurement only when the provisions of 3.8.3 are met, in which case, payment will be based on the cumulative weight of all the batches. The quantity will be the weight used in the accepted pavement, and no deduction will be made for the weight of asphalt binder or additives in the mixture.

**4.1.1** No separate measurement will be made for lighting necessary or overtime required due to night operations at the plant or at the site.

**4.1.2** Due to possible variations in the specific gravity of the aggregates, and to possible field changes in areas to be paved, the quantity used may vary from the proposal quantities, and no adjustment in Contract unit price will be made because of such variations.

**4.2** Asphalt pavement, removed because of faulty workmanship or contamination by foreign materials, will not be included in the pay quantity.

**4.3** Blank.

**4.4** Joint adhesive will be measured by the linear foot for each lift of pavement to be placed, to the nearest foot of adhesive applied. If the Contractor chooses to pave in echelon in lieu of using joint adhesive, payment for the length of joint eliminated by the echelon paving will be made.

**4.5** Echelon paving, when specified or approved, will be measured by the linear foot along the shared edge of the mats being simultaneously placed.

#### Basis of Payment

**5.1** All work performed and measured as prescribed above will be paid for at the Contract unit price as provided in the respective sections for each type specified.

**5.2** Tack coat material ordered under 3.10.5 will be paid as provided for in Section 410.

**5.3** Blank.

**5.4** Plant or project site lighting for hot bituminous pavement, machine or hand method, or overtime required due to night operations will be subsidiary to the paving items.

**5.5** Asphalt cement additives will be subsidiary to the paving items.

**5.6** Implementation of the Quality Control Plan and costs associated with obtaining core samples for acceptance testing shall be subsidiary. When items are to be accepted under Quality Assurance provisions, pay adjustment will be made in accordance with 106.03.2.4 as specified below.

**5.6.1 Gradation composite pay factor (CPF).** The total price for each lot will be adjusted by a composite pay factor (CPF) based on the gradation of the material after extraction using the pay factors for each sieve size and the sieve size weight factors in Tables 401-11, 11a & 11b.

**Table 401-11 - Sieve Size Weight Factors 1”**

Property	Weight Factor “f”
1/2”	6
#30	4
Gradation (each sieve)	#8 and #200 sieves
	8
	All other sieves (each)
	2

**Table 401-11a - Sieve Size Weight Factors 3/4”**

Property	Weight Factor “f”
3/8”	6
#30	4
Gradation (each sieve)	#8, and #200 sieves
	8
	All other sieves (each)
	2

**Table 401-11b - Sieve Size Weight Factors 1/2” and 3/8”**

Property	Weight Factor “f”
No. 4	6
#30	4
Gradation (each sieve)	#8, and #200 sieves
	8
	All other sieves (each)
	2

$$\text{Composite Pay Factor (CPF)} = \frac{[f_1(PF_1) + f_2(PF_2) + \dots + f_j(PF_j)]}{\sum f}$$

**5.6.2 Pay Adjustment.** The pay adjustment for each measured characteristic will be determined by the following equation:

$$PA_j = (Pf_j - 1) \frac{f_j}{\sum f} (Q)(P)$$

- where: PA = Pay adjustment payment in dollars for each characteristic.  
 Pf = Pay factor or composite pay factor for each characteristic.  
 f = Weight factor from Table 401-12 for each characteristic.  
 $\sum f$  = Sum of weight factors.  
 Q = Quantity computed from all accepted delivery records for the lot.  
 P = Contract unit price per ton.

**Table 401-12 – Tier 1 Weight Factors**

Measured Characteristic	Weight Factor “f”
Gradation	0.15
Asphalt Binder Content	0.15
In Place Air Voids	0.20
Thickness	0.08
Cross Slope	0.12
Ride Smoothness	0.30

**Table 401-13 – Tier 2 Weight Factors**

Measured Characteristic	Weight Factor “f”
Gradation	0.25
Asphalt Binder Content	0.25
In Place Air Voids	0.5

**5.6.3 Pay adjustment, Hot Bituminous Pavement QC/QA Items.** The pay adjustment for gradation, cross slope, thickness, asphalt binder content, in place air voids, and ride quality (made up of the sum of all sublots) will be applied to Item 1010.3. Pay adjustments may be applied at the end of each month based on all available test results for each lot.

**5.7** The accepted quantity of joint adhesive of type specified will be paid for at the Contract unit price per linear foot complete in place.

**5.7.1** Recoating of the joint, as described in 3.13.5, shall be at the Contractor's expense.

**5.7.2** When echelon paving is used in lieu of joint adhesive and the item is not included in the contract, the accepted quantity will be paid for at the price of joint adhesive under Item 403.6.

**5.8** The Material Transfer Vehicle (MTV) Item will be paid for at the Item Bid Price per ton for the tons of bituminous mixture actually transferred by the MTV.

**5.9** The accepted quantity of echelon paving will be paid for at the Contract unit price per linear foot complete.

**5.9.1** If the Contractor chooses to pave in echelon in lieu of pavement joint adhesive, and the item is not in the contract, echelon paving will be paid as stated in 5.7.

**APPENDIX A**

**NHDOT Test Procedure B-7**

Sampling Bituminous Paving Mixtures for Acceptance Testing

Sample shall be taken behind the paver after placement and before compaction.

Sample location will be randomly selected by the Contract Administrator.

When paving over aggregate base course or cold planed surface, use a rectangular metal plate no less than 12” each side. Center plate on sample location.

After paver passes over plate, measure back to sample location.

Locate the edges of the plate.

Using a flat-bottomed scoop large enough to obtain up to a 3000 gram sample, place scoop on plate and push across the mat (perpendicular to the center line), through the center of the plate, filling the scoop to obtain the sample size specified below.

**Required Sample Size**

Base Courses	2000-3000 grams
Binder Courses	1500-3000 grams
Surface Courses	1000-3000 grams
Sand Courses	500-3000 grams

When sampling over an existing pavement, the plate is not required.

**NHDOT Procedure B-8**

Sampling and Testing

Procedure for In Place Air Voids

Cores will be taken at random locations selected by the Contract Administrator.

Cores shall be delivered intact by the Contractor to the Department’s inspector at the Laboratory.

If Cores are lost or damaged, new cores shall be taken at the same location as the previous cores.

Cores shall be measured for thickness following ASTM D 3549.

Bulk specific gravity shall be determined by AASHTO T 166a.

Maximum Theoretical Density will be determined using the core by AASHTO T 209.

In Place Air Voids shall be determined by AASHTO T 2.

**SUPPLEMENTAL SPECIFICATION**

**AMENDMENT TO SECTION 403 – HOT BITUMINOUS PAVEMENT**

*Purpose: To expand the HBP paving items to include the mix type in the in the item description (07/27/20 & 07/01/21). This update also to removes all references to night items and “percent wear” pay items (06/06/17).*

**Delete** Section 1.3.

**Amend** Section 4.1.1 to read:

**4.1.1** Hot Bituminous pavement transferred by the Material Transfer Vehicle (MTV) will be measured as prescribed in 401.4.

**Amend** Section 5.1.1 to read:

**5.1.1** Blank.

**Amend** Section 5.2 to read:

**5.2** Bridge surface course will be paid under machine method.

**Replace** Pay items and units with the following:

**Key:**

**403. A B C D E**

**A Surface Type/Miscellaneous**

- 1 Roadway
- 2 Bridge

**B Placement Method**

- 1 Machine Method Ton
- 2 Hand Method Ton
- 6 Pavement Joint Adhesive Linear Foot
- 8 Leveling Ton
- 9 Temporary Ton

**C Asphalt Type**

- 0 Standard (as specified by Special Provision)
- 8 Polymer Modified (as specified by Special Provision)
- 9 High Strength

**D Mix Type**

- 0 Special (as specified by Special Provision)
- 1 1” Base Mix
- 2 3/4” Binder Mix
- 3 3/4” Winter Binder Mix
- 4 1/2” Surface Mix
- 5 3/8” Surface Mix
- 6 #4 Surface Mix

<b>E QC/QA Tier or Method</b>		
	1	Tier 1
	2	Tier 2
	3	Method
3	Blank	
4	Material Transfer Vehicle (MTV)	Ton
5	Blank	
6	Echelon Paving	Linear Foot
7	Blank	
8	Blank	
9	Blank	

**Examples:****Method**

403.11013	HBP-1" Base Mix, Machine Method	Ton
403.11023	HBP-3/4" Binder Mix, Machine Method	Ton
403.11033	HBP-3/4" Winter Binder Mix, Machine Method	Ton
403.11043	HBP-1/2" Surface Mix, Machine Method	Ton
403.11053	HBP-3/8" Surface Mix, Machine Method	Ton
403.12	HBP-Hand Method	Ton
403.x19x3	HBP-_____, Machine Method, High Strength	Ton
403.11963	HBP-#4 Surface Mix, Machine Method, High Strength	Ton
403.18	HBP-Leveling Course	Ton
403.19	HBP-Temporary	Ton
403.21053	HBP-3/8" Mix, Machine Method (Bridge Base)	Ton
403.29	HBP-Temporary (Bridge)	Ton

**QC/QA**

403.11011	HBP-1" Base Mix, Machine Method, QC/QA Tier 1	Ton
403.11012	HBP-1" Base Mix, Machine Method, QC/QA Tier 2	Ton
403.11021	HBP-3/4" Binder Mix, Machine Method, QC/QA Tier 1	Ton
403.11022	HBP-3/4" Binder Mix, Machine Method, QC/QA Tier 2	Ton
403.11031	HBP-3/4" Winter Binder Mix, Machine Method, QC/QA Tier 1	Ton
403.11032	HBP-3/4" Winter Binder Mix, Machine Method, QC/QA Tier 2	Ton
403.11041	HBP-1/2" Surface Mix, Machine Method, QC/QA Tier 1	Ton
403.11042	HBP-1/2" Surface Mix, Machine Method, QC/QA Tier 2	Ton
403.11051	HBP-3/8" Surface Mix, Machine Method, QC/QA Tier 1	Ton
403.11052	HBP-3/8" Surface Mix, Machine Method, QC/QA Tier 2	Ton
403.x18xx	HBP-_____, Machine Method, Polymer Modified, QC/QA Tier X	Ton
403.x19xx	HBP-_____, Machine Method, High Strength, QC/QA Tier X	Ton

**Other**

403.16	Pavement Joint Adhesive	Linear Foot
403.26	Pavement Joint Adhesive (Bridge Base)	Linear Foot
403.4	Material Transfer Vehicle (MTV)	Ton
403.6	Echelon Paving	Linear Foot
1010.3	Quality Control/Quality Assurance (QC/QA) for Asphalt	Dollar

## **SUPPLEMENTAL SPECIFICATION**

### **AMENDMENT TO SECTION 410 – BITUMINOUS SURFACE TREATMENT**

*The purpose of this Supplemental Specification is to:*

- *Adopt new AASHTO specifications for emulsions (2.1 – 04/13/16)*
- *Revise the pavement conditions and application rates for tack (3.4.1.1 – 01/04/17)*
  - *Identify tack sampling and penalties for non-conformance (2.1.1, 2.1.2, 3.2, 3.3, 3.4, 06/06/17)*
- *Amend distribution equipment and initiate an annual tack truck inspection program (3.2, 3.5.2, 07/06/18)*

**Amend** 2.1 to read:

**2.1** Bituminous material shall be the type and grade specified or ordered and shall conform to the requirements of AASHTO M 140 or M 208, except as amended in Section 702.

**Amend** 3.2, 3.3, and 3.4 to read:

### **3.2 Equipment.**

General equipment requirements for this work shall be as follows:

- (a) Tack distribution trucks shall have a minimum GVW of 26,000 lbs and shall be equipped with a storage tank of 1,200-gallon minimum capacity.
- (b) A tack distribution system shall be designed, equipped, maintained, and operated such that bituminous material at even heat (150° F) may be applied uniformly on variable widths of surface up to 12' at readily determined and computer-controlled rates with uniform pressure. Distributor equipment shall include: a tachometer, pressure gauges, accurate inside and outside volume measuring devices, and an exterior thermometer for measuring temperatures of tank contents. Distributors shall be equipped with a power unit for the pump and with full circulation spray bars adjustable laterally and vertically from the truck cab. The spray bar shall contain spray nozzles providing a fan-shaped spray pattern adjusted so the vertical axis is perpendicular to the pavement surface. The spray pattern and spray bar height shall be adjusted to provide a uniform application of the tack coat [double coverage should be avoided for seal coats; overlapping coverage is required for tack coats]. The distributor shall be equipped with a mechanical device to adjust the spray height as material is discharged to keep a uniform height above the pavement for full coverage with the correct overlap. The distributor shall also be equipped with a hand-held spray attachment and 25' hose for applying the material to areas inaccessible to spray bars and to fill in irregular areas to provide full coverage. Approved sampling valves shall be installed in distributors and transport tank trucks to permit the taking of representative samples of the contents. The recommended location of the sampling valve is in the rear bulkhead of the tank, roughly one-third of the height above the bottom. The inlet pipe shall project into the contained liquid as shown in ASTM D 140.

- (c) A rotary power broom shall be required unless the equipment listed under (d) is provided.
- (d) In urban and/or curbed sections, a vacuum truck or street sweeper shall be provided.
- (e) For seal coat applications only:
  - i A steel-wheeled roller.
  - ii A self-propelled pneumatic-tired roller.
  - iii A sand spreader capable of spreading blotter material in sufficient quantity to prevent traffic pickup of the applied bituminous material.
  - iv A steel-brush drag of an approved type.

**3.2.1** Only certified tack distributors will be allowed. Vehicles and equipment will be subject to a yearly inspection by June 1<sup>st</sup> by the NHDOT Paving Specialist which will include field verification of spray patterns. Yearly inspection shall be arranged with a ten working day notification. Approved vehicles will receive a seal certifying the tack distributor for that year.

**3.2.2 Sampling.** Tack shall be sampled as directed by the Engineer using new non-metal sample containers provided by the Engineer. Samples shall be taken by the operator in the presence of the Engineer. At least 1 qt. of material shall be drained off through the sampling valve and discarded before the sample is taken. To prevent the loss of solvents, containers shall be sealed with a tight fitting cover immediately after being filled and provided to the Engineer for testing. Any tack that is found to be out of specification will result in non-payment for all tack applied on the date the tack is sampled.

**3.2.2.1** Non-conforming tack will be evaluated by the Engineer to determine if overlying pavement should remain in place. Any pavement left in place shall not relieve the Contractor of the responsibility for latent defects and/or gross mistakes in the pavement layer above it as outlined in section 107.14.

**3.3 Surface Preparation for Tack Coat.** The existing surface shall be patched and shall be free of irregularities to provide a reasonably smooth and uniform surface to receive the treatment. Unstable corrugated areas shall be removed and replaced with suitable patching materials. The edges of existing pavements that are to be adjacent to new pavement shall be cleaned to permit the adhesion of bituminous materials.

#### **3.4 Application of Tack Coat.**

**3.4.1** Bituminous material shall be uniformly applied with an approved applicator. When ordered, a pressure distributor shall be used. The tack coat shall be applied in such a manner as to offer the least inconvenience to traffic and to permit one-way traffic without pickup or tracking of the bituminous material.

**3.4.1.1** A tack coat shall be applied immediately prior to placement of pavement. The rate of application of emulsified asphalt shall be between 0.02 and 0.06 gal/yd<sup>2</sup>, based on the application rate table below. The Engineer may further modify the rate depending on the relative absorbance and texture of the pavement surface.

Existing Pavement Condition	Application Rate in Gal/yd <sup>2</sup>
Smooth HMA	0.02 – 0.04
Milled HMA	0.04 – 0.06

**Amend** 3.5.2 to read:

**3.5.2** Blotter material at the rate ordered shall be applied before the bitumen has set; the entire treated surface shall be dragged, rolled and maintained. The remaining blotter material shall be removed with a power broom.

**Amend** 5.1 to read:

**5.1** The accepted quantities of bituminous surface treatment will be paid for at the Item Bid Price per ton for bituminous material, complete in place.

**Add** Section 5.2.2

**5.2.2** The quantity of tack coat used on the day represented by a non-conforming test sample will not be paid.

## SUPPLEMENTAL SPECIFICATION

### AMENDMENT TO SUBSECTION 520 – PORTLAND CEMENT CONCRETE

*The purpose of this Supplemental Specification:*

- *Amend the delivery temperature for Cast-in-Place concrete to match the Precast specifications (3.8.1.1, 04/02/18).*
- *Revise NETTCP QA Technologist requirements (3.1.6.2.1.2 A, 11/07/18).*

**Amend** 3.1.6.2.1.2 A to read:

**3.1.6.2.1.2** The Plan shall include the following personnel performing the described functions and meeting the following minimum requirements and qualifications:

A. **Plan Administrator** shall meet one of the following qualifications:

- (a) Professional Engineer licensed in the State of NH with one year of highway experience acceptable to the Department and proof of past certification as a NETTCP QA Technologist.
- (b) Engineer-In-Training with two years of highway experience acceptable to the Department and hold current certification as a NETTCP QA Technologist.
- (c) An individual with three years highway experience acceptable to the Department and with a Bachelor of Science Degree in Civil Engineering or an Associate's Degree in Civil Technology or Construction and hold current certification as a NETTCP QA Technologist.

**Amend** 3.8.1.1 to read:

**3.8.1.1** The temperature of the concrete shall not exceed 90° F when placed in the forms. This may require the addition of ice to mixing water, sprinkling the forms and reinforcing steel, scheduling the concrete placements for early morning or evening hours, or any other approved methods.

09/15/16

Page 1 of 1

**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**  
**A M E N D M E N T   T O   S E C T I O N   5 3 8 –   B A R R I E R   M E M B R A N E**

*The purpose of this Supplemental Specification is to update the laydown temperature range for pavement overlays in connection of welded barrier membrane.*

**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 as stipulated on the Qualified Products List. 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 Supplemental Specification is to allow polypropylene pipe, clarify UV light requirements as well as Contractor's Option requirements.*

**Amend** 2.3 to read:

#### **2.3 Plastic Pipe.**

**2.3.1** Manufacturers of Polyvinyl Chloride (PVC) pipe, Polyethylene (PE) pipe and Polypropylene (PP) pipe must participate in and maintain compliance with the AASHTO National Transportation Product Evaluation Program (NTPEP) that audits producers of plastic pipe.

**2.3.2** Polyvinyl chloride profile wall pipe shall conform to the requirements of AASHTO M 304. PVC pipe and associated fittings shall not be used in applications where it will be exposed to long term ultraviolet light .

**2.3.3** Polyethylene pipe shall conform to the requirements of AASHTO M 252 or M 294, Type C, Type S, or Type D as specified on the plans. PE pipe and associated fittings shall be protected from ultraviolet light degradation by the inclusion of carbon black as specified in AASHTO M 294.

**2.3.4** Polypropylene pipe shall conform to the requirements of AASHTO M 330, Type C, Type S, or Type D as specified on the plans. PP pipe and associated fittings shall be protected from ultraviolet light degradation by the inclusion of carbon black or ultraviolet light stabilizers as specified in AASHTO M 330.

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

**2.3.6** When watertight joints are specified, watertight pipefittings supplied or recommended by the manufacturer shall be used and shall conform to ASTM D3212.

**2.3.7** When the item description includes plastic pipe or plastic pipe material with the plastic material type not specified, either polyvinyl chloride, polyethylene, or polypropylene pipe shall be furnished meeting the requirements of 2.3.

**Amend** 2.6 to read:

#### **2.6 Pipe for Slope Drainage.**

**2.6.1** Pipe for slope drain shall conform to the requirements of 2.3 and shall be limited to Type C.

**2.6.2** The pipe coupler for plastic pipe shall consist of a plastic coupler and a minimum of 2 stainless steel or 3 plastic bands installed on the exterior corrugations. Slope pipe coupling bands shall engage a minimum of two full corrugations of each pipe section being joined, and shall be reinforced to meet the criteria for the "Downdrain Joint" category of Section 26 of the AASHTO LRFD Bridge Construction Specifications.

**Amend** 2.7 to read:

**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 or polypropylene pipe, meeting the requirements of 2.3, may be used.

**Add 2.13:**

**2.13 Contractor's Option.** When the pipe material is not specified in the item description, pipe conforming to either 2.1 or 2.3 shall be supplied. Once selected, pipe of similar type shall be used for the entire pipe run.

**Amend** Table 3 to read:

**Table 3 - Required Strength of Culvert Pipes**

Material	Diameter	Strength Concrete	Thickness, in.	Pipe Stiffness
			"Specified" Steel	Plastic
Reinforced Concrete	All	2000 D		
Corrugated Metal	12"-18"		0.064	
	24"-30"		0.079	
	36"		0.109	
Plastic (Polyethylene)	All			Reference AASHTO M294
(Polypropylene)	All			AASHTO M 330

**Amend** .4 under Pay Items to read:

- .4 Pipe for Slope Drainage (Plastic only) Linear Foot
- B Material
- 0 Unspecified
- 1 Blank
- 2 Blank
- 3 Blank
- 4 Plastic
- C Type
- 0 Blank
- 1 Blank
- 2 Polyethylene (Type C)
- 3 Polypropylene (Type C)

**Amend** .8 under Pay Items to read:

	Linear Foot
.8 Plastic Pipe	
B Materials	
0 Unspecified	
1 PVC	
2 Polyethylene	
3 Polypropylene	
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)	

## SUPPLEMENTAL SPECIFICATION

### AMENDMENT TO SECTION 645 – EROSION CONTROL

*The purpose of this Supplemental Specification is to:*

- *Update erosion control requirements.*
- *Add Erosion Control Plans to list of items to furnish for SWPPP (1.2.1, 11/07/18)*
- *Update construction dates for allowable area of exposed, unstabilized soil (3.1.5, 11/07/18)*

**Replace** 1.1 with the following:

**1.1 Erosion Control Products.** This work shall consist of furnishing and placing hay mulch, bark mulch, “Rolled Erosion Control Products” (RECP), Hydraulic Erosion Control Products (HECP) or other material to provide soil stabilization and/or erosion control on slopes or in channels/ditches at locations shown on the plans or where ordered.

**1.1.1 Temporary Slope Matting Type A** (Not Currently Used)

**1.1.2 Temporary Slope Matting Type B (Wildlife Friendly)** shall be a biodegradable RECP specified for protection of slopes of 3:1 or flatter. These products shall maintain their functional integrity for a minimum of 3 months and then biodegrade.

**1.1.3 Temporary Slope Matting Type C** (Not Currently Used)

**1.1.4 Temporary Slope Matting Type D (Wildlife Friendly)** shall be a biodegradable RECP specified for protection of slopes of 2:1 or flatter. These products shall maintain their functional integrity for a minimum of 12 months and then biodegrade.

**1.1.5 Permanent Channel Matting Type A** shall be a RECP specified for protection of vegetated channels/ditches with a slope profile of 5% or less. These products are considered to be permanent and shall be non-degradable.

**1.1.6 Permanent Channel Matting Type B** (Not Currently Used)

**1.1.7 Temporary Channel Matting Type A (Wildlife Friendly)** shall be an extended term RECP specified for protection of vegetated channels/ditches with a slope profile of 3% or less. These products are considered temporary and shall have a functional longevity of 24 months.

**1.1.8 Temporary Channel Matting Type B** shall be a long term RECP specified for protection of vegetated channels/ditches with a slope profile of 3% to 5%. These products are considered temporary and shall have a functional longevity of 36 months.

**1.1.9 Stabilized Mulch Matrix (SMM)** shall be a moderate term HECP, specified for temporary erosion control on slopes of 3:1 or flatter. These products shall have a functional longevity of at least 3 months.

**1.1.10 Bonded Fiber Matrix (BFM)** shall be an extended term HECP, specified for temporary erosion control on slopes of 2:1 or flatter. These products shall have a functional longevity of at least 6 months.

**1.1.11 Fiber Reinforced Matrix (FRM)** shall be a long term HECP, specified for temporary erosion control on slopes of 2:1 or flatter. These products shall have a functional longevity of at least 12 months.

**Amend** 1.2.1 to read:

**1.2.1** The Department will furnish the following data to the Contractor:

- Specific reproducible plan sheets and cross-sections of the project, as requested.
- Drainage calculations and plans (drainage area size and characteristics; runoff volume; type, size, and slope of pipes; invert elevations; and outlet velocities), as available.
- Geotechnical Report including soil boring logs, soil types, and test pit data, as available.
- Permits and certifications obtained for the project.
- A list of environmental commitments.
- A copy of the NHDOT's Notice of Intent application.
- A copy of the NHDOT's Acknowledgement letter from EPA.
- Documentation of permit eligibility related to federally listed threatened and endangered species.
- NHDES Wetlands Permit "Plan of Record".
- Erosion Control Plans

**Add** to 2.1:

**2.1.4 Hydraulic Erosion Control Products (HECP)** shall be temporary, biodegradable, pre-packaged fibrous mulch products mixed with water and applied as a slurry in conjunction, with, or without Turf Establishment without Mulch (Item 646.2). Hydraulic Erosion Control Products (HECP) selected for use shall be from those listed on the Qualified Products List.

**Amend** 3.1.5 to read:

**3.1.5** For the construction period from October 15<sup>th</sup> through May 1<sup>st</sup> the area of exposed, unstabilized soil shall be limited to one acre. The allowable area of exposed soil may be increased provided a winter construction plan shows adequate provisions to control erosion and sediment, provided the additional area of disturbance is necessary to meet the Contractors Critical Path Method schedule (CPM), and the Contractor can demonstrate there are adequate resources available (equipment & manpower) to respond to multiple events simultaneously and is reviewed and approved by the Department.

**Add** to 3.3:

**3.3.6 Hydraulic Erosion Control Products (HECP).**

**3.3.6.1** The Contractor shall only use personnel or subcontractors trained in the use of the product.

**3.3.6.2** Hydraulic Erosion Control Products (HECP) shall be mixed and applied in accordance with the manufacturer's specifications.

**3.3.6.3** Apply HECPs to the soil surface from at least two opposing directions, to achieve an even coverage of all exposed soil surfaces. Do not apply either BFM or SMM within 24 hours of a predicted rain event, or under saturated soil conditions. FRM does not require a cure time and is effective immediately; and FRM may be applied immediately before, during, or after a “typical” rainfall event. Avoid installing FRM during high intensity rainfall events.

**3.3.6.4 Inspection and Maintenance:** Reapplication will be required if the HECP treated soils are disturbed or turbidity or water quality testing shows the need for an additional application within the functional longevity of the product.

**Add** to 4.1:

**4.1.2 Hydraulic Erosion Control Products (HECP)** will be measured by the pound based upon the delivery slips and tags furnished to the Engineer, but not to exceed the rate specified or ordered. If reapplication is required due to damage caused by the Contractor’s negligence or inappropriate installation, retreated areas will not be measured for payment.

**Amend 5.1** to read:

**5.1** The accepted quantities of erosion control work will be paid for at the Contract unit price, complete in place.

**Replace** the Pay Items with the following:

**Pay items and units:**

645.11	Mulch	Acre
645.111	Mulch	Square Yard
645.12	Temporary Mulch	Acre
645.15__	Bark Mulch __in. Deep	Square Yard
645.3	Erosion Stone	Ton
645.42	Temporary Slope Matting Type B (Wildlife Friendly)	Square Yard
645.44	Temporary Slope Matting Type D (Wildlife Friendly)	Square Yard
645.45	Permanent Channel Matting Type A	Square Yard
645.471	Temporary Channel Matting Type A (Wildlife Friendly)	Square Yard
645.472	Temporary Channel Matting Type B	Square Yard
645.48	Erosion Control Mix	Cubic Yard
645.51	Hay Bales for Temporary Erosion Control	Each
645.52	Ryegrass for Temporary Erosion Control	Pound
645.531	Silt Fence	Linear Foot
645.532	Silt Fence with Support Fence	Linear Foot
645.611	Bonded Fiber Matrix	Pound
645.612	Fiber Reinforced Matrix	Pound
645.613	Stabilized Mulch Matrix	Pound
645.7	Storm Water Pollution Prevention Plan	Unit
645.71	Monitoring SWPPP and Erosion and Sediment Controls	Hour

**SUPPLEMENTAL SPECIFICATION**  
**AMENDMENT TO SECTION 702– BITUMINOUS MATERIALS**

*The purpose of this Supplemental Specification is to adopt new AASHTO specifications for emulsions.*

**Amend** Section 702 to read:

**Table 702-1 – Anionic Asphalt Emulsion**

Grade	Rapid-Setting				Medium Setting				Test Method
	RS-1h	RS-1	RS-2	HFMS-2	MS-4	MS-5	min	max	
<b>Tests on emulsified asphalt:</b>	min	max	min	max	min	max	min	max	
Viscosity, Saybolt Furol at 25°C (77°F), s <sup>a</sup>	20	100	20	100					
Viscosity, Saybolt Furol at 50°C (122°F), s <sup>a</sup>			75	400	100	500	100	500	500
Storage stability test, 24 h, % <sup>a,b</sup>	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Demulsibility, 35 mL, 0.02 N CaCl <sub>2</sub> , % <sup>a</sup>	60	60	60						
Coating ability and water resistance									T59
Coating, dry aggregate					good	75%	75%	75%	
Coating, after spraying					fair	see (e) (f)	see (e) (f)	see (e) (f) (g)	
Coating, wet aggregate					fair				
Coating, after spraying					fair				
Sieve test, % <sup>a,b</sup>	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10
Distillation									
Oil distillate, %							1.0	7.0	0
Residue, % <sup>c</sup>	55	55	65	65	65	65	65	65	65
<b>Tests on residue from distillation:</b>									
Penetration, 25°C (77°F), 100 g, 5 s, 0.1 mm	40	90	90	150	90	250	150	250	250
Ductility, 25°C (77°F), 5 cm/min, cm	40	40	40		40				
Ash content, %		1.0	1.0	1.0	1.0	1.0			
Float test, 60°C (140°F), s					1200		50	100	100

**Table 702-2 -- Cationic Asphalt Emulsion**

Type	Rapid-Setting				Test Method
	CRS-1h		CRS-1		
Grade	min	max	min	max	
<b>Tests on emulsified asphalt:</b>					
Viscosity, Saybolt Furol at 50°C (122°F), s <sup>a</sup>	20	100	20	100	T59
Storage stability test, 24-h, % <sup>a,b</sup>		1		1	
Sodium dioctyl sulfosuccinate, % <sup>a</sup>	40		40		
Particle charge test	Positive		Positive		
Sieve test, % <sup>a,b</sup>		0.10		0.10	
Distillation:					
Oil Distillate by volume of emulsified asphalt, %		3		3	
Residue, % <sup>c</sup>	60		60		
<b>Tests on residue from distillation:</b>					
Penetration, 25°C (77°F), 100 g, 5 s, 0.1 mm	40	90	90	150	T49
Ductility, 25°C (77°F), 5 cm/min, cm	40		40		T51
Ash content, %		1		1	T111

**Footnotes:**

- a. This test requirement and associated specification limits are waived for emulsified asphalt products following dilution
- b. This test requirement on representative samples may be waived if successful application of the material has been achieved in the field.
- c. For emulsions that are diluted, the percent residue requirements must be adjusted accordingly.
- d. 50 + when material is used for sealing.
- e. Wet Coating: Weigh 100 ± 0.5 g of aggregate, 20 to 30 mesh (0.85 to 0.60 mm) standard Ottawa sand, into a 600 mL glass beaker and add soft tap water, approximately twice the volume of that of sand. Weigh into the beaker containing the sand and water 8 ± 0.2 g of the emulsion at room temperature and mix for two minutes with a stiff spatula. Cover the mixture with approximately twice its own volume of tap water and pour the water off without further mixing. Repeat this process. After the second rinse, at least 75 percent of the sand shall remain coated.
- f. Stripping: After evaluating the wet coating, place the mixture into a clear 600 mL glass beaker, cover the mixture with tap water, let stand for 1 to 16 hours, and examine. At least 75 percent of the sand shall remain coated.
- g. The coating and stripping tests may be waived when MS-5 is used for sand sealing.

## 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:

SECTION 209 – GRANULAR BACKFILL.....	2
SECTION 304 – AGGREGATE BASE COURSE .....	3
SECTION 304 – AGGREGATE BASE COURSE .....	4
SECTION 304 – AGGREGATE BASE COURSE .....	5
SECTION 529 –PRECAST CONCRETE MEMBERS .....	6
SECTION 583 – RIPRAP .....	12
SECTION 592 -- RETAINING WALL .....	13
SECTION 645 – EROSION CONTROL .....	21
SECTION 645 – EROSION CONTROL .....	22
SECTION 645 – EROSION CONTROL .....	25
SECTION 699 – MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL .....	27

**SPECIAL PROVISION  
AMENDMENT TO  
SECTION 209 – GRANULAR BACKFILL  
Item 209.2011 – Granular Backfill (Bridge)**

**Add** to Materials:

**2.3** Recycled Concrete Aggregate (RCA) shall not be used in any item included in this section.

**Delete** 4.4 from Method of Measurement.

**Add** to Method of Measurement:

**4.4** Granular backfill (bridge) will be measured by the cubic yard within the limits shown on the plans.

**Delete** 5.2 from Basis of Payment.

**Add** to Basis of Payment:

**5.2** Granular backfill (bridge) will be paid for at the Contract unit price per cubic yard.

**Add** to Pay Items and Units

209.2011	Granular Backfill (Bridge)	CY
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END OF SECTION

**SPECIAL PROVISION  
AMENDMENT TO  
SECTION 304 – AGGREGATE BASE COURSE**

**Add** to Materials:

**2.12** Recycled Concrete Aggregate (RCA) shall not be used in any material listed in Table 304-1 except for Item 304.32, Crushed Gravel for Shoulder Leveling. Use of RCA for Item 304.32 shall be as specified in Section 2.6.

END OF SECTION

**SPECIAL PROVISION  
AMENDMENT TO  
SECTION 304 – AGGREGATE BASE COURSE  
Item 304.31 – Crushed Gavel for Shimming**

This special provision provides for the measurement and payment of crushed gravel for shimming as shown on the plans. All requirements as set forth in the Standard Specifications are applicable except as modified or changed herein for these items only.

**Add** to Materials

**2.12** Crushed gravel for shimming. The material shall meet the gradation requirements of either crushed gravel or crushed stone (fine) as shown in Table 1.

**Add** to 3.4:

**3.4.11** Crushed gravel for shimming shall be placed on travel way as shown on the plans and as determined by the Engineer.

**Add** to Method of Measurement:

**4.5** Crushed gravel for shimming 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 crushed gravel for shimming will be paid for at the contract unit price per cubic yard complete in place.

**Add** to Pay Items and Units:

304.31	Crushed Gravel for Shimming	Cubic Yard
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END OF SECTION

**SPECIAL PROVISION  
AMENDMENT TO  
SECTION 304 – AGGREGATE BASE COURSE  
Item 304.99 – Streambed Simulation Material**

This Special Provision provides streambed simulation material for use in creating void filled riprap and restoring the natural channel of Beaver Brook as detailed on the Contract Documents and neither amends nor modifies the provision of this section except as noted below.

**Add** to Description

**1.3** This work shall consist of furnishing and installing a streambed simulation material to be used in filling riprap voids and in restoring a natural stream bottom.

**Add** to Materials:

**2.12** Streambed Simulation Material shall conform to the gradation as shown on the plans.

**Add** to Construction Requirements:

**3.11** Compaction requirements of Section 304 do not apply to Streambed Simulation Material. The Contractor is advised to review the notes on sheet 34 of the Contract Plans for installation requirements.

**Add** to Method of Measurement:

**4.5** Streambed Simulation Material will be measured by the cubic yard of material placed within the limits shown on the plans.

**Add** to Basis of Payment:

**5.4** The accepted quantity of Streambed Simulation Material will be paid for at the contract unit price per cubic yard complete in place.

**Add** to Pay Items and Units

304.99	Streambed Simulation Material	Cubic Yard
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END OF SECTION

**SPECIAL PROVISION**  
**SECTION 529 –PRECAST CONCRETE MEMBERS**  
**Item 529.002 – Precast Concrete Box Culvert (Bridge)**

**Description**

**1.1** This work shall consist of furnishing the design, construction plans, materials, and installing precast concrete box culvert sections, headwalls and cut-off walls in accordance with these specifications and in reasonably close conformity with the lines, grades, design, and dimensions shown on the contract plans. The joints between the sections shall be made watertight utilizing flexible rubber or plastic gaskets. Mechanical devices shall be used as shown on the plans to connect the individual sections together.

**1.2** The precast concrete box culvert sections shall meet the design and manufacturing requirements of the AASHTO LRFD Bridge Design Specifications, latest edition except as otherwise specified on the plans or in other sections of this Special Provision.

**Materials**

**2.1 Cement.** Portland cement shall conform to 528.2.1.

**2.1.1** All cement used in manufacture of the members shall be the same brand, type and color, unless otherwise permitted.

**2.1.2** Supplemental cementitious materials shall conform to 520.2.1.4.

**2.2 Aggregate.** Aggregate shall conform to the requirements of 520.2.2. The coarse aggregate gradation shall be as specified for Concrete Class AAA in 520.

**2.3 Admixtures.** All admixtures shall conform to the requirements of 520.

**2.3.1 Corrosion Inhibitor.** A corrosion inhibitor admixture meeting the requirements of 520, paragraph 2.3.2.2 shall be included in the concrete for the box culvert and headwalls. The admixture shall be from the NHDOT Qualified Products List. The dosage shall be per the manufacturer's recommendations for a 75-year service life.

**2.4 Water** shall conform to 520.2.5.

**2.5 Reinforcing Steel.** Reinforcing steel shall conform to the requirements of 544.

**2.6 Concrete.**

**2.6.1 Concrete** shall be controlled, mixed, and handled as specified in the pertinent portions of 520 unless otherwise specified herein.

**2.6.2** The Contractor shall submit a concrete mix design for approval in conformance with 520.

**2.6.2.1** The Contractor shall supply laboratory test reports that contain data on the mineralogy and potential reactivity for all aggregates being used in the concrete mix. All aggregates shall be tested in accordance with the requirements of AASHTO T303 to determine alkali-silica reactivity. The laboratory supplying the test results shall provide evidence that the laboratory is properly equipped and qualified to perform the test methods. All test results submitted for alkali-silica reactivity shall be from tests conducted within one calendar year from the date the mix design is submitted to the Engineer.

**2.6.2.2** Mix designs using potentially alkali reactive aggregates shall include mitigation for reactivity and shall be submitted to the Engineer for approval. Mitigation of potentially reactive aggregates shall consist of one or more of the following methods: use of low alkali cement (less than 0.6 percent Na<sub>2</sub>O equivalent); use of a mineral admixture; or use of a chemical admixture. The proposed mitigation method may be accepted for use after the Engineer reviews test results supplied by the Contractor that show the effectiveness of the mitigation. An effective mitigation technique would reduce the mean expansion to below 0.10% for alkali-silica reactivity when tested in accordance with AASHTO T303.

**2.6.2.3** Should a change in sources of material be made, a new mix design shall be established and approved prior to incorporating the new material. When unsatisfactory results or other conditions make it necessary, the Engineer will require a new mix design.

**2.6.3** Concrete for precast concrete box culvert sections shall conform to the requirements of Concrete Class AAA in 520.

**2.7 Flexible watertight gaskets** between the sections shall meet the physical requirements of AASHTO C-990 and AASHTO M198.

**2.8 Grout** used for frame elements, pedestal walls and footings and, lifting and erection anchor recesses shall be an approved grout as listed under Section 528A of the Qualified Products List. Additional aggregates shall not be added to the material during field mixing, unless otherwise recommended by the grout manufacturer. The grout when thoroughly mixed shall be readily pourable so that it completely fills the shape of the shear key joint.

**2.8.1** The Contractor may use a non-shrink ready-mixed grout in lieu of a product on the Qualified Products List. The contractor shall submit a mix design to the Engineer for review and approval. The ready-mixed grout shall include a shrinkage reducing admixture. The average compressive strength of the 3 cubes at 7 days shall be a minimum of 5000 psi. When tested by the Engineer's Material Testing Subconsultant, 3 neat 2" cubes will be molded and cured in accordance with AASHTO T 106 (ASTM C 109).

**2.10 Weepers.** PVC pipe, if used for weepers, shall be schedule 40 or thicker.

**2.11 Curing Materials** shall conform to 520.2.6.

### **Construction Requirements**

**3.1 Qualification of Fabricator.** Proof shall be given by the Contractor that the Fabricator is capable of and has the organization and plant for performing the work involved in manufacturing the precast concrete rigid frame sections. The fabricator must fabricate the components within the fabricator's shop facilities.

**3.1.1 Minimum Requirements.** All plants/shops fabricating material for the Department shall satisfy the following minimum requirements:

**3.1.1.1 Certification.** The precast concrete manufacturing plant shall be a certified precast fabricator per the National Precast Concrete Association or Prestressed Concrete Institute Plant Certification Program. The Fabricator shall submit proof of certification prior to the start of production.

**3.1.1.2 Engineering/Drafting.** The Fabricator shall have trained, knowledgeable, and experienced drafting personnel available who can produce and check legible, complete, and accurate shop detail drawings.

**3.1.1.3 Specifications.** The Fabricator shall have available in the shop all pertinent specifications governing the work.

**3.1.1.4 Technician.** The Fabricator shall provide a technician having at least 5 years continuous experience in the manufacture of precast members, who shall supervise the work.

**3.2 Method of Manufacture.** Information as to the proposed method of manufacturing the precast box culvert sections including the curing method shall be submitted for approval.

**3.2.1** All surfaces of the precast units shall receive a Class 1, Ordinary Finish in accordance with 520.3.12 except where otherwise noted in the plans. The outside and inside edges of the ends of each rigid frame unit shall be chamfered.

**3.3 Calculations** for the design of the precast box culvert sections for the loading specified on the contract plans shall be submitted to the Engineer for approval. These calculations shall be prepared and stamped by a Professional Engineer licensed in the State of New Hampshire.

**3.3.1** A Load Rating of the precast box culvert using the load factor design method shall be performed. The NHDOT Form 4 - Bridge Capacity Summary completed and stamped by a Professional Engineer licensed in the State of New Hampshire shall be submitted with the shop drawings.

**3.4 Detailed 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.

**3.4.1** Shop drawings for the precast box culvert sections shall be prepared on standard full-size sheets (22 inches by 34 inches) and shall be stamped by a Professional Engineer licensed in the State of New Hampshire. The shop drawings shall be properly titled as to project location and bridge components similar to the Contract Plans title box. The shop drawings shall include but not necessarily be limited to the following:

- A. Fully and accurately dimensioned views showing the geometry of the sections including all projections, recesses, notches, openings, blockouts, etc.
- B. Details and bending schedules of steel reinforcing showing clearly the size, spacing and location including any special reinforcing required but not shown on the contract plans in the proposal. Reinforcing or ties provided under lifting devices shall be shown in detail.

- C. Details and locations of all items to be embedded in the sections such as inserts, lifting devices, etc.
- D. Quantities for each section (concrete volume, reinforcing steel weight and total section weight).
- E. Description of method of curing, handling, storing, transporting and erecting the sections.

Electronic files in PDF format of the approved shop drawings shall be submitted to the Engineer.

**3.5 Inspection.** The Engineer shall have free entry at all reasonable times to the manufacturing site for the purpose of inspecting the precasting operation. At least 14 days prior to the first casting, the Fabricator shall submit a schedule to Engineer, showing the dates on which the precast concrete box culvert sections will be cast.

**3.5.1** Concrete test cylinders shall be required for verification of the required concrete compressive strength.

**3.5.1.1** The concrete test cylinders, prepared from fresh concrete at the time of placing, shall be cured under the same temperature and moisture conditions as the precast concrete box culvert for a minimum of 48 hours.

**3.5.1.2** If at any time during the progress of the work the concrete being furnished is, in the opinion of the Engineer, of improper consistency, is below specified strength, or is otherwise unsuitable, the Engineer reserves the right to stop the work until suitable corrective measures are taken by the Contractor. No additional compensation will be paid to the Contractor because of work stoppage resulting from deficient concrete.

**3.5.2** Concrete shall not be deposited in forms until all work related to the setting of the forms has been completed, all materials required to be embedded in the concrete have been placed, and the Engineer has inspected and approved said forms and materials. The inside surfaces of forms shall be cleaned of all dirt, mortar, and foreign materials and shall not contain pools of release agent.

**3.5.2.1** The Engineer reserves the right to reject forms for reuse which are in his opinion unsatisfactory unless and until they are satisfactorily repaired.

**3.6 Casting, curing, erection, assembly and handling.** The method of casting, curing, erection, assembly and handling of the precast sections shall be subject to the approval of the Engineer. Casting shall not start until approval of the shop drawings has been received.

**3.6.1** The Contractor shall be responsible for the proper casting, curing, handling, lifting, storing, transporting and erection of all sections so that they can be placed in the completed structure without damage. Improperly cast or damaged sections shall be repaired or replaced, as approved by the Engineer, at the Contractor's expense.

**3.6.1.1** Continuously wet cure components utilizing water retaining material for a minimum of seven (7) days. Water retaining material shall be burlap conforming to 520.2.6.1, or cotton mats conforming to 520.2.6.4.

### **3.6.2 Handling, Lifting, Storage, Transporting, and Erecting**

**3.6.2.1** Lift anchors shall be provided in each unit and shall be the only means used to lift the elements unless otherwise approved by the Engineer. No lifting holes will be allowed on curbs. Members shall be lifted at designated points only. Members shall be stored plumb.

**3.6.2.2** Storage areas shall be smooth and well compacted to prevent damage due to differential settlement.

**3.6.2.3** Members shall be protected from freezing temperatures 32 °F, for 5 days or until attaining design compressive strength detailed on the plans, whichever comes first.

**3.6.2.4** Members may be loaded on a trailer as described above. Shock-absorbing cushioning material shall be used at all bearing points during transportation of the members. Tie-down straps shall be located at the lines of blocking only.

**3.6.2.5** The members shall not be subject to damaging torsional or impact stresses.

**3.6.2.6 Shipping.** A member shall not be transported from the casting yard until the minimum 28 day compressive strength has been attained as shown by test cylinders, and a minimum of 7 days has elapsed from casting of the member.

**3.6.2.7** The Contractor shall submit an erection plan to the Engineer for review and approval. The erection plan shall describe the method of erection and proposed sequence of installation, and the amount and character of equipment proposed.

**3.7 Rejection of precast concrete box culvert sections.** Upon removal from the casting bed and prior to casting the next sections the Engineer will inspect the sections for defects described in 3.7.1. Defects will be identified and the Contractor shall take such measures as necessary to eliminate those defects in the next group of sections. If a defect occurs a second time, none of the defective sections may be repaired and will be rejected.

**3.7.1** The following are considered defects which may constitute cause for rejection:

1. Any cracks which extend to the reinforcing steel. The crack depth shall be determined by a method satisfactory to the Engineer.
2. Rock pockets or honeycombs larger than 6 square inches in area or over 1 inch deep.
3. Any section having more than one honeycomb area per side or surface even though the area is of a smaller scope than defined above.
4. Any discontinuity of the concrete which would permit moisture to reach the reinforcing steel.

- 5. Edge or corner breakage exceeding 12 inches in length or 1 inch in depth.
- 6. Damaged ends, where such damage would prevent making a satisfactory joint.
- 7. Extensive fine hair cracks or checks.
- 8. Culvert sections produced by racked or otherwise unsquared forms.

**3.7.2** The Engineer may approve repairs to occasional, non-recurring, and isolated defects. The Contractor shall submit procedures and materials for repairs to the Engineer for approval.

**Method of Measurement**

**4.1** Precast concrete box culvert will be measured as a unit and includes headwalls, cut-off walls as shown on the drawings.

**4.1.1** Concrete cylinders and compression tests on cylinders will be subsidiary.

**Basis of Payment**

**5.1** The accepted quantity of precast concrete box culvert will be paid for at the contract lump sum complete in place.

**5.1.1** All costs for concrete cylinders, and tests and authorized repairs will be subsidiary.

**Pay item and unit:**

529.002	Precast Concrete Box Culvert (Bridge)	Unit
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END OF SECTION

**SPECIAL PROVISION  
AMENDMENT TO  
SECTION 583 – RIPRAP  
Item 583.2 – Riprap Class II  
Item 583.4 – Riprap Class IV  
Item 583.6 – Riprap Class VI  
Item 583.8 – Riprap Class VIII  
Item 583.10 – Riprap Class X**

*This special provision adds gradation requirements of the riprap sizes included in FHWA HEC 23.*

**Delete** from Materials:

Table 583-1

**Add** to Materials:

**Table 583-1**

Riprap Classes and Sizes			Percentage Distribution of Particle Sizes by Volume (cubic feet)			
Class	Nominal Size (in)	Maximum Size (in)	< 15%	15% - 85%	> 85%	Maximum
I	6	12	0.05	0.14	0.31	1.0
II	9	18	0.2	0.5	1.2	3.4
III	12	24	0.4	1.0	2.5	6.5
IV	15	30	0.8	2.4	5.6	16
V	18	36	1.3	3.5	8.5	22
VI	21	42	2.3	6.2	16	43
VII	24	48	3	8	19	53
VIII	30	60	6	18	44	125
IX	36	72	10	27	65	179
X	42	84	17.2	50.1	121.9	343

**Add** to Pay Items and Units

583.2	Riprap Class II	Cubic Yard
583.4	Riprap Class IV	Cubic Yard
583.6	Riprap Class VI	Cubic Yard
583.8	Riprap Class VIII	Cubic Yard
583.10	Riprap Class X	Cubic Yard

END OF SECTION

**SPECIAL PROVISION**  
**SECTION 592 -- RETAINING WALL**  
**Item 592.3 – Concrete Faced Retaining Wall System**

The Contractor shall supply a precast concrete modular retaining wall system to construct the concrete faced retaining wall system shown on the plans. The wall systems to be considered and requirements are specified below.

**Description**

**1.1** This work shall consist of designing, furnishing and constructing a precast concrete modular (PCM) retaining wall system in accordance with these specifications and in close conformance with the lines, grades, design and dimensions shown on the plans or established by the Engineer. The PCM wall consists of a cast-in-place concrete leveling pad and precast concrete modules.

**1.2 PCM Wall Systems.** The following proprietary wall systems are considered to produce a product which is in general conformance with the contract documents for this project, however, it is still the responsibility of the Contractor to ensure that the fabrication techniques and limitations of the wall system will allow for the construction illustrated in the contract documents.

**1.2.1** Potential PCM wall systems to be considered for this project include the following:

- A. T-Wall™ by The Reinforced Earth Company  
45610 Woodland Road, Suite 200  
Springfield, VA 20166  
(703) 547-8797
  
- B. Conspan Bridge Systems  
Contech Construction Products, Inc.  
9025 Centre Pointe Drive, Suite 400  
West Chester, OH 45069  
(800) 338-1122
  
- C. Doublewal® by United Concrete Products  
173 Church Street  
Yalesville, CT 06492  
(800) 234-3119

**1.2.2** Additional PCM systems may be used upon evaluation and approval by the Engineer. Additional PCM block systems will only be evaluated by the Engineer after the project has been awarded.

**1.2.3** Alternative wall system types may be considered in accordance with the General Conditions of the Specifications if they meet the Owners criteria, and are in accordance with the Contract Documents. Additional or alternative Specifications may be provided by the Engineer for alternative retaining wall systems. Mechanically Stabilized Earth (MSE) wingwall systems will not be permitted for use on this project. The Contractor shall be back charged for the engineering charges associated with the development of additional or alternate retaining wall system details and specifications.

**1.3 Requirements for Supplier Prepared Design and Plans.** The Contractor shall submit plans and calculations for the wall system selected in conformance with Section 01300, the design criteria in sections 1.4 through 1.5 of this specification and the requirements listed below.

**1.3.1** The fully detailed plans shall be prepared on standard full-size sheets (22 inches by 34 inches). The shop drawings shall be properly titled as to project location and bridge components similar to the Contract Plans title box. Electronic files in PDF format of the approved shop drawings shall be submitted to the Engineer.

**1.3.2** The plans and calculations shall be prepared, sealed and signed by a Professional Engineer licensed in the State of New Hampshire and shall be submitted a minimum of 45 days prior to beginning any wall related construction.

**1.3.3** The design calculations shall include a complete and thorough set of hand calculations to support any computer generated calculations. A detailed explanation of any symbols and computer programs used in the design shall be provided. The design calculations shall be provided for external stability (sliding, overturning, and maximum bearing pressure) of the final wall configuration, and internal stability (sliding and overturning) for each module layer for both seismic and non-seismic loading. The design calculations for the PCM system shall also include pullout for both seismic and non-seismic loading.

**1.3.4** Plan and elevation sheets shall be provided and shall contain the following information:

- A. An elevation view of the wall which shall indicate the elevation at the top of the wall at all horizontal and vertical break points and at least every 50 feet along the wall, elevations at the top of leveling pads, the designation as to the type and size of all modules and the location of the original and final ground line.
- B. A plan view of the wall which shall indicate the offset from the construction centerline to the face of the wall at all changes in horizontal alignment, the limit of the widest unit and the centerline of any drainage structure or drainage pipe which is behind or passes under or through the wall.
- C. Any general notes required for design and construction of the wall.
- D. All horizontal and vertical curve data affecting wall construction.
- E. A summary listing of quantities provided on the elevation sheet of each wall for all items including subsidiary items.
- F. Cross section showing limits of construction and in fill sections, limits and extent of select granular backfill material placed above original ground.

**1.3.5** Detail sheets shall be provided and shall contain the following information:

- A. All details for foundations and leveling pads, including the maximum calculated bearing pressures.
- B. All details for the concrete module including all dimensions to construct the unit and all reinforcement steel in the unit.
- C. All reinforcing bar bending details.
- D. All details for construction of the wall around drainage facilities and utilities.

- E. All details for connection to traffic barriers, coping, parapets, attached lighting and other structures.

**1.4 General Design Criteria.** The PCM wall design shall meet all applicable requirements from the AASHTO LRFD Bridge Design Specifications, 9<sup>th</sup> Edition, including the latest revisions for both seismic and non-seismic loading conditions. In particular, the wall shall meet the design requirements for prefabricated modular wall design contained in Article 11.11. General design criteria which is applicable to both wall systems shall include the following:

- A. The design shall include a live load surcharge per article 3.11.6.4.
- B. All seismic design calculations shall be based on a design acceleration per the NHDOT Bridge Design Manual.
- C. The retained soil shall have an assumed maximum soil friction angle of 34 degrees and a soil unit weight of 120 pounds per cubic foot. These values represent material conforming to NHDOT Item 209.201, Granular Backfill (Bridge) as identified in the NHDOT Bridge Design Manual Section 4.3.3F for soils that are in a relatively dry to moist state and shall be adjusted according to sound geotechnical principles if the water table or other source of water is present within the reinforced or retained soil zones.
- D. The material below the concrete footing shall have an assumed maximum soil friction angle of 36 degrees for investigating retaining wall failure by sliding. This value represents material conforming to NHDOT Item 508., Structural Fill as identified in the NHDOT Bridge Design Manual Section 4.3.3F.
- E. The nominal bearing resistance of the foundation soil shall be assumed to be 4 tons per square foot with a resistance factor of 0.45.
- F. Passive earth pressures shall be ignored.

**1.5 T-Wall and Doublewall Design Criteria.** Design criteria and soil parameters shall be as noted below. The soil within and vertically above the modules shall be assumed to have the following design values:

- A.  $f_s$  (soil on soil friction) equal to 0.62
- B.  $f_c$  (soil on concrete friction) equal to 0.44
- C.  $K_o$  (at-rest earth pressure coefficient) equal to 0.47

### **Materials**

**2.1** The Contractor shall make all arrangements to purchase the materials covered by this section of the specifications, including concrete modules, lifting devices, joint materials and all necessary incidentals from one of the approved wall system suppliers. The Contractor, or the supplier as his agent, shall furnish the Engineer a Certificate of Compliance meeting the requirements of Section 106.04, certifying that the applicable materials comply with this section of the specifications. Materials not conforming to this section of the specifications shall not be used without the written consent of the Engineer.

**2.2 Concrete Units.** Precast concrete modular units shall have a minimum concrete cover on reinforcing steel of 1-1/2 inches. Cement shall be Type II and shall conform to the requirements of AASHTO

M 85. Concrete shall have a minimum compressive strength of 5000 psi at 28 days and meet all other requirements of Concrete Class AA as specified in Section 520. Lifting devices shall be set in place to the dimensions and tolerances shown on the approved shop drawings prior to casting. All concrete components shall meet or exceed specifications listed in Section 520.

**2.2.1 Testing and Inspection.** Acceptability of the units shall be determined on the basis of compressive strength tests and visual inspection. The Contractor shall furnish facilities and perform all necessary sampling and testing in an expeditious and satisfactory manner.

**2.2.2 Casting.** The concrete in each unit shall be placed without interruption and shall be consolidated by the use of an approved vibrator, supplemented by such hand tamping as may be necessary to force the concrete into the corners of the forms and to prevent the formation of stone pockets or cleavage planes. Clear form oil or release agent shall be used throughout the casting operation.

**2.2.3 Curing.** The units shall be cured as specified in Section 520. Any production lot which does not conform to the strength requirements shall be rejected. Continuously wet cure components utilizing water retaining material for a minimum of seven (7) days. Water retaining material shall be burlap conforming to 520.2.6.1, or cotton mats conforming to 520.2.6.4.

**2.2.4 Removal of Forms.** The forms shall remain in place until they can be removed without damage to the unit.

**2.2.5 Concrete Finish.** Unless otherwise indicated on the plans or elsewhere in the specifications, the concrete surface for the front face shall have an Class I ordinary finish as per Section 520.3.12.1. The rear face of the unit shall be free of open pockets of aggregate and surface distortions in excess of 1/4 inch.

**2.2.6 Tolerances.** All units shall be manufactured within the following tolerances with respect to the dimensions shown on the approved shop drawings:

- A. Unit Dimensions. All unit dimensions shall be within 1/4 inch.
- B. Unit Squareness. Squareness, as determined by the difference between the two diagonals, shall not exceed 1/2 inch for modules up to 10 feet in width and 3/4 inch for modules wider than 10 feet.
- C. Unit Face Surface Finish. Surface defects on smooth-formed surfaces, measured on a length of 5 feet, shall not exceed 1/4 inch. Surface defects on textured-finished surfaces, measured on a length of 5 feet, shall not exceed 5/16 inch.

**2.2.7 Compressive Strength.** Acceptance of the units, with respect to compressive strength, shall be determined on the basis of production lots. A production lot is defined as a group of units that shall be represented by a single set of compressive strength samples and shall consist of not more than 20 units or a single day's production, whichever is less.

During the production of the units, the manufacturer shall randomly sample the concrete in accordance with AASHTO T 141. A single set of compressive strength samples, consisting of a minimum of four cylinders, shall be made for every production lot.

For every compressive strength sample, a minimum of two cylinders shall be cured in the same manner as the units and tested at seven days or less. The average compressive strength of these cylinders, when tested in accordance with AASHTO T 22, will determine the initial strength of the concrete. In addition, a minimum of two cylinders shall be cured in accordance with AASHTO T 23 and tested at 28 days. The

average compressive strength of these cylinders, when tested in accordance with AASHTO T 22, will determine the compressive strength of the production lot.

If the initial strength test result indicates a compressive strength greater than or equal to the required 28 day strength, then this test result will be utilized as the compressive strength test results for that production lot, and the requirement for testing at 28 days will be waived for that particular production lot.

Acceptance of a production lot will be made if the compressive strength test result is greater than or equal to the required 28 day strength. If the compressive strength test results is less than the required 28 day strength, the acceptance of the production lot will be based on its meeting the following acceptance criteria in its entirety:

- A. Ninety percent of the compressive strength test results for the overall production shall exceed 1.0375 times the required 28 day strength.
- B. The average of any six consecutive compressive strength test results, including the one in question, shall exceed 1.0625 times the required 28 day strength.
- C. No individual compressive strength test result shall fall below 0.9 times the required 28 day strength.

In the event that a production lot fails to meet the specified compressive strength requirements, the production lot shall be rejected. Such rejection shall prevail unless the Contractor, at no cost to the Department, obtains and submits evidence of a type acceptable to the Engineer that the strength and quality of the concrete placed in the units within a production lot is acceptable. If such evidence consists of tests made on cores taken from the units within the production lot, the cores shall be obtained and tested in accordance with AASHTO T 24.

**2.2.8 Rejection.** Units shall be subject to rejection because of failure to meet any of the requirements specified above. In addition, any or all of the following defects may be sufficient cause for rejection:

- A. Defects that indicate imperfect molding.
- B. Defects indicating honeycombed or open-texture concrete.
- C. Defects in the physical characteristics of the concrete, such as broken or chipped concrete.

**2.2.9** The Engineer shall determine whether spalled, honeycombed, chipped or otherwise defective concrete shall be repaired or be cause for rejection. Repair of concrete, if allowed, shall be done in a manner satisfactory to the Engineer. Repair to concrete surfaces which will be exposed to view after completion of construction must be approved by the Engineer.

**2.2.10 Marking.** The date of manufacture, the production lot number, and the piece-mark shall be clearly marked on the back side of each unit.

**2.2.11 Handling, Storage and Shipping.**

**2.2.11.1** Lift anchors shall be provided in each unit and shall be the only means used to lift the elements unless otherwise approved by the Engineer. Members shall be lifted at designated points only. Members shall be stored plumb.

**2.2.11.2** Storage areas shall be smooth and well compacted to prevent damage due to differential settlement.

**2.2.11.3** Members shall be protected from freezing temperatures 32 °F, for 5 days or until attaining design compressive strength detailed on the plans, whichever comes first.

**2.2.11.4** Members may be loaded on a trailer as described above. Shock-absorbing cushioning material shall be used at all bearing points during transportation of the members. Tie-down straps shall be located at the lines of blocking only.

**2.2.11.5** The members shall not be subject to damaging torsional or impact stresses.

**2.2.11.6 Shipping.** A member shall not be transported from the casting yard until the minimum 28 day compressive strength has been attained as shown by test cylinders, and a minimum of 7 days has elapsed from casting of the member.

**2.3 Reinforcing Steel.** Reinforcing steel shall conform to Section 544.

**2.4 Joint Materials.** Joint materials shall be as specified by the wall supplier, subject to the following requirements:

**2.4.1 Bearing Pads.** Bearing pads shall be preformed rubber pads having a durometer hardness of 80±5.

**2.4.2 Joint Cover.** Horizontal and vertical joints between units shall be covered by a geotextile. The geotextile may be either a non-woven needle punched polyester geotextile or a woven monofilament polypropylene geotextile as approved by the wall supplier. Adhesive used to hold the geotextile filter fabric material to the rear of the units prior to backfill shall be approved by the wall supplier.

**2.5 Concrete Leveling Pad.** Concrete for cast-in-place leveling pads shall conform to the requirements of Item 520.211, Concrete Class B, Footings (on rock) or Item 520.213 Concrete Class B, Footing (on soil) (F).

**2.6 Unit Backfill.** Material used to backfill units within the limits indicated on the plans shall conform to Granular Backfill (Bridge), Item 209.201.

### **Construction Requirements**

**3.1 Wall Supplier's Representative.** The Contractor shall make the necessary arrangements with the wall supplier to have a technical representative on the project to supervise the initial construction of the wall. The technical representative shall also be required to be on-site at any time during wall construction as requested by the Engineer. When a technical representative has been requested, no wall construction shall be allowed until the technical representative has arrived at the project site.

**3.2 Foundation Preparation.** The foundation for the structure shall be graded level for a width as shown on the plans. Prior to wall construction, the foundation, if not in rock, shall be compacted as directed by the Engineer. Any foundation soils found to be unsuitable shall be removed and replaced as directed by the Engineer.

At each unit foundation level, an unreinforced concrete leveling pad shall be provided as shown on the plans. The leveling pad shall have minimum nominal dimensions of 6 inches by 12 inches. The leveling pad shall be cast to the design elevations as shown on the plans. Allowable elevation tolerances are plus 0.01 foot (1/8 inch), and minus 0.02 foot (1/4 inch), from the design elevation. The leveling pad shall be cured a minimum of 24 hours before placement of the concrete units.

**3.3 Wall Erection.** Precast concrete modular units may be placed in the wall when the initial strength of the units equals or exceeds 85 percent of the 28 day requirement. The units shall be erected in

accordance with the wall supplier's recommendations. Special care shall be taken in setting the bottom course of units to true line and grade. Assembly of the various components shall be performed in such a manner that no undue strain or stress is placed on structure. Shims shall not be permitted without prior approval of the Engineer.

The vertical joint opening on the front face of the wall shall not exceed 3/4 inch. Vertical and horizontal alignment tolerances measured from the face line shown on the plans shall not exceed 3/4 inch when measured along an 8-foot straightedge. The overall vertical tolerance of the wall (plumbness from top to bottom) shall not exceed 1/2 inch per 8 feet of wall height or 1 inch total, whichever is less, measured from the face line shown of the plans.

Joint materials and bearing pads shall be installed in accordance with the wall supplier's requirements and the details shown on the approved shop plans.

**3.3.1** For Doublewal system, all units above the first course shall interlock with the lower courses and vertical joints shall be staggered with each successive course.

**3.3.2** The Contractor shall submit an erection plan for documentation. The erection plan shall describe the method of erection and proposed sequence of installation, and the amount and character of equipment proposed.

**3.4 Backfill Placement.** Backfill materials placed within the limits of the module and behind the wall shall be as detailed on the plans. Backfill placement shall closely follow erection of each course of wall units. Backfill shall be placed in such a manner as to avoid any damage to the wall materials or misalignment of the units. Any wall components which become damaged or disturbed shall be either removed and replaced at the Contractor's expense or corrected, as directed by the Engineer. Any backfill material placed within the soil mass which does not meet the requirements of this specification shall be corrected or removed and replaced at the Contractor's expense, as directed by the Engineer.

**3.4.1 Testing Requirements.** Backfill dry density and moisture content shall be determined in accordance with AASHTO T 99, Method C or D (with oversize correction, as outlined in Note 7 of AASHTO T 99).

The frequency of sampling of select granular backfill material, necessary to assure gradation control throughout construction, shall be as directed by the Engineer. If 30 percent or more of the select granular backfill material is greater than 3/4 inch in size, AASHTO T 99 is not applicable. For such a material, the acceptance criteria for control of compaction shall be either a minimum of 70 percent of the relative density of the material as determined by ASTM D 4253 and D 4254, or a method specification, based on a test compaction section, which defines the type of equipment, lift thickness, number of passes of the specified equipment, and placement moisture content.

**3.4.2 Moisture Requirements.** The moisture content of the backfill material prior to and during compaction shall be uniform throughout each layer. Backfill material shall have a placement moisture content less than or equal to one percent above the optimum moisture content. Backfill material with a placement moisture content in excess of this requirement shall be removed and reworked until the moisture content is uniform and acceptable throughout the entire lift.

**3.4.3 T-Wall Lift Thickness and Density Requirements.** Material placed within the T-Wall units and behind the T-Wall structure shall be placed in maximum 12 inch thick lifts measured before compaction, and shall be compacted to 95 percent of the maximum dry density.

**3.4.4 Doublewal Lift Thickness and Density Requirements.** Material placed within the Doublewal unit shall be placed in maximum two foot thick lifts measured before compaction and shall be compacted to 90

percent of the maximum dry density. Material placed behind the Doublewal structure shall meet the same requirements as in 3.4.3. At no time shall the difference in backfill elevation between the interior and exterior of the wall exceed 6 feet.

**3.4.5** Compaction within 3 feet of the back face of the units shall be achieved by at least three passes of a lightweight mechanical tamper, roller or vibratory system. The specified lift thickness shall be adjusted as warranted by the type of compaction equipment actually used, but no soil density tests need be taken within this area. Care shall be exercised in the compaction process to avoid misalignment of or damage to the wall units. Heavy compaction equipment shall not be used to compact backfill within 3 feet of the wall face.

**3.4.6** At the end of each day's operation, the Contractor shall slope the last level of backfill to direct runoff of rainwater away from the wall face. In addition, the Contractor shall not allow surface runoff from adjacent areas to enter the wall construction site.

#### **Method of Measurement**

**4.1** PCM retaining wall system will be measured by the square foot of wall surface area. The wall surface area shall be taken as the surface area of the precast concrete facing panels, including the surface area of nominal panel joint openings and wall penetrations such as pipes and other utilities. The surface area of the leveling pad/footing shall be included.

**4.1.1** Precast concrete modular retaining wall system will include precast concrete units, bearing pads, joint materials, concrete leveling pad, excavation, backfill, and wall supplier site visits and incidentals.

#### **Basis of Payment**

**5.1** The accepted quantity of concrete faced retaining wall system will be paid for at the contract price per square foot complete and in place.

**5.1.1** Payment for PCM system shall be considered full compensation for all labor, materials, and equipment for excavation, backfill and to install precast concrete units, bearing pads, joint materials, concrete leveling pad/footing, clean up, and for all site visits by the wall supplier's technical representative.

#### **Pay Item and Unit**

592.3	Concrete Faced Retaining Wall System	Square Foot
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END OF SECTION

**SPECIAL PROVISION**  
**SECTION 645 – EROSION CONTROL**  
**Item 645.0002 – Sedimentation Basin**

**Description**

**1.1** This work shall consist of designing, furnishing, constructing, maintaining, and removing temporary sedimentation basins and concrete washout areas as required by the approved Storm Water Pollution Prevention Plan (SWPPP).

**Materials**

**2.1** Material requirements shall be as specified in 645.2 or as indicated in the approved Storm Water Pollution Prevention Plan (SWPPP).

**Construction Requirements**

**3.1** Construction requirements shall be as specified in 645.3 or as indicated in the approved Storm Water Pollution Prevention Plan (SWPPP).

**Method of Measurement**

**4.1** This item will be measured as a unit.

**4.2** No separate payment will be made for multiple sedimentation basins or concrete washout areas.

**Basis of Payment**

**5.1** Partial payments for this item will be made as follows:

(a) When the sedimentation basins and concrete washout areas have been installed in place, the accumulated total to be paid will be 50 percent of the amount bid.

(b) When the sedimentation basins and concrete washout areas has been completely removed and any disturbed areas have been stabilized, the accumulated total to be paid will be 100 percent of the amount bid.

**Pay item and unit:**

645.0002	Sedimentation Basin	Unit
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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 yarns 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)
Stability3 Carbon Dioxide Evolution Rate	mg CO2-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.

- 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 inches 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  
AMENDMENT TO  
SECTION 645 – EROSION CONTROL  
Item 645.719 - Monitoring SWPPP and Erosion and Sediment Controls**

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** 3.2.1.1 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** 4.7 in its entirety with the following:

**4.7** Monitoring SWPPP and 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 (½) hour. Site visits of less than (½) 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** 5.7 in its entirety with the following:

**5.7** The accepted quantities of Monitoring Erosion and Sediment Control will be paid for at the contract unit price per each visit.

**Replace** 5.7.1 in its entirety with the following:

**5.7.1** 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.

**Add** the following Pay items and units:

645.719	Monitoring SWPPP and Erosion and Sediment Controls	Each
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END OF SECTION

**SPECIAL PROVISION**  
**SECTION 699 – MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL**

**Amend** 5.1 to read:

**5.1** Payment for work authorized under this item will be made using the following methods as appropriate; with Contract unit prices, on a lump sum, time and materials, or other previously agreed upon basis. A detailed estimate for work authorized under this item shall be submitted to the Engineer for review and approval a minimum of 5 working days prior to the scheduled start of the work.

END OF SECTION

## **Appendix A**

# **NHDES Wetlands and Non-Site Specific Permit**



The State of New Hampshire  
**Department of Environmental Services**



**Robert R. Scott, Commissioner**

February 17, 2026

TOWN OF GOFFSTOWN  
SCOTT OZANA  
404 ELM STREET  
GOFFSTOWN NH 03045

**Re: Approved Standard Dredge and Fill Wetlands Permit Application (RSA 482-A)**  
**NHDES File Number: 2025-03132**  
**Subject Property: Montelona Rd, Goffstown, Tax Map/Block/Lot(s): 9/no block/**

Dear Applicant:

On February 17, 2026, the New Hampshire Department of Environmental Services (NHDES) Wetlands Bureau approved the above-referenced Standard Dredge and Fill Wetlands Permit Application. Enclosed please find Wetlands Permit # 2025-03132 to Permanently impact 448 square feet (SF) of palustrine forested wetlands, 53 SF of palustrine emergent wetlands, 803 SF (112 LF) within the beds and banks of Hardy Brook to replace a 12' span by 5' rise pre-cast concrete box culvert. Temporary impacts include 16 SF to palustrine forested wetlands, and 213 SF and 10 LF to the bed of Hardy Brook for construction access and erosion controls. The permittee shall notify the department in writing at least one week prior to commencing any work under this permit and shall file a notice of completion of work and certificate of compliance with the department within 10 working days of completion of the work authorized by this permit.

This permit is not valid unless signed by the permittee and the principal contractor, if any, who will build or install the project. Prior to start of construction, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project. It shall remain posted until the project is completed. Transfer of this permit to a new owner shall require notification to, and approval of, the NHDES. **This permit does not convey any property right, nor does it preclude the need to meet any other applicable state, federal, or municipal legal requirements.**

In accordance with RSA 482-A:10, RSA 21-O:14, and Rules Ec-Wet 100-200, **any person aggrieved by this decision may file a Notice of Appeal directly with the NH Wetlands Council (Council) within 30 days of the decision date, February 17, 2026.** Every ground claiming the decision is unlawful or unreasonable must be fully set forth in the Notice of Appeal. Only the grounds set forth in the Notice of Appeal are considered by the Council. Information about the Council, including Council Rules, is available at <https://www.nhec.nh.gov/wetlands-council/about>. For appeal-related issues, contact the Council Appeals Clerk at (603) 271-3650.

**This approval is based on the following findings:**

1. This is classified as a major impact project per Env-Wt 903.01(g)(3) as the project is for the replacement of a tier 3 stream crossing.
2. DataCheck letter DCT25-2495 identified the presence protected species. The applicant has implemented recommendations from the Ecological Review Team per Env-Wt 311.01(b)(1) and Env-Wt 311.06(g), to avoid and minimize project-related impacts to protected species.
3. The applicant has provided statements from a Professional Engineer certifying that:
  - a. The rip-rap is required to reinforce the wingwall due the slope and anticipated turbulence and flows in accordance with Env-Wt 514.02(c)(4).
  - b. The existing structure does not have a history of causing or contributing to flooding in accordance with Env-Wt 904.09(c)(1).

[www.des.nh.gov](http://www.des.nh.gov)

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(603) 271-3503 • Fax: (603) 271-2867 • TDD Access: Relay NH 1-800-735-2964

- c. The "structure type and opening size decreases flood velocities, more than doubles the hydraulic waterway opening, provides a span that better matches existing bankfull widths, and lowers flood profiles" in accordance with Env-Wt 904.09(c)(2).
4. The applicant has demonstrated that the replacement stream crossing meets Env-Wt 904.01 and Env-Wt 904.09 design criteria.

If you have any questions, please contact me at Kara.Villone@des.nh.gov or (603)271-3376.

Sincerely,



Emma Berger  
Inland Wetland Supervisor, Wetlands Bureau  
Land Resources Management, Water Division

Enclosure

Copied: Hoyle Tanner & Associates  
Goffstown Municipal Clerk  
Goffstown Conservation Commission



The State of New Hampshire  
**Department of Environmental Services**



**Robert R. Scott, Commissioner**

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**WETLANDS PERMIT 2025-03132**

**NOTE CONDITIONS**

**PERMITTEE:** TOWN OF GOFFSTOWN  
SCOTT OZANA  
404 ELM STREET  
GOFFSTOWN NH 03045

**PROJECT LOCATION:** MONTELONA RD, GOFFSTOWN  
Tax Map/Block/Lot(s): 9/no block/

**WATERBODY:** HARDY BROOK

**APPROVAL DATE:** FEBRUARY 17, 2026                      **EXPIRATION DATE:** FEBRUARY 17, 2031

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The New Hampshire Department of Environmental Services' (NHDES) review of permit application 2025-03132 has found that it is consistent with RSA 482-A. NHDES hereby issues this Wetlands Permit authorizing the impacts described provided the Conditions imposed are met. To validate this Permit, the Permittee and the Principal Contractor are required to sign below.

**PERMIT DESCRIPTION:**

Permanently impact 448 square feet (SF) of palustrine forested wetlands, 53 SF of palustrine emergent wetlands, 803 SF (112 LF) within the beds and banks of Hardy Brook to replace a 12' span by 5' rise pre-cast concrete box culvert. Temporary impacts include 16 SF to palustrine forested wetlands, and 213 SF and 10 LF to the bed of Hardy Brook for construction access and erosion controls.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING PROJECT-SPECIFIC CONDITIONS:**

1. All work shall be done in accordance with the approved plans dated November 2025 and revised through January 10, 2025 by Hoyle Tanner & Associates, as received by the NH Department of Environmental Services (NHDES) on January 19, 2026. If there is a conflict between the approved plans and the conditions contained in this permit, the permit conditions shall apply.
2. This permit is not valid unless the recommendations of the Ecological Review Team for the protection of rare, threatened, or endangered species and critical habitat are met, relative to DataCheck DCT25-2495 per Env-Wt 307.06 and Env-Wt 311.06(g).
3. This permit is not valid until the permittee or permittee's contractors submit a final construction sequence and dewatering and diversion plan to NHDES for review and written approval. The plan shall include the relative timing and progression of all work and all proposed cofferdams, diversion and dewatering strategies, estimated maximum flow to be diverted, site stabilization provisions if capacity of diversion is exceeded, and measures to reduce turbidity. This plan shall be stamped by a licensed Professional Engineer (PE), in accordance with New Hampshire Administrative Rule Env-Wt 303.04(l).
4. The permittee shall notify NHDES in writing at least one week prior to commencing any work under the permit in accordance with Env-Wt 314.03 and Env-Wt 524.05(a). "Wetlands Initiation of Construction Notification Form" available at <https://onlineforms.nh.gov/>.
5. No activity shall be conducted in such a way as to cause or contribute to any violation of surface water quality standards specified in RSA 485-A:8 or Env-Wq 1700; ambient groundwater quality standards established under RSA 485-C; or any provision of RSA 485-A, RSA 483-B, or Env-Wq 1400 that protects water quality.

[www.des.nh.gov](http://www.des.nh.gov)

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(603) 271-3503 • Fax: (603) 271-2867 • TDD Access: Relay NH 1-800-735-2964

6. Work on stream crossings that requires any work in areas that are subject to flowing water shall maintain normal flows and prevent water quality degradation during the work by using best management practices, such as temporary by-pass pipes, culverts, or cofferdams in accordance with Env-Wt 904.02(b).
7. Dredged materials to be stockpiled in uplands shall be dewatered in sedimentation basins that are contained within turbidity controls that prevent turbid water from leaving the basins; and located outside of any jurisdictional area in accordance with Env-Wt 307.10(f).
8. In accordance with Env-Wt 307.11(b), limits of fill shall be clearly identified prior to commencement of work and controlled in accordance with Env-Wt 307.03 to ensure that fill does not spill over or erode into any area where filling is not authorized.
9. Fill shall be clean sand, gravel, rock, or other material that meets the project's specifications for its use; and does not contain any material that could contaminate surface or groundwater or otherwise adversely affect the ecosystem in which it is used in accordance with Env-Wt 307.11(a).
10. To prevent the use of soil or seed stock containing nuisance or invasive species, the contractor responsible for work shall follow Best Management Practices for the Control of Invasive and Noxious Plant Species (Invasive Plant BMPs) in accordance with Env-Wt 307.05(e).
11. In accordance with Env-Wt 307.05(b), equipment to be used in surface waters shall be completely free of all aquatic and terrestrial invasive plants, seeds, and other propagules, and all exotic aquatic species of wildlife as defined in RSA 487:16, I-a.
12. Water quality control measures shall be installed prior to start of work and in accordance with the manufacturer's recommended specifications in accordance with Env-Wt 307.03(c)(3).
13. Any sediment collected by water quality control measures shall be removed with sufficient frequency to prevent the discharge of sediment; and placed in an upland location in a manner that prevents its erosion into a surface water or wetland in accordance with Env-Wt 307.03(d).
14. In accordance with Env-Wt 307.03(c)(6), water quality control measures shall remain in place until all disturbed surfaces are stabilized to a condition in which soils on the site will not experience accelerated or unnatural erosion by achieving and maintaining a minimum of 85% vegetative cover using an erosion control seed mix, whether applied in a blanket or otherwise, that is certified by its manufacturer as not containing any invasive species; or placing and maintaining a minimum of 3 inches of non-erosive material such as stone.
15. In accordance with Env-Wt 307.03(c)(7), temporary water quality control methods shall be removed upon completion of work when compliance with Env-Wt 307.03(c)(6) is achieved.
16. All exposed soils and other fills shall be permanently stabilized within 3 days following final grading in accordance with Env-Wt 307.03(e).
17. The person in charge of construction equipment shall inspect and maintain and repair such equipment for leaking fuel, oil, and hydraulic fluid each day prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands in accordance with Env-Wt 307.03(g).
18. In accordance with Env-Wt 307.03(h), equipment shall be staged and refueled outside of jurisdictional areas and in accordance with Env-Wt 307.15.
19. If any temporary impact area that is stabilized with seeding or plantings does not have at least 75% successful establishment of wetlands vegetation after 2 growing seasons, the area shall be replanted or reseeded, as applicable, in accordance with Env-Wt 307.12(f).
20. Wetland areas where permanent impacts are not authorized shall be restored to their pre-impact conditions and elevation by replacing the removed soil and vegetation in their pre-construction location and elevation such that post-construction soil layering and vegetation schemes are as close as practicable to pre-construction conditions in accordance with Env-Wt 307.12(i).
21. A standard permit shall be signed by the permittee and principal contractor who will build or install the project prior to start of construction; and not be valid until signed as required by Env-Wt 314.01 (a) and (b).
22. The permittee shall file a "Wetlands Completion of Construction Notice and Certificate of Compliance" Form with the department within 10 working days of completing the work authorized by the permit in accordance with Env-Wt 314.08. This report shall be signed by the permittee and include the permit number & date of issuance, the date work

was completed, and photos showing resource impact areas upon completion. "Wetlands Completion of Construction Notice and Certificate of Compliance Form" available at <https://onlineforms.nh.gov/>.

**ANY INDIVIDUAL CONDUCTING WORK UNDER THIS PERMIT IS ADVISED OF THE FOLLOWING:**

1. This permit does not preclude the need to meet any other applicable state, federal, or municipal legal requirements.
2. The permit holder is responsible for reading, and ensuring compliance with, the applicable general conditions established in Env-Wt 307.
3. This permit does not in any way authorize the take of threatened or endangered species, as defined by RSA 212-A:2, or of any protected species or exemplary natural communities, as defined in RSA 217-A:3.
4. This approval does not convey any property right. The permittee is responsible for ensuring that they have the legal authority to access the subject lands and conduct the impacts described.

APPROVED:



Emma Berger  
Inland Wetland Supervisor, Wetlands Bureau  
Land Resources Management, Water Division

**THE SIGNATURES BELOW ARE REQUIRED TO VALIDATE THIS PERMIT (Env-Wt 314.01).**

\_\_\_\_\_  
PERMITTEE SIGNATURE (required)

\_\_\_\_\_  
PRINCIPAL CONTRACTOR SIGNATURE (required)

**Appendix B**  
**Project Easements**

**RETURN RECORDED ORIGINAL TO:**

ADAM JACOBS, P.E.  
DIRECTOR OF PUBLIC WORKS  
TOWN OF GOFFSTOWN  
404 ELM STREET  
GOFFSTOWN, NH 03045

#E89

Doc # 260003872 02/02/2026 02:16:11 PM  
Book 9926 Page 1510 Page 1 of 3

FEES: \$18.74
SURCHARGE: \$2.00
CASH: _____

Dennis C Hogan  
Register of Deeds, Hillsborough County

**CULVERT CONSTRUCTION AND ACCESS EASEMENT**

Know all men by these presents, that **John and Tanya Libby** (“Grantor”), 5 Mercier Court Goffstown, N.H. 03045, located in the Town of Goffstown, County of Hillsborough, State of New Hampshire, for and in consideration of the sum of one (\$1.00) dollar and other valuable consideration, paid hereby does give, grant, bargain, sell, transfer, convey and confirm unto the Town of Goffstown, with a mailing address of 16 Main Street, Goffstown, N.H., 03045 and its successors and assigns forever the following:

*Perpetual easements* in and upon the *easement premises* described below, for the purposes and subject to the terms and conditions set forth herein.

**EASEMENT PREMISES**

The property which is made subject to the within easement by means of this conveyance and which is identified herein as the ‘*easement premises*’, is a *portion* of that certain tract or parcel of land situated on **5 Mercier Court**, located in the Town of Goffstown, Hillsborough County, State of New Hampshire, shown on the Town of Goffstown Tax Maps as **Map 9 Lot 87-1-3**. The portion of said **Map 9 Lot 87-1-3** to which the easements conveyed hereunder shall apply shall be limited to the following area: a strip of land approximately 24 feet wide by 113 feet long adjacent to the Montelona Road Right-of-Way as shown on plan entitled “**Montelona Road Over Hardy Brook: Easement Plan**”, dated November, 2025 prepared by the Hoyle Tanner & Associates, said plan is on file with the Town of Goffstown Department of Public Works. Within this area the Town will remove the existing metal culvert to construct a new concrete box culvert. The work within the easement area will include tree cutting, earth removal and placement, installation of erosion stone, installation of concrete headwalls, reestablishing turf, installation of drainage pipe, and any other construction tasks associated with the culvert construction. Within the easement area the Town will also perform routine maintenance tasks to ensure the culverts longevity and functionality.

**EASEMENT TERMS**

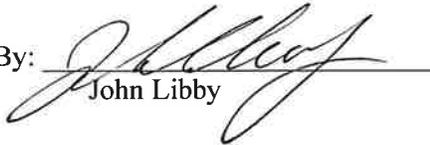
The right and easement conveyed hereby shall consist of the perpetual right and easement to construct, repair and maintain a concrete box culvert across the aforementioned Property of Grantor beyond the limits of the present highway passing through and by Grantor’s Property in the Town of Goffstown, as will or may be necessary to construct and maintain said concrete . It is understood that the Town shall determine the manner in which it shall exercise this responsibility and shall not be responsible nor liable for any greater standard of care than applies to maintenance of public roads generally and this agreement does not obligate the Town to perform any particular specified service other than the typical maintenance which it undertakes, in its judgment and with the oversight of the Director of Public Works, on public roads in the Town of Goffstown.

**RETURN RECORDED ORIGINAL TO:**

ADAM JACOBS, P.E.  
DIRECTOR OF PUBLIC WORKS  
TOWN OF GOFFSTOWN  
404 ELM STREET  
GOFFSTOWN, NH 03045

GRANTOR DOES HEREBY ALSO GRANT to the Town shall have the right and easement to enter said 'easement premises' at any and all reasonable times for the purpose of clearing out maintaining or repairing said concrete box culvert providing however, that the Town shall be responsible for any and all damages to persons or property (including the property of Grantor) caused thereby. All damage incurred shall be repaired as well as the original upon completion of work performed. Grantor shall be notified prior to work being performed.

IN WITNESS WHEREOF, the parties have executed this **Culvert Construction and Access Easement** as of the 23<sup>rd</sup> day of January, 2026 at Goffstown, New Hampshire.

By:   
John Libby

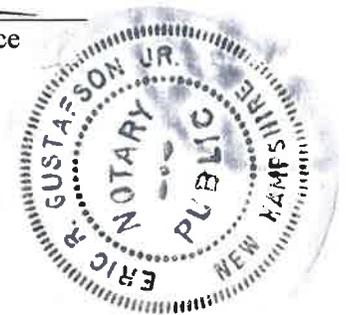
STATE OF NEW HAMPSHIRE  
COUNTY OF HILLSBOROUGH

Personally appeared before me on the 23<sup>rd</sup> day of January, 2026 the above-named **John Libby**, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

Before Me:

  
Notary Public/Justice of the Peace

ERIC R. GUSTAFSON, JR.  
NOTARY PUBLIC  
State of New Hampshire  
My Commission Expires  
September 7, 2027



**RETURN RECORDED ORIGINAL TO:**

ADAM JACOBS, P.E.  
DIRECTOR OF PUBLIC WORKS  
TOWN OF GOFFSTOWN  
404 ELM STREET  
GOFFSTOWN, NH 03045

IN WITNESS WHEREOF, the parties have executed this **Culvert Construction and Access Easement** as of the 22<sup>nd</sup> day of January, 2026 at Goffstown, New Hampshire.

By:   
Tanya Libby

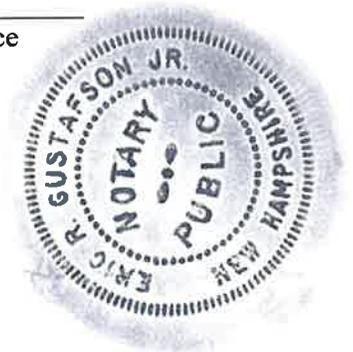
STATE OF NEW HAMPSHIRE  
COUNTY OF HILLSBOROUGH

Personally appeared before me on the 22<sup>nd</sup> day of January, 2026 the above-named **Tanya Libby**, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

Before Me:

  
Notary Public/Justice of the Peace

**ERIC R. GUSTAFSON, JR.**  
NOTARY PUBLIC  
State of New Hampshire  
My Commission Expires  
September 7, 2027



**RETURN RECORDED ORIGINAL TO:**

ADAM JACOBS, P.E.  
DIRECTOR OF PUBLIC WORKS  
TOWN OF GOFFSTOWN  
404 ELM STREET  
GOFFSTOWN, NH 03045

#E89

Doc # 260003856      02/02/2026 01:25:06 PM  
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FEES: \$14.74
SURCHARGE: \$2.00
CASH: _____

Dennis C Hogan  
Register of Deeds, Hillsborough County

**CULVERT CONSTRUCTION AND ACCESS EASEMENT**

Know all men by these presents, that **Daniel Whelan** (“Grantor”), 283 East Dunbarton Road Goffstown, N.H. 03045, located in the Town of Goffstown, County of Hillsborough, State of New Hampshire, for and in consideration of the sum of one (\$1.00) dollar and other valuable consideration, paid hereby does give, grant, bargain, sell, transfer, convey and confirm unto the **Town of Goffstown**, with a mailing address of 16 Main Street, Goffstown, N.H., 03045 and its successors and assigns forever the following:

*Perpetual easements* in and upon the *easement premises* described below, for the purposes and subject to the terms and conditions set forth herein.

**EASEMENT PREMISES**

The property which is made subject to the within easement by means of this conveyance and which is identified herein as the ‘*easement premises*’, is a *portion* of that certain tract or parcel of land situated on **283 East Dunbarton Road**, located in the Town of Goffstown, Hillsborough County, State of New Hampshire, shown on the Town of Goffstown Tax Maps as **Map 9 Lot 90-3**. The portion of said **Map 9 Lot 90-3** to which the easements conveyed hereunder shall apply shall be limited to the following area: a strip of land approximately 26 feet wide by 85 feet long adjacent to the Montelona Road Right-of-Way as shown on plan entitled “**Montelona Road Over Hardy Brook: Easement Plan**”, dated November, 2025 prepared by the Hoyle Tanner & Associates, said plan is on file with the Town of Goffstown Department of Public Works. Within this area the Town will remove the existing metal culvert to construct a new concrete box culvert. The work within the easement area will include tree cutting, earth removal and placement, installation of erosion stone, installation of concrete headwalls, reestablishing turf, installation of drainage pipe, and any other construction tasks associated with the culvert construction. Within the easement area the Town will also perform routine maintenance tasks to ensure the culverts longevity and functionality.

**EASEMENT TERMS**

The right and easement conveyed hereby shall consist of the perpetual right and easement to construct, repair and maintain a concrete box culvert across the aforementioned Property of Grantor beyond the limits of the present highway passing through and by Grantor’s Property in the Town of Goffstown, as will or may be necessary to construct and maintain said concrete . It is understood that the Town shall determine the manner in which it shall exercise this responsibility and shall not be responsible nor liable for any greater standard of care than applies to maintenance of public roads generally and this agreement does not obligate the Town to perform any particular specified service other than the typical maintenance which it undertakes, in its judgment and with the oversight of the Director of Public Works, on public roads in the Town of Goffstown.

**RETURN RECORDED ORIGINAL TO:**

ADAM JACOBS, P.E.  
DIRECTOR OF PUBLIC WORKS  
TOWN OF GOFFSTOWN  
404 ELM STREET  
GOFFSTOWN, NH 03045

GRANTOR DOES HEREBY ALSO GRANT to the Town shall have the right and easement to enter said 'easement premises' at any and all reasonable times for the purpose of clearing out maintaining or repairing said concrete box culvert providing however, that the Town shall be responsible for any and all damages to persons or property (including the property of Grantor) caused thereby. All damage incurred shall be repaired as well as the original upon completion of work performed. Grantor shall be notified prior to work being performed.

IN WITNESS WHEREOF, the parties have executed this **Culvert Construction and Access Easement** as of the 21 day of January, 2026 at Goffstown, New Hampshire.

By: [Signature]  
Daniel Whelan

STATE OF NEW HAMPSHIRE  
COUNTY OF HILLSBOROUGH

Personally appeared before me on the 21 day of January, 2026 the above-named **Daniel Whelan**, known to me (or satisfactorily proven) to be the person whose name is subscribed to the within instrument and acknowledged that he/she executed the same for the purposes therein contained.

Before Me:  
[Signature]  
Notary Public/Justice of the Peace

