

# **REQUEST FOR PROPOSAL**

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**MELENDY ROAD OVER FIRST BROOK (114/083)  
BRIDGE REPLACEMENT  
NHDOT PROJECT NO. 44653, X-A005(563)**

**TOWN OF HUDSON, NH**

**Prepared for**

**Town of Hudson  
Engineering Department  
12 School Street  
Hudson, NH 03051**

**September 2024**



**Prepared By:**

**Wright-Pierce  
230 Commerce Way, Suite 302  
Portsmouth, NH 03801  
603-430-3728**

**HILLSBOROUGH COUNTY  
TOWN OF HUDSON, NEW HAMPSHIRE**

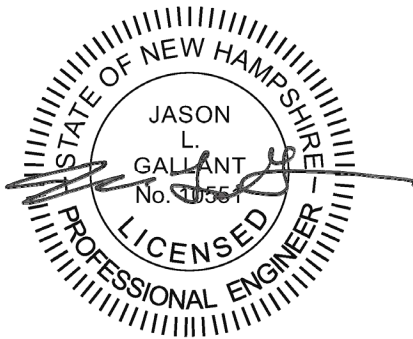
**BIDDING/CONTRACT DOCUMENTS  
AND TECHNICAL SPECIFICATIONS**

**FOR**

**MELENDY ROAD OVER FIRST BROOK (114/083)  
BRIDGE REPLACEMENT**

**NHDOT PROJECT NO. 44653, X-A005(563)**

**SEPTEMBER 2024**



**9/11/2024**

**Prepared By:**

**Wright-Pierce  
230 Commerce Way, Suite 302  
Portsmouth, NH 03801  
603-430-3728**

## TABLE OF CONTENTS

<u>SECTION</u>	<u>TITLE</u>
----------------	--------------

DIVISION 00 - BIDDING AND CONTRACT REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS

DIVISION 02 - EARTHWORK

DIVISION 03 - BASE COURSES

DIVISION 04 - PAVEMENTS

DIVISION 05 - STRUCTURES

DIVISION 06 - INCIDENTAL CONSTRUCTION

APPENDICES

A	Supplemental Specifications, Special Provisions and Federal Requirements
B	NHDES Permit
C	Right-of-Way Plans
D	NEPA Documents

## INVITATION TO BID

Sealed Bids will be received at the Town Hall Offices, Buxton Room, 12 School Street, Hudson, NH, until **10:00 AM, local time, October 25, 2024**, for the following project:

**CONSTRUCTION SERVICES FOR  
BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
NHDOT PROJECT NO. 44653, X-A005(563)**

Bids submitted or received after this date and time will not be accepted. This project is an LPA project 80%/20% funded by State of NH and Town of Hudson.

All questions with regard to the Invitation to Bid should be addressed (in writing only) to the attention of:

Elvis Dhima, P.E.  
Town of Hudson  
Engineering Department  
12 School Street  
Hudson, NH 03051  
edhima@hudsonnh.gov

**A MANDATORY PRE-BID MEETING WILL BE HELD AT TOWN HALL OFFICES ON OCTOBER 4, 2024, IN THE BUXTON ROOM, 10:00 AM.**

**THIS IS A CONSTRUCTION PROJECT.**

The deadline for all questions shall be at 10:00 a.m. on October 11, 2024, to Town Engineer.

The successful bidder shall comply with all applicable Federal, State, and local laws, ordinances, rules, regulations, and codes in the performance of this contract.

The bids will be evaluated based on cost and experience of the engineering firm.

All qualified bidders will receive consideration without regard to race, color, religion, creed, age, sex, or national origin. The Town of Hudson is an equal opportunity employer.

The OWNER reserves the right to waive any informalities, to negotiate with any bidder and to reject any or all bids. No bidder may withdraw his bid within 90 days after the actual date of the opening thereof.

All the bid package information will be available on the town website.

## **REQUEST FOR PROPOSAL**

The Town of Hudson, New Hampshire wishes to engage the services of a qualified contractor for:

### **CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT MELENDY ROAD OVER FIRST BROOK (114/083) NHDOT PROJECT NO. 44653, X-A005(563)**

The CONTRACTOR shall be prequalified by New Hampshire Department of Transportation (NHDOT) for Bridge Construction and additional qualifications/experience as described below.

An overview and detailed specifications are provided later in the Request for Proposal (RFP).

Proposals must be received no later than **10:00 AM on October 25, 2024**, from interested firms, to be eligible for consideration by the Town. Proposal shall follow the format listed below and be on the forms provided as required. Each statement shall be submitted in a sealed envelope, which is clearly marked,

### **“CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT MELENDY ROAD OVER FIRST BROOK (114/083)”**

Requests may be issued only by the Town Engineer, or his designee, to authorized firms, and are not transferable unless authorized by the Town Engineer or his designee.

Complete copies of RFP are available from:

Mr. Elvis Dhima, P.E.  
Town Engineer  
Town Hall  
12 School Street  
Hudson, NH 03051  
[edhima@Hudsonnh.gov](mailto:edhima@Hudsonnh.gov)

**All proposals received will be considered confidential and not available for public review until after a vendor has been selected.**

The Town reserves the right to reject any or all proposals or any part thereof, to waive any formality, informality, information or errors in the proposal, to accept the proposal considered to be in the best interest of the Town, or to purchase on the open market if it is considered in the best interest of the Town to do so. Failure to submit all information called

for and/or submission of an unbalanced proposal are sufficient reasons to declare a proposal as non-responsive and subject to disqualification.

Proposals which do not incorporate our requested format for providing **CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT MELENDY ROAD OVER FIRST BROOK (114/083)** will not be considered.

All proposals are advertised, at the Town’s discretion, in various publications and are posted publicly as detailed below:

<b>Name</b>	<b>Advertising Medium</b>	<b>Address</b>	<b>Phone/Fax</b>	<b>Email and Web Address</b>
Town Hall Hudson, NH	Post at Town Hall	12 School Street, Hudson NH 03051	603.886.6008 603.594.1142(fax)	<a href="mailto:edhima@hudsonnh.gov">edhima@hudsonnh.gov</a>

TOWN OF HUDSON, NEW HAMPSHIRE

\_\_\_\_\_  
Mr. Elvis Dhima, PE, Town Engineer

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

**PROPOSAL DUE DATE/TIME: OCTOBER 25, 2024, NOT LATER THAN 10:00 AM, AT THE TOWN HALL OFFICES, BUXTON ROOM, 12 SCHOOL STREET, HUDSON, NH.**

**A MANDATORY PRE-BID MEETING WILL BE HELD AT THE TOWN HALL OFFICES, BUXTON ROOM, ON OCTOBER 4, 2024, AT 10:00 AM.**

**ALL QUESTIONS DUE BY OCTOBER 11, 2024, AT 10:00 AM, TO TOWN ENGINEER.**

**PREPARATION OF PROPOSALS:**

Proposals shall be submitted on the forms provided and must be signed by the Proposer or the Proposer’s authorized representative. The person signing the proposal shall initial any corrections to entries made on the proposal forms.

Proposers must quote on all items appearing on the proposal forms. Failure to quote on all items may disqualify the proposal.

Unless otherwise stated in the Request for Proposal (RFP), the Proposer agrees that the proposal shall be deemed open for acceptance for sixty (60) calendar days subsequent to submittal to the Town of Hudson or as modified by addendum.

Any questions or inquiries must be submitted in writing, and must be received by the Town Engineer, Elvis Dhima ([edhima@hudsonnh.gov](mailto:edhima@hudsonnh.gov)) no later than due date to be considered. Any responses to questions, clarifications, or changes to the Request for Proposals will be provided to all Proposers of record that attended the pre-proposal meeting.

The Proposer shall not divulge, discuss or compare this proposal with other Proposers and shall not collude with any other Proposers or parties to a proposal whatever.

#### MANDATORY PRE-PROPOSAL MEETING:

All Proposers are required to attend the pre-proposal meeting at **Town Hall Offices, Buxton Room, at 10:00 AM on OCTOBER 4, 2024, AT 10:00 AM.**

#### SUBMISSION OF PROPOSALS:

Proposals must be submitted at the Town Hall Offices, Buxton Room, 12 School Street, Hudson, NH by **10:00 AM OCTOBER 25, 2024**, as directed in the Request for Proposals, and on the forms provided unless otherwise specified. Proposals must be typewritten or printed in ink. Proposals must be mailed or delivered in person. Proposals that are faxed or e-mailed will not be accepted.

#### AMENDMENTS TO PROPOSALS

If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

Proposers shall acknowledge receipt of any amendment to this solicitation (1) by identifying the amendment number and date on the Proposal form, or by letter. Proposals which fail to acknowledge the Proposer's receipt of any amendment will result in the rejection of the Proposal if the amendment(s) contained information which substantively changed the municipality's requirements.

**Amendments will be on file in the offices of the municipality and the Engineer by October 18, 2024, 10:00 AM.**

#### WITHDRAWAL OF PROPOSALS:

Proposals may be withdrawn by written notice, telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of proposals; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the proposer is mailed and postmarked prior to the specified proposal opening time. A proposal may be withdrawn in person by a proposer or its authorized representative if, before

the exact time set for opening of proposals, the identity of the person requesting withdrawal is established and the person signs a receipt for the proposal. Negligence on the part of the Proposer in preparing this proposal shall not constitute a right to withdraw a proposal subsequent to the proposal opening. Proposals may not be withdrawn for the period as indicated in this Request for Proposals or as modified by addenda.

RECEIPT AND OPENING OF PROPOSALS:

Proposals shall be submitted prior to the time fixed in the Request for Proposals. Proposals received after the time so indicated shall be returned unopened.

All qualified Bidders will receive consideration without regard to race, color, religion, creed, age, sex, or national origin.

PROPOSAL RESULTS:

**All proposals received shall be considered confidential and not available for public review until after a contractor has been selected. All proposals may be subject to negotiations prior to the award of a contract.**

**NO TELEPHONE REQUESTS FOR RESULTS WILL BE ACCEPTED OR GIVEN.**

TIE PROPOSALS:

When identical Proposals are received, with respect to price, delivery, financial resources, experience, ability to perform and quality, award may be made by a toss of a coin.

LIMITATIONS:

This Request for Proposal (RFP) does not commit the Town to award a contract, to pay any costs incurred in the preparation of a response to this request, or to procure or contract for services, supplies or equipment. The Town reserves the right to accept or reject any or all proposals received as a result of this request, or to cancel in part or in its entirety this RFP, if it is in the best interest of the Town to do so.

The OWNER reserves the right to waive any informalities, to negotiate with any Bidder and to reject any or all Bids. No Bidder may withdraw his Bid within ninety (90) days after the actual date of the opening thereof.

PROPOSAL EVALUATION:

In an attempt to determine if a Proposer is responsible, the Town, at its discretion, may obtain technical support from outside sources. Each Proposer will agree to fully cooperate with the personnel of such organizations.



## PROJECT BACKGROUND

Town of Hudson is requesting construction services for replacement of the Melendy Road Bridge over First Brook, NHDOT Bridge No. (114/083). This project will be funded by the Federal Highway Administration (FHWA) as administered by the New Hampshire Department of Transportation (NHDOT). The Town of Hudson is also providing funding for this project.

## SCOPE OF SERVICES

The work will involve the following:

- Mobilization
- Establish traffic control plan
- Install temporary erosion control measures
- Install water diversion structure
- Demolish existing bridge
- Excavate for proposed rigid frame
- Install rigid frame footing and stem wall
- Reconstruct wingwalls utilizing existing abutment stones
- Install proposed rigid frame
- Regrade streambed
- Relocate underground utilities
- Backfill proposed structure
- Install guardrail
- Grade and pave Melendy Road
- Remove water diversion structure
- Remove traffic control measures
- Remove temporary erosion control measures
- Site restoration

### 1.1 DESCRIPTION:

A. Location: The Work locations include, but are not limited to, locations within the rights-of-way on the following streets and easements in the Town of Hudson.

1. Melendy Road at First Brook located between Central Street and Able Street.
2. 9 Melendy Road (Temporary Easement)
3. 10 Melendy Road (Temporary and Permanent Easement)

B. Work Included: The Work includes, but is not limited to, the following:

#### 1. Structures:

- Constructing rigid frame, cast-in-place reinforced concrete footing and stem walls, wingwall construction, underground utility relocation, paving, and guardrail installation.

- Designing and installing a water diversion structure to maintain adequate channel flow throughout construction while maintaining dry working conditions.
  - Regrading streambed along new rigid frame.
2. Incidental Construction:
    - Designing, installing and maintaining traffic control measures to detour traffic for the project duration.
    - Designing, installing and maintaining temporary stormwater pollution prevention measures for the duration of the project.
    - Mobilizing and demobilizing
  3. Bid Alternate:
    - None
  4. Construction and materials for temporary laydown area
  5. All material handling
- C. Related Work Specified Elsewhere
1. Coordination: Section 01050
  2. Construction Schedules: Section 01310
- D. Removals, Relocations and Rearrangements
1. Existing landscaping or site amenities disturbed during construction shall be replaced and established to preconstruction conditions. Prior coordination with property owners shall be made prior to removal, relocation, and replacement.

## PART 2 - PRODUCTS (NOT APPLICABLE)

## PART 3 – EXECUTION

### 3.1 MAINTAINING EXISTING WORKS

- A. Continuous Operations Criteria
1. The Contractor shall conduct his operation in such a manner and sequence which shall neither result in a disruption of, nor interfere with, the functional workings of any existing utility.
  2. The Contractor shall furnish, install and operate any necessary piping and/or equipment to maintain groundwater levels to execute the work without impacting the abutters or surrounding area.
  3. The Contractor shall detour traffic on Melendy Road for the duration of the project.
  4. The Owner will operate and maintain existing utility systems and equipment not modified or impacted by the project. The Contractor shall protect utilities within the work area and notify/coordinate with the Owner whenever the Contractor's temporary facilities or construction will interface with existing utilities.
  5. The Contractor shall be responsible for identifying and protecting areas not to be disturbed or impacted by their operations or construction.

6. The Contractor shall be responsible for protecting all temporary and newly constructed elements for the project from damage either by themselves or the general public through project completion and acceptance by the Owner.

B. Minimize Interference

1. The Contractor shall conduct their operations to minimize interference with existing works. The Contractor shall develop a program, in cooperation with the Engineer and interested officials, which shall provide for the construction of new works in the most orderly manner possible. This program shall be adhered to except as deviations therefrom are expressly permitted by the Owner and Engineer.
2. Work of connecting with, cutting into and reconstructing existing pipes or structures shall be planned to interfere with the operation of existing facilities for the shortest possible time and when the demands on the facilities best permit such interference. It may be necessary to work outside of working hours to minimize interference. Before starting work which will interfere with the operations of existing facilities, the Contractor shall do all possible preparatory work and shall see that all tools, materials and equipment are made ready and at hand.

3.2 CONSTRUCTION SEQUENCE

- A. The Contractor shall promptly start construction under this contract and continue actual construction work under this contract with the necessary crews and equipment to properly execute and complete this contract in the specified time. No cessation of Contractor's operations will be allowed without the approval of the Owner. The rate of progress shall be satisfactory to the Owner and the Engineer. The Contractor shall furnish to the Engineer a progress schedule for the work at the preconstruction conference.
- B. The Contractor shall submit to the Engineer for review and acceptance a complete schedule of their proposed sequence of construction operations prior to commencing any work. This schedule shall include the Contractor's plans for performing the work.
- C. The Contractor must submit to the Engineer a written request to deviate from the accepted sequence of construction. Any deviation proposed shall demonstrate to the Engineer that the continuity and execution of the work will not be adversely affected.

3.3 SITE ACCESS LIMITATIONS

3.4 SCHEDULE LIMITATIONS AND WORK RESTRICTIONS/ REQUIREMENTS

A. Work Hours:

1. Designated work hours are defined as Monday through Friday, 7 a.m. to 7 p.m.
2. All work shall be prohibited on Saturdays, Sundays and legal holidays without prior approval from the Owner and Engineer.
3. The Contractor shall provide a written request for permission to work outside the designated work hours at least 72-hours in advance of the proposed work.
4. The Contractor shall not commence work outside the designated work hours without prior permission from the Owner and Engineer.

B. Maintain Services:

1. Maintain and protect all existing sewer, water, stormwater, and electrical services.

- C. Traffic Control Plan:
  - 1. A project-specific Traffic Control Plan shall be submitted prior to the Pre-Construction Meeting (refer to Item 619.1). The Traffic Control Plan shall identify traffic management requirements for each distinct component of the project.
  - 2. Contractor shall detour traffic from Melendy Road during the duration of the project.
  - 3. Contractor shall maintain access to all residences and businesses at all times.
  - 4. Contractor shall maintain access for garbage collection and mail services to all residences and businesses at all times. Contractor shall coordinate with these service providers.
  - 5. Contractor shall coordinate detour access for bus routes, schools, day care facilities, etc. at all times. Contractor shall coordinate efforts with local school district to ensure access.
- D. Proposed Road Closures
  - 1. Road closures shall be requested in writing and shall be approved by Town of Hudson Engineering Department.
- E. Winter Shutdown Period:
  - 1. The work shall be completed during one construction season. There is no allowance for work after November 15th.

Proposers shall demonstrate experience in the completion of similar design work.

1. Description of Services Requested

The Contractor will provide the Town with a detailed written description of the proposed approach to the work for review and approval.

2. Time Frame for Performance of Services

A contract will be signed as soon as possible after the Proposal due date and completion of the Proposal evaluations, but no later than **November 8, 2024**, and the project will proceed immediately. **The notice to proceed/start date will coincide with the contract signing. The work shall be substantially complete by June 13, 2025 and all work must be complete no later than July 11, 2025.**

APPROXIMATE BUDGET FOR CONSTRUCTION SERVICES

The budget is \$995,000.

TRAFFIC CONTROL/MAINTENANCE

The Town reserves the right to hire Hudson Police Department or Highway Department staff directly to reduce the cost of the traffic control/maintenance, if necessary.

PROPOSAL STATEMENT PREPARATION

In order to facilitate the evaluation of the Proposals, the Proposer is instructed to follow the outline below in responding. Proposals that do not follow the outline, or do not contain the

required information may be considered as unresponsive Proposals. Additional or more detailed information may be annexed to the main body of the Proposal. Proposals shall be submitted in electronic and two (2) identical hard copy formats.

1. Company or Contractor Team Background Material

The Proposer shall provide information concerning the background of the firm including a brief description of the firm's experience providing similar services. This shall include any proposed subcontractor or consultants that the Proposer plans to engage on this project.

2. Experience/References

The Proposer shall provide a Client reference list, with names, addresses, and telephone numbers, especially for clients whom the Proposer has provided similar services in the past. The Proposer should be able to provide a list showing that they have worked on at least one similar project in the last ten (10) years that are of similar size and scope. References shall include a brief description of the project and the services provided.

3. Project Approach

The Proposer shall provide a work schedule and cost estimate of their construction. The Proposer shall also describe recent similar work and any other information that the Proposer deems relevant to the project, and which the Proposer believes will further the competitiveness of the Proposal, including work samples, pictures, etc. from similar completed projects.

4. Schedule

The Proposer shall provide a brief description of their ability to meet the schedule set forth in this Request for Proposal.

5. Cost Proposal

Proposers shall submit a breakdown for each task and a Cost Proposal in a total in Unit Price format.

AWARD OF CONTRACT:

Any contract entered into by the Town shall be in response to the proposal and subsequent discussions. It is the policy of the Town that contracts be awarded, among other considerations, only to responsive and responsible Proposers. In order to qualify as responsive and responsible, a prospective Engineering Firm must meet the following standards as they relate to this request:

- Have the necessary experience, organization, technical and professional qualifications, skills and facilities;
- Be able to comply with the proposed or required time of completion or performance schedule;
- Have a demonstrated satisfactory record of performance.
- Adhere to the specifications of this proposal and provide all documentation required of this proposal

The contract will be awarded to a responsive and responsible Proposer based on the evaluation criteria (design approach, experience of the engineering firm and sub consultants, cost and schedule), not necessarily the lowest price.

The Town reserves the right to reject any or all proposals or any part thereof, to waive any formality, informality, information and/or errors in the proposal, to accept any proposal in part or in whole as may be in the best interest of the Town, or any other option if it is considered in the best interest of the Town to do so.

This solicitation requires proposing on all items, failure to do so will disqualify the proposal.

CONTRACT AWARD PROTEST POLICY AND PROCEDURE:

- a. Definitions. As used in this provision:

“Interested party” means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

“Protest” means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

- b. Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from:

Steve Malizia, Town Administrator  
Town of Hudson  
12 School Street  
Hudson, NH 03051

- c. All protests shall be resolved in accordance with the municipality’s protest policy and procedures, copies of which are maintained at the municipality.

MODIFICATIONS AFTER AWARD:

The Contract shall constitute the entire understanding between the parties, and it shall not be considered modified, altered, changed, or amended in any respect unless in writing and signed by the parties hereto. Such modification shall be in the form of a contract amendment executed by both parties.

### CANCELLATION OF AWARD:

The Town reserves the right to cancel the award without liability to the Proposer at any time before a contract has been fully executed by all parties and is approved by the Town.

### CONTRACT:

Any Contract between the Town and the Contractor shall consist of (1) the Request for Proposal (RFP) and any amendments thereto and (2) the Contractor's proposal in response to the RFP, (3) Form of Agreement. In the event of a conflict in language between documents (1), (2), and (3) referenced above, the provisions and requirements set forth and referenced in the RFP shall govern. However, the Town reserves the right to clarify any contractual relationship in writing and such written clarification shall govern in case of conflict. In all other matters, not affected by written clarification, if any, the RFP shall govern. The Proposer is cautioned that this proposal shall be subject to acceptance without further clarification.

### EXECUTION OF CONTRACT:

The successful Proposer shall sign (execute) the contract documents and shall satisfy all conditions set forth in the contract to enter into the contract and return such signed documents to the Town, within ten (10) calendar days from the date mailed or otherwise delivered to the successful Proposer.

### APPROVAL OF CONTRACT:

Upon receipt of the contract that has been fully executed by the successful Proposer (Contractor), the Town shall complete the execution of the contract in accordance with local laws or ordinances and return the fully executed contract to the Contractor. Delivery of the fully executed contract, along with a Notice to Proceed and a Town purchase order, to the Contractor shall constitute the Town's approval of the contract with the Contractor.

### FAILURE TO EXECUTE CONTRACT:

Failure of the successful Proposer to execute the contract within ten (10) calendar days from the date mailed or otherwise delivered to the successful Proposer shall be just cause for cancellation of the award.

### DISQUALIFICATION:

Awards will not be made to any person, firm and/or corporation that has defaulted upon a contract with the Town, the State of New Hampshire or the Federal Government within the past 5 years. Awards will not be made to any principal owner or officers that have a 10% or greater interest in a firm or corporation that has defaulted upon a contract with the Town, the State of New Hampshire or the Federal Government within the past 5 years. Corporations must currently be in good standing with the Secretary of State's Office in the state of incorporation.

INSURANCE:

The successful Proposer shall procure and maintain insurance, in the amounts and coverage as set forth in this Request for Proposals, or otherwise required by the Town, at the Proposer's sole expense, with Town approved insurance companies, insuring against any and all public liability, including injuries or death to persons and damage to property, arising out of or related to the goods or Proposer's performance hereunder and shall furnish to the Town certificates of such insurance and renewals thereof signed by the issuing company or agent upon the Town's request. Such certificates shall name the Town of Hudson and City as an additional insured. Such policies shall provide for cancellation only subsequent to 30 days prior written notice to the Town and proof of subsequent insurance upon cancellation of prior policy.

The Town's examination of, or failure to request or demand, any evidence of insurance hereunder, shall not constitute a waiver of any requirement and the existence of any insurance shall not limit the Proposer's obligation under any provision hereof.

Except to the extent of comparable insurance acceptable to, or express waiver by the Town, the Proposer shall, or shall cause any carrier engaged by the Proposer, to insure all shipments of goods for full value.

If the contract with the Proposer involves the performance of work by the Proposer's employees at property owned or leased by the Town, the Proposer shall furnish such additional insurance as the Town may request in respect thereof, but in any event and without such request, workers' compensation insurance and unemployment compensation insurance as required by laws of the State of New Hampshire and public and automotive liability and property damage insurance. In no event shall such employees of the Proposer be deemed to be the employees of, or under the direction or control of the Town for any purpose whatsoever.

WORKER'S COMPENSATION:

All Proposers and subcontractors at every tier under the Proposer will conform with the requirements of RSA 281 Title XXIII, Section 281-A:2 with close attention to sections VI(a), VI(c) and VII(a) as well as Section 281-A:4.

DISAGREEMENTS AND DISPUTES:

All disagreements and disputes, if any, arising under the terms of any contract, either by law, in equity, or by arbitration, shall be resolved pursuant to the laws and procedures of the State of New Hampshire, in which state any contract shall be deemed to have been executed. No action at law, or equity, or by arbitration shall be commenced to resolve any disagreements or disputes under the terms of any contract, in any jurisdiction whatsoever other than the State of New Hampshire and Hillsborough County.



#### TERMINATION OF CONTACT FOR CAUSE:

If the Contractor shall violate any provision of the Contract, the Town shall have the right to terminate the Contract. To terminate the Contract, the Town shall provide written notice to the Contractor of such termination. Such written notice shall state the Contract violation(s) and be delivered to the Contractor's address as identified in the Contract Documents. This notice shall provide the Contractor with fifteen (15) calendar days from the date of delivery, to correct the violation(s) to the Town's satisfaction. Should the Contractor fail to satisfactorily correct all violations within (15) fifteen calendar days, the Town may terminate the contract immediately upon delivery of a Notice of Termination to the Contractor. Such termination shall become effective immediately or as otherwise determined by the Town. Upon termination, all finished or unfinished work, services, plans, data programs and reports prepared by the Contractor under the Contract shall become the Town's property. The Town may also terminate this Contract in accordance with any other applicable Contract provision.

Notwithstanding the above, the Contractor shall not be relieved of liability to the Town for damages sustained by the Town by virtue of any breach of any contract, and the Town may withhold any payments until such time as the exact amount of damages due the Town is determined.

#### TERMINATION FOR THE CONVENIENCE OF THE TOWN:

The Town may terminate any contract at any time by giving written notice to the Vendor of such termination and specifying the effective date thereof, at least fifteen (15) days before the effective date of such termination.

In that event, all finished or unfinished work, services, documents and materials shall become the Town's property. If any Contract is terminated by the Town as provided herein, the Vendor will be paid an amount which bears the same ratio to the total compensation as the services covered by any contract, less payments of compensation previously made.

#### PATENT PROTECTION:

The successful Proposer agrees to indemnify and defend the Town of Hudson from all claims and losses resulting from alleged and actual patent infringements and further agrees to hold the Town of Hudson harmless from any liability arising under RSA 382-A, 2-312 (3). (Uniform Commercial Code).

#### OWNERSHIP OF REPORTS:

All data, materials, plans, reports and documentation prepared pursuant to any contract between the Town of Hudson and the successful Proposer shall belong exclusively to the Town of Hudson.

ASSIGNMENT PROVISION:

The successful Proposer hereby agrees that it will assign to the Town of Hudson all cause of action that it may acquire under the anti-trust laws of New Hampshire and the United States as the result of conspiracies, combination of contracts in restraint of trade which affect the price of goods or services obtained by the Town under this contract if so requested by the Town of Hudson.

PAYMENT:

Payment will be made within thirty (30) days of the completion of the work based upon the payment schedule listed in the Form of Agreement after receipt of invoice by the Town.

TAX:

The Town is exempt from all sales and Federal excise taxes. The Town's tax exemption certificate will be provided to the successful Contractor upon request. Please bill less these taxes.

FUNDING OUT:

The Town of Hudson's obligations to pay any amount due under a contract are contingent upon availability and continuation of funds for the purpose. The Town may terminate the contract at any time, due to the non-appropriation of funds, and all payment obligations of the Town cease on the date of termination.

ASSIGNMENT OR SUB-CONTRACTING:

None of the work or services covered by the contract shall be assigned in full or in part, or sub-contracted without the prior approval of the Town.

PRICING:

Unless otherwise specified all prices listed are firm for the term of the contract. All prices should include all labor, material and transportation costs, and any discounts offered. No fuel surcharges shall be allowed at any time.

AUDIT:

For a period of at least three (3) years after completion of any contract, it is the responsibility of the Contractor to make available at the Contractor's place of business, upon demand, all price lists, documents, financial records and other records pertaining to purchases made and /or work performed under contract for the purposes of audit by the Town of Hudson.

## FUGITIVE NOISE ORDINANCES

All work shall be conducted in conformance with the Town's Code Part II General Legislation

1. Chapter 249-4, Prohibited Noise Emissions and Conditions

The Town Code can be viewed on-line at <http://ecode360.com/HU1110>

## GUARANTEES & WARRANTY:

All parts and labor related to contracts must be guaranteed and include a 12-month warranty from the date of acceptance by the Town. If any work is unable to be guaranteed, the contractor must inform the Town, in writing, prior to the delivery of an item or any work being performed. Non-guaranteed work must be offered at a discount rate from the proposal prices. **Inspection, testing and final determination of non-warranty work shall be performed at no cost to the Town, if applicable.**

## FORCE MAJEURE:

Neither party shall be liable for any inability to perform its' obligations under any subsequent contract due to war, riot, insurrection, civil commotion, fire, flood, earthquake, storm or other act of God.

## SEVERABILITY:

If any of this Request for Proposals or subsequent contract are held to be invalid or unenforceable, it will be construed to have the broadest interpretation which would make it valid and enforceable under such holding. Invalidity or the inability to enforce a term or condition will not affect any of the other this Request for Proposals or subsequent contract.

## PROVISION REQUIRED BY LAW DEEM INSERTED

Each and every provision and clause required by law to be inserted in this Request for Proposals and any subsequent Contract shall be deemed to be inserted herein and this Request for Proposals and Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party, the Request for Proposals and/or Contract shall forthwith be physically amended to make such insertion or correction.

## DISADVANTAGED BUSINESS ENTERPRISES

The Town hereby notifies all Contractors that it will affirmatively insure that in any contract entered into pursuant to this Request for Proposals, disadvantaged business enterprises will be afforded full opportunity to submit proposals in response to this request and will not be discriminated against on the grounds of race, color, national origin, religion, sex, age or disability in consideration for an award.

## NON-DISCRIMINATION

Contracts for work resulting from this Request for Proposals shall obligate the Contractor and the Contractor's subcontractors not to discriminate in employment practices on the grounds of race, color, national origin, religion, sex, age or disability. Statements as to non-discriminatory practices may be requested from the successful Vendor(s).

## DEFINITIONS:

Proposal shall also mean quotation, bid, offer and qualification/experience statement.

Vendors shall also mean Proposers, offerors, bidders, contractors or any person or firm responding to a Request for Proposals.

Contract shall also mean agreement.

## GOVERNING LAW:

The Laws of the State of New Hampshire shall govern all contracts entered into by the Town of Hudson. Any disputes shall be resolved within the venue of the State of New Hampshire and Hillsborough County.

*FAILURE TO ACKNOWLEDGE THIS REQUEST FOR PROPOSALS MAY RESULT IN WITHDRAWAL FROM THE PROPOSAL LIST FOR THIS COMMODITY OR SERVICE.*

*FAILURE TO COMPLY WITH THESE REQUIREMENTS COULD RESULT IN THE CANCELLATION OF AN ORDER OR CONTRACT.*

## **PROPOSAL SUBMISSION CHECKLIST**

In order to be considered responsive, each prospective vendor must submit the following documents, in **electronic and two (2) identical hard copy formats** as part of its proposal:

1. Proposal Document as outlined above
2. Specifications Exception Form
3. Alternate Form W-9
4. Town of Hudson Indemnification Agreement

**The successful contractor must submit, prior to contract signing, its insurance certificate (naming the Town of Hudson and Wright-Pierce) that meets the minimum required types and levels of coverage.**

**PROPOSAL FORM**

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
TOWN OF HUDSON, NEW HAMPSHIRE**

THE UNDERSIGNED HEREBY OFFERS TO PROVIDE CONSTRUCTION SERVICES FOR THE ABOVE.

**1. Construction Services:** Bridge Replacement Melendy Road over First Brook (114/083)

BID ITEMS					
ITEM NO.	ITEM DESCRIPTION	UNITS	UNIT PRICE	QTY	TOTAL PRICE
202.7	REMOVAL OF GUARDRAIL	LF		135	\$
203.1	COMMON EXCAVATION	CY		122	\$
209.209	GRANULAR BACKFILL (BRIDGE)	CY		130	\$
304.301	CRUSHED GRAVEL	CY		101	\$
403.11013	HBP-1" BASE MIX, MACHINE METHOD	TON		28	\$
403.11043	HBP-1/2" SURFACE MIX, MACHINE METHOD	TON		34	\$
403.21053	HBP-3/8" MIX, MACHINE METHOD (BRIDGE BASE)	TON		4	\$
410.22	ASPHALT EMULSION FOR TACK COAT	GAL		20	\$
417	COLD PLANING BITUMINOUS SURFACES	SY		98	\$
502	REMOVAL OF EXISTING BRIDGE STRUCTURE	U		1	\$
503.101	WATER DIVERSION STRUCTURE	U		1	\$
503.201	COFFERDAMS	U		1	\$
504.101	COMMON BRIDGE EXCAVATION	CY		350	\$
508	STRUCTURAL FILL	CY		33	\$
520.0032	PRECAST CONCRETE RIGID FRAME	U		1	\$
520.01	CONCRETE CLASS AA	CY		26	\$
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	CY		22	\$
520.213	CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)	CY		54	\$
534.3	WATER REPELLENT (SILANE/SILOXANE)	GAL		9	\$
538.2	BARRIER MEMBRANE, PEEL AND STICK - VERTICAL SURFACES (F)	SY		43	\$
538.5	BARRIER MEMBRANE, HEAT WELDED (F)	SY		62	\$
544.31	REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED)	LB		6100	\$
559.41	ASPHALTIC PLUG FOR CRACK CONTROL (F)	LF		57	\$
563.3	BRIDGE RAIL T101	LF		40	\$
563.301	BRIDGE RAIL T101 (MODIFIED)	LF		16	\$
563.95	SNOW SCREENING FOR OVERPASS STRUCTURES	LF		20	\$
570.401	MORTAR RUBBLE MASONRY	CY		30	\$

<b>BID ITEMS</b>					
<b>ITEM NO.</b>	<b>ITEM DESCRIPTION</b>	<b>UNITS</b>	<b>UNIT PRICE</b>	<b>QTY</b>	<b>TOTAL PRICE</b>
585.21	STONE FILL, CLASS B (BRIDGE)	CY		20	\$
593.421	GEOTEXTILE; PERM CONTROL CL.2, NON-WOVEN	SY		120	\$
606.127	BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST)	U		1	\$
606.1285	BEAM GUARDRAIL (BRIDGE APPROACH UNIT)	U		3	\$
608.12	2" BITUMINOUS SIDEWALK (F)	SY		17	\$
609.811	BITUMINOUS CURB, TYPE B (4" REVEAL)	LF		30	\$
612.1131	BYPASS PUMPING SYSTEM	U		1	\$
612.615081	SEWER MAIN REPLACEMENT	LF		70	\$
619.1	MAINTENANCE OF TRAFFIC	U		1	\$
628.2	SAWED BITUMINOUS PAVEMENT	LF		120	\$
632.0104	RETROREFLECTIVE PAINT PAVE. MARKING, 4" LINE	LF		440	\$
645.7	STORM WATER POLLUTION PREVENTION PLAN	U		1	\$
692	MOBILIZATION	U		1	\$
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	\$	\$15,000	1	\$15,000
1008.9	ALTERATIONS AND ADDITIONS AS NEEDED - TESTING OF MATERIALS	\$	\$10,000	1	\$10,000
1008.91	ALTERATIONS AND ADDITIONS AS NEEDED - WATER MAIN REPLACEMENT	\$	\$75,000	1	\$75,000

**Construction services for the project listed above.**

**\$ \_\_\_\_\_**

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Length of the warranty for labor shall be one year from the date of Project acceptance

Length of the warranty for materials shall be one year from the date of Project acceptance

The warranty shall include parts, labor, and travel to and from the site to remedy any warranty repairs.

The undersigned acknowledges:

1. That he/she is an authorized agent of the vendor submitting this proposal
2. The receipt of the following addenda:  
  
\_\_\_\_\_
3. The firm submitting this bid has never defaulted on any municipal, state, federal or private contract
4. The undersigned hereby certifies that he is able to furnish labor that can work in harmony with all other elements of labor employed or to be employed on the work.
5. The undersigned hereby certifies that he (has) (has not) (CIRCLE ONE) performed work subject to the President's Executive Order No. 11246 entitled "Equal Employment Opportunity."
6. The undersigned hereby acknowledges that he has read this proposal in its entirety and understands and agrees to all provisions contained herein.

**Company:** \_\_\_\_\_

**Signed by:** \_\_\_\_\_

**Printed or typed name:** \_\_\_\_\_

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

**Telephone number:** \_\_\_\_\_ **fax number:** \_\_\_\_\_

**Toll free number:** \_\_\_\_\_ **e-mail:** \_\_\_\_\_

**Cell phone number:** \_\_\_\_\_

**Primary point of contact:** \_\_\_\_\_

**Payment terms and conditions:** \_\_\_\_\_



**Please fill out, sign and return to:**

Town of Hudson  
Town Clerk  
12 School Street, Hudson, NH 03051  
603-886-6003; 603-594-1142 (Fax)  
[edhima@hudsonnh.gov](mailto:edhima@hudsonnh.gov)

**Due Date/Time: October 25, 2024, Not Later Than 10:00 AM**

**SPECIFICATIONS EXCEPTION FORM**

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
TOWN OF HUDSON, NEW HAMPSHIRE**

In the interest of fairness and sound business practice, it is mandatory that you state any exceptions taken by you to our specifications.

It should not be the responsibility of the Town of Hudson to search for information concerning the materials, which you intend to furnish.

If your bid/quotation does not meet all of our specifications, you **must** so state in the space provided below:

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Proposals on equipment, vehicles, supplies, service and materials not meeting specifications may be considered by the Town, however, all deviations must be listed above.

If your proposal does not meet our specifications, and your exceptions are not listed above, the Town of Hudson may claim forfeiture on your proposal bond, if submitted.

Signed: \_\_\_\_\_  
**I DO** meet specifications

Signed: \_\_\_\_\_  
**I DO NOT** meet specifications as listed in this bid; exceptions are in the space provided.

Failure to submit this form with your RFP response may result in your Proposal being rejected as unresponsive.

Name (as shown on your income tax return)	
Business name/disregard entity name, if different from above	
Check appropriate box for federal tax classification (required): <input type="checkbox"/> Individual/ Sole proprietor <input type="checkbox"/> C Corporation <input type="checkbox"/> S Corporation <input type="checkbox"/> Partnership <input type="checkbox"/> Trust/estate <input type="checkbox"/> Limited Liability Company - Enter the tax classification (C= Corporation, S-S Corporation, P= Partnership)_ _ _ _ _ <input type="checkbox"/> Other (see instructions)	<input type="checkbox"/> Exempt payee
Address (number, street, and apt. or suite no.)	Requester's name and address (optional)
City, state, and ZIP code	City of Concord 41 Green Street Concord NH 03301
List account number(s) here (optional)	

**Part I Taxpayer Identification Number (TIN)**

Enter your TIN in the appropriate box. The TIN provided must match the name given on the "Name" line to avoid backup withholding. For individuals, this is your social security number (SSN). However, for a resident alien, sole proprietor, or disregarded entity, see the Part I instructions on page 3. For other entities, it is your employer identification number (EIN). If you do not have a number, see *How to get a TIN* on page 3. **Note.** If the account is in more than one name, see the chart on page 4 for guidelines on whose number to enter.

Social Security number –	Employer identification number –
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**Part II Certification**

Under penalties of perjury, I certify that:

1. The number shown on this form is my correct taxpayer identification number (or I am waiting for a number to be issued to me), and
2. I am not subject to backup withholding because: (a) I am exempt from backup withholding, or (b) I have not been notified by the Internal Revenue Service (IRS) that I am subject to backup withholding as a result of a failure to report all interest or dividends, or (c) the IRS has notified me that I am no longer subject to backup withholding, and
3. I am a U.S. citizen or other U.S. person (defined below).

Certification instructions: You must cross out item 2 above if you have been notified by the IRS that you are currently subject to backup withholding because you have failed to report all interest and dividends on your tax return. For real estate transactions, item 2 does not apply. For mortgage interest paid, acquisition or abandonment of secured property, cancellation of debt, contributions to an individual retirement arrangement (IRA), and generally, payments other than interest and dividends, you are not required to sign the certification, but you must provide your correct TIN. See the instructions on page 4.

<b>Sign Here</b>	<b>Signature of U.S. Person</b>	<b>Date:</b>
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**General Instructions**

Section references are to the Internal Revenue Code unless otherwise noted.

**Purpose of Form**

A person who is required to file an information return with the IRS must obtain your correct taxpayer identification number (TIN) to report, for example, income paid to you, real estate transactions, mortgage interest you paid, acquisition or abandonment of secured property, cancellation of debt, or contributions you made to an IRA. Use Form W-9 only if you are a U.S. person (including a resident alien), to provide your correct TIN to the person requesting it (the requester) and, when applicable, to: 1. Certify that the TIN you are giving is correct (or you are waiting for a number to be issued), 2. Certify that you are not subject to backup withholding, or 3. Claim exemption from backup withholding if you are a U.S. exempt payee. If applicable, you are also certifying that as a U.S. person, your allocable share of any partnership income from a U.S. trade or business is not subject to the withholding tax on foreign partners' share of effectively connected income. **Note.** If a requester give you a form other than Form W-9 to request your TIN, you must use the requester's form if it is substantially similar to this Form W-9. Pursuant to IRS Regulations, you must furnish your Taxpayer IRS Identification Number (TIN) to the City whether or not you are required to file tax returns. If this number is not provided, you may be subject to required withholding on each payment made to you. To avoid this withholding & to ensure that accurate tax information is reported to the IRS, **A RESPONSE IS REQUIRED.**

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
TOWN OF HUDSON, NEW HAMPSHIRE**

**THE FOLLOWING INDEMNIFICATION AGREEMENT SHALL BE, AND IS  
HEREBY A PROVISION OF ANY CONTRACT**

The successful contractor agrees to indemnify, defend and save harmless the Town of Hudson, its officials, officers, agents and employees from any and all claims and losses accruing or resulting to any and all contractors, subcontractors, suppliers, laborers and any other person, firm, or corporation furnishing or supplying work, services, materials or supplies in connection with the performance of this contract, and from any and all claims and losses accruing or resulting to any person, firm or corporation which may be injured or damaged by the contractor in the performance of this contract. In any case, the foregoing provisions concerning indemnification shall not be construed to indemnify the Town of Hudson for damage arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence of the Town or its employees. This indemnification shall survive the expiration or early termination of this contract.

**Company**\_\_\_\_\_

**Taxpayer identification number**\_\_\_\_\_

**Authorized signature**\_\_\_\_\_

**Date**\_\_\_\_\_

**Address**\_\_\_\_\_

**Telephone**\_\_\_\_\_

**Toll-free number**\_\_\_\_\_

**Fax number**\_\_\_\_\_

**E-mail address**\_\_\_\_\_

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
TOWN OF HUDSON, NEW HAMPSHIRE  
Insurance Requirements for All Contractors( NA to Consultants)**

**Additional Coverage is Required if Checked**

**Minimum Limits Required**

**Commercial General Liability**

General Aggregate	\$2,000,000
Products-Completed Operations Agg.	\$2,000,000
Personal and Advertising	\$1,000,000
Each Occurrence Injury	\$1,000,000
Fire Damage (Any One Fire)	\$ 50,000
Medical Expense (Any One Person)	\$ 5,000

- Occurrence  
 Claims Made

**Additional Coverage to Include**

- |   |    |
|---|----|
| <input type="checkbox"/> Owners & Contractors' Protective – Limit | NA |
| <input type="checkbox"/> Underground/Explosion and Collapse       | NA |

**Commercial Automobile Liability**

Combined Single Limit	\$1,000,000
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- Any Auto, Symbol 1  
 Include Employees as Insured

**Additional Coverage to include:**

- |   |    |
|---|----|
| <input type="checkbox"/> Garage Liability               | NA |
| <input type="checkbox"/> Garage Keepers Legal Liability | NA |

**Workers Compensation**

NH Statutory including Employers Liability - Each Accident/Disease-Policy Limit/Disease-Each Employee	\$100,000/\$500,000/\$100,000
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**Commercial Umbrella**

May be substituted for higher limits required above	\$1,000,000 _____
<input checked="" type="checkbox"/> Follow Form Umbrella on ALL requested Coverage	

**Other**

- |   |    |
|---|----|
| <input type="checkbox"/> 1. Professional/Errors & Omissions     | NA |
| <input type="checkbox"/> 2. Builders Risk – Renovation Form     |    |
| All Risk completed value form including Collapse                | NA |
| Sublimit for Soft Cost Coverage                                 | NA |
| <input type="checkbox"/> 3. Installation Floater (Equipment)    | NA |
| <input type="checkbox"/> 4. Riggers Liability                   | NA |
| <input type="checkbox"/> 5. Environmental – Pollution Liability | NA |
| <input type="checkbox"/> 6. Aviation Liability                  | NA |
| <input type="checkbox"/> 7. Watercraft – Protection & Indemnity | NA |

(X) **The Town of Hudson must be named as Additional Insured with respect to general, automobile and umbrella liability.**

**NOTICE OF AWARD**

Dated \_\_\_\_\_, 2024

TO: \_\_\_\_\_  
(BIDDER)

ADDRESS: \_\_\_\_\_

OWNER'S PROJECT NO: \_\_\_\_\_

PROJECT: **CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT (114/083)**

OWNER'S CONTRACT NO: \_\_\_\_\_

CONTRACT FOR: **CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT (114/083)**

\_\_\_\_\_  
(Insert name of contract as it appears in the Bid Documents)

You are notified that your Bid dated \_\_\_\_\_ for the above Contract has been considered. You are the apparent successful bidder and have been awarded a contract for:

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT (114/083)  
HUDSON 2024**

(Indicate total Work, alternates or sections of Work awarded)

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

4 (four) copies of each of the proposed Form of Agreement, and Performance and Payment Bond forms accompany this Notice of Award.

You must comply with the following conditions precedent within **five** days of receiving this Notice of Award.

1. You must deliver to the OWNER all of the fully executed counterparts of the Agreement.
2. You must deliver with the executed Agreement the Contract Security (Bonds) as specified in the Information for Bidders and General Provisions.
3. (List other conditions precedent).

\_\_\_\_\_  
List of subcontractors

\_\_\_\_\_  
Insurance Certificates (1 copy) - **Please note that Town of Hudson and Wright-Pierce must be named as additional insureds.**

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Failure to comply with these conditions within the time specified will entitle **OWNER** to consider your bid abandoned, to annul this Notice of Award and to declare your Bid Security forfeited.

Within ten days after receipt of acceptable performance BOND, payment BOND and agreement signed by the party to whom the Agreement was awarded, the **OWNER** will return to you one fully signed counterpart of the Agreement with the Contract Documents attached.

Town of Hudson, New Hampshire  
(OWNER)

By \_\_\_\_\_  
(Authorized Signature)

\_\_\_\_\_  
(TITLE)

ACCEPTANCE OF NOTICE

Receipt of the above NOTICE OF AWARD is hereby acknowledged

By \_\_\_\_\_

The \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_\_

By \_\_\_\_\_

Title \_\_\_\_\_

Copy to ENGINEER  
(Use Certified Mail, Return Receipt Requested)

**GENERAL CONDITIONS OF THE  
CONTRACT FOR CONSTRUCTION**

**CONSTRUCTION SERVICES FOR  
BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
NHDOT PROJECT NO. 44653, X-A005(563)  
TOWN OF HUDSON, NH**

**SEPTEMBER 2024**



**Prepared by:**

**Wright-Pierce  
230 Commerce Way, Suite 302  
Portsmouth, NH 03801  
603-430-3728**



# General Conditions

## Table of Contents

	<u>Page</u>
ARTICLE 1 – DEFINITIONS.....	1
1.1    General.....	1
ARTICLE 2 - PRELIMINARY MATTERS .....	5
2.1    Delivery of Bonds and Evidence of Insurance .....	5
2.2    Hazardous Materials .....	6
2.3    Commencement of Contract Times .....	7
2.4    Before Construction Begins.....	7
ARTICLE 3 - CONTRACT DOCUMENTS.....	8
3.1    Intent of Contract .....	8
ARTICLE 4 - SUSPENSION OF WORK.....	9
4.1    Municipalities May Suspend Work .....	9
ARTICLE 5 - CHANGES IN THE WORK .....	9
5.1    Differing Site Conditions.....	9
5.2    Extra Work.....	10
5.3    Changes in Character of Work.....	10
ARTICLE 6 - SCOPE OF WORK.....	11
6.1    Maintenance of Traffic .....	11
6.2    Contractor's Responsibilities.....	11
6.3    Supervision of Work.....	12
6.4    Labor .....	13
6.5    Services, Materials, and Equipment.....	13
6.6    Schedule of Work .....	14
6.7    Substitutes and “Or - Equals” .....	14
6.8    Concerning Subcontractors, Suppliers, and Others .....	16
6.9    Patent Fees and Royalties .....	17
6.10    Permits .....	18
6.11    Laws and Regulations.....	18

	<u>Page</u>
6.12 Taxes.....	19
6.13 Use of Site and Other Areas.....	19
6.14 Record Documents.....	20
6.15 Safety .....	20
6.16 Safety Representative.....	21
6.17 Hazard Communication Programs.....	21
6.18 Emergencies.....	21
6.19 Shop Drawings and Samples .....	21
6.20 Continuing the Work.....	23
6.21 General Warranty and Guarantee.....	23
6.22 Indemnification.....	24
6.23 Layout of the Work.....	25
ARTICLE 7 - CONTROL OF THE WORK .....	25
7.1 Authority of the Engineer .....	25
7.2 Visits to Site.....	26
7.3 Authorized Variations in Work.....	26
7.4 Interpretation of Contract Documents and Acceptability of Work.....	27
7.5 Engineer's Authority and Responsibilities .....	27
ARTICLE 8 - TESTS AND INSPECTIONS .....	28
8.1 Defects .....	28
8.2 Access to Work.....	28
8.3 Tests and Inspections .....	28
8.4 Quality Assurance/Quality Control.....	29
8.5 Uncovering Work.....	30
8.6 Municipality Right to Stop Work .....	31
8.7 Correction or Removal of Defective Work.....	31
8.8 Correction Period.....	31
8.9 Acceptance of Defective Work.....	32
8.10 Municipalities Right to Correct Defective Work.....	32

	<u>Page</u>
ARTICLE 9 - PAYMENTS TO CONTRACTOR AND COMPLETION.....	33
9.1 Measurement and Payment.....	33
9.1.1 Measure of Quantities.....	33
9.1.2 Scope of Payment.....	35
9.1.3 Compensation for Altered Quantities.....	36
9.1.4 Differing Site Conditions, Changes, Extra Work, and Force Account Work.....	36
9.2 Schedule of Values and Partial Payment Applications.....	43
9.3 Payment to the Contractor.....	45
9.4 Reduction in Payments.....	45
9.5 Payment for Alterations to the Contract.....	46
9.6 Unjustified Withholding of Payment.....	47
9.7 Written Notice to Contractor.....	47
9.8 Contractor Representations.....	47
9.9 Substantial Completion.....	47
9.10 Final Inspection.....	48
9.11 Final Payment.....	48
9.12 Progress Payments.....	48
9.13 Acceptance of Work by Engineer.....	49
9.14 Adjustments to Final Payment.....	49
ARTICLE 10 – MISCELLANEOUS.....	50
10.1 Written Notice.....	50
10.2 Cumulative Remedies.....	50
10.3 Survival Obligations.....	50
10.4 Controlling Law.....	50
10.5 Project Visitation by Third Party.....	50



## ARTICLE 1 – DEFINITIONS

### 1.1 GENERAL

The most recent date of issue of publications referenced by the contract documents, including interim publications, that precedes the date of receipt of bid for the Project shall apply unless stated otherwise in the contract documents.

**1.1.1 Acceptance.** The formal written acceptance by the Municipalities of the contract work as described herein which has been completed in all respects in accordance with the Plans and Specifications and any modifications previously approved.

**1.1.2 Addendum (addenda).** Contract revisions developed after advertisement and before opening Bids.

**1.1.3 Advertisement.** A public announcement, inviting Bids for work to be performed or materials to be furnished.

**1.1.4 Agreement.** The written instrument which is evidence of the agreement between the Municipalities and Contractor.

**1.1.5 Approved Material.** 1. Material obtained from within the limits of the Project or from outside sources suitable for the intended use and approved by the Engineer. 2. Manufactured material approved by the Engineer for use in the work.

**1.1.6 Award** The acceptance of a proposal by the Municipalities.

**1.1.7 Bid.** The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.

**1.1.8 Bid Bond.** A proposal guarantee as outlined in the Instructions to Bidders for Contracts.

**1.1.9 Bidder.** The individual, partnership, firm, corporation, or any combination thereof, or joint venture, submitting a Bid in accordance with the bidding requirements.

**1.1.10 Bidding Requirements.** The advertisement or invitation to Bid, instructions to Bidders, bid security of acceptable form, if any, and the Bid Form with any supplements.

**1.1.11 Change Order.** A document recommended by the Engineer, signed by the Contractor and Municipalities authorizing changes in the plans or quantities or both, within the scope of the Contract, and establishing the basis of payment and time adjustments for the Work affected by the changes.

**1.1.12 Completion.** Completion of the Project occurs when the Contractor has completed all work required by the Contract and has satisfactorily executed and delivered to the Engineer all documents, certificates and proofs of compliance required by the Contract.

**1.1.13 Construction Zone.** The area shown on the plans in which the contract work is to be performed.

**1.1.14 Contract.** The written agreement between the Municipalities and the Contractor setting forth the obligations of the parties there under, including, but not limited to the performance of the Work and the basis of payment.

**1.1.15 Contract Bonds:** The approved form of security including a Performance Bond and a Labor and Materials Payment Bond executed by the Contractor and his Surety or Sureties, guaranteeing complete execution of the Contract and all supplemental agreements pertaining thereto, including the payment of all legal debts pertaining to the construction of the project.

**1.1.16 Contract Documents.** Those items so designated in the Agreement. Including but not limited to information supplied to bidders, bid, bid bond, Agreement, payment bond, performance bond, notice of award, notice to proceed, change orders, drawings, specifications and addenda.

**1.1.17 Contract Administrator/Project Engineer.** The field representative of the Engineer having direct supervision of the administration of the Contract.

**1.1.18 Contract Price.** Those monies payable to the Contractor pursuant to the Contract terms for completion of the Work as stated in the Agreement.

**1.1.19 Contract Time.** The time allowed for completion of the contract, including authorized time extensions.

**1.1.20 Contractor/Prime Contractor.** The individual or entity with whom the Municipalities has entered into Agreement.

**1.1.21 Day.** Unless otherwise indicated, this term will mean a calendar day.

**1.1.22 Delay.** Any event, action, force, or factor that causes the established Contract Time to be exceeded for performance of the Contract.

**1.1.23 Department/Municipalities/Owner.** The Municipalities designated as the party of the first part to the Contract .

**1.1.24 Differing Site Conditions.** Subsurface or latent physical conditions that, (1) differ materially from those indicated in the Contract, or (2) differ materially from conditions normally encountered or those conditions generally recognized as inherent in the nature of the Work required in the Contract, or (3) are unknown conditions of an unusual nature.

**1.1.25 Engineer.** The New Hampshire licensed Engineering Firm or Engineer with whom the Municipalities has contracted, who is responsible for engineering supervision of the work, acting directly or through his duly authorized representatives.

**1.1.26 Expression.** By or to the Engineer. In order to avoid cumbersome and confusing repetition of expressions in these specifications, it is hereby provided that any and all of the following words or any form of such words, unless clearly indicated otherwise, shall be understood to be followed by the words “by the Engineer” or “to the Engineer”: Accepted, approved, authorized, condemned, considered, or deemed necessary, contemplated, designated, determined, directed, disapproved, established, given, indicated, insufficient, ordered, permitted, rejected, required, reserved, satisfactory, specified, sufficient, suitable, suspended, unacceptable or unsatisfactory.

**1.1.27 Extra Work.** Work performed by the Contractor not originally specified in the Contract, but found essential to the satisfactory completion of the project.

**1.1.28 Force Account.** A basis of payment for the directed performance of Work with payment based on the actual cost for labor, materials, and equipment with consideration for overhead and profit.

**1.1.29 Hazardous Material (toxic waste).** Shall mean material as defined by RSA 147-A.

**1.1.30 Major and Minor Contract Items.** Any contract item having an original value in excess of five percent of the original Contract total for contracts of \$1,000,000.00 or less, or three percent of the original Contract total for contracts greater than \$1,000,000.00 shall be considered as a major item or items. All other contract items are considered as minor.

**1.1.31 Notice to Proceed.** Written notice to the Contractor to proceed with the Contract work, including the beginning of Contract time when applicable.

**1.1.32 Project.** The specific section(s) of the Municipal facilities together with all appurtenances to be constructed under the Contract.

**1.1.33 Proposal Form.** The prescribed form on which the Municipalities requires the Bid be submitted.

**1.1.34 Prosecution of Work.** A document included in the Contract which gives the Contractor specific requirements and information unique to the Project, allowing for the satisfactory performance of the Work. It also includes the final and any intermediate completion dates.

**1.1.35 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 yearly by the NHDOT Bureau of Materials and Research.

**1.1.36 Site.** The Project area provided to perform the Work.

**1.1.37 Solid Waste.** Shall mean material as defined by RSA 149-M.

**1.1.38 Special Attentions.** Notices calling bidders' attention to issues applicable to an individual project.

**1.1.39 Special Provisions.** Additions and revisions to the Standard and Supplemental Specifications applicable to an individual project.

**1.1.40 Specifications.** The compilation of Standard Specifications (including these Municipal General Conditions), Supplemental Specifications, Special Provisions, Special Attentions and other requirements for the performance of prescribed work.

**1.1.41 Specified Completion Date.** The date on which the Contract work is specified to be completed.

**1.1.42 Storm Water Pollution Prevention Plan, (SWPPP).** Per Environmental Protection Agency requirements.

**1.1.43 Subcontractor.** An individual, partnership, firm, corporation, or any combination thereof, or joint venture, to which the Contractor sublets any part of the Contract.

**1.1.44 Subsidiary and Subsidiary Item.** These terms are used to indicate work for which no direct payment will be made. Such work is considered to be incidental to items having contract prices, and the bid prices submitted by the Contractor shall be sufficient to absorb the cost of all work designated as subsidiary or as subsidiary items.

**1.1.45 Superintendent.** The Contractor's authorized representative in responsible charge of the work.

**1.1.46 Supplementary Agreement.** A written agreement recommended by the Engineer, between the Contractor and the Municipalities, for the performance of work by the Contractor at agreed prices under items not originally included in the Contract.

**1.1.47 Surety.** The corporation, partnership, or individual, other than the Contractor, executing a bond furnished by the Contractor.

**1.1.48 Traffic Control Plan (TCP).** A document included in the Contract which gives the Contractor specific requirements and procedures for controlling traffic during the course of construction. It also allows the Contractor to submit for approval variations of such plan.

**1.1.49 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, Chapter Wt 101.87, 1997)



**1.1.50 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.

**1.1.51 Working Drawings.** Temporary bridge plans, cofferdam plans, water diversion structure plans, plans of precast elements to be designed by the Contractor, shop fabrication drawings, erection plans, falsework plans, temporary support systems, bending diagrams when required for reinforcing steel, scaffolding plans and bridge analysis, detour plans, sign structure plans, traffic signal poles and mast arm plans, Storm water Pollution Prevention Plan (SWPPP), erosion control plans, or any other supplementary plans or similar data required of the Contractor to control the Work and its prosecution.

## **ARTICLE 2 - PRELIMINARY MATTERS**

### **2.1 DELIVERY OF BONDS AND EVIDENCE OF INSURANCE**

**2.1.1** Concurrent with the execution of the Construction Contract, Contractor shall deliver to the Municipality such bonds as may be required by the Contract. Performance and Labor and Material Payment Bonds will be provided, unless specifically deleted by the Invitation for Bids.

**2.1.2** Prior to the start of Work, the Contractor shall deliver to the Municipality proof of insurance as required under the Contract including but not limited to certificates of insurance naming the Municipality and its agents/consultants as additional insureds.

**2.1.3** The Contractor shall indemnify, defend and save-harmless the Municipality and their officers, agents, and employees from and against any and all claims, liabilities, suits or penalties arising out of (or which may be claimed to arise out of) negligent acts or omissions of the Contractor or Subcontractors in the performance of Work covered by the Contract. This responsibility shall survive the termination of the Contract. Notwithstanding the foregoing, nothing herein contained shall be deemed to constitute a waiver of the sovereign immunity of the Municipality, which immunity is hereby reserved by the Municipality.

**2.1.4** Liability insurance for damages imposed by law of the kinds and amounts specified herein shall be obtained and maintained by the Contractor. The insurance obtained shall cover all operations under the Contract whether performed by the Contractor or Subcontractor of any tier and shall be maintained until Acceptance.

**2.1.5** Each policy shall contain a clause prohibiting cancellation or modifications of the policy earlier than 30 days, or 10 days in cases of non-payment of premium, after written notice thereof has been received by the Municipality.

**2.1.6** All insurance requirements shall be the responsibility of the Contractor. The Contractor shall require Subcontractors to maintain similar coverage.

**2.1.7** It is specifically agreed between the parties executing this Contract that it is not intended by the Contract provisions to make the public or any member thereof a third party beneficiary hereunder, or to authorize anyone not a party to the Contract to maintain a suit for personal injuries or property damage pursuant to the terms or provisions of the Contract. The duties, obligations, and responsibilities of the parties to this Contract with respect to third parties shall remain as imposed by law.

**2.1.8** Insurance coverage shall be consistent with limits outlined in Subsection 107.11 of the NHDOT Standard Specifications for Road and Bridge Construction.

## **2.2 HAZARDOUS MATERIALS**

**2.2.1** . The Contractor shall also be aware of laws and regulations relating to hazardous materials which may be encountered during construction operations, either within project limits or at material sites off the project. The health and safety of employees, the general public, and the potential of damage to the overall environment is possible if hazardous materials are not recognized, reported, and the appropriate action taken to dispose of, remove from the site, or otherwise contain the possible contaminants.

**2.2.2** State laws such as RSA 141-E, Asbestos Management and Control RSA 147-A, Hazardous Waste Management, and RSA 149-M, Solid Waste Management identify the major areas of concern. Parts Env-Wm 100-110, Env-Wm 101-300, 2100-3700, and Env-Wm 3900 of the New Hampshire Code of Administrative Rules identify various contaminants related to hazardous waste, solid waste, solid waste and asbestos and their management, respectively.

**2.2.3** If any abnormal condition is encountered or exposed that indicates the presence of a hazardous material or toxic waste, construction operations shall be immediately suspended in the area and the Engineer notified. No further work shall be conducted in the area of the contaminated material until the site has been investigated and the Municipalities have given approval to continue the work in the area. The Contractor shall fully cooperate with the Engineer and perform any remedial work as directed. Work shall continue in other areas of the Project unless otherwise directed.

**2.2.4** Exposure to hazardous materials may result from contact with, but not necessarily limited to, such items as drums, barrels, other containers, waste such as cars, batteries, and building construction debris. Containers leaking unknown chemicals or liquids, abandoned cars leaking petroleum products, batteries leaking acid, construction debris which may include asbestos, or any other source of suspected hazardous material found within excavation areas or stockpiled on land within construction limits shall be referred to the Department of Environmental Services so that a proper identification of the materials may be made and disposal procedures initiated as required.

**2.2.5** Disposition of the hazardous material or toxic waste shall be made under the requirements and regulations of the Department of Environmental Services. Work required to dispose of these materials shall be performed under a Supplemental Agreement or

Contract item, if included in Contract. If the waste material disposal requires special procedures, the Municipalities will make arrangements to dispose of the material, either by the Contractor or by other parties.

## 2.3 COMMENCEMENT OF CONTRACT TIMES

**2.3.1 Execution and Approval of Contract.** The signed Contract, together with the Contract Bond, certificate of insurance and the Disadvantaged Business Enterprise forms, if required, shall be returned to the Municipalities within 10 days after the date of notice that the Proposal has been accepted. The Contract will not be considered approved until it has been fully executed by all of the parties to the Contract.

**2.3.2 Failure to Execute Contract.** If the successful bidder fails to execute the Contract and file acceptable bond within 5 days after the date of notice of acceptance of the Proposal, the Municipalities may cancel the notice of award and retain the bidder's Proposal Guarantee which shall become the property of the Municipalities, not as a penalty, but in liquidation of damages sustained. Contract award may then be made to the next lowest responsible bidder or the Work may be readvertised.

**2.3.3 Contract Time/Notice to Proceed.** The Contract Times will commence to run on the thirtieth day after the Effective Date of the Agreement or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Agreement. In no event will the Contract Times commence to run later than the 90<sup>th</sup> day after the day of Bid opening or the thirtieth day after the Effective Date of the Agreement, whichever date is earlier.

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

## 2.4 BEFORE CONSTRUCTION BEGINS

**2.4.1** Before undertaking each part of the Work, Contractor shall carefully study and compare the Contract Documents and check and verify pertinent figures therein and all applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy which Contractor may discover and shall obtain a written interpretation or clarification from Engineer before proceeding with any Work affected thereby.

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

**2.4.3** A preconstruction conference shall be held by the Contractor prior to the Work commencing. At this time the Contractor shall submit to the Engineer and Municipalities for approval a Progress Schedule outlining the intended schedule of the Work. All parties of interest including but not limited to utilities, Municipal officials, sub-contractors, etc. shall be invited to attend.

## **ARTICLE 3 - CONTRACT DOCUMENTS**

### **3.1 INTENT OF CONTRACT**

**3.1.1** The intent of the Contract is to provide for the construction and completion in every detail of the work it describes. The Contractor shall furnish all labor, materials, equipment, tools, transportation, and supplies required to complete the Work under the Contract.

**3.1.2** Clarifications and/or interpretations of the Contract Documents shall be at the discretion of the Engineer. All requests by Contractor for same shall be made in writing to the Engineer.

**3.1.3** The Specifications, Supplemental Specifications, Plans, Special Provisions, other special Contract requirements and all supplemental documents are essential parts of the Contract and a requirement occurring in one is as binding as though occurring in all. They are intended to be complementary and to describe and provide for a complete Contract. In case of discrepancy between these Contract documents, calculated dimensions, unless obviously incorrect, will govern over scaled dimensions and the parts of the Contract will prevail in the following descending order:

Municipal General Conditions; Special Contract Requirements; Special Provisions; Plans; Supplemental Specifications; Standard Specifications including Standard Details, Standard Plans; Including, but not limited to, Special Attentions in the mentioned descending order.

**3.1.4** To the extent applicable no Local, State or Federal code and/or regulation will be deemed waived as a result of the conditions and /or specifications contained herein.

**3.1.5** Conflicts between the requirements of these General Conditions and specifications incorporated herein including but not limited to the NHDOT Standard Specifications for Road and Bridge Construction as it may be amended shall be interpreted to the benefit of the Municipalities at its sole discretion unless the Contractor notifies Municipalities of said conflict prior to submission of bids. If notified in writing of a conflict in specifications prior to bid the Municipalities shall take such action as it deems appropriate.

## **ARTICLE 4 - SUSPENSION OF WORK**

### **4.1 MUNICIPALITIES MAY SUSPEND WORK**

**4.1.1** Municipalities may suspend all or any portion of the Work for any reason during performance of the Contract. Suspension of all or any portion of the Work will be done by written notice to the Contractor.

**4.1.1.1** If the suspension or delay resulting from the written order is considered unreasonable, or not customary, or inherent to the construction industry; the Contractor shall submit a written request providing the reasons and justification for

any Contract adjustment considered necessary as a result of the suspension or delay. The written request for Contract adjustment must be submitted to the Engineer in writing within seven days following receipt of the notice to resume work. A Contract adjustment will not be made unless the request for adjustment has been submitted within the prescribed time.

**4.1.1.2** There will be no Contract adjustment under the provisions of this Subsection if the Work would have been suspended or delayed by any other cause, or for which an adjustment is provided for, or excluded under any other term or condition of the Contract.

**4.1.1.3** The request for a Contract adjustment will be reviewed by the Engineer. If there is agreement that, (1) there has been an increase in the Contract performance cost or time as a result of such suspension and (2) the suspension was caused by conditions beyond the control of and not the fault of the Contractor, Contract suppliers, or subcontractors at any approved tier; and not caused by weather, an adjustment will be made to the Contract by Change Order.

## **ARTICLE 5 - CHANGES IN THE WORK**

### **5.1 DIFFERING SITE CONDITIONS**

**5.1.1** If differing site conditions are encountered at the work site, the Contractor shall promptly notify the Municipalities and Engineer in writing. No further disturbance of the site or performance of the affected work is to be done after the alleged differing site conditions are noted unless directed otherwise in writing by the Engineer. If the Municipalities and Engineer determine the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an adjustment, excluding loss of anticipated profits, will be made and the Contract modified in writing accordingly. The Engineer will notify the Contractor whether or not an adjustment in the Contract is warranted.

**5.1.2** After receipt of written notice as required by paragraph 5.1.1, Engineer will promptly review the pertinent condition, determine the necessity of obtaining additional exploration or tests with respect thereto, and advise Municipalities in writing (with a copy to Contractor) of Engineer's findings and conclusions.

### **5.2 EXTRA WORK**

**5.2.1** Extra Work shall be performed by the Contractor in accordance with the Specifications and as directed, and will be paid for as provided herein. When the Contract provides for payment of certain work under Extra Work, no further order from the Engineer will be necessary for such work; otherwise, when the Engineer determines that Extra Work is to be performed, an Extra Work Order will be issued.

**5.2.2** The Contract Price or the Contract Times, or both, may be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an

increase or decrease in Contractor's cost of, or time required for, performance of the Work. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times if:

**5.2.2.1** Contractor knew or should have known of the existence of such conditions at the time Contractor made a final commitment to Municipalities respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or

**5.2.2.2** The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such final commitment; or

**5.2.2.3** Contractor failed to give prompt written notice as required by paragraph 5.1.

**5.2.3** If Municipalities and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided herein. However, Municipalities, Engineer, and Engineer's Consultants shall not be liable to Contractor for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Contractor on or in connection with any other project or anticipated project.

### **5.3 CHANGES IN CHARACTER OF WORK**

**5.3.1** The Engineer reserves the right to provide written notice to the Contractor at any time during the Contract to change Major Item quantities or make other alterations considered necessary to satisfactorily complete the Contract.

**5.3.2** Such changes in quantities and alterations do not invalidate the Contract nor release the Contract Surety.

**5.3.3** If the directed changes require additional time to complete the Contract, adjustments in the Contract Time shall be determined by the Engineer.

**5.3.4** Payments for the alterations in the Work or changed Major Item quantities will be made as provided under Article 9.

**5.3.5** The basis of the Contract adjustment shall be agreed upon before the performance of the Work. If a basis cannot be agreed upon, prosecution of the Work may be ordered by the Municipalities under the Force Account provisions of Subsection 9.4.3.3.

## **ARTICLE 6 - SCOPE OF WORK**

### **6.1 MAINTENANCE OF TRAFFIC**

**6.1.1** The Contractor shall keep all roads open to all traffic during construction. The Contractor shall keep the signals operational during construction. Where provided in the Contract, or approved by the Engineer, traffic may be bypassed over an approved detour route. In the event a Contractor proposes to construct detours not shown on the Plans, the Contractor shall submit proposed detour plans for documentation, showing the proposed location, alignment, grade, cross section, and signing. All detours shall be kept in a safe and adequate condition. The Contractor shall furnish, erect, and maintain barricades, warning signs, delineators, striping, flaggers, and pilot cars in accordance with the MUTCD and Sections 618, 619 and 632 of the New Hampshire Department of Transportation Standard Specifications for Road and Bridge Construction. The Contractor shall bear all expense of maintaining the section of road undergoing improvement including all temporary approaches or crossings and intersections with trails, roads, streets, abutters, and other features as may be necessary. Payment for the furnishing, installation, and maintenance of traffic control will be as provided in the Agreement. No other additional compensation for maintenance will be made.

**6.1.2** The Contractor shall make passable and open to traffic the sections of the project and temporary roadways as agreed upon between the Contractor and the Engineer for the accommodation of necessary traffic during the anticipated period of suspension. During this suspension period the maintenance of the temporary roadway and sections of the Project will be the responsibility of the Contractor.

**6.1.3** When Work is suspended due to seasonal or climatic conditions or, for failure to correct conditions unsafe for the workers or the general public, for failure to carry out orders of the Engineer or for other reasons caused by the Contractor, all costs for maintenance of the roadway to accommodate traffic during the suspended period shall be borne by the Contractor.

### **6.2 CONTRACTOR'S RESPONSIBILITIES**

**6.2.1** Until Acceptance of the project by the Engineer, the Contractor is responsible for and shall protect the Work against injury or damage from all causes whether arising from the execution or the nonexecution of the Work except as provided herein.

**6.2.2** The Contractor, at his or her expense, shall rebuild, repair, restore, and make good all losses, injuries, or damage to any portion of the Work from any cause before Acceptance, except for loss, injury or damage due to causes not under the control and without the fault or negligence of the Contractor. Such causes include, but are not restricted to, natural disasters such as earthquake, tidal wave, tornado, hurricane, or other cataclysmic phenomenon of nature; acts of a public enemy; acts of governmental authorities; and errant vehicles. The Contractor shall repair damage due to such excepted causes and shall be paid at the contract prices or in the same manner as Extra Work as determined and ordered by

the Engineer. Causes under the control of the Contractor shall be any cause that he or she could have prevented by reasonable and foreseeable action and shall include damage caused by normal weather conditions.

**6.2.3** In case of suspension of the Work from any cause, the Contractor is responsible for the Work under the Contract and shall prevent damage to the project, provide for normal drainage, and erect necessary temporary structures, signs, or other facilities. The Contractor shall also maintain in an acceptable growing condition all living material in newly established plantings, seedings, and soddings furnished under the Contract, and protect new tree growth and other designated vegetative growth against injury. When work is suspended for reasons of differing site conditions, the costs during the period of suspension shall be borne by the Contractor.

**6.2.4** The Contractor shall comply with all Federal, State, and local laws and regulations controlling pollution of the environment. Pollution of streams, lakes, ponds and reservoirs with fuels, oils, bitumens, chemicals, or other harmful materials and pollution of the atmosphere from particulate and gaseous matter shall be avoided to the extent practicable.

**6.2.5** Work performed and materials furnished shall be uniform in character and meet the Contract dimensions and material requirements according to tolerances specified in the Contract. If tolerances are specified, deviations beyond the specified limits will be unacceptable. When tolerance limits are not specified, and only single dimensions are indicated, such dimensions are to be regarded as nominal dimensions. If the materials furnished, work performed, or the finished product does not conform to the Contract, but adequately addresses the design purpose, the Engineer will determine the conditions under which the Work will be accepted and allowed to remain in place unless there are other provisions in the Contract that provide for this determination. Where this determination is made by the Engineer rather than Contract provisions, the Engineer will document the basis of acceptance by Contract modification. The modification will provide for an appropriate adjustment in the Contract price for such work or materials as necessary to support the Engineer's determination.

### **6.3 SUPERVISION OF WORK**

**6.3.1** Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction, but Contractor shall not be responsible for the negligence of Municipalities or Engineer in the design or specification of a specific means, method, technique, sequence, or procedure of construction which is shown or indicated in and expressly required by the Contract Documents. Contractor shall be responsible to see that the completed Work complies accurately with the Contract Documents.

**6.3.2** At all times during the progress of the Work, Contractor shall assign a competent resident superintendent thereto who shall not be replaced without written notice to



Municipalities and Engineer except under extraordinary circumstances. The superintendent will be Contractor's representative at the Site and shall have authority to act on behalf of Contractor. All communications given to or received from the superintendent shall be binding on Contractor.

#### **6.4 LABOR**

**6.4.1** Contractor shall provide competent, suitably qualified personnel to survey, layout, and construct the Work as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.

**6.4.2** Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, and Contractor will not permit overtime work or the performance of Work on Saturday, Sunday, or any legal holiday without Municipalities' written consent (which will not be unreasonably withheld) given after prior written notice to Engineer.

#### **6.5 SERVICES, MATERIALS, AND EQUIPMENT**

**6.5.1** Unless otherwise specified in the General Requirements, 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.

**6.5.2** All materials and equipment incorporated into the Work shall be as specified or, if not specified, shall be of good quality and new, except as otherwise provided in the Contract Documents. All warranties and guarantees specifically called for by the Specifications shall expressly run to the benefit of Municipalities. 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. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

#### **6.6 SCHEDULE OF WORK**

**6.6.1** Contractor shall adhere to the progress schedule established in accordance with Article 2.4.3 as it may be adjusted from time to time as provided below.

**6.6.1.1** Contractor shall submit to Engineer for acceptance proposed adjustments in the progress schedule that will not result in changing the Contract Times (or Milestones). Such adjustments will conform generally to the progress schedule then in effect and additionally will comply with any provisions of the General Requirements applicable thereto.

**6.6.1.2** Proposed adjustments in the progress schedule that will change the Contract Times (or Milestones) shall be submitted in accordance with the requirements of Article 2. Such adjustments may only be made upon written approval of the Engineer.

## **6.7** SUBSTITUTES AND “OR - EQUALS”

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

**6.7.1.1** “Or – Equals”: If in Engineer’s sole discretion an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, it may be considered by Engineer as an "or-equal" item, in which case review and approval of the proposed item may, in Engineer’s sole discretion, be accomplished without compliance with some or all of the requirements for approval of proposed substitute items. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

**6.7.1.1(a)** in the exercise of reasonable judgment the Engineer determines that: (i) it is at least equal in quality, durability, appearance, strength, availability, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole; (iii) it has a proven performance record; and

**6.7.1.1(b)** Contractor certifies that: (i) there is no increase in cost to the Municipalities or increase in Contract Times; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.

### **6.7.1.2** Substitute Items:

**6.7.1.2(a)** If in Engineer’s sole discretion an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item under paragraph 6.7.1, it will be considered a proposed substitute item.

**6.7.1.2(b)** Contractor shall submit sufficient information as provided below to allow Engineer to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by Engineer from anyone other than Contractor.

**6.7.1.2(c)** The procedure for review by Engineer will be as set forth in paragraph 6.7.1.2.(d), as supplemented in the General Requirements and as Engineer may decide is appropriate under the circumstances.

**6.7.1.2(d)** Contractor shall first make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice Contractor's achievement of Substantial Completion on time, whether or not 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 Municipalities for work on the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by Engineer in evaluating the proposed substitute item. Engineer may require Contractor to furnish additional data about the proposed substitute item.

**6.7.2** If a specific means, method, technique, sequence, or procedure of construction is shown or indicated in and expressly required by the Contract Documents, Contractor may furnish or utilize a substitute means, method, technique, sequence, or procedure of construction approved by Engineer. Contractor shall submit sufficient information to allow Engineer, in Engineer's sole discretion, to determine that the substitute proposed is equivalent to that expressly called for by the Contract Documents. The procedure for review by Engineer will be similar to that provided in subparagraph 6.7.1.2(d).

**6.7.3** Engineer will be allowed a reasonable time within which to evaluate each proposal or submittal made pursuant to paragraph 6.7. Engineer will be the sole judge of acceptability. No "or-equal" or substitute will be ordered, installed or utilized until Engineer's review is complete, which will be evidenced by either a Change Order for a substitute or an approved Shop Drawing for an "or equal." Engineer will advise Contractor in writing of any negative determination.

**6.7.4** Special Guarantee: Municipalities may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.

**6.7.5 Engineer's Cost Reimbursement:** Engineer will record time required by Engineer and Engineer's Consultants in evaluating substitute proposed or submitted by Contractor pursuant to paragraphs 6.7.1.1 and 6.7.1.2 and in making changes in the Contract Documents (or in the provisions of any other direct contract with Municipalities for work on the Project) occasioned thereby. Whether or not Engineer approves a substitute item so proposed or submitted by Contractor, Contractor may reimburse Municipalities for the charges due Engineer and Engineer's Consultants for evaluating each such proposed substitute.

**6.7.6 Contractor's Expense:** Contractor shall provide all data in support of any proposed substitute or "or-equal" at Contractor's expense.

## **6.8 CONCERNING SUBCONTRACTORS, SUPPLIERS, AND OTHERS**

**6.8.1** Contractor shall not employ any Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, against whom Municipalities may have reasonable objection. Contractor shall not be required to employ any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against whom Contractor has reasonable objection.

**6.8.2** If the Supplementary Conditions require the identity of certain Subcontractors, Suppliers, or other individuals or entities to be submitted to Municipalities in advance for acceptance by Municipalities by a specified date prior to the Effective Date of the Agreement, and if Contractor has submitted a list thereof in accordance with the Supplementary Conditions, Municipalities' acceptance (either in writing or by failing to make written objection thereto) by the date indicated for of any such Subcontractor, Supplier, or other individual or entity so identified may be revoked on the basis of reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity, and the Contract Price will be adjusted by the difference in the cost occasioned by such replacement, and an appropriate Change Order will be issued or Written Amendment signed. No acceptance by Municipalities of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of any right of Municipalities or Engineer to reject defective Work.

**6.8.3** Contractor shall be fully responsible to Municipalities and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions. Nothing in the Contract Documents shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Municipalities or Engineer and any such Subcontractor, Supplier or other individual or entity, nor shall it create any obligation on the part of Municipalities or Engineer to pay or to see to the payment of any moneys due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

**6.8.4** Contractor shall be solely responsible for scheduling and coordinating the Work of Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work under a direct or indirect contract with Contractor.

**6.8.5** Contractor shall require all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work to communicate with Engineer through Contractor.

**6.8.6** The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.

**6.8.7** All Work performed for Contractor by a Subcontractor or Supplier will be pursuant to an appropriate agreement between Contractor and the Subcontractor or Supplier which specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Municipalities and Engineer. Whenever any such agreement is with a Subcontractor or Supplier who is listed as an additional insured on the property insurance required herein, the agreement between the Contractor and the Subcontractor or Supplier will contain provisions whereby the Subcontractor or Supplier waives all rights against Municipalities, Contractor, Engineer, Engineer's Consultants, and all other individuals or entities identified in the Supplementary Conditions to be listed as insureds or additional insureds (and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them) for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work. If the insurers on any such policies require separate waiver forms to be signed by any Subcontractor or Supplier, Contractor will obtain the same.

## **6.9 PATENT FEES AND ROYALTIES**

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

the Work of any invention, design, process, product, or device not specified in the Contract Documents.

## **6.10 PERMITS**

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

## **6.11 LAWS AND REGULATIONS**

**6.11.1** Contractor shall give all notices and comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Municipalities nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.

**6.11.2** If Contractor performs any Work knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work; however, it shall not be Contractor's primary responsibility to make certain that the Specifications and Drawings are in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations herein.

**6.11.3** Changes in Laws or Regulations not known at the time of opening of Bids (or, on the Effective Date of the Agreement if there were no Bids) having an effect on the cost or time of performance of the Work may be the subject of an adjustment in Contract Price or Contract Times. If Municipalities and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment, a Claim may be made therefore as provided herein.

## **6.12 TAXES**

**6.12.1** 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.

## **6.13 USE OF SITE AND OTHER AREAS**

**6.13.1** Limitation on Use of Site and Other Areas

**6.13.1.1** Contractor shall confine construction equipment, the storage of materials and equipment, and the operations of workers to the Site and other areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and other areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for any damage to any such land or area, or to the owner or occupant thereof, or of any adjacent land or areas resulting from the performance of the Work.

**6.13.1.2** Should any claim be made by any such owner or occupant because of the performance of the Work, Contractor shall promptly settle with such other party by negotiation or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law.

**6.13.1.3** To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Municipalities, Engineer, Engineer's Consultant, and the officers, directors, partners, employees, agents, and other consultants of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Municipalities, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

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

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

**6.13.4** Loading Structures: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent property to stresses or pressures that will endanger it.

## **6.14** RECORD DOCUMENTS

**6.14.1** Contractor shall maintain in a safe place at the Site one record copy of all Drawings, Specifications, Addenda, Written Amendments, Change Orders, Work Change Directives, Field Orders, and written interpretations and clarifications in good order and annotated to show changes made during construction. These record documents together with all approved Samples and a counterpart of all approved Shop Drawings will be available to

Engineer for reference. Upon completion of the Work, these record documents, Samples, and Shop Drawings will be delivered to Engineer for Municipalities.

## **6.15 SAFETY**

**6.15.1** Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:

**6.15.1.1** all persons on the Site or who may be affected by the Work;

**6.15.1.2** all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and

**6.15.1.3** other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated-for removal, relocation, or replacement in the course of construction.

**6.15.2** Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Municipalities of adjacent property and of Underground Facilities and other utility Municipalities when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to herein, caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Municipalities or Engineer or Engineer's Consultant, 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). Contractor's duties and responsibilities for safety and for protection of the Work shall continue until such time as all the Work is completed and Engineer has issued a notice to Municipalities and Contractor as required herein that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).

## **6.16 SAFETY REPRESENTATIVE**

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



## **6.17 HAZARD COMMUNICATION PROGRAMS**

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

## **6.18 EMERGENCIES**

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

## **6.19 SHOP DRAWINGS AND SAMPLES**

**6.19.1** Contractor shall submit Shop Drawings to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. All submittals will be identified as Engineer may require and in the number of copies specified in the General Requirements. The data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by paragraph 6.19.5

**6.19.2** Contractor shall also submit Samples to Engineer for review and approval in accordance with the acceptable schedule of Shop Drawings and Sample submittals. Each Sample will be identified clearly as to material, supplier, pertinent data such as catalog numbers, and the use for which intended, and otherwise as Engineer may require to enable Engineer to review the submittal for the limited purposes required by paragraph 6.19.5. The numbers of each Sample to be submitted will be as specified in the Specifications.

**6.19.3** Where a Shop Drawing or Sample is required by the Contract Documents or the schedule of Shop Drawings and Sample submittals acceptable to Engineer as required herein, 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.

### **6.19.4 Submittal Procedures**

**6.19.4.1** Before submitting each Shop Drawing or Sample, Contractor shall have determined and verified:

**6.19.4.1(a)** all field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;

**6.19.4.1(b)** all materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work;

**6.19.4.1(c)** all information relative to means, methods, techniques, sequences, and procedures of construction and safety precautions and programs incident thereto; and

**6.19.4.1(d)** Contractor shall also have reviewed and coordinated each Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents.

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

**6.19.4.3** At the time of each submittal, Contractor shall give Engineer specific written notice of such variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract Documents, such notice to be in a written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to Engineer for review and approval of each such variation.

#### **6.19.5** Engineer's Review

**6.19.5.1** Engineer will timely review and approve Shop Drawings and Samples in accordance with the Contractor's schedule of Shop Drawings and Sample submittals acceptable to Engineer (expected review time shall never be less than 10 days). Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.

**6.19.5.2** Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction (except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents) or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.

**6.19.5.3** Engineer's review and approval of Shop Drawings or Samples shall not relieve Contractor from responsibility for any variation from the requirements of

the Contract Documents unless Contractor has in writing called Engineer's attention to each such variation at the time of each submittal as required by paragraph 6.19.4 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by Engineer relieve Contractor from responsibility for complying with the requirements of paragraph 6.19.4.

#### **6.19.6 Resubmittal Procedures**

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

#### **6.20 CONTINUING THE WORK**

**6.20.1** Contractor shall carry on the Work and adhere to the progress schedule during all disputes or disagreements with Municipalities. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, except as permitted herein or as Municipalities and Contractor may otherwise agree in writing.

#### **6.21 GENERAL WARRANTY AND GUARANTEE**

**6.21.1** Contractor warrants and guarantees to Municipalities, Engineer, and Engineer's Consultants that all Work will be in accordance with the Contract Documents and will not be defective. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:

**6.21.1.1** abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or

**6.21.1.2** wear and tear under normal usage.

**6.21.2** 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:

**6.21.2.1** observations by Engineer;

**6.21.2.2** recommendation by Engineer or payment by Municipalities of any progress or final payment;

**6.21.2.3** the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Municipalities;

**6.21.2.4** use or occupancy of the Work or any part thereof by Municipalities;

**6.21.2.5** any acceptance by Municipalities or any failure to do so;

**6.21.2.6** any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by Engineer;

**6.21.2.7** any inspection, test, or approval by others; or

**6.21.2.8** any correction of defective Work by Municipalities.

## **6.22 INDEMNIFICATION**

**6.22.1** To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Municipalities, Engineer, Engineer's Consultants, and the officers, directors, partners, employees, agents, and other consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage:

**6.22.1.1** is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom; and

**6.22.1.2** is caused in whole or in part 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, regardless of whether or not caused in part by any negligence or omission of an individual or entity indemnified hereunder or whether liability is imposed upon such indemnified party by Laws and Regulations regardless of the negligence of any such individual or entity.

**6.22.2** In any and all claims against Municipalities or Engineer or any of their respective consultants, agents, officers, directors, partners, or employees by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under paragraph 6.22.1 shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.

**6.22.3** The indemnification obligations of Contractor under paragraph 6.22.1 shall not extend to the liability of Engineer and Engineer's Consultants or to the officers, directors,

partners, employees, agents, and other consultants and subcontractors of each and any of them arising out of:

**6.22.3.1** the preparation or approval of, or the failure to prepare or approve, maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or

**6.22.3.2** giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

## **6.23 LAYOUT OF THE WORK**

**6.23.1** CONTRACTOR shall be solely responsible for layout of all Work.

## **ARTICLE 7 - CONTROL OF THE WORK**

### **7.1 AUTHORITY OF THE ENGINEER**

**7.1.1** The Engineer, acting as Municipalities's representative, shall decide all questions regarding the quality and acceptability of materials furnished, work performed, the rate of progress of the Work, the interpretation of the Contract, and the acceptable fulfillment of the Contract by the Contractor.

**7.1.2** If directed by the Municipalities, the Engineer will suspend the Work, wholly or in part, for such periods as may be necessary for the Contractor's failure to correct conditions unsafe for the Project personnel or general public, or carry out provisions of the Contract, or carry out orders of the Engineer. Notwithstanding the foregoing, action on the part of the Municipalities and/or Engineer pursuant to this section shall NOT be deemed to constitute a waiver of the sovereign immunity of the Municipalities, which immunity is hereby expressly reserved by the Municipalities nor shall any such action be claimed to and/or constitute a waiver of the CONTRACTOR's indemnification obligations specified elsewhere herein.

**7.1.3** Work may also be wholly or partially suspended for periods necessary due to existing or forecasted unsuitable weather, or for conditions considered unsuitable for the prosecution of the Work such as hazardous materials, directives of the New Hampshire Department of Environmental Services, implementing emergency episode procedures, or any other condition or reason deemed to be in the Municipalities's interest.

### **7.2 VISITS TO SITE**

**7.2.1** 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 Municipalities, 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 Municipalities 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 Municipalities informed of the progress of the Work and will endeavor to guard Municipalities against defective Work.

7.2.2 Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Article 7, and 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.

### 7.3 AUTHORIZED VARIATIONS IN WORK

7.3.1 Engineer may authorize minor variations in the Work from the requirements of the Contract Documents which do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. These may be accomplished by a Field Order and will be binding on Municipalities and also on Contractor, who shall perform the Work involved promptly. If Municipalities and Contractor are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, as a result of a Field Order, a Claim may be made therefore as provided herein.

### 7.4 INTERPRETATION OF CONTRACT DOCUMENTS AND ACCEPTABILITY OF WORK

7.4.1 Engineer will be the initial interpreter of the requirements of the Contract Documents and judge of the acceptability of the Work thereunder. Claims, disputes and other matters relating to the acceptability of the Work, the quantities and classifications of Unit Price Work, the interpretation of the requirements of the Contract Documents pertaining to the performance of the Work, and Claims seeking changes in the Contract Price or Contract Times will be referred initially to Engineer in writing, with a request for a formal decision.

7.4.2 When functioning as interpreter and judge under the contract, Engineer will not show partiality to Municipalities or Contractor and will not be liable in connection with any interpretation or decision rendered in good faith in such capacity. The rendering of a decision by Engineer pursuant to the contract with respect to any such Claim, dispute, or other matter will be a condition precedent to any exercise by Municipalities or Contractor of such rights or remedies as either may otherwise have under the Contract Documents or by Laws or Regulations in respect of any such Claim, dispute, or other matter.

## **7.5 ENGINEER'S AUTHORITY AND RESPONSIBILITIES**

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

**7.5.2** 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.

**7.5.3** 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.

**7.5.4** 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 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.

**7.5.5** The limitations upon authority and responsibility set forth in this paragraph shall also apply to Engineer's Consultants, Resident Project Representative, and assistants.

**7.5.6** The Contractor shall perform all necessary layout work not specified above in order to construct all elements of the Project as shown on the Plans and specified in the Contract. This work shall include, but shall not be limited to stakeout necessary for re-establishment of line and grade as earthwork operations progress; stakeout, layout, and elevations as required for structures, forms, pile layouts, and paving. Prior to paving, the Contractor shall perform all work necessary to set the blue top stakes for fine grading.

## **ARTICLE 8 - TESTS AND INSPECTIONS**

### **8.1 DEFECTS**

**8.1.1** Prompt notice of all defective Work of which Municipalities or Engineer has actual knowledge will be provided to Contractor in writing. All defective Work may be rejected, corrected, or accepted as provided in this Article 8.

## **8.2 ACCESS TO WORK**

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

## **8.3 TESTS AND INSPECTIONS**

**8.3.1** Contractor shall give Engineer timely notice of readiness of the Work for all required inspections, tests, or approvals and shall cooperate with inspection and testing personnel to facilitate required inspections or tests.

**8.3.2** Municipalities shall employ and pay for the services of any additional independent testing laboratory required to perform inspections, tests, or approvals as directed by the Municipalities to confirm the Work is in compliance with the specifications unless results of said testing proves non-compliant Work. Then all costs shall be borne by the Contractor.

**8.3.3** Municipalities shall not be responsible for testing/inspection costs associated with the following:

**8.3.3.1** for inspections, tests, or approvals covered by paragraphs 8.3.4 and 8.3.5 below;

**8.3.3.2** those costs incurred in connection with tests or inspections conducted pursuant to paragraph 8.4.2 shall be paid as provided in said paragraph 8.4.2; and

**8.3.3.3** as otherwise specifically provided in the Contract Documents.

**8.3.4** 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.

**8.3.5** Contractor shall be responsible for arranging and obtaining and shall pay all costs in connection with any inspections, tests, or approvals required for Municipalities' and Engineer's acceptance of materials or equipment to be incorporated in the Work; or acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work. Such inspections, tests, or approvals shall be performed by organizations acceptable to Municipalities and Engineer.

**8.3.6** 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, it must, if requested by Engineer, be uncovered for observation.



**8.3.7** Uncovering Work as provided in paragraph 8.3.6 shall be at Contractor's expense unless Contractor has given Engineer timely notice of Contractor's intention to cover the same and Engineer has not acted with reasonable promptness in response to such notice.

#### **8.4 QUALITY ASSURANCE/QUALITY CONTROL**

**8.4.1** The CONTRACTOR shall be responsible for assuring that all work and materials, complete and in-place, meet or exceed the standards of quality specified or implied in the Contract Documents.

**8.4.2** The ENGINEER will employ an independent testing agency to conduct construction quality control testing for earthwork and cast-in-place concrete. Agency name and contact person will be provided to the CONTRACTOR upon Notice to Proceed.

**8.4.3** The CONTRACTOR shall adhere to certain general testing and quality control requirements under this Contract. The CONTRACTOR shall:

**8.4.3.1** Schedule and coordinate all testing and inspections and notify the testing agency and the ENGINEER sufficiently in advance of operations to allow for the proper assignment of personnel and scheduling of tests.

**8.4.3.2** Cooperate with testing agency and the ENGINEER and provide access to the work for testing.

**8.4.3.3** Provide representative samples of materials to be tested, in required quantities.

**8.4.3.4** Furnish labor and facilities:

- (1) To provide access to work to be tested.
- (2) To obtain and handle samples at the site.
- (3) To facilitate inspections and tests.
- (4) For storage and curing of test samples.

**8.4.3.5** Assure that required inspection, sampling and testing has been conducted prior to commencement of any work which would alter or cover the work to be inspected, sampled and/or tested.

**8.4.4** All work under this Contract shall be subject to inspection and observation by representatives of the Municipalities and the ENGINEER.

**8.4.5** In the event that any quality control testing, inspection or observation results in any indication that any material or portion of the work does not meet Contract requirements, the CONTRACTOR shall, at his sole expense, undertake remedial work and/or repeat testing to the satisfaction of the ENGINEER.

**8.4.6** QUALITY CONTROL TESTING FOR EARTHWORK (DELETED)

**8.4.7** QUALITY CONTROL TESTING FOR CAST-IN-PLACE CONCRETE (DELETED)

## **8.5 UNCOVERING WORK**

**8.5.1** If any Work is covered contrary to the written request of Engineer, it must, if requested by Engineer, be uncovered for Engineer's observation and replaced at Contractor's expense.

**8.5.2** If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, furnishing all necessary labor, material, and equipment. If it is found that such Work is defective, Contractor shall, pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and Municipalities shall be entitled to an appropriate decrease in the Contract Price. If such Work is not found to be defective, Contractor shall be allowed an extension of the Contract Times (or Milestones), directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, Contractor may make a Claim therefore as provided herein.

## **8.6 MUNICIPALITY RIGHT TO STOP WORK**

**8.6.1** 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, Municipalities may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the Municipalities' right to stop the Work shall not give rise to any duty on the part of Municipalities 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.

## **8.7 CORRECTION OR REMOVAL OF DEFECTIVE WORK**

**8.7.1** Contractor shall correct all defective Work, whether or not fabricated, installed, or completed, or, if the Work has been rejected by Engineer, remove it from the Project and replace it with Work that is not defective. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or removal (including but not limited to all costs of repair or replacement of work of others).

## **8.8 CORRECTION PERIOD**

**8.8.1** If within one year after the date of Substantial Completion or such longer period of time as may be prescribed by Laws or Regulations or by the terms of any applicable special

guarantee required by the Contract Documents or by any specific provision of the Contract Documents, any Work is found to be defective, or if the repair of any damages to the land or areas made available for Contractor's use by Municipalities or permitted by Laws and Regulations as contemplated herein is found to be defective, Contractor shall promptly, without cost to Municipalities and in accordance with Municipalities's written instructions: (i) repair such defective land or areas, or (ii) correct such defective Work or, if the defective Work has been rejected by Municipalities, remove it from the Project and replace it with Work that is not defective, and (iii) satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others or other land or areas resulting therefrom. If Contractor does not promptly comply with the terms of such instructions, or in an emergency where delay would cause serious risk of loss or damage, Municipalities may have the defective Work corrected or repaired or may have the rejected Work removed and replaced, and all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others) will be paid by Contractor.

**8.8.2** 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 or by Written Amendment.

**8.8.3** Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph 8.7, 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.

**8.8.4** Contractor's obligations under this paragraph 8.7 are in addition to any other obligation or warranty. The provisions of this paragraph 8.7 shall not be construed as a substitute for or a waiver of the provisions of any applicable statute of limitation or repose.

## **8.9 ACCEPTANCE OF DEFECTIVE WORK**

**8.9.1** If, instead of requiring correction or removal and replacement of defective Work, Municipalities (and, prior to Engineer's recommendation of final payment, Engineer) prefers to accept it, Municipalities may do so. Contractor shall pay all Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) attributable to Municipalities's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness) and the diminished value of the Work to the extent not otherwise paid by Contractor pursuant to this sentence. If any such acceptance occurs prior to Engineer's recommendation of final payment, a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work, and Municipalities shall be entitled to an appropriate decrease in the Contract Price, reflecting the diminished value of Work so

accepted. If the acceptance occurs after such recommendation, an appropriate amount will be paid by Contractor to Municipalities.

## **8.10 MUNICIPALITIES RIGHT TO CORRECT DEFECTIVE WORK**

**8.10.1** If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work or to remove and replace rejected Work as required by Engineer in accordance with paragraph 8.6, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, Municipalities may, after seven days written notice to Contractor, correct and remedy any such deficiency.

**8.10.2** In exercising the rights and remedies under this paragraph, Municipalities shall proceed expeditiously. In connection with such corrective and remedial action, Municipalities may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Municipalities has paid Contractor but which are stored elsewhere. Contractor shall allow Municipalities, Municipalities's representatives, agents and employees, Municipalities's other contractors, and Engineer and Engineer's Consultants access to the Site to enable Municipalities to exercise the rights and remedies under this paragraph.

**8.10.3** All Claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) incurred or sustained by Municipalities in exercising the rights and remedies under this paragraph 8.9 will be charged against Contractor, and a Change Order will be issued incorporating the necessary revisions in the Contract Documents with respect to the Work; and Municipalities shall be entitled to an appropriate decrease in the Contract Price. Any claims by the Municipalities resulting from the parties' inability to agree will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removals or replacement of Contractor's defective Work.

**8.10.4** Contractor shall not be allowed an extension of the Contract Times (or Milestones) because of any delay in the performance of the Work attributable to the exercise by Municipalities of Municipalities's rights and remedies under this paragraph 8.9.

## **ARTICLE 9 - PAYMENTS TO CONTRACTOR AND COMPLETION**

### **9.1 MEASUREMENT AND PAYMENT**

**9.1.1 Measurement of Quantities.** Work completed under the Contract will be measured by the Engineer according to the United States customary measure.

A station, when used as a definition or term of measurement, will be 100 linear feet measured horizontally.

The method of measurement and computations to be used in determination of quantities of material furnished and work performed will be those methods generally recognized as conforming to good engineering practice.

Unless otherwise specified, longitudinal measurements for area computations will be made horizontally, and no deductions will be made for individual objects having an area of 9 square feet or less. Unless otherwise specified, transverse measurements for area computations will be the neat dimensions shown on the plans or ordered in writing.

Structures will be measured according to neat lines shown on the plans or as ordered to fit field conditions.

Items which are measured by the linear foot, such as pipe culverts, guardrail, curb, underdrains, etc., will be measured parallel to the base or foundation upon which such structures are placed.

In computing volumes of excavation, embankment, and borrow, the average end area method will be used. Where it is impracticable to measure material by the cross-section method due to irregular, isolated deposits, acceptable methods involving three-dimensional measurement may be used. When measurement of materials in vehicles is permitted, the quantity will be determined as 80 percent of the loose volume.

In computing volumes of concrete and masonry, the prismoidal method will be used.

The space occupied by pipe will not be included in the volume of headwalls. In the case of pipe having a wall thickness of 2 inches or more, the area of the pipe will be based on the manufacturer's nominal dimensions, outside to outside, or the shell of the pipe. In the case of pipe having a wall thickness of less than 2 inches, the area of the pipe will be based on the nominal inside diameter of the pipe.

The thickness of plates and galvanized sheets used in the manufacture of corrugated metal pipe, metal plate pipe culverts and arches, and metal cribbing will be specified and measured in decimal fractions of inches.

The term "ton" will mean the short ton consisting of 2,000 pounds. Except as specified below, materials which are measured or proportioned by weight shall be weighed on scales which the Contractor has had sealed by the New Hampshire Department of Agriculture or by a company approved by that Department. All weighing shall be performed in a manner prescribed under the Rules and Regulations of the Bureau of Weights and Measures of the New Hampshire Department of Agriculture. Weighing of materials on scales located outside New Hampshire will be permitted for materials produced or stored outside the State, when requested by the Contractor. Out-of-state weighing, in order to be approved, must be performed on scales sealed by the appropriate governmental authority.

If material is shipped by rail, the car weight may be accepted, provided that payment is made only for the actual weight of material. Car weights will not be acceptable for material to be passed through mixing plants.

Trucks used to haul material being paid for by weight shall be weighed empty daily at times directed by the Engineer. Each truck shall bear a plainly legible identification mark.

When material is weighed, the individual weight slips, which shall be furnished by the Contractor, for trucks, trailers, or distributors, shall show the following information: the date, the project name and number; slip number; the material or commodity; the dealer of vendor; the Contractor or Subcontractor; the location of the scales; the time of loading; the vehicle registration number or other approved legible identification mark; the tare and net weights, with gross weights when applicable; and the weigher's name, signature, or signed initials.

The right is reserved to weigh any truck, trailer, or distributor, at locations designated, before and after making deliveries to the Project.

When requested by the Contractor and approved or ordered by the Engineer in writing, material specified to be measured by the cubic yard may be weighed and converted to cubic yards. Factors for conversion from weight measurement to volume measurement will be determined by the Engineer and agreed to by the Contractor before this method of measurement of pay quantities is used.

Bituminous materials will be measured by the gallon.

Timber will be measured by the thousand feet board measure (MBM) actually incorporated in the structure. Measurement will be based on nominal widths, thicknesses, and the extreme length of each piece.

The term "lump sum," when used as an item of payment, will mean complete payment for the Work described in the Contract.

When a complete structure of structural unit (in effect, "lump sum" work) is specified as the unit of measurement, the unit includes all necessary fittings and accessories.

Except as may be otherwise provided, partial payments for lump sum items will be made approximately in proportion to the amount of the work completed on those items.

Rental of equipment will be measured in hours of actual working time and necessary travel time of the equipment within the limits of the Project. If special equipment has been ordered by the Engineer in connection with force account work, travel time and transportation to the project will be measured. If equipment is ordered held on the property on a standby basis by the Engineer, payments will be made as provided herein.

When standard manufactured items are specified such as fence, wire, plates, rolled shapes, pipe, conduit, etc. and these items are identified by gauge, unit weight, section dimensions, etc., the identification will be considered to be nominal weights or dimensions. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

Material wasted without authority will not be included in the final pay quantity.

When the estimated quantities for a specific portion of the Work are designated as final pay quantities in the Contract, they shall be the final pay quantities for which payment will be made in accordance with 9.14.

**9.1.2 Scope of Payment.** The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials; for performing work under the Contract in a complete and acceptable manner; and for all risk, loss, damage, or expense arising out of the nature or prosecution of the work, subject to the provisions contained herein.

**9.1.3 Compensation for Altered Quantities.** When the accepted quantities of work vary from the quantities in the Contract, the Contractor shall accept payment at the original Contract unit prices for the accepted quantities of work done.

**9.1.4 Differing Site Conditions, Changes, Extra Work, and Force Account Work.** Differing Site Conditions, changes and Extra Work performed under Article 5.2 will be paid for using the following methods as appropriate:

- Contract unit prices.
- Unit prices agreed upon in the order authorizing the work.
- An agreed upon lump sum amount.
- If directed by the Department, on a force account basis to be compensated in the following manner:

**9.1.4.1 Labor.** For all labor, including equipment operators, and foremen in direct charge of the specific operation, the Contractor shall receive the rate of wage agreed to in writing for each and every hour that the labor and foreman are actually engaged in the work. In case the Contractor is required to pay overtime pay or holiday pay to labor engaged in the Work, such rate will be the rate reimbursed. When the Contractor is ordered to return to the project solely to perform Extra Work, labor will be considered as being actually engaged in the Work during the hours while traveling.

No part of the salary or expenses of anyone connected with the Contractor's forces above the grade of foreman and having general supervision of the Work will be included in the labor item as specified above, except under any of the following conditions: (1) The work ordered is of an emergency nature or is ordered too late to be done before all work shown on the Plans or provided for in the Proposal has been substantially accomplished, (2) the Contractor's organization is entirely occupied with Extra Work, or (3) the nature of the work is such that the services of superintendents and timekeepers may be included in the classification of labor. In order to determine the allowable rate of pay of eligible superintendents, foremen, and timekeepers, a notarized statement shall be furnished to the Engineer. In case no documentary evidence of the actual

rate of pay is furnished for such superintendents, foremen and timekeepers, no reimbursement will be allowed. Transportation for a superintendent will be paid for as equipment in the manner specified in (3) below.

The Contractor will also receive an additional amount (i.e. a labor burden rate) equal to 50 percent of the actual hourly rate paid to, or in behalf of workers, for costs of health and welfare benefits, taxes, insurances, retirement (including social security taxes), union benefits, and unemployment insurance premiums.

The unemployment insurance rate shall be the lesser of the Contractor's current unemployment insurance rate or the Unemployment Insurance Rate for New Employer established by the New Hampshire Department of Employment Security. The worker's compensation rate shall be the National Council on Compensation Insurance published rates approved by the New Hampshire Department of Insurance. All rates paid will be the Contractor's policy rate in effect at the time work is performed. For work outside the State of New Hampshire, the rates paid shall be the rates established by the appropriate agency of the State in which the work is performed. The Contractor shall furnish evidence of the rate or rates paid for such insurance, and taxes.

A Contractor can request a different labor burden rate be used if an independently audited breakdown of the actual aforementioned costs, prepared by a Certified Public Accountant, is provided. The audit of the burden rate shall be prepared on current financial data and in conformity with the accounting practices prescribed by the Federal Acquisition Regulations 48 CFR, Part 31.

An amount equal to ten percent of the sum of the above labor-related items will also be paid the Contractor.

Subsistence and travel expenses paid by the Contractor will be reimbursed only when the Engineer orders Extra Work and in order to perform such work, it is necessary to move workers to the project particularly for that operation. Such subsistence and travel expenses allowed shall be carried on the daily report form under the classification of "Material," without, however, being subject to the added percentage for materials. If work other than such Extra Work is performed by the individuals during or in connection with that operation, no subsistence or travel expenses will be allowed.

**9.1.4.2 Materials and Specialized Work.** When the Engineer directs special work not included in the Contract, requiring skills, tools, and equipment unlike those used by the Contractor, payment may be made for such work performed by a specialist. For specialist services, and materials accepted by the Engineer whether furnished by a specialist or by the Contractor, the Contractor will receive the actual cost, including transportation charges paid (exclusive of equipment rentals and hereinafter set forth), to which cost 15 percent will be



added. Invoices not exceeding a value of two thousand dollars per work event for specialist services on the basis of the current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization. If specialized work is carried out by a subcontractor, provisions of paragraph 5 herein shall apply.

The cost of materials will be the cost to the purchaser, whether Contractor, Subcontractor, or other, from the supplier thereof, except as the following are applicable:

- a. If materials are procured by the purchaser by any method which not a direct purchase is from and a direct billing by the actual supplier to such purchaser, the cost of such materials will be deemed to be the price paid to the actual supplier as determined by the Engineer. No markup except for actual costs incurred in the handling of such materials will be permitted.
- b. If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or the current wholesale price for such materials delivered to the job site, whichever price is lower.
- c. If, in the opinion of the Engineer, the cost of such materials is excessive, then the cost of such material will be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site.
- d. If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier, the cost will then be determined in accordance with paragraph (c).

**9.1.4.3 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 latest edition of the “Rental Rate Blue Book for Construction Equipment” published by Dataquest, Inc. 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 = Average regional adjustment factor for New Hampshire.

C = Factor from Rate Adjustment Table for the year of equipment manufacture.

D = Estimated operating costs per hour.

- 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 current revision of the “Blue Book” applicable to the specific Force Account work is as of the beginning of the calendar year in which Extra Work is being performed. Revised sections published during the year will not be incorporated in the “Blue Book” until the beginning of the next calendar year.
- d. The average regional adjustment factor applicable for this Contract will be specified in the Supplemental Specification for this Subsection. The average regional adjustment factor will be reviewed and revised annually subsequent to revisions of “Blue Book” sections. Equipment life adjustments will be made using the rate adjustment tables.
- e. Overtime shall be charged at the same rate indicated in subparagraph (a) above.
- f. 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. Such costs do not apply to idle time regardless of the idleness.
- g. The maximum rental period to be paid for per day shall not exceed eight hours unless the equipment operates for eight or more hours.
- 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, 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 shall have available for the Engineer's use a revised copy of the "Blue Book" as referenced in above.

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 Extra 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 and must obtain it 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. The Contractor will be paid the actual rental for the equipment for the time that the equipment is actually used to accomplish the work provided that the rate is reasonable, plus the cost of moving the equipment onto and away from the job. 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.

**9.1.4.4 Miscellaneous.** No additional allowance will be made for general superintendence, the use of small tools, or for other costs for which no specific allowance is provided.

**9.1.4.5 Subcontracting.** For administration costs in connection with approved subcontract work, the Contractor shall receive an amount equal to five percent of the total cost of work computed as set forth above, except that no percentage will be allowed for equipment rented from the Contractor. In the event lower tier subcontracting is required, the administration cost shall not exceed a combined total of 20% of the actual cost of the work as computed above.

**9.1.4.6 Bond.** The Contractor will receive the actual costs for bond premium as a percentage of the total cost of the Work computed as set forth above for work paid under items not originally in the contract. The Contractor shall furnish evidence of the rate paid for such bond.

**9.1.4.7 Compensation.** The compensation herein provided shall be accepted by the contractor as payment in full for Force Account work, including superintendence (except as provided in (1) above), subcontracting, taxes, bond, overhead, profit, and other costs in connection with the Work which are not provided for.

**9.1.4.8 Statements.** The Contractor's representative and the Engineer each day shall compare records of the cost of work completed on a Force Account basis. These daily records shall be set forth on the forms provided by the Engineer and shall thereafter be considered to be the basis for payment of the work performed, but shall not preclude subsequent adjustment based on a late audit by the Department.

No payments will be made for work performed on a Force Account basis until the Contractor has furnished the Engineer with a statement of the cost of the Force Account work showing the following:

- a. Name of subcontractor, if appropriate.
- b. Name, classification, date, daily hours, total hours, rate, and extension for each laborer, operator, and foreman.
- c. Quantities of materials, prices, and extensions.
- d. Charges for transportation of materials.
- e. Specialized work charges.
- f. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment or plant.

The Contractor shall certify that the labor, materials, and equipment listed were actually used on the Force Account Extra Work described, that the labor and equipment were used for the hours indicated and that the rates for labor do not exceed those for comparable labor currently employed on the project.

Statements shall be accompanied and supported by certified copies of the appropriate payrolls, and invoices for all materials and specialized work and for transpiration charges. If materials used on the Force Account work are not specifically purchased for the work but are taken from the Contractor's stock, the Engineer shall be furnished an affidavit certifying that the materials were taken from stock, that the quantity claimed was actually used, and that the price and transportation claimed represents the Contractor's actual cost.

During the life of the contractor and for a period of not less than three years after the date of Acceptance thereof, the Contractor's cost records pertaining to work paid for on an Extra Work basis shall be open to inspection or audit by representatives of the Department, and the Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor shall make every reasonable effort to ensure that the cost records of such other forces will be open to inspection and audit by representatives of the Municipalities on the same terms and conditions as the cost records of the Contractor.

**9.1.4.9 Final Pay Quantity.** When an item of work is designated as a final pay quantity in the Method of Measurement, or Basis of Payment, or Bid Schedule as (F), the estimated bid quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion or the quantity of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion or the quantity of the item are revised, and the revision results in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions or the quantity. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

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

- a. A quantity adjustment (increase or decrease) to the estimated bid quantity will be made if either the actual quantity is more than 125 percent or less than 75 percent of the estimated bid quantity for roadway items, or the value of the actual quantity is more than or less than \$10,000.00 of the estimated bid quantity value.

- b. A quantity adjustment (increase or decrease) to the estimated bid quantity will also be made if either the actual quantity per bridge structure is more than 125 percent or less than 75 percent of the estimated bid quantity for that bridge item or the value of the actual quantity is more than or less than \$10,000.00 of the estimated bid quantity value.

In case of discrepancy between the quantity shown in the Bid Schedule for a final pay item and the quantity or summation of quantities for the same item shown on the plans or in the proposal, payment will be based on the quantity shown in the Bid Schedule.

## **9.2 SCHEDULE OF VALUES AND PARTIAL PAYMENT APPLICATIONS**

**9.2.1** The schedule of values established as provided herein shall serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed.

**9.2.2** At least 5 days before the date established for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitable stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Municipalities has received the materials and equipment free and clear of all Liens and evidence that the materials and equipment are covered by appropriate property insurance or other arrangements to protect Municipalities' interest therein, all of which must be satisfactory to Municipalities.

**9.2.3** Retainage – Not used.

**9.2.4** The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments. Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this Contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the Municipalities' interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the Municipalities.

**9.2.5** All material and work covered by progress payments made shall, at the time of payment become the sole property of the Municipalities, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or (2) waiving the right of the Municipalities to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the Municipalities in the course of their employment, the Contractor shall restore such damaged work without cost to the Municipalities and to seek redress for its damage only from those who directly caused it.

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

**9.2.7** Within 10 days after receipt of each Application for Payment, the Engineer shall either indicate in writing a recommendation of payment and present the Application to Municipalities 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.

**9.2.8** Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Municipalities, based on Engineer's observations on the Site 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 that:

**9.2.8.1** 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, to the results of any subsequent tests called for in the Contract Documents, to a final determination of quantities and classifications for Unit Price Work, and to any other qualifications stated in the recommendation); and

**9.2.8.2** The conditions precedent to Contractor being entitled to such payment appears to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.

**9.2.8.3** By recommending any such payment Engineer will not thereby be deemed to have represented that: (i) inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract Documents; or (ii) that there may not be other matters or issues between the parties that might

entitle Contractor to be paid additionally by Municipalities or entitle Municipalities to withhold payment to Contractor.

**9.2.9** 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 to supervise, direct, or control the Work or for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work. Additionally, said review or recommendation will not impose responsibility on Engineer to make any examination to ascertain how or for what purposes Contractor has used the moneys paid on account of the Contract Price, or to determine that title to any of the Work, materials, or equipment has passed to Municipalities free and clear of any Liens.

**9.2.10** 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 Municipalities referred to herein Engineer may also refuse to recommend any such payment or, because of subsequently discovered evidence or the results of subsequent inspections or tests, revise or revoke any such payment recommendation previously made, to such extent as may be necessary in Engineer's opinion to protect Municipalities from loss because:

**9.2.10.1** the Work is defective, or completed Work has been damaged, requiring correction or replacement;

**9.2.10.2** the Contract Price has been reduced by Written Amendment or Change Orders;

**9.2.10.3** Municipalities has been required to correct defective Work or complete Work in accordance with the Specifications; or

**9.2.10.4** Engineer has actual knowledge of the occurrence of any of the events warranting Contractor's termination for cause.

### **9.3 PAYMENT TO THE CONTRACTOR**

**9.3.1** Payment to the Contractor shall become due in accordance with the Municipalities' approval and payment schedule, but not later than thirty (30) days after presentation of the Application for Payment to Municipalities with Engineer's recommendation of the amount for payment (subject to the provisions contained herein) and will be paid by Municipalities to Contractor.

### **9.4 REDUCTION IN PAYMENTS**

**9.4.1** Reduction in payments recommended by the Engineer may be made by the Municipalities when:



**9.4.1.1** Claims have been made against Municipalities on account of Contractor's performance or furnishing of the Work;

**9.4.1.2** Liens have been filed in connection with the Work, except where Contractor has delivered a specific Bond satisfactory to Municipalities to secure the satisfaction and discharge of such Liens;

**9.4.1.3** there are other items entitling Municipalities to a set-off against the amount recommended; or

**9.4.1.4** Municipalities have actual knowledge of the occurrence of any of the events enumerated in Article 9.1.

#### **9.4.2** Liquidated Damages.

**9.4.2.1** If the Contractor fails to complete the Work within the time specified in the Contract, or any extension, the Contractor shall pay to the Municipalities liquidated damages, as indicated in the contract for each day of delay. If different completion dates are specified in the Contract for separate parts or stages of the Work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this Contract, liquidated damages shall not be due the Municipalities. The Contractor remains liable for damages caused other than by delay.

**9.4.2.2** If the Municipalities terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final completion of the Municipalities work together with any increased costs occasioned the Municipalities in completing the Work.

**9.4.2.3** If the Municipalities do not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the Work is completed or accepted.

#### **9.5** PAYMENT FOR ALTERATIONS TO THE CONTRACT

**9.5.1** The Contractor shall receive and accept compensation provided for in the Contract as full payment for furnishing all materials; for performing work under the Contract in a complete and acceptable manner; and for all risk, loss, damage, or expense arising out of the nature or prosecution of the work, subject to the provisions contained herein.

**9.5.2** When final approved quantities of work vary from the Contract quantities, the Contractor shall accept payment at the original Contract unit prices for the accepted quantities of work done, unless specified otherwise in this Contract.. No additional allowance will be considered unless approved by the Engineer.

**9.5.3** Differing Site Conditions, changes, and Extra Work approved in accordance with the terms herein will be paid as stipulated in 9.1.4 herein.

## **9.6 UNJUSTIFIED WITHHOLDING OF PAYMENT**

**9.6.1** If it is subsequently determined that Municipalities' refusal of payment was not justified, the amount previously withheld shall become due with the subsequent request for payment

**9.6.2** The Municipalities and/or Engineer shall not be liable to the Contractor for damages resulting from the incorrect withholding of a payment

## **9.7 WRITTEN NOTICE TO CONTRACTOR**

**9.7.1** If Municipalities refuses to make payment of the full amount recommended by Engineer, Municipalities must give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Municipalities shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Municipalities and Contractor, when Contractor corrects to Municipalities' satisfaction the reasons for such action.

## **9.8 CONTRACTOR REPRESENTATIONS**

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

## **9.9 SUBSTANTIAL COMPLETION**

**9.9.1** When substantially complete the Contractor shall notify Municipalities and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Promptly thereafter, Municipalities, 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 therefore. If Engineer considers the Work substantially complete, Engineer will prepare and deliver to Municipalities a tentative certificate of Substantial Completion which shall fix the date of Substantial Completion. There shall be attached to the certificate a tentative list of items to be completed or corrected before final payment. Municipalities shall have seven days after receipt of the tentative certificate during which to make written objection to Engineer as to any provisions of the certificate or attached list. If, after considering such objections, Engineer concludes that the Work is not substantially complete, Engineer will within 14 days after submission of the tentative certificate to Municipalities notify Contractor in writing, stating the reasons therefore. If, after consideration of Municipalities' objections, Engineer considers the Work substantially complete, Engineer will within said 14 days execute and deliver to Municipalities and Contractor a definitive certificate of Substantial Completion

(with a revised tentative list of items to be completed or corrected) reflecting such changes from the tentative certificate as Engineer believes justified after consideration of any objections from Municipalities. At the time of delivery of the tentative certificate of Substantial Completion Engineer will deliver to Municipalities and Contractor a written recommendation as to division of responsibilities pending final payment between Municipalities and Contractor with respect to security, operation, safety, and protection of the Work, maintenance, heat, utilities, insurance, and warranties and guarantees. Unless Municipalities and Contractor agree otherwise in writing and so inform Engineer in writing prior to Engineer's issuing the definitive certificate of Substantial Completion, Engineer's aforesaid recommendation will be binding on Municipalities and Contractor until final payment.

#### **9.10 FINAL INSPECTION**

**9.10.1** A final inspection shall be performed by the Engineer upon written notice from Contractor that the entire Work or an agreed portion thereof is complete. The Municipalities and Contractor shall attend the Engineer's inspection and Engineer shall promptly notify Contractor in writing of all particulars in which this inspection reveals that the Work is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

#### **9.11 FINAL PAYMENT**

**9.11.1** Final payment shall be made to the Contractor after, in the opinion of Engineer, the Contractor has satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, Bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents, and other documents.

#### **9.12 PROGRESS PAYMENTS**

**9.12.1** Contractor may make application for final payment in accordance with the procedure for progress payments:

**9.12.2** The final Application for Payment shall be accompanied (except as previously delivered) by: (i) all documentation called for in the Contract Documents, including but not limited to the evidence of insurance required herein; (ii) consent of the surety, if any, to final payment; and (iii) complete and legally effective releases or waivers (satisfactory to Municipalities) of all Lien rights arising out of or Liens filed in connection with the Work.

**9.12.3** In lieu of the releases or waivers of Liens specified herein and as approved by Municipalities, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Municipalities or Municipalities' property might in any way be responsible 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 Municipalities to indemnify Municipalities against any Lien.

### **9.13 ACCEPTANCE OF WORK BY ENGINEER**

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

### **9.14 ADJUSTMENTS TO FINAL PAYMENT**

**9.14.1** When an item of work is designated as a final pay quantity in the Method of Measurement, Basis of Payment, and Bid Schedule (F), the estimated bid quantity for that item of work shall be the final pay quantity, unless the dimensions of any portion or the quantity of that item are revised by the Engineer, or the item or any portion of the item is eliminated. If the dimensions of any portion or the quantity of the item are revised, and the revision results in an increase or decrease in the estimated quantity of that item of work, the final pay quantity for the item will be revised in the amount represented by the changes in the dimensions or the quantity. If a final pay item is eliminated, the estimated quantity for the item will be eliminated. If a portion of a final pay item is eliminated, the final pay quantity will be revised in the amount represented by the eliminated portion of the item of work.

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

The Contractor may review the computations of final pay quantity items on record at the Municipalities. The computations requested will be available within one week after a request is received by the contact person stated in the Invitation for Bids. In case of discrepancy between the quantity shown in the Bid Schedule for a final pay item and the quantity or summation of quantities for the same item shown on the plans, payment will be based on the quantity shown in the Bid Schedule.

## **ARTICLE 10 - MISCELLANEOUS**

### **10.1 WRITTEN NOTICE**

**10.1.1** Whenever any provision of the Contract requires the giving of written notice, it will be deemed to have been validly given if delivered in person to the individual or to a member of the firm or to an officer of the corporation for whom it is intended, or if delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the giver of the notice.

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

### **10.2 CUMULATIVE REMEDIES**

**10.2.1** The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract Documents, and 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.

### **10.3 SURVIVAL OBLIGATIONS**

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

### **10.4 CONTROLLING LAW**

**10.4.1** This Contract is to be governed by the laws of the state in which the Project is located.

### **10.5 PROJECT VISITATION BY THIRD PARTY**

**10.5.1** Non-emergency visits by third parties require 24-hour notice to Contractor and Engineer. The Contractor must provide the applicable contact name and phone number of desired point of contact. If the primary contact is unavailable, an appropriate voice message must be provided describing an alternate contact person and phone number.

**FORM OF AGREEMENT  
BETWEEN OWNER AND CONTRACTOR  
ON THE BASIS OF A LUMP SUM PRICE**

**THIS AGREEMENT** is dated as of the \_\_\_\_\_ day of \_\_\_\_\_ in the year 2024 by and between the Town of Hudson, 12 School Street, Hudson, NH (hereinafter called OWNER) and \_\_\_\_\_ (hereinafter called CONTRACTOR).

OWNER and CONTRACTOR, in consideration of the mutual covenants hereinafter set forth, agree as follows:

**ARTICLE 1 - WORK**

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

**CONSTRUCTION SERVICES FOR  
BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
NHDOT PROJECT NO. 44653, X-A005(563)**

**ARTICLE 2 - ENGINEER**

The Project is being managed by the Town Engineer with assistance from \_\_\_\_\_, who is to act as OWNER's representative, assume all duties and responsibilities and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with completion of the Work in accordance with the Contract Documents.

**ARTICLE 3 - CONTRACT PRICE**

OWNER shall pay CONTRACTOR for completion of the Work in accordance with the Contract Documents an amount equal to the sum of the Lump Sum Cost as shown on the Proposal Form (attached).

- 3.1 Liquidated Damages: OWNER and CONTRACTOR recognize that time is of the essence of this Agreement and that if the Work is not completed within the times specified, plus any extensions thereof allowed in accordance with the General Conditions, the OWNER and CONTRACTOR agree that as liquidated damages for delay (but not as a penalty) the OWNER shall deduct from payments due the CONTRACTOR **Two Hundred and Fifty dollars (\$250.00)** for each calendar day that expires past the date for each calendar day that expires after the Substantial Completion date specified, until said portions of the work have been completed. If payments due the CONTRACTOR are less than the amount of such liquidated damages, said damages shall be deducted from any other monies due or to become due the CONTRACTOR, and then the CONTRACTOR or his Surety shall pay the balance to the OWNER.

- 3.2 In addition to the above, if the Contract is not completed within the time specified and no extension of time is authorized by the OWNER, the CONTRACTOR shall indemnify the OWNER for costs to the OWNER of additional engineering work required during any such extension period.

#### **ARTICLE 4 - PAYMENT PROCEDURES**

CONTRACTOR shall submit Applications for Payment in accordance with the General Conditions and Supplemental Conditions. Applications for Payment will be processed by ENGINEER as follows:

- Payment will be made within thirty (30) days of the completion of each phase

All payments to the Contractor will be based on the payment schedule noted above.

#### **ARTICLE 5 - INTEREST**

All monies not paid when due as provided in the General Conditions shall bear interest at the maximum rate allowed by law at the place of the Project.

#### **ARTICLE 6 - CONTRACTOR'S REPRESENTATIONS**

In order to induce OWNER to enter into this Agreement CONTRACTOR makes the following representations:

- 7.1 CONTRACTOR has examined and carefully studied the Contract Documents including the Addenda and the other related data identified in the Bidding Documents including "technical data".
- 7.2 CONTRACTOR has visited the site and become familiar with and is satisfied as to the general, local and site conditions that may affect cost, progress, performance or furnishing of the Work.
- 7.3 CONTRACTOR is familiar with and is satisfied as to all federal, state and local Laws and Regulations that may affect cost, progress, performance and furnishing of the Work.
- 7.4 CONTRACTOR has obtained and carefully studied (or assumes responsibility for having done so) all such additional supplementary examinations, investigations, explorations, tests, studies and data concerning conditions (surface, subsurface and Underground Facilities) at or contiguous to the site or otherwise which may affect cost, progress, performance or furnishing of the Work or which relate to any aspect of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR and safety precautions and programs incident thereto. CONTRACTOR does not consider that any additional examinations, investigations, explorations, tests, studies or data are necessary for the performance and furnishing of the Work at the Contract Price, within the Contract Times and in accordance with the other terms and conditions of the Contract Documents.
- 7.5 CONTRACTOR has correlated the information known to CONTRACTOR, information and observations obtained from visits to the site, reports and drawings identified in the Contract Documents and all additional examinations, investigations, explorations, tests,

studies and data with the Contract Documents.

- 7.6 CONTRACTOR has given OWNER written notice of all conflicts, errors, ambiguities or discrepancies that CONTRACTOR has discovered in the Contract Documents and the written resolution thereof by OWNER is acceptable to CONTRACTOR, and the Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

## **ARTICLE 7 - CONTRACT DOCUMENTS**

The Contract Documents which comprise the entire agreement between OWNER and CONTRACTOR concerning the Work consist of the following:

- 7.1 Request for Proposal (RFP)
- Construction Services for Bridge Replacement
- Melendy Road Over First Brook (114/083)
- NHDOT Project No. 44653, X-A005(563)
- Hudson 2024
- 7.2 Town of Hudson required contract forms:
- a.) Proposal Document
  - b.) Specifications Exception Form
  - d.) Alternate Form W-9
  - d.) Indemnification Agreement
- 7.3 Notice of Award.
- 7.4 This Agreement.
- 7.5 CONTRACTOR's Proposal.
- 7.6 Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_ to \_\_\_\_, inclusive).
- 7.7 The following which may be delivered or issued after the Effective Date of the Agreement and are not attached hereto: All Written Amendments and other documents amending, modifying or supplementing the Contract Documents pursuant to the General Conditions.



## ARTICLE 8 - MISCELLANEOUS

- 8.1 Terms used in this Agreement which are defined in the General Conditions will have the meanings indicated in the General Conditions, for construction use only.
- 8.2 No assignment by a party hereto of any rights under or interests in the Contract Documents will be binding on another party hereto without written consent of the party sought to be bound; and, specifically but without limitation, monies that may become due and monies that are due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment no assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.
- 8.3 OWNER and CONTRACTOR each binds itself, its partners, successors, assigns and legal representatives to the other party hereto, its partners, successors, assigns and legal representatives in respect to all covenants, agreements and obligations contained in the Contract Documents.
- 8.4 Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon OWNER and CONTRACTOR, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

IN WITNESS WHEREOF, OWNER and CONTRACTOR have signed this Agreement in triplicate. One counterpart each has been delivered to OWNER, CONTRACTOR and ENGINEER. All portions of the Contract Documents have been signed, initialed or identified by OWNER and CONTRACTOR or identified by ENGINEER on their behalf.

This Agreement will be effective on \_\_\_\_\_, 20\_\_\_\_ (which is the Effective Date of the Agreement).

OWNER

CONTRACTOR \_\_\_\_\_

Town of Hudson, New Hampshire

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

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

Print Name \_\_\_\_\_

Print Name \_\_\_\_\_

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

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

STATE OF NEW HAMPSHIRE  
COUNTY OF \_\_\_\_\_

STATE OF \_\_\_\_\_  
COUNTY OF \_\_\_\_\_

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_, by \_\_\_\_\_, duly authorized \_\_\_\_\_ of \_\_\_\_\_, a New Hampshire corporation, on behalf of same.

The foregoing instrument was acknowledged before me this \_\_\_\_ day of \_\_\_\_\_ 20\_\_\_\_, by \_\_\_\_\_, duly authorized \_\_\_\_\_ of \_\_\_\_\_, a \_\_\_\_\_ corporation, on behalf of same.

\_\_\_\_\_  
Justice of the Peace/Notary Public

\_\_\_\_\_  
Justice of the Peace/Notary Public

Address for giving notices:

Address for giving notices:

Town of Hudson, 12 School Street,

\_\_\_\_\_

Hudson, New Hampshire

\_\_\_\_\_

(If OWNER is a public body, attach evidence of authority to sign and resolution of other documents authorizing execution of Agreement.

NH License No.: \_\_\_\_\_

Agent for service of process: \_\_\_\_\_

\_\_\_\_\_  
(If CONTRACTOR is a corporation, attach evidence of authority to sign).

# BID BOND

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

---

BIDDER (Name and Address):

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

OWNER (Name and Address):

Town of Hudson, New Hampshire  
12 School Street  
Hudson, NH 03051

BID

Bid Due Date:  
Project (Brief Description Including Location):

CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)  
NHDOT PROJECT NO. 44653, X-A005(563)

BOND

Bond Number:  
Date (Not later than Bid due date):  
Penal Sum: \_\_\_\_\_

(Words)

\_\_\_\_\_ (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms printed on the reverse side hereof, do each cause this Bid Bond to be duly executed on its behalf by its authorized officer, agent, or representative.

**BIDDER**

**SURETY**

\_\_\_\_\_  
Bidder's Name and Corporate Seal (Seal)

\_\_\_\_\_  
Surety's Name and Corporate Seal (Seal)

By: \_\_\_\_\_  
Signature and Title

By: \_\_\_\_\_  
Signature and Title  
(Attach Power of Attorney)

Attest: \_\_\_\_\_  
Signature and Title

Attest: \_\_\_\_\_  
Signature and Title

Note: Above addresses are to be used for giving required notice.

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder any difference between the total amount of Bidder's Bid and the total amount of the Bid of the next lowest, responsible Bidder who submitted a responsive Bid as determined by Owner for the work required by the Contract Documents, provided that:

1.1. If there is no such next Bidder, and Owner does not abandon the Project, then Bidder and Surety shall pay to Owner the penal sum set forth on the face of this Bond, and

1.2. In no event shall Bidder's and Surety's obligation hereunder exceed the penal sum set forth on the face of this Bond.

2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.

3. This obligation shall be null and void if:

3.1. Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or

3.2. All Bids are rejected by Owner, or

3.3. Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).

4. Payment under this Bond will be due and payable upon default by Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.

5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from Bid due date without Surety's written consent.

6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after Bid due date.

7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.

8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.

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

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

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

**PERFORMANCE BOND**

**KNOW ALL MEN BY THESE PRESENTS:** that

\_\_\_\_\_ (Name of Contractor)

\_\_\_\_\_ (Address of Contractor)

a \_\_\_\_\_, hereinafter called Principal,  
(Corporation, Partnership or Individual)

and \_\_\_\_\_  
(Name of Surety)

\_\_\_\_\_ (Address of Surety)

hereinafter called Surety, are held and firmly bound unto

\_\_\_\_\_ Town of Hudson, NH  
(Name of Owner)

\_\_\_\_\_ 12 School Street, Hudson, NH 03051  
(Address of Owner)

hereinafter called **OWNER**, in the total aggregate penal sum of \_\_\_\_\_ Dollars, \$ ( \_\_\_\_\_ )

in lawful money of the United States, for the payment of which sum well and truly to be made, we bind ourselves, our heirs, executors, administrators' successors, and assigns, jointly and severally, firmly by these presents.

**THE CONDITION OF THIS OBLIGATION** is such that whereas, the Principal entered into a certain contract with the **OWNER**, dated the \_\_\_\_\_ day of \_\_\_\_\_ 20 \_\_, a copy of which is hereto attached and made a part hereof for the construction of:

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT,  
MELENDY ROAD OVER FIRST BROOK (114/083)  
NHDOT PROJECT NO. 44653, X-A005(563)**

**NOW, THEREFORE**, if the Principal shall well, truly and faithfully perform its duties, all the undertakings, covenants, terms, conditions, and agreements of said contract during the original term thereof, and any extension thereof which may be granted by the **OWNER**, with or without notice to the Surety and during the one year guaranty period, and if the **PRINCIPAL** shall satisfy all claims and demands incurred under such contract, and shall fully indemnify and save harmless the **OWNER** from all costs and damages which it may suffer by reason of failure to do so, and shall reimburse and repay the **OWNER** all outlay and expense which the **OWNER** may incur in making good any default, then this obligation shall be void: otherwise to remain in full force and effect.

PROVIDED, FURTHER, that the said surety, for value received hereby stipulates and agrees that no change, extension of time, alteration or addition to the terms of the contract or to WORK to be performed thereunder or the specifications accompanying same shall in any way affect its obligation on this BOND, and it does hereby waive notice of any such change, extension of time alteration or addition to the terms of the contract or to the WORK or to the specifications.

PROVIDED, FURTHER, that it is expressly agreed that this BOND shall be deemed amended automatically and immediately, without formal and separate amendments hereto, upon amendment to the Contract not increasing the contract price more than 20 percent, so as to bind the PRINCIPAL and the SURETY to the full and faithful performance of the Contract as so amended. The term "Amendment", wherever used in this BOND and whether referring to this BOND, the contract or the loan Documents shall include any alteration, addition, extension or modification of any character whatsoever.

PROVIDED, FURTHER, that no final settlement between the OWNER and the CONTRACTOR shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

IN WITNESS WHEREOF, this instrument is executed in \_\_\_\_\_ counterparts, each one of  
(number)  
which shall be deemed an original, this \_\_\_\_\_ day of \_\_\_\_\_, 20 \_\_\_\_ .

**ATTEST:**

By: \_\_\_\_\_  
(Principal) Secretary

(SEAL)

\_\_\_\_\_  
Principal

**BY**

\_\_\_\_\_

\_\_\_\_\_  
(Address)

By: \_\_\_\_\_  
Witness as to Principal

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_  
(Surety)

**ATTEST:**

By \_\_\_\_\_  
Witness as to Surety

\_\_\_\_\_

\_\_\_\_\_  
(Address)

**BY**

\_\_\_\_\_  
Attorney - in - Fact

\_\_\_\_\_  
(Address)

\_\_\_\_\_

\_\_\_\_\_

NOTE: Date of BOND must not be prior to date of Contract.

If CONTRACTOR is Partnership, all partners should execute BOND

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of New Hampshire

**CERTIFICATE OF SUBSTANTIAL COMPLETION**

OWNER's Project No.: \_\_\_\_\_ ENGINEER's Project No.: \_\_\_\_\_

**CONSTRUCTION SERVICES FOR BRIDGE REPLACEMENT  
MELENDY ROAD OVER FIRST BROOK (114/083)**  
Project: \_\_\_\_\_  
**NHDOT PROJECT NO. 44653, X-A005(563)**  
\_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

Contract For: \_\_\_\_\_ Contract Date: \_\_\_\_\_

This Certificate of Substantial Completion applies to all Work under the Contract Documents or to the following specified parts thereof:

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

To: \_\_\_\_\_  
Town of Hudson  
(Owner)

And To: \_\_\_\_\_  
(Contractor)

The Work to which this Certificate applies has been inspected by authorized representatives of OWNER, CONTRACTOR and ENGINEER, and that Work is hereby declared to be substantially complete in accordance with the Contract Documents on

\_\_\_\_\_  
(Date of Substantial Completion)

A tentative list of items to be completed or corrected is attached hereto. This list may not be all-inclusive, and the failure to include an item in it does not alter the responsibility of CONTRACTOR to complete all the Work in accordance with the Contract Documents. The items in the tentative list shall be completed or \_\_\_\_\_ calendar days of the above date of Substantial Completion.

The responsibilities between OWNER and CONTRACTOR for security, operation, safety, maintenance, heat, utilities, insurance and warranties shall be as follows:

RESPONSIBILITIES:

OWNER: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_

---

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

\_\_\_\_\_

\_\_\_\_\_

---

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

Executed by ENGINEER on \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_  
(Engineer)

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

CONTRACTOR accepts this Certificate of Substantial Completion on \_\_\_\_\_, 20 \_\_\_\_\_

\_\_\_\_\_  
(Contractor)

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

OWNER accepts this Certificate of Substantial Completion on \_\_\_\_\_, 20 \_\_\_\_\_

Town of Hudson  
\_\_\_\_\_  
(Owner)

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



DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01050

COORDINATION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Contractor is required to work in close proximity to Owner's existing facilities. The Contractor, under this Contract, will be responsible for coordinating construction activities with Owner to ensure that services, facilities, and safe working conditions are maintained.
- B. Other Construction Contractors may be interfacing with this Contract and working within the work area and in the vicinity of this Contract. The Contractor, under this contract, shall act as Construction Coordinator and shall coordinate construction activities with other Contractors working for Owner.
- C. Any damage to existing structures, equipment and property, accepted equipment or structures, and property or work in progress by others; as a result of the Contractor's or their subcontractor's operations shall be made good by the Contractor at no additional cost to the Owner.
- D. The Contractor shall coordinate their schedules with all relevant utility companies. There will be no additional costs to the Owner resulting from delays to the Contractor's schedule due to the utility companies.

1.2 COORDINATION WITH OTHERS

- A. The Contractor shall be responsible for coordinating all work around Public and Private Utilities with the appropriate utility owner and shall bear the costs of inspection requirements, temporary support requirements, facilities relocation for underground services, and all other requirements other than those associated specifically with work.
  - 1. The location of public utility information depicted on the plans is approximate and may not be complete. In accordance with NH State Law, the Contractor is responsible for contacting DIGSAFE (888.344.7233 or DIAL 811) and notifying non-member utilities to have the utility locations marked in the field prior to the start of construction.
- B. Town of Hudson:
  - 1. The contractor shall be responsible for coordinating work in the vicinity of water, stormwater, and sewer lines with the Town of Hudson Engineering Department. The Contractor shall bear all costs associated with Town Requirements.

Mr. Elvis Dhima, P.E.  
Town Engineer  
Town Hall  
12 School Street  
Hudson, NH 03051  
[edhima@Hudsonnh.gov](mailto:edhima@Hudsonnh.gov)

2. Water and sewer services shall be maintained to all customers for the duration of construction except during scheduled shutdowns and during changeover of customer's service. Customer's that are changed over to a new service shall be given 48 hours advance notice prior to shutoff. For interruptions of service required for water main tie-ins, the Contractor shall not connect to any hydrant without written permission from the Town. **The Contractor is not authorized to open or close any valves. The Town of Hudson shall perform all opening and/or closing of valves.**

C. Eversource

1. The Contractor shall be responsible for coordinating and maintaining power to all residences and businesses in the project area. The Contractor shall coordinate all work in and around Eversource facilities with Eversource and shall bear all costs of inspection requirements, temporary facilities relocation, and other requirements.

Eversource  
P.O. Box 330  
Manchester, NH 03105  
603.634.3516

D. Unitil

1. The Contractor shall be responsible for coordinating and maintaining gas service to all residences and businesses in the project area. The Contractor shall coordinate all work and use extreme care when working around Unitil facilities and shall bear all costs of inspection requirements, temporary facilities relocation, and other requirements.

Unitil  
6 Liberty Lane  
West Hampton, NH 03842  
866.933.3821

E. Consolidated Communications (formerly FairPoint)

The Contractor shall be responsible for coordinating and maintaining telephone, and internet service to all residences and businesses in the project area. The Contractor shall coordinate all work in and around Consolidated Communications aerial and

underground facilities with Consolidated Communications and shall bear all costs of inspection requirements, temporary facilities relocation, and other requirements.

Consolidated Communications  
106 High Street  
Somersworth, NH 03878  
844.968.7224

F. Comcast

Comcast is a cable service provider in the Town of Hudson. The contractor is responsible for maintaining phone, internet, and cable television service to all businesses in the project area. The contractor shall coordinate all work in and around Comcast aerial and underground facilities with Comcast and shall bear all costs of inspection requirements, temporary facilities, relocation, and other requirements.

Comcast  
800.266.2278

G. Hudson Police Department

The Contractor shall coordinate access, egress, detours, and traffic control, as required, with the Hudson Police Department. The Contractor shall request approval from the Hudson Police, and subsequently notify the Town Engineer, the Fire Department, Rescue Squad and local dispatch at least 48-hour advance of any street closings or detours.

Hudson Police Department  
603.886.6011

H. Hudson Fire Department

The Contractor shall coordinate access, egress, detours, and traffic control, if required, with the Hudson Fire Department. The Contractor shall notify the Fire Department when any hydrants will be required to be shut down and the start time and stop time when hydrants will be shut down. The Contractor shall coordinate with the Fire Department if dedicated building alarm signals are encountered and should contact the Fire Department prior to digging in areas where alarm conduits may be present.

Hudson Fire Department  
603.886.6021

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01070

ABBREVIATIONS & SYMBOLS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Where any of the following abbreviations are used in these Specifications, they shall have the meaning set forth opposite each.

AASHTO	American Association of State Highway & Transportation Officials
AC	Alternating Current
ACI	American Concrete Institute
ACP	Asbestos Cement Pipe
AGA	American Gas Association
AIC	Ampere Interrupting Capacity
AGMA	American Gear Manufacturers Association
AIEE(IEEE)	American Institute of Electrical Engineers (Institute of Electrical and Electronics Engineers, Inc.)
AISC	American Institute of Steel Construction
AMP	Ampere 125-16
Amer. Std.	American Standard for Cast Iron Pipe Flanges and Flanged Fittings, Class 125 (ASA B16 11960)
ANSI	American National Standards Institute
API	American Petroleum Institute
ASA	American Standards Association
ASCE	American Society of Civil Engineers
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWG	American or Brown and Sharpe Wire Gage
AWWA	American Water Works Association
CCTV	Closed Circuit Television
CF	Cubic Foot
CFM	Cubic Foot Per Minute
CFS	Cubic Foot Per Second
CI	Cast Iron
CIPP	Cured-in-Place Pipe
CIPRA	Cast Iron Pipe Research Association
CSI	Construction Specifications Institute
CY	Cubic Yard
DC	Direct Current
DEP	Department of Environmental Protection
DI (DIP)	Ductile Iron (Pipe)
DOT	Department of Transportation
EDR	Equivalent Directional Radiation
EPA	U.S. Environmental Protection Agency
FPS	Feet Per Second

FT	Feet
GAL	Gallons
GPD	Gallons Per Day
GPM	Gallons Per Minute
HP	Horsepower
IBR	Institute of Boiler and Radiator Manufacturers
IN	Inches
ISA	Instrument Society of America
KVA	Kilovolt-ampere
KW	Kilowatt
LB	Pound
MACP	Manhole Assessment and Certification Program
MAX	Maximum
MGD	Million Gallons Per Day
MIN	Minimum
NACE	National Association of Corrosion Engineers
NASSCO	National Association of Sewer Service Companies
NBS	National Bureau of Standards
NHDOT	New Hampshire Department of Transportation
NEC	National Electrical Code, Latest Edition
NEMA	National Electrical Manufacturers Association
NEWWA	New England Water Works Association
NPT	National Pipe Thread
OS&Y	Outside Screw and Yoke
PCA	Portland Cement Association
PPM	Parts Per Million
PSI	Pounds Per Square Inch
PSIG	Pounds Per Square Inch Gage
PVC	Polyvinyl Chloride
RPM	Revolutions Per Minute
RUS	Rural Utility Service
SF	Square Foot
STL. W.G.	U.S. Steel Wire, Washburn and Moen, American Steel and Wire Cos., or Roebling Gage
SY	Square yard
TDH	Total Dynamic Head
USAS	Standards of the United States of America Standards Institute (formerly American Standards Association)
USS GAGE	United States Standard Gage
VC	Vitrified Clay
WSP	Working Steam Pressure
Fed. Spec.	Federal Specifications issued by the Federal Supply Service of the General Service Administration, Washington, D.C.

END OF SECTION

SECTION 01150MEASUREMENT AND PAYMENTPART 1 - GENERAL1.1 DESCRIPTION

- A. Lump Sum payment shall be made to the Contractor based on Specification Divisions 2 through 16 as described under Division 1, Section 01370, Section 1.4.B, Items 1 through 7. Payment shall be made to the contractor in accordance with an accepted progress schedule and schedule of values on the basis of actual work completed in-place. No allowance will be made for materials stored either on or off site.
- B. Item quantities and pricing provided with the bid will be utilized in determining the monthly work progress for billing and negotiating any future work. Payment shall be based on the actual amount of work accepted and for the actual amount of materials in-place, as shown by the final measurements.
  - 1. All Item measurements shall be in accordance with NHDOT Standard Specification for Highway and Bridge Construction, 2016 Edition as amended by this Specification.
  - 2. At the end of each work week, the Contractor's Superintendent or other authorized representative of the Contractor shall meet with the Resident Project Representative and determine the quantities of work accomplished and/or completed during the preceding week.
  - 3. The Resident Project Representative will then prepare two "Weekly Progress Reports" which shall be signed by both the Resident Project Representative and Contractor's Representative.
  - 4. Once each month the Resident Project Representative will prepare two "Monthly Progress Summation" forms from the month's accumulation of "Daily Progress Reports" which shall also be signed by both the Resident Project Representative and Contractor's Representative.
  - 5. These completed forms will provide the basis of the Engineer's monthly quantity estimate upon which payment will be made. Items not appearing on both the Weekly Progress Reports and Monthly Progress Summation will not be included for payment. Items appearing on forms not properly signed by the Contractor will not be included for payment.
  - 6. After the work is completed and before final payment is made, the Engineer will make final measurements to determine the quantities of various items of work accepted as the basis for final settlement.

1.2 REQUIREMENTS SPECIFIED ELSEWHERE

- A. Measurement and payment as described under Divisions 02 through 16 of this Specification shall be in accordance with NHDOT Standard Specification for Road and Bridge Construction, 2016 Edition as amended by this Specification.
- B. Additional Requirements are specified elsewhere including, but not necessarily limited to, General Conditions, Supplementary Conditions, and Division 1.

1.3 SCOPE OF PAYMENT

- A. Payments to the Contractor will be made for the actual quantities of the Contract items performed and accepted in accordance with the Contract Documents. Upon completion of construction, if these actual quantities show either an increase or decrease of 25% from the quantities given in the Proposal Form, the Contract Unit Prices will still prevail.
- B. The Contractor shall accept in compensation, as herein provided, in full payment for furnishing all materials, labor, tools, equipment, and incidentals necessary to the completed work and for performing all work contemplated and embraced by the Contract; also for all loss or damage arising from the nature of the Work, or from the action of the elements, or from any unforeseen difficulties which may be encountered during the prosecution of the Work and until its final acceptance by the Engineer, and for all risks of every description connected with the prosecution of the work, except as provided herein, also for all expenses incurred in consequence of the suspension of the Work as herein authorized.
- C. The payment of any partial estimate except by and under the approved final invoice, in no way shall affect the obligation of the Contractor to repair or renew any defective parts of the construction or to be responsible for all damage due to such defects.

1.4 PAYMENT FOR INCREASED OR DECREASED QUANTITIES

- A. When alterations in the quantities of work not requiring supplemental agreements, as hereinbefore provided for, are ordered and performed, the Contractor shall accept payment in full at the Contract unit prices for the actual quantities of work done. No allowance will be made for anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as stipulated in such agreements.

1.5 OMITTED ITEMS

- A. Should any items contained in the bid form be found unnecessary for the proper completion of the work contracted, the Engineer may eliminate such items from the Contract, and such action shall in no way invalidate the Contract, and no allowance will be made for items so eliminated in making final payment to the Contractor.

1.6 PARTIAL PAYMENTS

- A. Partial payments shall be made monthly as the work progresses. Partial payments shall be made subject to the provisions of the Supplemental and General Conditions. The breakdown of quantities will be determined by the Engineer.

1.7 PAYMENT FOR MATERIAL DELIVERED

- A. When requested by the Contractor and at the discretion of the Owner, payment may be made for all or part of the value of acceptable, non-perishable materials and equipment which are to be incorporated into bid items, have not been used and have been delivered to the construction site, or placed in storage places acceptable to the Owner. Payment shall be subject to the provisions of the General and Supplemental Conditions.
- B. No payment shall be made upon fuels, supplies, lumber, false work, or other materials of any kind which are not a permanent part of the Contract.

1.8 FINAL PAYMENT

A. After final measurements are made by the Engineer, the Contractor will prepare a final quantity invoice of the amount of the Work performed and the value of such Work. Owner shall make final payments of the sum found due with no retainages.

1.9 INCIDENTAL WORK

A. Incidental work items for which separate payment will not be made includes, but is not limited to, the following items:

1. Pre-Construction photographs or videos.
2. Maintaining Project Record Documents for the duration of the project (Refer to Division 1, Section 01720).
3. Preparing site for construction.
4. Locating, marking, and protecting public and private utilities.
5. Replacing damaged signs not scheduled for replacement.
6. Coordinating and cooperating with other Contractors and utility companies including related inspection costs and other costs (Refer to Section 01050).
7. Utility crossings and relocations, unless otherwise paid for.
8. Providing and maintaining temporary utility services to buildings, as required, during construction.
9. Minor Items--such as relocating signposts, guard rails, rock wall, mailboxes, curbs, traffic loop detectors, pavement markings, etc., damaged during construction and not scheduled for replacement.
10. Designing, furnishing, installing, and removing temporary excavation support, such as, trench boxes, steel and/or wood sheeting unless otherwise noted on the Drawings or Specifications.
11. Maintaining all existing sewer flows and repairing of damaged existing sewer pipes.
12. Temporary construction dewatering as necessary.
13. Dust control.
14. Quality assurance testing.
15. Final cleaning of storm drains.
16. Providing flagman services, unless otherwise noted on the Drawings or Specifications.
17. Construction schedules, bonds, insurance, shop drawings, warranties, guarantees, certifications and other submittals required by the Contract Documents.
18. Temporary construction necessary for construction sequencing and other facilities not permanently incorporated into the work, unless otherwise specified.
19. Weather protection.
20. Permits not otherwise paid for or provided by the Owner.
21. Visits to the project site or elsewhere by personnel or agents of the Contractor, including manufacturer's representatives, as may be required.
22. Contract administration and insurance.
23. Test pits to establish in place field soils density, groundwater conditions, or requirements for dewatering.
24. Test Pits for the Contractor's Benefit



25. Temporary resetting or replacement of existing street and traffic signs and temporary traffic signals where necessary.
26. Disconnecting and reconnecting traffic signal power to accommodate the work.
27. Raising and lowering of existing frames and covers of buried utilities to grade unless payment is otherwise provided for.
28. Adjusting existing frames, covers and grates horizontally to match final grades and curb faces.
29. Removing and resetting existing steps, guard rails, fences, walls and non-paved brick or paver walkways disturbed during construction, other than those identified on the Drawings to be replaced.
30. Protecting existing block and stone retaining walls unless otherwise identified to be removed, relocated or modified in the Drawings.
31. Modifying, to include coring, patching and parging of existing sewer and drainage structures to accommodate new pipes as shown on plans.
32. Removing and subsequent delivery of replaced or obsolete frames, covers, grates, hydrants curbstones and signs to a location within the City limits designated by the Owner.
33. Removing temporary pavement markings related to maintenance of traffic and repainting the original pavement markings through the project work zone.
34. Relocating, replacing and extending all underground telephone, power, cable, data, gas and all other private utility services from within the Rights of Way to the dwellings, structures or meters.
35. Flushing and final cleaning of storm drain system.
36. Clean-up and restoring property within the project area impacted by construction.
37. Restoring fences and other structures disturbed by construction.

1.10 DESCRIPTION OF PAY ITEMS

- A. Pay Items for the work shall be identified and broken down as described under Division 01, Section 01370, Section 1.4.B, Items 1 through 7.
- B. Each unit or lump-sum price stated in the Bid Form shall constitute full compensation, as herein specified, for each item of the work completed.

1.11 BASIS OF PAYMENT

Payment will be made monthly based on agreed upon completed work.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01200

PROJECT MEETINGS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: To enable orderly review during progress of the work, and to provide for systematic discussion of problems, the Engineer will conduct project meetings throughout the construction period.
- B. Related work described elsewhere: The Contractor's relations with their subcontractors and materials suppliers and discussions relative thereto, are the Contractor's responsibility and are not part of project meetings content.

1.2 QUALITY ASSURANCE

- A. Persons designated by the Contractor to attend and participate in the project meetings shall have all required authority to commit the Contractor to solutions agreed upon in the project meetings.

1.3 SUBMITTALS

- A. Agenda items: To the maximum extent practicable, advise the Engineer at least 24 hours in advance of project meetings regarding all items to be added to the agenda.
- B. Minutes: The Engineer will compile minutes of each project meeting and will furnish a copy to the Contractor. The Contractor may make and distribute such other copies as they wish.

PART 2 - PRODUCTS

(No products are required in this Section.)

PART 3 - EXECUTION

3.1 MEETING SCHEDULE

- A. Except as noted below for Preconstruction Meeting, project meetings will be held monthly. Coordinate as necessary to establish mutually acceptable schedule for meetings.

3.2 MEETING LOCATION

- A. Meetings will be held at the job site in the Engineers' field office, unless the Owner and/or Engineer determine that virtual meetings are applicable and appropriate for any reason (e.g., COVID, Safety and Health Plan, etc.).
  - 1. If meetings are required by Owner/Engineer to be held virtually, Engineer will host the meetings via Microsoft Teams. All required meeting attendees are responsible for providing hardware necessary to view, share, be heard and hear content of the meeting.

### 3.3 PRECONSTRUCTION MEETING

- A. Preconstruction meeting will be scheduled within twenty days after the Effective Date of the Agreement, but before the Contractor starts work at the site. Provide attendance by authorized representatives of the Contractor and all major subcontractors. The Engineer will advise other interested parties and request their attendance.
- B. Minimum agenda: Distribute data on, and discuss:
  - 1. Identification of key project personnel for Owner, Engineer, Contractor, funding/regulatory Agencies.
  - 2. Responsibilities of Owner, Engineer, Resident Project Representative, Contractor.
  - 3. Channels and procedures for communications.
  - 4. Construction schedule, including sequence of critical work.
  - 5. Easements, permits.
  - 6. Contract Documents, including distribution of required copies of original documents and revisions.
  - 7. Processing of Shop Drawings and other data submitted to the Engineer for review.
  - 8. Processing of field decisions and Change Orders.
  - 9. Rules and regulations governing performance of the Work, including funding/regulatory Agency requirements.
  - 10. Procedures for safety and first aid, security, quality control, housekeeping, and other related matters.

### 3.4 PROJECT MEETINGS

- A. Attendance: To the maximum extent practicable, assign the same person or persons to represent the Contractor at project meetings throughout progress of the Work. The Superintendent shall attend. Subcontractors, materials suppliers, and others may be invited to attend those project meetings in which their aspects of the Work are involved.
- B. Minimum agenda:
  - 1. Review, revise as necessary, and approved minutes of previous meeting.
  - 2. Review progress of the Work since last meeting, including status of submittals for approval.
  - 3. Review schedule of work to be accomplished prior to next meeting.
  - 4. Discuss monthly partial payment request.
  - 5. Review status of change order requests and Work Directive Changes.
  - 6. Identify problems which impede planned progress.
  - 7. Develop corrective measures and procedures to regain planned schedule.
  - 8. Complete other current business.

END OF SECTION

DIVISIOIN 1 – GENERAL REQUIREMENTS  
SECTION 01310

CONSTRUCTION SCHEDULES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included: Within ten (10) days after the effective date of the Agreement between Owner and Contractor submit to the Engineer an estimated progress schedule as specified herein.
- B. Form of Schedules:
1. Narrative: Completely describe the construction methods to be employed.
  2. Network Analysis System:
    - a. Provide a separate horizontal schedule line for each trade or operation and show concurrent and preceding activities.
    - b. Present in chronological order the beginning of each trade or operation showing duration and float time.
    - c. Scale: Identify key dates and allow space for updating and revision.
  3. Mathematical Analysis:
    - a. A mathematical analysis shall accompany the network diagram. A computer printout will be acceptable.
    - b. Information shall be included on activity numbers, duration, early start, late start, etc. and float times.
- C. Content of Schedules:
1. Provide complete sequence of construction by activity:
    - a. Shop Drawings, Project Data and Samples:
      - i. Submittal dates.
      - ii. Dates reviewed copies will be required.
    - b. Decision dates for:
      - i. Products specified by allowances.
      - ii. Selection of finishes.
    - c. Estimated product procurement and delivery dates.
    - d. Dates for beginning and completion of each element of construction.
  2. Identify work of separate phases and logically grouped activities.
  3. Show the projected percentage of completion for each item of work as of the first day of each month.
  4. Provide separate sub-schedules, if requested by the Engineer, showing submittals, review times, procurement schedules, and delivery dates.
- D. Updating:
1. Show all work activities including those already complete.
  2. Show all changes occurring since previous submission.
  3. Indicate progress of each activity, show completion dates.
  4. Include:
    - a. Major changes in scope.
    - b. Activities modified since previous updating.

- c. Revised projections due to changes.
- d. Other identifiable changes.
- 5. Provide narrative report, including:
  - a. Discussion of problem areas, including current and anticipated delay factors.
  - b. Corrective action taken or proposed.
  - c. Description of revisions that may affect schedules.
  - d. Description of activities to be performed in the next 6-week period.
  - e. Updated list of key shop drawings, project data and samples to be submitted in the next 6-week period.

1.2 SUBMITTALS

- A. Submit updated schedules with each progress payment request.
- B. Submit 4 copies of initial and updated schedules to the Engineer.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01320

SAFETY AND HEALTH PLAN

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. The Contractor shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the work, as outlined herein and in the General and Special Conditions of the Contract Documents. Within 10 days after the effective date of the Agreement between Owner and Contractor, submit to the Engineer a Safety and Health Plan as specified herein. Refer to submittals section below.
2. Contractor shall comply with all applicable Laws and Regulations related to the safety of persons or property, or for the protection of persons or property from damage, injury, illness, or loss; and shall erect and maintain all necessary safeguards for such safety and protection.
3. Contractor shall designate a qualified and experienced safety representative (OSHA defined "Competent Person") at the site whose duties and responsibilities shall be the prevention of accidents and maintaining and supervising of safety precautions and programs, including a "Job Hazards Analysis".
4. The Contractor shall be solely responsible to provide all labor, equipment, and utilities sufficient to ensure no construction noise, particulates, or odors, are allowed to accumulate to levels which adversely affect health or work in, or near the construction area.

B. Content of Safety and Health Plan:

1. Prepare complete safety and health plan in accordance with the requirements of CFR Title 29 Part 1926 - Safety and Health Regulations for Construction.
  - a. Provide documentation that Contractor's hazardous communication program is up to date.
  - b. Provide documentation that Contractor's safety training is up to date.
  - c. Prepare a project specific Safety and Health Plan addressing construction safety and protection, including but not limited to excavations, fall protection and egress, as well as provisions for construction in hazardous environmental conditions, if required, for the work site.

C. Updating:

1. Contractor shall be responsible for updating the Safety and Health Plan as appropriate throughout the course of the construction period.

1.2 SUBMITTALS

- A. The Contractor shall submit four (4) copies of the initial and all updated Contractor's site-specific Safety and Health Plan to the Engineer, in accordance with Section 01340.

- B. The Safety and Health Plan is provided “for information only” to inform the Owner, Engineer and Resident Project Representative of the project specific safety program requirements; however, if the Safety and Health Plan is found to be incomplete (e.g., missing elements relevant to the project work), inadequate (e.g., outdated qualifications) or not project-specific, it will be returned “revise and resubmit”. Delays related to an incomplete Safety and Health Plan are the responsibility of the Contractor.
- C. The Contractor will overview the plan with the Owner (and staff), Engineer (and Resident Project Representative) prior to work beginning at the project site, and subsequently when/if the safety plan is updated.
- D. A hard copy of the Contractor's most current Safety and Health Plan shall be available at the construction site throughout the construction project.

1.3 ON-SITE COORDINATION MEETINGS

- A. Contractor shall review key aspects of Safety and Health Plan at the Pre-Construction Meeting, and subsequent on-site safety informational meeting.
- B. Contractor shall report to Engineer and Owner at each progress meeting concerning compliance with the Safety and Health Plan for the most recent construction period and new considerations and requirements for the upcoming period.
- C. Contractor shall hold weekly on-site coordination meetings with Resident Project Representative and Owner to ensure that Owner's staff is aware of key Safety and Health Plan requirements of the current phase of construction.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTSSECTION 01340SUBMITTALSPART 1 - GENERAL1.1 DESCRIPTION

- A. Work Included:
  - 1. Submit all shop drawings, operations and maintenance manuals, Manufacturer's certificates, project data, and samples required by the Specifications.
- B. Related Work Specified Elsewhere:
  - 1. Construction Schedules: Division 1, Section 01310
  - 2. Project Record Documents: Division 1, Section 01720
  - 3. General Conditions: Division 0, Section 00700.
- C. Submittals: This project shall utilize:
  - 1. Submittals – Electronic via Email/FTP
    - a. The Contractor shall submit to the Engineer an electronic submittal of shop drawings in portable document format (PDF) transmitted via email or file transfer protocol (FTP). The Engineer shall return an electronic PDF of the submittal review comments to the Contractor for distribution to subcontractors, suppliers and manufacturers. The electronic submittals shall serve as the electronic record of the project. Hard copy submittals are not permitted without prior authorization from the Engineer.

1.2 SUBMISSION REQUIREMENTS

- A. Accompany submittals with a transmittal cover sheet, containing:
  - 1. Date.
  - 2. Project title and number.
  - 3. Contractor's name and address.
  - 4. The sequential shop drawing number for each shop drawing, project data and sample submitted shall be:
    - a. Specification Section number followed by a dash and then a sequential number beginning with 01 (e.g., 16000-01).
    - b. Under limited situations when additional different pieces of equipment are submitted under the same specification section, those submittals shall be numbered sequentially (e.g. 05500-01, 05500-02, 05500-03, etc.).
    - c. Resubmittals shall include an alphabetic suffix after the corresponding sequential number (e.g., 16000-01A).
  - 5. Notification of deviations from Contract Documents.
  - 6. Other pertinent data.
- B. A completed Contractor Submittal Certification Form shall be attached to each electronic PDF of each shop drawing and must include:
  - 1. Project name
  - 2. Specification Section and sequential number with alphabet suffix for resubmittal
  - 3. Description



4. Identification of deviations from Contract Documents.
  5. Contractor's stamp, initialed or signed, certifying review of the submittal, verification of field measurements and compliance with Contract Documents.
  6. Where specified or when requested by the Engineer, manufacturer's certification that equipment, accessories and shop painting meet or exceed the Specification requirements.
  7. Where specified, manufacturer's guarantee.
- C. Additional Requirements for Electronic Submittals:
1. Each individual shop drawing or O&M submittal shall be contained in one PDF.
  2. The first page of the PDF shall be the Contractor Submittal Certification Form as described above.
  3. The electronic PDF shall include an electronic table of contents that is bookmarked for each section of the submittal.
  4. The electronic PDF shall be configured such that is fully searchable.
  5. PDF versions of 24x36 drawings shall be converted to 24 x 36 PDFs so as not to lose the clarity of the original drawing.
  6. Electronic PDF submittals that are not submitted in accordance with the requirements stated above will not be reviewed by the Engineer.
  7. Electronic submittals shall be transmitted via the protocol established in Part 1 above.

### 1.3 RESUBMISSION REQUIREMENTS

- A. Revise initial submittals as required and resubmit as specified for initial submittal.
- B. Indicate on submittals any changes which have been made other than those required by Engineer. All renumbering of shop drawings, relabeling of individual pieces or assemblies or relocating of pieces or assemblies to other Drawings within the submittal shall be clearly brought to the attention of the Engineer. If relabeling of individual pieces or assemblies has taken place, the labels from the previous submittal shall be indicated to assist in comparing the original and resubmitted shop drawing.

### 1.4 ENGINEER'S REVIEW

- A. The review of shop and working drawings hereunder will be general only, and nothing contained in this specification shall relieve, diminish or alter in any respect the responsibilities of the Contractor under the Contract Documents and in particular, the specific responsibility of the Contractor for details of design and dimensions necessary for proper fitting and construction of the work as required by the Contract and for achieving the result and performance specified thereunder.
- B. The Engineer's review comments will be summarized on a Submittal Review Form, which includes an action code. A description of each action code is provided below.
  1. No Exceptions Taken (Status 0 on shop drawing log). The shop drawing complies with the Contract Document requirements. No changes or further information are required. Where appropriate, the submittal review form will be used to alert the Contractor, Owner and Field personnel of remaining items within that specification section that still needs to be submitted.
  2. Make Corrections Indicated (Status 1 on shop drawing log). The shop drawing complies with the Contract Document requirements except for minor changes, as indicated. Engineer requires that all comments will be addressed by the

- Contractor, unless otherwise notified in writing prior to execution of the relevant work.
3. Conditional to Remarks (Status 2 on shop drawing log). The shop drawing potentially complies with the Contract Document requirements, contingent upon satisfactory resolution of review comments. Remarks will explicitly list what information needs to be resubmitted. Resubmittal from the Contractor should include a cover letter or summary which indicates how each review comment has been addressed. **This action code will not be used, or will be sparingly used, for electronic submittals.**
  4. Revise and Resubmit (Status 3 on shop drawing log). The shop drawing does not comply with the Contract Document requirement as submitted, but may with changes indicated and/or submission of additional information. The entire package must be resubmitted with the necessary information and a cover letter which indicates how each review comment has been addressed and where to find the information in the resubmittal.
  5. Rejected (Status 4 on shop drawing log). The shop drawing does not comply with the Contract Document requirements, for the reasons indicated in the remarks, and is unacceptable.
  6. For Information Only (Status 5 on shop drawing log). The shop drawing review was for information only.
  7. In Review (Status 6 on shop drawing log). The shop drawing is currently under review.

CONTRACTOR SUBMITTAL CERTIFICATION FORM

PROJECT: \_\_\_\_\_ CONTRACTOR'S PROJ. NO: \_\_\_\_\_

CONTRACTOR: \_\_\_\_\_ ENGINEER'S PROJ. NO: \_\_\_\_\_

ENGINEER: \_\_\_\_\_

SHOP DRAWING NUMBER:	SPECIFICATION SECTION OR DRAWING NO:	SEQUENTIAL NUMBER (& ALPHA SUFFIX FOR RESUBMITTAL)
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DESCRIPTION: \_\_\_\_\_

MANUFACTURER: \_\_\_\_\_

The above referenced submittal has been reviewed by the undersigned and I/we certify that the material and/or equipment meets or exceeds the project specification requirements with

- NO DEVIATIONS  
or
- A COMPLETE LIST OF DEVIATIONS AS FOLLOWS<sup>a</sup>:

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By: \_\_\_\_\_ By: \_\_\_\_\_  
Contractor<sup>b</sup>

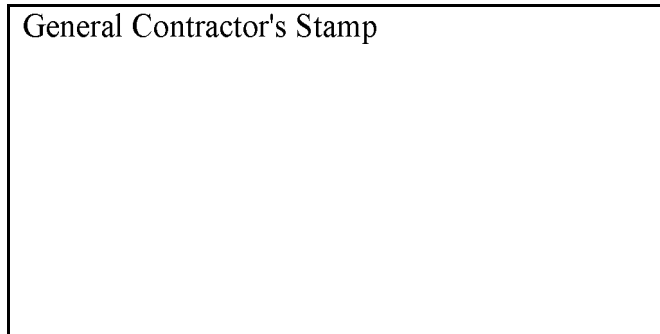
Manufacturer<sup>c</sup>

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

a Any deviations not brought to the attention of the Engineer for review and concurrence shall be the responsibility of the Contractor to correct, if so directed.

b Required on all submittals

c When required by specifications Page \_\_\_ of \_\_\_



DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01370

SCHEDULE OF VALUES

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Provide a detailed breakdown of the Contract Sum showing values allocated to each of the various parts of the Work, as specified herein and in other provisions of the Contract Documents.

1.2 REQUIREMENTS SPECIFIED ELSEWHERE

- A. Additional Requirements are specified elsewhere including, but not necessarily limited to, General Conditions, Supplementary Conditions, and Division 1.

1.3 QUALITY ASSURANCE

- A. Use required means to assure arithmetical accuracy of the sums described.
- B. When so required by the Engineer, provide copies of the subcontracts or other data acceptable to the Engineer substantiating the sums described.

1.4 SUBMITTALS

- A. The proposed schedule of values (hereinafter referred to as “SOV”), meeting the requirements outlined below, shall be submitted to the Engineer for review. The SOV shall be used as the basis for reviewing and approving payment requisitions along with determining percentages of work completed. No payment requisitions will be processed until the Engineer has taken no exceptions to the schedule of values.
- B. The SOV shall consist of a detailed breakdown of all the work within the Contract Documents, as specified herein, and shall include a sufficient number of work items to serve as an accurate basis the General Contractor’s Application for Payment. Each work item shall include its prorated share of overhead and profit and subcontractor markup. The breakdown shall provide the level of detail outlined below.
1. **DIVISION 02 – EARTHWORK:**
    - a. Includes all work indicated in the contract documents identified under Division 02 of this Specification.
    - b. Provide breakdown by NHDOT Item Number, estimated total quantity and completed quantity as indicated in the Specification and on the Contract Drawings.
  2. **DIVISION 03 – BASE COURSES:**
    - a. Includes all work indicated in the contract documents identified under Division 03 of this Specification.
    - b. Provide breakdown by NHDOT Item Number, estimated total quantity and completed quantity as indicated in the Specification and on the Contract Drawings.

3. DIVISION 04 – PAVEMENTS:
  - a. Includes all work indicated in the contract documents identified under Division 04 of this Specification.
  - b. Provide breakdown by NHDOT Item Number, estimated total quantity and completed quantity as indicated in the Specification and on the Contract Drawings.
4. DIVISION 05 – STRUCTURES:
  - a. Includes all work indicated in the contract documents identified under Division 05 of this Specification.
  - b. Provide breakdown by NHDOT Item Number, estimated total quantity and completed quantity as indicated in the Specification and on the Contract Drawings.
5. DIVISION 06 – INCIDENTAL CONSTRUCTION:
  - a. Includes all work indicated in the contract documents identified under Division 06 of this Specification.
  - b. Provide breakdown by NHDOT Item Number, estimated total quantity and completed quantity as indicated in the Specification and on the Contract Drawings.
6. BID ALTERNATE 1
  - a. Not used
7. Line items shall be broken down into work performed by the General Contractor or a Subcontractor
8. Provide an aggregate percentage completed calculation for each major subcontractor (e.g., site, HVAC, ATC, systems integrator, plumber, electrician, etc.).
9. If a work item, or series of work items, are separated into construction phases which will require phased payments, the SOV shall have separate line item values for each phase.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01380

CONSTRUCTION PHOTOGRAPHS

PART 1 - GENERAL

1.1 DESCRIPTION

A. Work Included:

1. Pre-Construction Record: Contractor shall take digital photographs and video to obtain a visual record of the project area prior to beginning any work at the project site.
2. Provide a description for each photograph or video and an index by street and house number for easy reference.
3. Notify Engineer at least three (3) working days prior to photographing or videoing the project area so Engineer may, at their option, observe.

1.2 QUALITY

- A. Pre-Construction Record: Quality shall be such that the condition of existing pavement, curbing, driveway entrances, sidewalks, walls, doors, equipment, piping, etc. can be readily determined.

1.3 SUBMITTAL OF PRINTS

A. Pre-Construction Record:

1. Submit pre-construction photographs/videos in accordance with Section 01340 prior to initiating any work on-site.
- B. The quality of the photos and video are subject to approval by the Engineer.
- C. Photographs and videos taken for the project and submitted are released to the Owner and Engineer for reproduction and use for records retention, governmental and commercial purposes.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01400

QUALITY CONTROL

PART 1 - GENERAL

1.1 REQUIREMENTS INCLUDED

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certificates.
- E. Manufacturer's Field Services.
- F. Testing Laboratory Services.

1.2 RELATED REQUIREMENTS

- A. Division 0, Section 00700 - General Conditions: Inspection and testing required by governing authorities.
- B. Division 0, Section 01340 - Submittals
- C. Division 2 - Earthwork
- D. Division 3, Base Courses
- E. Division 5, Structures

1.3 QUALITY CONTROL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.4 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.5 MANUFACTURERS' INSTRUCTIONS

- A. Comply with instructions in full detail, including each step in sequence. Should instructions conflict with Contract Documents, request clarification from Engineer before proceeding.

1.6 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specifications Section, submit manufacturer's certificate that products meet or exceed specified requirements.

1.7 MANUFACTURERS' FIELD SERVICES

- A. When specified in respective Specification Sections, require supplier and/or manufacturer to provide qualified personnel to observe field conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust

- and balance of equipment as applicable, and to make appropriate recommendations.
- B. Representative shall submit written report to Engineer listing observations and recommendations.

1.8 TESTING LABORATORY SERVICES

- A. Contractor will employ and pay for services of an Independent Testing Laboratory to perform inspections, tests, and other services wherever an Independent Testing Laboratory is required by individual specification sections listed in paragraph 1.2 above, unless otherwise indicated. Contractor will be reimbursed for testing services as outlined below.
- B. Services will be performed in accordance with requirements of governing authorities and with specified standards.
- C. Reports will present observations and test results and indicate compliance or non-compliance with specified standards and with Contract Documents. Independent Testing Laboratory will submit one copy of each report directly to each of the following: Engineer, Resident Project Representative, Contractor. Reports will be submitted within 5 days of obtaining test results. If test results indicate deficiencies, Independent Testing Laboratory shall telephone or email results to Engineer, Resident Project Representative and Contractor within 24 hours.
- D. Contractor shall cooperate with Independent Testing Laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
- E. Contractor shall coordinate/schedule all testing work with Independent Testing Laboratory and notify Engineer at least 48 hours prior to performing work requiring testing services. If adequate notice is not provided, Contractor shall suspend work on that portion of the Project until testing can be performed. Such suspension will **not** be grounds for a claim against the Owner for delay, **nor** will it be an acceptable basis for an extension of time.
- F. Payment for Independent Testing Laboratory services shall be as follows:
1. General: Where testing is the Contractor's responsibility, payment will be made as stated below unless other requirements are given in Specification Sections. Testing which is the responsibility of the Contractor will be considered an incidental item unless otherwise indicated in Section 01150, Measurement and Payment.
  2. Initial Testing: Owner will reimburse the Contractor for the cost of the initial testing. No markup is allowed.
  3. Retesting: The Contractor **will not** be reimbursed for costs associated with retesting due to non-compliance of original work and/or failed test results.
  4. Cancellations: If scheduled tests or sampling cannot be performed because the work is not ready as scheduled, testing costs associated with the delay are the responsibility of the Contractor and will not be reimbursed by the Owner. Testing costs due to cancellation by the Owner will be reimbursed to the Contractor.
  5. Contractor's Convenience Testing: Inspections and tests performed for Contractor's convenience will be paid for by Contractor and **will not** be reimbursed by the Owner.



PART 2 - PRODUCTS  
Not Used

PART 3 - EXECUTION  
Not Used

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01562

DUST CONTROL

PART 1 - GENERAL

1.1 DESCRIPTIONS

A. Work Included:

1. Furnish and apply water or calcium chloride on the road surfaces within the construction site, when required to control dust and when directed by the Engineer.
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.

1.2 REQUIREMENTS SPECIFIED ELSEWHERE

- A. Additional Requirements are specified elsewhere including, but not necessarily limited to, General Conditions, Supplementary Conditions, and Division 1.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Water for Sprinkling:  
B. Clean, free of salt, oil, and other injurious matter.  
C. Calcium Chloride:  
1. Meet the requirements of AASHTO M144.

PART 3 - EXECUTION

3.1 APPLICATION

A. Water:

1. Apply water by methods approved by the Engineer.
2. Use approved equipment including a tank with gauge equipped pump and spray bar.

B. Calcium Chloride:

1. Apply at a rate sufficient to maintain a damp surface but low enough to assure non-contamination of water courses.
2. Apply water prior to calcium chloride addition.

END OF SECTION

DIVISION 1 – GENERAL REQUIREMENTS  
SECTION 01720

PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Work Included:
  - 1. Keep accurate record documents for all additions, demolition, changes of material or equipment (from that shown on the Drawings), variations in work, and any other additions or revisions to the Contract (via Change Order, Work Change Directive, Field Order or Clarification).
- B. Related Work Specified Elsewhere:
  - 1. Shop Drawings, Project Data, and Samples are specified in "General Conditions" and Section 01340, Submittals.
  - 2. Electrical System Record Drawing requirements are outlined in Section 16010.

1.2 MAINTENANCE OF DOCUMENTS

- A. Maintain at job site, one copy of:
  - 1. Contract Drawings
  - 2. Specifications
  - 3. Addenda
  - 4. Reviewed Shop Drawings
  - 5. Change Orders
  - 6. Any other modifications to the Contract
  - 7. Field Test Reports
- B. Store documents in files and racks specifically identified for Record Drawing use, that are apart from documents used for construction.
- C. File documents in a logical manner indexed for easy reference.
- D. Maintain documents in clean, dry, legible condition.
- E. Do not use record documents for construction purposes.
- F. Make documents available at all times for inspection by the Engineer and Owner, and by the end of the project, transmit these documents to the Engineer.

1.3 RECORDING

- A. Label each document "PROJECT RECORD" in large high printed letters.
- B. Keep record documents current and do not permanently conceal any work until required information has been recorded.
- C. General Field Recording Issues:
  - 1. All swing ties shall be taken from existing, permanent features such as utility poles, corners of buildings and hydrants. Porches, sheds or other house additions shall be avoided as they could be torn down. A minimum of two swing ties shall be taken. Survey grade GPS coordinates are also acceptable.
  - 2. Stations shall be recorded to the nearest foot.
  - 3. Inverts shall be recorded to the nearest hundredth of a foot.

4. Elevations shall be recorded to the nearest hundredth of a foot.
  5. Building dimensions shall be recorded to the nearest 1/4".
  6. Equipment and Piping shall be recorded to the nearest tenth of a foot, and the overall dimensions and layout of the equipment shall be adjusted to reflect the equipment provided.
- D. Project Record Drawings - Legibly mark Contract Drawings to record existing utilities and actual construction of all work, including but not limited to the following (where applicable):
1. Existing Utilities
    - a. Water mains and services, water main gate valves, sewer mains and services, storm drains, culverts, steam lines, gas lines, tanks and other existing utilities encountered during construction must be accurately located and shown on the Drawings. In congested areas supplemental drawings or enlargements may be required.
    - b. Show any existing utilities encountered in plan and profile and properly labeled showing size, material and type of utility. Ties shall be shown on plan. Utility shall be drawn to scale in section (horizontally and vertically) and an elevation shall be called out to the nearest hundredth of a foot.
    - c. When existing utility lines are broken and repaired, ties shall be taken to these locations.
    - d. If existing water lines are replaced or relocated, document the area involved and pipe materials, size, etc. in a note, and with ties.
  2. Manholes, Catch Basins, Valve Pits and other structures.
    - a. Renumber structure stationing to reflect changes.
    - b. Show ties to center of structure covers or hatches.
    - c. In general, show inverts at center of structures. However, for manholes with drop structures, or steep channels (greater than 0.2' change on slope), show inverts at face of manhole.
    - d. Show inverts for other structures at the face of the structure.
    - e. Draw any new structures that are added on plan and profile.
    - f. Show any field or office redesigns.
    - g. Redraw plan if the structure's location is moved more than 5 feet in any direction. Note: It is important to show existing utilities, as outlined in Paragraph 1 above, especially if they were one reason for relocating the sewer, manholes and other structures.
    - h. Redraw profile if inverts changed by more than 6 inches.
  3. Gravity Sewer Line
    - a. Change sewer line slopes indicated on Drawings if inverts are changed.
    - b. Draw any new gravity lines that are added on plan and profile.
    - c. Show any field or office redesigns.
    - d. Redraw the sewer line profile if manhole inverts are redrawn.
    - e. Redraw the sewer line on plan corresponding to relocated manholes.
  4. Water Mains and Force Mains
    - a. Show ties to the location of all valves, bends (horizontal and vertical), tees and other fittings. The use of thrust blocks shall be recorded.
    - b. Revise elevations indicated on the Drawings to reflect actual construction.

5. House Services
  - a. Draw all house services (even to empty lots) on plan, and show ties.
  - b. Show ties or distances to wyes from manhole.
  - c. Show chimneys heights in the profile.
  - d. The Wright-Pierce "Sanitary Sewer Service Location" forms and "Water Service Location" forms shall be used to record sewer and water service information. A copy of these forms shall be provided to the Owner, along with the Record Drawing Set.
6. Septic Tanks
  - a. Show ties to center of tank covers.
  - b. Label size of septic tanks that are other than standard 1,000-gallon capacity.
  - c. The Wright-Pierce "Sanitary Sewer Service Location" forms shall be used to record septic tank information. A copy of these forms shall be provided to the Owner, along with the Record Drawing Set.
7. Ledge
  - a. Ledge profiles shall be shown. Note whether the plotted ledge profile reflects undisturbed or expanded conditions.
8. Yard Piping and Buried Electrical Conduit
  - a. Site piping and utilities shall be drawn to reflect the installed locations, with ties and elevation of all bends (horizontal and vertical).
  - b. Show routing for electrical conduits and pull boxes, especially in close proximity to buildings and when the conduits change direction or cross process piping.
9. Roads
  - a. Show centerline road profile and level spot elevations.
  - b. Show pavement widths.
  - c. On road cross sections, show the pavement cross slope.
  - d. Show any deviations from the design plans.
10. Buildings
  - a. In general, small changes to structures shall not be redrawn. If any dimensional changes were made in the field, the numerical change shall be made on the Drawing and be properly labeled. Update dimensions and elevations on Drawings.
  - b. Show finished concrete elevations (top of slab, top of wall, top of footing, etc.). Redraw any foundation, frost wall, etc. that was modified, deepened, or altered during construction.
  - c. Adjust finished concrete horizontal dimensions that are shown on the Drawings.
  - d. Adjust structural steel elevations and horizontal dimensions that are shown on the Drawings.
  - e. Show location of anchors, construction and control joints, and waterstops, when they are different from those shown on Drawings.
  - f. Any additions or major changes shall be shown in both plan and elevation (i.e. relocated doors, opposite door swings, change in wall location, relocation of floor drains).

- g. Show approximate location and routing of electrical conduits in walls, slabs and ceilings. Most conduits are run in groups, therefore, use range of measurements to define location for entire section of conduits.
  - h. Special circuits for computers, alarms and instrumentation shall be shown.
  - i. Show any changes in location and elevation of ductwork and devices, fuel piping and equipment, and heat piping and equipment.
  - j. Location of gravity sewer system below slabs in buildings shall be shown, if changes are made in the configuration.
  - k. If wall mounted electrical switches, control boxes, thermostats, etc. have been relocated significantly, (other side of door, or to a wall other than indicated diagrammatically on electrical plans) make the revision accordingly.
11. Utilities
- a. When encountered, additional utilities (e.g., gas, cable, telephone, fiber optic, etc.) shall be indicated on the Record Drawings.
12. Equipment Systems and Piping
- a. Show any changes to equipment systems, whether interior or exterior, for process, HVAC, plumbing, instrumentation or electrical. If any dimensional changes were made in the field, the numerical change shall be made on the Drawing and be properly labeled. Update dimensions and elevations on Drawings. Record Drawings must reflect any equipment configuration and layout changes differing from that shown on the Drawings.
  - b. Show any changes to piping systems, whether interior or exterior, for process, HVAC, plumbing and instrumentation. If any dimensional changes were made in the field, the numerical change shall be made on the Drawing and be properly labeled. Update dimensions and elevations on Drawings.
- E. Specifications and Addenda - Legibly mark up each section to record:
- 1. Manufacturer, trade name, catalog number, and supplier of each product and item of equipment actually installed.
  - 2. Changes made by Change Order, Field Order, or other method.

#### 1.4 SUBMITTALS

- A. At the completion of the project, deliver record documents to the Engineer.
- 1. Record drawings shall be provided as a bound paper set of computer-generated drawings, an electronic file (pdf format) of the bound paper set, and electronic files in AutoCAD format. Ownership of the drawings and files shall pass to the Owner at the time of submittal.
  - 2. Record drawings shall be provided as electronic files in ESRI GIS format. Ownership of the drawings and files shall pass to the Owner at the time of submittal.
- B. Accompany submittal with transmittal letter, in duplicate, containing:
- 1. Date, project title and number.
  - 2. Contractor's name and address.
  - 3. Title and number of each record document with certification that each document is completed and accurate.

4. Signature of Contractor, or their authorized representative.
- C. Failure to supply all information on the Project Record Drawings as specified in Part 1.3 may result in withholding final completion and in non-approval of final payments of the Contract. If Contract Time has elapsed, this shall be grounds for imposing liquidated damages.

### 1.5 QUALITY ASSURANCE

- A. All horizontal and vertical dimensions, swing-ties, and elevations shall be accurate to within one-tenth of a foot, unless greater accuracy is specified elsewhere in the Specifications (e.g., concrete elevations, weir elevations, etc.).

## PART 2 - PRODUCTS – NOT APPLICABLE

## PART 3 - EXECUTION

### 3.1 MAINTAINING AND PROVIDING RECORDS

- A. Records shall be kept current as the work progresses.
- B. Records shall be made available for review by the Owner, Engineer, Resident Project Representative and/or Funding Agency(s) upon request.
- C. Records shall be kept current as the work progresses. Failure to provide records shall be grounds for withholding of final payment and, if beyond contract time, shall be grounds for imposing liquidated damages.

### 3.2 AS-BUILT SURVEY PERFORMANCE

- A. From established survey control, and construction baseline as shown on the drawings, conduct surveys of the project area during construction as needed to obtain information of buried and above ground items. Surveys shall include information outlined in Section 1.3.
- B. Actual road alignments; walls; fence and guardrail; existing, new and relocated utility poles; traffic and warning sign locations; crosswalks, parking space and stop bar locations; retaining walls and foundations drains; all underground and overhead utility poles and lines within the project limits, including those installed on private property; all other new features and appurtenances and those existing features and appurtenances changed as a result of this project shall be included in the survey.

### 3.3 FORMAT FOR ELECTRONIC DELIVERABLES

- A. AutoCAD digital survey data for the as-built survey shall include:
  1. Copy of field notes and sketches of the survey.
  2. Paper copy of description of layers.
  3. Paper copy of base map.
  4. Provide digital information on compact disk with paper copy printout; information shall be provided in .DWG format (AutoCAD 2011 or earlier). Data shall be provided in 3D format (northing, easting, elevation, or Y, X, Z).
  5. Drawing scale: Minimum one inch = twenty feet.
  6. Layering:
    - a. Repetitive symbols made into blocks and defined on layer 0.
    - b. All entities shall be drawn “by layer” as opposed to individual properties.

- c. Use one linetype and one color per layer as opposed to numerous colors/linetypes on a single layer.
  - d. Preface each layer with the initials of the Survey company or Contractor (example, Survey Company: SC “layername”).
  - e. Database text annotation will be coordinated so the text will be right-reading.
  - f. Place text on separate layers.
- B. ESRI GIS digital survey data for the as-built survey shall include:
- 1. All lines and points shall be accompanied by the attributes listed in Tables 1, 2, and 3 with consistent formatting and punctuation (e.g. 6, 8, 12, not 6”, 8, 10”, 12), and shall be provided in an ESRI geodatabase that may be easily imported by the Owner into their GIS System.





SANITARY SEWER SERVICE LOCATION

Project:	_____	Date:	_____
Date Installed:	_____	Town, City of:	_____
Type, Size of Service Pipe	_____	Street	_____
Connection at Sewer Main	_____	Dwelling No.	_____
Depth, End of Service	_____	Occupant	_____
Length of Service Pipe	_____	Owner	_____
Laid	_____		_____
Measured, Located By	_____	House No.	_____
Project Contractor	_____	Complete	_____
		Incomplete	_____

N.T.S.

Comments: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Observed By:

_____	_____
Contractor	(Date)
_____	_____
Wright-Pierce	(Date)

WATER SERVICE LOCATION

Project:	_____	Date:	_____
Date Installed:	_____	Town, City of:	_____
Type, Size of Service Pipe	_____	Street	_____
Connection at Water Main (STA)	_____	Occupant	_____
Depth to Cap	_____	Owner	_____
Elevation of Cap	_____	House No.	_____
Length of Service Pipe Laid	_____	Complete	_____
Measured, Located By	_____	Incomplete	_____
Project Contractor	_____		

N.T.S.

Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Observed By:

_____	_____
Contractor	(Date)
_____	_____
Wright-Pierce	(Date)

Location of Stub  
 approved

\_\_\_\_\_ (Owner)

**Table 1**  
Sewer - GIS Attribute Table

<b>Field</b>	<b>Description</b>
<b>Casing</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
MATERIAL	Material the casing is manufactured with
RECORDLENG	Recorded length of the casing
CASEINVUP	Invert elevation of the casing (upstream)
CASEINVDOWN	Invert elevation of the casing (downstream)
<b>Clean - Out</b>	
FACILITYID	Locally assigned Facility Identifier = "CO"
ACCESSMAT	Access material for lid or cover
CORIM	Rim elevation of the clean out
COINV	Invert elevation of the clean out
INTDEPTH	Interior Depth
INSTALLDATE	The date the asset was installed
DEVICETYPE	The type of cleanout
ACCESSDIAM	Access diameter for the clean out
<b>Gravity Main</b>	
FACILITYID	Locally assigned Facility Identifier - US/DS
INSTALLDATE	The date the asset was installed
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the asset
MAINSHAPE	The shape of the gravity main
FROMMH	From Manhole
TOMH	The downstream manhole
WATERTYPE	Indicates the type of water in the pipe = "Sewer"
DOWNELEV	The downstream pipe elevation
UPELEV	The upstream pipe elevation
SLOPE	The slope of the pipe from outside face of structure
CALCPIPELENGTH	The pipe length used to calculate slope
<b>Lateral Lines (separated &amp; combined)</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the asset
WATERTYPE	Indicates the type of water in the pipe = "Sewer"

**Table 1**  
Sewer - GIS Attribute Table

<b>Field</b>	<b>Description</b>
<b>Lateral Line Points</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the asset
WATERTYPE	Indicates the type of water in the pipe = "Sewer"
ELEV	Elevation at the top of the asset
<b>Sewer Manholes</b>	
FACILITYID	Locally assigned Facility Identifier
INSTALLDATE	The date the asset was installed
HIGHELEV	High pipe elevation inside manhole - for drop
DEPTH	The depth of the manhole
INVERTELEV1	Invert elevation 1
INVERTELEV2	Invert elevation 2
INVERTELEV3	Invert elevation 3
RIMELEV	The elevation of the manhole rim
CVTYPE	The type of sewer manhole cover
WALLMAT	The manhole wall material = Brick, Block, or Concrete
MHTYPE	The type of manhole - Size and Shape
CONDITION	The condition of the asset = Excellent
GPSDATE	Date the feature was located with GPS
WATERTYPE	Indicates the type of water in the pipe = "Sewer"

**Table 2**  
Water - GIS Attribute Table

<b>Field</b>	<b>Description</b>
<b>Abandoned Line</b>	
LINETYPE	The type of abandoned line = Water
ABANDATE	The date the asset was abandoned
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the pipe
<b>Water Casings</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
MATERIAL	Material the casing is manufactured with
RECORDLENG	Recorded length of the casing
CASEINVUP	Invert elevation of the casing (upstream)
CASEINVDOWN	Invert elevation of the casing (downstream)
<b>Control Valve (control mechanism such as blowoff or relief)</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the pipe the valve is attached to
VALVETYPE	Type of control valve
ELEV	Elevation at the top nut of valve
<b>Curb Stop Valve (control flow to lateral or service connection)</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the pipe the valve is connected to
VALVETYPE	Type of curb stop valve
NORMALLYOPEN	Flag to indicate if the device is normally open = Open
TURNSTOCLOSE	TurnsToClose = Left and # of turns
OPERABLE	Indicates if the asset can be operated = Yes
CURROPEN	Flag to indicate if the device is currently open = Open
ELEV	Elevation of top of pipe at curb stop
<b>Fitting (features that connect segments of pipes)</b>	
FACILITYID	Locally assigned Facility Identifier
INSTALLDATE	The date the asset was installed
FITTINGTYPE	The type of fitting
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
LASTUPDATE	The date the feature was last updated in the maintenance database
MAINLATERAL	Indicates whether it is a main, lateral, or hydrant lateral fitting
ELEV	Elevation at the top of fitting
<b>Hydrants</b>	
INSTALLDATE	The date the asset was installed

**Table 2**  
Water - GIS Attribute Table

<b>Field</b>	<b>Description</b>
MANUFACTURER	The manufacturer of the hydrant
OPERABLE	Indicates if the hydrant can be operated = Yes
ACTIVEFLAG	Indicates if the feature is in use/active = Active
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
ELEV	Elevation at the top of vertical bend of hydrant
<b>Lateral Lines</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the lateral is manufactured with
DIAMETER	The diameter of the lateral
WATERTYPE	Indicates the type of water in the pipe = Water
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
<b>Lateral Line Points</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the lateral is manufactured with
DIAMETER	The diameter of the lateral
WATERTYPE	Indicates the type of water in the pipe = Water
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
ELEV	Elevation at the top of the asset
<b>Water Mains</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the main is manufactured with
DIAMETER	The diameter of the main
WATERTYPE	Indicates the type of water in the pipe = Water
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
<b>Water System Valves</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
VALVETYPE	Type of system valve = Gate or Butterfly
VALVEMAN	Manufacturer of valve
BYPASSVALVE	Indicates if this is a bypass valve = Yes or No
CLOCKTOCLOSE	Indicates if the valve turn direction = Left to close
NORMALLYOPEN	Flag to indicate if the device is normally open = Open
TURNSTOCLOSE	Number of turns to close

**Table 2**  
Water - GIS Attribute Table

<b>Field</b>	<b>Description</b>
OPERABLE	Indicates if the hydrant can be operated = Yes
HYDRFLAG	Indicates if this is a hydrant valve = Yes or No
CURROPEN	Flag to indicate if the device is currently open = Open
MAINLATERAL	Indicates whether the valve is on a main, lateral, or hydrant lateral
ELEV	Elevation at the top nut of valve

**Table 3**  
Drainage - GIS Attribute Table

<b>Field</b>	<b>Description</b>
<b>Casing</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
MATERIAL	Material the casing is manufactured with
RECORDLENG	Recorded length of the casing
CASEINVUP	Invert elevation of the casing (upstream)
CASEINVDOWN	Invert elevation of the casing (downstream)
<b>Culverts</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the asset
MAINSHAPE	The shape of the culvert
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
DOWNELEV	Downstream invert elevation
UPELEV	Upstream invert elevation
SLOPE	Culvert slope
<b>Discharge Point</b>	
DISCHRGTYP	The type of stormwater discharge = Stormwater
PERMIT	Permit Name
PERMITID	Unique permit identifier
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
<b>Stormwater Gravity Main</b>	
INSTALLDATE	The date the asset was installed
MATERIAL	Material the asset is manufactured with
DIAMETER	The diameter of the asset
MAINSHAPE	The shape of the gravity main
FROMMH	The upstream structure
TOMH	The downstream structure
OWNEDBY	Indicates which organization owns the asset = City
MAINTBY	Indicates which organization maintains the asset = City
DOWNELEV	The downstream elevation where the pipe meets the structure
UPELEV	The upstream elevation where the pipe meets the structure
SLOPE	The slope of the main from outside face of structure
CALCPIPELENGTH	The pipe length used to calculate slope
<b>Inlet (typically found along side of roads or in drainage swales)</b>	



**Table 3**  
Drainage - GIS Attribute Table

<b>Field</b>	<b>Description</b>
INSTALLDATE	The date the asset was installed
INLETTYPE	The type of stormwater inlet = Pipe, Beehive, or Headwall
ACCESSDIAM	Access diameter for the inlet
INVERTELEV	Invert elevation
ACCESSMAT	Access material for lid or cover
ACCESSTYPE	Method for accessing the opening = Remove Grate
<b>Manhole and Catch Basin</b>	
FACILITYID	Locally assigned Facility Identifier
INSTALLDATE	The date the asset was installed
HIGHELEV	High pipe elevation inside manhole - for drops
INVERTELEV1	Invert elevation 1
INVERTELEV2	Invert elevation 2
INVERTELEV3	Invert elevation 3
INVERT	The depth of the structure from rim to bottom
RIMELEV	The elevation of the structure rim
CVTYPE	The type of stormwater structure cover
WALLMAT	Wall Material = Brick, Block, or Precast Concrete
MHTYPE	The type of structure = Concentric, Eccentric, or Flat Slab
CONDITION	The condition of the asset = Excellent
GPSDATE	Date the feature was located with GPS
MAINTBY	Indicates which organization maintains the asset = City
<b>NetworkStructure - (Pump Stations, etc.)</b>	
FACILITYID	Locally assigned Facility Identifier
INSTALLDATE	The date the asset was installed
OPDATE	Date when the facility was put into service
STRUCTTYPE	Type of Sewer Network structure
<b>System Valves</b>	
INSTALLDATE	The date the asset was installed
DIAMETER	The diameter of the asset
VALVETYPE	Type of control valve
ELEV	Elevation at the top nut of valve

END OF SECTION

DIVISION 02 – EARTHWORKPART 1 - GENERAL1.1 DESCRIPTION

- A. Earthwork as depicted by Item Numbers on the contract plans, documents and, as noted below, shall conform with New Hampshire Department of Transportation (NHDOT) Standard Specification for Road and Bridge Construction, 2016 Edition, Division 200 – Earthwork.

<b>NHDOT ITEM NUMBER</b>	<b>ITEM DESCRIPTION</b>	<b>UNITS</b>
202.7	REMOVAL OF GUARDRAIL	LF
203.1	COMMON EXCAVATION	CY
209.209	GRANULAR BACKFILL (BRIDGE)	CY

- B. Work for each NHDOT Item Number shall be performed as defined and described under the Description provided for each NHDOT Specification Section.

1.2 CONSTRUCTION REQUIREMENTS

- A. Work shall be performed as described under the Construction Requirements provided under each NHDOT Specification Section.

1.3 METHOD OF MEASUREMENT

- A. The method of measurement for each contract pay item shall be in accordance with the methods described under the Method of Measurement of the appropriate NHDOT Item Specification Section.

1.4 BASIS OF PAYMENT

- A. Payment for each contract pay item shall be made in accordance with the Basis of Payment section of the related NHDOT Item Specification Section.

END OF SECTION

DIVISION 03 – BASE COURSESPART 1 - GENERAL1.1 DESCRIPTION

- A. Base Courses as depicted by Item Numbers on the contract plans, documents and, as noted below, shall conform with New Hampshire Department of Transportation (NHDOT) Standard Specification for Road and Bridge Construction, 2016 Edition, Division 300 – Base Courses.

NHDOT ITEM NUMBER	ITEM DESCRIPTION	UNITS
304.301	CRUSHED GRAVEL	CY

- B. Work for each NHDOT Item Number shall be performed as defined and described under the Description provided for each NHDOT Specification Section.

1.2 CONSTRUCTION REQUIREMENTS

- A. Work shall be performed as described under the Construction Requirements provided under each NHDOT Specification Section.

1.3 METHOD OF MEASUREMENT

- A. The method of measurement for each contract pay item shall be in accordance with the methods described under the Method of Measurement of the appropriate NHDOT Item Specification Section.

1.4 BASIS OF PAYMENT

- A. Payment for each contract pay item shall be made in accordance with the Basis of Payment section of the related NHDOT Item Specification Section.

END OF SECTION

DIVISION 04 – PAVEMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Pavements as depicted by Item Numbers on the contract plans, documents and, as noted below, shall conform with New Hampshire Department of Transportation (NHDOT) Standard Specification for Road and Bridge Construction, 2016 Edition, Division 400 – Pavements.

<b>NHDOT ITEM NUMBER</b>	<b>ITEM DESCRIPTION</b>	<b>UNITS</b>
403.11013	HBP-1" BASE MIX, MACHINE METHOD	TON
403.11043	HBP-1/2" SURFACE MIX, MACHINE METHOD	TON
403.21053	HBP-3/8" MIX, MACHINE METHOD (BRIDGE BASE)	TON
410.22	ASPHALT EMULSION FOR TACK COAT	GAL
417	COLD PLANING BITUMINOUS SURFACES	SY

- B. Work for each NHDOT Item Number shall be performed as defined and described under the Description provided for each NHDOT Specification Section.

1.2 CONSTRUCTION REQUIREMENTS

- A. Work shall be performed as described under the Construction Requirements provided under each NHDOT Specification Section.

1.3 METHOD OF MEASUREMENT

- A. The method of measurement for each contract pay item shall be in accordance with the methods described under the Method of Measurement of the appropriate NHDOT Item Specification Section.

1.4 BASIS OF PAYMENT

- A. Payment for each contract pay item shall be made in accordance with the Basis of Payment section of the related NHDOT Item Specification Section.

END OF SECTION

DIVISION 05 – STRUCTURES

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Structures as depicted by Item Numbers on the contract plans, documents and, as noted below, shall conform with New Hampshire Department of Transportation (NHDOT) Standard Specification for Road and Bridge Construction, 2016 Edition, Division 500 – Structures.

NHDOT ITEM NUMBER	ITEM DESCRIPTION	UNITS
502	REMOVAL OF EXISTING BRIDGE STRUCTURE	U
503.101	WATER DIVERSION STRUCTURE	U
503.201	COFFERDAMS	U
504.101	COMMON BRIDGE EXCAVATION	CY
508	STRUCTURAL FILL	CY
520.0032	PRECAST CONCRETE RIGID FRAME	U
520.01	CONCRETE CLASS AA	CY
520.12	CONCRETE CLASS A, ABOVE FOOTINGS (F)	CY
520.213	CONCRETE CLASS B, FOOTINGS (ON SOIL) (F)	CY
534.3	WATER REPELLENT (SILANE/SILOXANE)	GAL
538.2	BARRIER MEMBRANE, PEEL AND STICK – VERTICAL SURFACES (F)	SY
538.5	BARRIER MEMBRANE, HEAT WELDED (F)	SY
544.31	REINFORCING STEEL, EPOXY COATED (CONTRACTOR DETAILED)	LB
559.4	ASPHALTIC PLUG EXPANSION JOINT (F)	LF
563.3	BRIDGE RAIL T101	LF
563.301	BRIDGE RAIL T101 (MODIFIED)	LF
563.95	SNOW SCREENING FOR OVERPASS STRUCTURES	LF
570.401	MORTAR RUBBLE MASONRY	CY
585.21	STONE FILL, CLASS B (BRIDGE)	CY
593.421	GEOTEXTILE; PERM CONTROL CL.2, NON-WOVEN	SY

- B. Work for each NHDOT Item Number shall be performed as defined and described under the Description provided for each NHDOT Specification Section.

1.2 CONSTRUCTION REQUIREMENTS

- A. Work shall be performed as described under the Construction Requirements provided under each NHDOT Specification Section.

1.3 METHOD OF MEASUREMENT

- A. The method of measurement for each contract pay item shall be in accordance with

the methods described under the Method of Measurement of the appropriate NHDOT Item Specification Section.

1.4 BASIS OF PAYMENT

- A. Payment for each contract pay item shall be made in accordance with the Basis of Payment section of the related NHDOT Item Specification Section.

END OF SECTION

DIVISION 06 – CONSTRUCTION INCIDENTALS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Construction incidentals as depicted by Item Numbers on the contract plans, documents and, as noted below, shall conform with New Hampshire Department of Transportation (NHDOT) Standard Specification for Road and Bridge Construction, 2016 Edition, Division 600 – Construction Incidentals.

<b>NHDOT ITEM NUMBER</b>	<b>ITEM DESCRIPTION</b>	<b>UNITS</b>
606.127	BEAM GUARDRAIL (TERMINAL UNIT TYPE G-2) (STEEL POST)	U
606.1285	BEAM GUARDRAIL (BRIDGE APPROACH UNIT)	U
608.12	2" BITUMINOUS SIDEWALK (F)	SY
609.811	BITUMINOUS CURB, TYPE B (4" REVEAL)	LF
612.1131	BYPASS PUMPING SYSTEM	U
612.615081	SEWER MAIN REPLACEMENT	LF
619.1	MAINTENANCE OF TRAFFIC	U
628.2	SAWED BITUMINOUS PAVEMENT	LF
632.0104	RETROREFLECTIVE PAINT PAVE. MARKING, 4" LINE	LF
645.7	STORM WATER POLLUTION PREVENTION PLAN	U
692	MOBILIZATION	U
699	MISCELLANEOUS TEMPORARY EROSION AND SEDIMENT CONTROL	ALLOW

- B. Work for each NHDOT Item Number shall be performed as defined and described under the Description provided for each NHDOT Specification Section.

1.2 CONSTRUCTION REQUIREMENTS

- A. Work shall be performed as described under the Construction Requirements provided under each NHDOT Specification Section.

1.3 METHOD OF MEASUREMENT

- A. The method of measurement for each contract pay item shall be in accordance with the methods described under the Method of Measurement of the appropriate NHDOT Item Specification Section.

1.4 BASIS OF PAYMENT

- A. Payment for each contract pay item shall be made in accordance with the Basis of Payment section of the related NHDOT Item Specification Section.

END OF SECTION

**APPENDIX A**  
**Supplemental Specifications, Special Provisions  
and Federal Requirements**



PROJECT SUPPLEMENTAL AND SPECIAL PROVISIONS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Add the following New Hampshire Department of Transportation (NHDOT) Supplemental and Special Provisions to the NHDOT Standard Specification for Road and Bridge Construction, 2016 Edition.

<b>NHDOT SECTION</b>	<b>DESCRIPTION</b>
SS 101	DEFINITIONS AND TERMS
SS 105	CONTROL OF THE WORK
SS 106	CONTROL OF MATERIAL
SS 107	LEGAL RELATIONS AND RESPONSIBILITY TO PUBLIC
SS 108	PROSECUTION AND PROGRESS
SS 109	MEASUREMENT AND PAYMENT
SS 211	VIBRATION MONITORING
SS 401	PLANT MIX PAVEMENTS - GENERAL
SS 403	HOT BITUMINOUS PAVEMENT
SS 410	BITUMINOUS SURFACE TREATMENT
SS 520	PORTLAND CEMENT CONCRETE
SS 538	BARRIER MEMBRANE
SS 563	BRIDGE RAIL
SS 606	GUARDRAIL
SS 609	CURBS
SS 702	BITUMINOUS MATERIALS
SP 209	GRANULAR BACKFILL
SP 304	AGGREGATE BASE COURSE
SP 504	COMMON BRIDGE EXCAVATION
SP 520	PORTLAND CEMENT CONCRETE
SP 544	REINFORCING STEEL
SP 563	BRIDGE RAIL
SP 570	STONE MASONRY
SP 612	SANITARY SEWER INSTALLATION
SP 1008.9	ALTERATIONS AND ADDITIONS AS NEEDED – TESTING AND MATERIALS
SP 1008.91	WATER MAIN REPLACEMENT

END OF SECTION

## 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**  
**AMENDMENT TO SECTION 105 – CONTROL OF THE WORK**

*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 SECTION 108 – PROSECUTION AND PROGRESS

*The purpose of this Supplemental Specification is to amend the requirements for liquidated damages.*

**Amend** Section 108.09 to read:

#### **108.09 Failure to Complete on Time.**

For each work day that work remains uncompleted after the Contract Time, the sum specified below will be deducted from any money due the Contractor. This sum shall not be considered and treated as a penalty but as liquidated damages to defray the cost to the Department to administer the Contract including but not limited to the cost of engineering, inspection, supervision, inconvenience to the public obstruction of traffic, and interference with business due to the Contractor's failure to complete the Work on time. Any adjustment of the Contract Time for completion of the Work granted under the provisions of [108.07](#) will be considered in the assessment of liquidated damages.

In the case of a date in the Contract being given for the completion of parts, phases, or stages, the liquidated damages will be deducted for the period during which that particular work remains incomplete.

Permission for the Contractor or Surety to continue and finish work after the Contract Time and approved time extensions have elapsed shall not waive the Department's rights under the Contract.

The assessment of all or any of the liquidated damages that accrue may be terminated if the Department has determined that the Work is substantially complete and is in a condition for safe and convenient use by the traveling public.

The Work will be considered substantially complete when all necessary signing, striping, guardrail, and other safety appurtenances have been installed, and when applicable opened to the traveling public. For projects that will not be opened to the traveling public, the Contract will be considered substantially complete when it is ready for the subsequent project. This shall not be construed as a Contractual right and its application will be contingent upon the Contractor's diligence in completing the remaining items of work.

Liquidated damages shall be assessed in accordance with the following schedule:

<u>Original Contract Amount (\$)</u>		<u>Daily Charge(\$)</u>
From more than	To and including	Working Day
0	750,000	850
750,000	2,000,000	1280
2,000,000	5,000,000	1700
5,000,000	10,000,000	2550
10,000,000	20,000,000	3400
20,000,000	20,000,000+	4250

Should the Contractor elect to work on Saturdays, Sundays, holidays, or days from December 1<sup>st</sup>, to April 1<sup>st</sup>, inclusive, after the Contract Completion Date, the Contractor will be charged liquidated damages for such days worked.

When the Contract Time is on a calendar date basis, the schedule for calendar date shall be used. When the Contract time is on a working day basis, the schedule for working days shall be used.

When Acceptance has been made by the Engineer as prescribed in [105.17](#), the daily charge will no longer be assessed.

Should the amount of money otherwise due the Contractor be less than the amount of such liquidated damages, the Contractor and the Surety shall be liable to the State for such deficiency.

The Engineer has the right to deduct the amount of anticipated liquidated damages against the Contractor from any estimated payment for Work performed under the Contract; or to claim and recover such sums by process of law. Review of anticipated Contract completion and potential liquidated damages will commence when 80% of the original Contract Time has elapsed.



## 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 211 – VIBRATION MONITORING**

*The purpose of this Supplemental Specification is to add the reference to the requirements for pre-construction and post-construction surveys.*

**Replace** 3.4 to read:

**3.4 Pre-construction and post-construction condition surveys.** The Contractor shall conduct a pre-construction condition survey on all structures, including swimming pools and mobile homes, within 150 feet of the anticipated sources of construction related vibrations. A pre-construction survey shall also be conducted on structures that may be affected by construction related vibrations beyond the 150 foot distance as directed by the Engineer or as contained in the approved Vibration Monitoring Plan. The pre-construction surveys shall not be initiated until the Vibration Monitoring Plan has been approved. Upon completion of all construction operations that are a source of construction related vibrations, the Contractor shall conduct a post-construction condition survey of all structures for which a complaint of damage has been received or a damage claim has been filed. Notification of the post-construction survey shall be given to all interested parties, so they may be present during the survey. A copy of all pre-construction condition surveys shall be provided to the Engineer prior to the start of work. A copy of all post-construction condition surveys conducted shall be provided to the Engineer upon completion of the survey. Perform the surveys in accordance with of 203.3.3.3.2 and 203.3.3.3.3.

## 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 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.*

#### 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

	Tier 1	Tier 2
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 comply with the requirement of AASHTO R 26. Asphalt binder suppliers shall have a quality control plan approved by the Bureau of Materials and Research that complies with AASHTO R 26.

**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%
5.5%	Winter Binder 3/4"	5.2%
4.9%	3/4"	4.6%
4.6%	1"	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:	a) 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. b) 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. c) 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.

**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.

\*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** The inside surfaces of vehicles may be lightly lubricated with a soap solution or non-petroleum release agent that will not be detrimental to the mix. Equipment that leaks oil, diesel fuel, gasoline, or any other substance detrimental to the pavement will not be allowed on the project.

**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.

### **3.10 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 sublot 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 sublot 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 sublot 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”**

	<b>Property</b>	<b>Weight Factor “f”</b>
	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”**

	<b>Property</b>	<b>Weight Factor “f”</b>
	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”**

	<b>Property</b>	<b>Weight Factor “f”</b>
	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**

**AMENDMENT TO SECTION 538– BARRIER MEMBRANE**

*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.

09/15/16

Page 1 of 2

**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 6 3 –   B R I D G E   R A I L**

*The purpose of this Supplemental Specification is to disallow aluminum in bridge fence applications, except for use as ties.*

**Amend** 1.2 and 1.3 to read:

**1.2 Designations.** Bridge rails are classified as follows:

<b>Type</b>	<b>Bridge Railing</b>
Steel Tube Railing, 2 Rail	T2
Steel Tube Railing, 3 Rail	T3
Steel Tube Railing, 4 Rail	T4
W-Beam with Steel Tubing	T101
Aluminum Railing (2 Bar)	F2
Aluminum Railing (3 Bar)	F3

**1.3** This work shall consist of furnishing and erecting protective screening or snow fence in conformity with details shown on the plans or ordered.

**Amend** 2.2 to read:

**2.2** Steel pipe for bridge railing, shall conform to ASTM A 53, Grade B, seamless unless specified otherwise on the plans.

**Amend** 2.6 to read:

**2.6** Aluminum railing and aluminum and steel appurtenances shall conform to the pertinent materials specified in the latest edition of “A Guide To Standardized Highway Barrier Rail Hardware”, by the AASHTO-AGC-ARTBA Task Force 13, ARTBA (formerly Technical Bulletin No. 268-B AGC Standard Form No. 131, June 1979) as amended.

**Amend** 2.8 to read:

**2.8** Protective screening and snow fence materials shall meet the material requirements shown on the plans and as noted below:

**2.8.1** Chain-link fabric shall be 9-guage steel, 1½” mesh, aluminum-coated conforming to AASHTO M181, Type II (ASTM A491).

**2.8.2** Wire ties shall be standard round 9-guage aluminum coated steel or 6-guage aluminum alloy conforming to ASTM F626.

**2.8.3** Post and rail pipes shall be hot-dip galvanized steel conforming to AASHTO M181, Grade 1 (ASTM F1083). All pipe shall be schedule 40, standard weight.

**2.8.4** Tension bars, bar bands, in-line rail clamp, and end rail clamps shall be steel, hot-dip galvanized in accordance with AASHTO M111 (ASTM A123) or AASHTO M232 (ASTM A153), as applicable. All bar bends shall have a beveled edge.



09/15/16

Page 2 of 2

**2.8.5** All bolts and nuts shall be steel conforming to ASTM A307 and ASTM A563 Grade A, respectively. Washers shall be hardened steel commercial Type A plain, and shall meet the dimensional requirements of ANSI B18.22. All bolts, nuts and washers shall be hot-dip galvanized in accordance with AASHTO M111 (ASTM A123) or AASHTO M232 (ASTM A153), as applicable.

**Amend** 4.1 to read:

**4.1** Bridge rail, of the type specified, will be measured by the linear foot, to the nearest tenth of a foot.

**Amend** Pay Items to read:

**Pay items and units:**

563.22	Bridge Rail T2	Linear Foot
563.221	Bridge Rail T2 with Protective Screening	Linear Foot
563.223	Bridge Rail T2 with Snow Screening	Linear Foot
563.23	Bridge Rail T3	Linear Foot
563.231	Bridge Rail T3 with Protective Screening	Linear Foot
563.233	Bridge Rail T3 with Snow Screening	Linear Foot
563.24	Bridge Rail T4	Linear Foot
563.241	Bridge Rail T4 with Protective Screening	Linear Foot
563.243	Bridge Rail T4 with Snow Screening	Linear Foot
563.3	Bridge Rail T101	Linear Foot
563.72	Bridge Rail F (2-bar)	Linear Foot
563.721	Bridge Rail F (2-Bar) with Protective Screening	Linear Foot
563.723	Bridge Rail F (2-Bar) with Snow Screening	Linear Foot
563.73	Bridge Rail F (3-bar)	Linear Foot
563.731	Bridge Rail F (3-Bar) with Protective Screening	Linear Foot
563.733	Bridge Rail F (3-Bar) with Snow Screening	Linear Foot
563.8	Resetting Bridge Rail	Linear Foot
563.81	Rehabilitation of Bridge Rail	Linear Foot
563.84	Temporary Bridge Rail	Linear Foot
563.94	Protective Screening for Overpass Structures	Linear Foot
563.95	Snow Fence Screening for Overpass Structures	Linear Foot

**SUPPLEMENTAL SPECIFICATION**

**AMENDMENT TO SUBSECTION 606 – GUARDRAIL**

*The purpose of this Supplemental Specification is to:*

- *Add specific references to AWWA Standards and modify preservation requirements for wooden guardrail posts (04/02/18)*
  - *Update Preformed Expansion Joint Filler Requirements (04/02/18)*
    - *Update Corrosion Inhibitor Requirements (04/02/18)*

**Amend** 2.2 to read:

**2.2 Preservative Treatment.**

**2.2.1** All wood posts, blocks and rails shall be pressure treated with preservative materials conforming to the requirements of AASHTO M 133, which includes AWWA Standards by reference.

**2.2.2** The type of treatment shall be one of the following per AASHTO M 133 and AWWA:

**Treatment**

Type A

Pentachlorophenol

Water-Borne Preservative

**2.2.3** All wood posts and rails shall be treated after sawing and drilling or retreated after drilling in accordance with AASHTO M 133 and AWWA.

**Amend** 2.6.5 to read:

**2.6.5** Preformed Expansion Joint Filler shall conform to AASHTO M 153, Type III (self-expanding cork) AASHTO M 213 (non-extruding and resilient bituminous types), or ASTM D8139 (semi-rigid, closed cell polypropylene foam).

**Amend** 3.4 to read:

**3.4 Wood rail.** Wood rail shall be constructed as shown on the plans. Wood surfaces cut or damaged shall be brush treated with 2 applications using preservatives specified in AWWA M4.

**Amend** 3.7.1.5 to read:

**3.7.1.5** Concrete shall contain corrosion inhibitor (calcium nitrate) admixture added at the rate of 2 gallons per cubic yard.

**SUPPLEMENTAL SPECIFICATION****AMENDMENT TO SECTION 609 – CURBS**

*The purpose of this Supplemental Specification is to allow the substitution of PG 76-28 binder in lieu of fibers.*

**Amend** 2.4 to read:

**2.4** Bituminous curb shall meet the requirements of Section 401 except that the composition of the mixture shall conform to the limits of Table 609-2. The mixture shall extrude properly with a uniform, smooth appearance.

**2.4.1** Polyester fibers, as included on the Qualified Products List, shall be uniformly incorporated in the dry mix in the proportion of approximately 1/4 percent of the total batch weight.

**2.4.1.1** PG 76-28 binder may be used in lieu of polyester fibers, provided that the mix conforms to the limits of Table 411-1 and the asphalt content is 7.0%.

**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	min	max	min	max	min	max	min	max	min	max		
<b>Tests on emulsified asphalt:</b>														
Viscosity, Saybolt Furol at 25°C (77°F), s <sup>a</sup>	20	100	20	100					50	500	50	500		
Viscosity, Saybolt Furol at 50°C (122°F), s <sup>a</sup>			75	400			100 see (d)							
Storage stability test, 24 h, % <sup>a,b</sup>		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														
Coating, dry aggregate							good	75%		75%				T59
Coating, after spraying							fair	see (e)	see (e)	see (e)	see (e)	see (e)	see (e)	
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
Distillation														
Oil distillate, %									2.0	7.0	0	3.0		
Residue, % <sup>c</sup>	55		55		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	150	90	250	200		150	250		T149
Ductility, 25°C (77°F), 5 cm/min, cm	40		40		40		40							T151
Ash content, %		1.0		1.0		1.0		1.0						T111
Float test, 60°C (140°F), s							1200		50		100			T150

**Table 702-2 -- Cationic Asphalt Emulsion**

Type Grade	Rapid-Setting				Test Method
	CRS-1h		CRS-1		
	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.

AUGUST 2024

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 209 – GRANULAR BACKFILL**

**Item 209.209 – Granular Backfill (Bridge)**

**Amend** 4.4 to read:

4.4 Granular Backfill (Bridge) will be measured by the cubic yard in accordance with 109.01.

**Amend** 5.2 to read:

5.2 The accepted quantity of Granular Backfill (Bridge) will be paid for at the contract unit price per cubic yard completed.

**Add** to Pay items and units:

209.209	Granular Backfill (Bridge)	Cubic Yard
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AUGUST 2024

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 304 – AGGREGATE BASE COURSE**

**Item 304.301 – Crushed Gravel**

**Amend** 4.1 to read:

4.1 Crushed Gravel will be measured by the cubic yard in accordance with 109.01.

**Amend** 5.1 to read:

5.1 The accepted quantity of Crushed Gravel will be paid for at the contract unit price per cubic yard completed.

**Add** to Pay items and units:

304.301	Crushed Gravel	Cubic Yard
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AUGUST 2024

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 504 – BRIDGE EXCAVATION**

**Item 504.101 – Common Bridge Excavation**

**Amend** 4.1 to read:

**4.1** Common Bridge Excavation will be measured by the cubic yard in accordance with 109.01.

**Amend** 5.1 to read:

**5.1** The accepted quantity of Common Bridge Excavation will be paid for at the contract unit price per cubic yard completed.

**Add** to Pay items and units:

504.101	Common Bridge Excavation	Cubic Yard
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AUGUST 2024

**SPECIAL PROVISION****AMENDMENT TO SECTION 520 – PORTLAND CEMENT CONCRETE****ITEM 520.0032 - PRECAST CONCRETE RIGID FRAME**

This special provision provides for a precast concrete rigid frame only and neither amends nor modifies other provisions of 520 except as specified below.

**Description**

- 1.1 This work shall consist of designing, furnishing, and delivering to the project site the precast concrete rigid frame sections as shown on the contract plans and installed by others. The joints between the sections shall be made watertight.
- 1.2 The precast concrete rigid frame sections shall meet the design and manufacturing requirements of the AASHTO Standard Specifications except as otherwise specified on the plans, in the proposal or in other sections of this Special Provision.

**Materials**

- 2.1 **Cement.** Portland cement shall be Type II or III conforming to AASHTO M 85 or M 240, as appropriate.
  - 2.1.1 All cement used in the manufacture of the members shall be the same brand, type and color, unless otherwise permitted.
- 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.
- 2.4 **Reinforcing Steel.** Reinforcing steel shall conform to the requirements of 54.
- 2.5 **Concrete.**
  - 2.5.1 Concrete shall be controlled, mixed, and handled as specified in the pertinent portions of 520 unless otherwise specified herein.

**2.5.2** The Fabricator shall submit a concrete mix design for approval in conformance with 520.

**2.5.2.1** The Fabricator 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 T 303 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.

**2.5.2.2** 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  $\text{Na}_2\text{O}$  equivalent); use of a mineral admixture; or use of a chemical admixture. The proposed mitigation method will be accepted for use after the NHDOT Bureau of Materials and Research reviews test results supplied by the Fabricator 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.

**2.5.2.3** 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.

**2.5.3** Concrete for precast concrete sections shall conform to the requirements of Concrete Class AAA in 520.

### **Construction Requirements**

**3.1 Qualification of Fabricator.** The Fabricator shall provide proof and experience demonstrating capability and has the organization and plant for performing the work involved in manufacturing the precast concrete rigid frame sections.

**3.2 Method of Manufacture.** Information as to the proposed method of manufacturing the precast concrete rigid frame sections including the curing method shall be submitted for approval.

**3.3 Calculations** for the design of the precast concrete rigid frame sections for the loading specified on the contract plans in the proposal shall be submitted to the Engineer for approval. These calculations shall be prepared and stamped by a Licensed Professional Structural Engineer licensed by the State of New Hampshire.

**3.3.1** A load rating of the precast concrete rigid frame using the load and resistance factor design method shall be performed. The NHDOT Form 4 - Bridge Capacity Summary completed and stamped by a Licensed Professional Engineer registered in the State of New Hampshire shall be submitted with the shop drawings.

### **3.4 Shop drawings**

**3.4.1** The Fabricator shall submit detailed shop drawings 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.

**3.4.2** Shop drawings for the precast concrete rigid frame sections shall be prepared on standard full-size sheets (22 inches by 34 inches) and shall be stamped by a Licensed Professional Engineer. 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.

Upon approval of the shop drawings, they shall be transferred to permanent, archival quality, 22" x 34" double-matte mylar and submitted to the Department.

**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 four (4) weeks prior to the first casting, the Fabricator shall submit a schedule to the Engineer, showing the dates on which the rigid frame 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 rigid frame sections 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 Fabricator. No additional compensation will be paid to the Fabricator 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/her opinion unsatisfactory unless and until they are satisfactorily repaired.

**3.6 Coordination with Installation Contractor.** Once the Installation Contractor is selected by the Town, the Fabricator shall fully coordinate the delivery and installation of the precast rigid frame and wingwalls with the Installation Contractor.

**3.7 Casting, assembly and handling.** The method of casting, assembly and handling of the rigid frame sections shall be subject to the approval of the Engineer. Casting shall not start until approval of the shop drawings has been received.

**3.7.1** The Fabricator shall be responsible for the proper casting, handling, lifting, storing, and transporting of all sections so that they can be placed in the completed structure without damage. Improperly cast or sections damaged prior to delivery at the project site shall be repaired or replaced, as approved by the Engineer, at the Fabricator's expense.

**3.7.2** The Fabricator shall make necessary arrangements to have a technical representative on the project to supervise and assist the Installation Contractor with erection of the precast rigid frame and wingwalls.

**3.8 Rejection of precast concrete rigid frame 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 Fabricator 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 honeycomb over 3750 square mm (6 square inches) in area or over 25 mm (one inch) deep.
3. Any section having more than one honeycomb area per side or surface even though of 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 over one inch in depth and damaged ends, where such damage would prevent making a satisfactory joint.
6. Extensive fine hair cracks or checks.
7. Rigid frame sections produced by racked or otherwise unsquare forms.

**3.7.2** The Engineer may approve repairs to occasional, non-recurring, and isolated defects. The Fabricator shall submit procedures and materials for repairs to the Engineer for approval.

### **Method of Measurement**

**4.1** Precast concrete rigid frame will be measured as a unit.

### **Basis of Payment**

**5.1** The accepted quantity of precast concrete rigid frame will be paid for at the contract lump sum delivered to the site ready for installation.

**5.1.1** All costs for concrete cylinders, and tests and authorized repairs will be subsidiary.

Pay item and unit:

520.0032 Precast Concrete Rigid Frame	Unit
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AUGUST 2024

**SPECIAL PROVISION****AMENDMENT TO SECTION 544 -- REINFORCING STEEL****544.3 – Reinforcing Steel (Contractor Detailed)****544.31 – Reinforcing Steel, Epoxy Coated (Contractor Detailed)****544.311 – Reinforcing Steel, Epoxy Coated Mechanical Connectors (Contractor Detailed)**

This special provision requires that the Contractor prepare the shop plans for the fabrication and field layout of the reinforcing steel. The plans shall include quantities and the bending schedule. The cost of preparing reinforcing steel shop plans and bar schedules shall be included.

**Amend** 3.1 Bar list to read:

**3.1 Shop Plans and Bar Schedule.**

**3.1.1** The Contractor shall prepare the reinforcing steel shop plans from the typical design details shown on the Contract Plans. For the fabrication and field layout of the reinforcing steel, the shop plans shall be complete in detail including bar marks, bar location and spacing, splice length, and splice locations. The shop plans shall have a bar list, bending diagrams, bar weight by size, and bar quantity grand total.

**3.1.2** The shop plans shall be prepared on Department-standard full-size sheets (22 inches by 34 inches). The sheets may be vellum or archival-quality mylar material. The shop plans shall be properly titled as to project location and bridge components (as Abutment A, Pier, Deck, etc.) similar to the Contract Drawing title box.

**3.1.3** The shop plans and bar schedule shall be submitted to the Engineer in accordance with 105.02. The Contractor shall allow sufficient time for review. No payment shall be made for any delay caused by the shop plan review process due to ordering, preparation, review, revisions or shop plan errors.

**3.1.4** The Contractor shall attempt to maximize reinforcing bar lengths by minimizing the number of splices.

**3.1.5** Original tracings of corrected shop drawings shall be delivered to the Department before final payment will be made.

**3.1.6** The reinforcing steel quantities as shown on the Contract Plans may vary approximately 10% plus or minus from the required quantity.

**Add** to Method of Measurement:

**4.1.1** Reinforcing Steel (Contractor Detailed); Reinforcing Steel, Epoxy Coated (Contractor Detailed); and Reinforcing Steel, Epoxy Coated Mechanical Connectors (Contractor Detailed) will be measured by the pound of reinforcing steel placed as shown on the plans or ordered.

**Add** to Basis of Payment:

**5.1.2** The accepted quantity of Reinforcing Steel (Contractor Detailed); Reinforcing Steel, Epoxy Coated (Contractor Detailed); and Reinforcing Steel, epoxy Coated Mechanical Connectors (Contractor Detailed) will be paid for at the Contract unit price per pound complete in place.

**Add** to pay items and units:

544.3	Reinforcing Steel (Contractor Detailed)	Pound
544.31	Reinforcing Steel, Epoxy Coated (Contractor Detailed)	Pound
544.311	Reinforcing Steel, Epoxy Coated Mechanical Connectors (Contractor Detailed)	Pound

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 563 -- BRIDGE RAIL**

**Item 563.301 – Bridge Rail T101 (Modified)**

This special provision provides for Bridge Rail T101 (Modified) and neither amends nor modifies the provisions of this section except as stated herein.

**Add** to Description:

**1.4** The Contractor shall install Bridge Rail T101 (Modified) as full height driven post approach rail as shown on the plans or ordered. Rail posts shall be W6x25 sections of the same material as the bridge rail posts and shall have a total post height of 8'-0".

**Add** to Method of Measurement:

**4.2** Bridge rail, of the type specified, will be measured by the linear foot.

**Add** to Basis of Payment:

**5.3** Bridge rail, of the type specified will be paid for at the Contract unit price complete and in place.

**Add** to pay items and units:

563.301 – Bridge Rail T101 (Modified)

Linear Foot



AUGUST 2024

**SPECIAL PROVISION**

**AMENDMENT TO SECTION 570 – STONE MASONRY**

**Item 570.401 – Mortar Rubble Masonry**

**Amend** 4.1 to read:

4.1 Mortar Rubble Masonry will be measured by the cubic yard in accordance with 109.01.

**Amend** 5.1 to read:

5.1 The accepted quantity of Granular Backfill (Bridge) will be paid for at the contract unit price per cubic yard completed.

**Add** to Pay items and units:

570.401	Mortar Rubble Masonry	Cubic Yard
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**SPECIAL PROVISION****SECTION 612 -- SANITARY SEWER INSTALLATION**

Town of Hudson

**Description**

**1.1 General Description of Work.** This work shall consist of removing and disposing of the existing 8-inch PVC gravity sewer main and the existing 12-inch cast iron sleeve under Melendy Rd at the First Brook crossing between SMH 3 and SMH 4, temporarily supporting the sewer main where applicable, bypass pumping sewer flows during construction, excavation, bedding, backfill, as shown on the plans and specified herein. The CONTRACTOR shall be responsible for replacing the sewer main piping, casing pipe, and appurtenances in accordance with the plans and specifications or as directed by the Engineer.

**1.1.1** The Town of Hudson or its Designated Representative, hereinafter called OWNER, together with the ENGINEER, will inspect, accept, and/or reject work related to the sanitary sewer installation herein specified.

**1.1.2** The CONTRACTOR shall furnish all materials, labor, tools, and equipment and perform all operations, testing, and incidentals necessary for a complete sewer installation as shown on the plans and specified herein.

**1.2 Sequence/Maintenance of Service.** The CONTRACTOR shall provide a bypass pumping system as necessary to maintain continuous sewer service. The CONTRACTOR shall be responsible for providing whatever is necessary to allow for continuation of sewage flow from residences and businesses upstream of, and adjacent to, the construction of the bridge replacement. The flow shall be maintained in whatever manner the CONTRACTOR chooses; however, the method chosen must provide for round-the-clock fail-safe sewer service which shall not result in any spills. Should pumps be employed by the CONTRACTOR to maintain flow, the pumps shall be electrically driven and powered by electrical drops from power companies during non-working hours. Additional requirements for bypass pumping, including which manholes are available for pumping from and to, and cleaning of existing sewers in the area of the project are provided on the sewer plans. The CONTRACTOR shall submit the proposed plan to maintain sewage flow to the OWNER for review and approval a minimum of 10 days prior to start-up of the bypass system.

**1.3 Reference Drawings and Information.** The plans indicate, in general, the alignment of the sewer and alignment of other existing underground utilities. The ENGINEER may make such adjustments in grade and alignment, as are necessary, in order to avoid interference and to adapt the piping to other special conditions encountered. All locations of existing pipes, utilities, etc.,

shall be verified by the CONTRACTOR with the proper authority. Neither the NHDOT nor the ENGINEER/OWNER guarantees the accuracy or completeness of the existing conditions shown on the construction plans. Cover over pipes shall conform to requirements of the New Hampshire Department of Environmental Services (NHDES).

**1.3.1** Sufficient investigations shall be made by the CONTRACTOR so that the CONTRACTOR is knowledgeable about existing conditions prior to tendering a bid.

## **1.4 Submittals**

**1.4.1** Shop Drawings are required for each and every element of the sewer facilities installation work. One electronic copy in PDF format of shop and working drawings for sewer facilities shall be submitted to the Town of Hudson Engineering Department or its Designated Representative, together with the ENGINEER for approval in accordance with 105.02. Each shop drawing shall be assigned a sequential number for purposes of easy identification, and shall retain its assigned number, with appropriate subscript, on required resubmissions.

**1.4.2** Shop Drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills of material, manufacturers data, spare parts lists, and other data prepared by the CONTRACTOR, his subcontractors, suppliers, or manufacturers which illustrate the manufacturer, fabrication, construction, and installation of the work, or a portion thereof.

**1.4.3** Shop Drawings shall be submitted as a complete package by Special Provision section, unless otherwise reviewed and approved by the ENGINEER. It is the intent that all information, materials and samples associated with each specification section be included as a single submittal for the ENGINEER's review. Any deviation from this requirement, such as submitting miscellaneous metals grouped by structure, shall be requested in writing prior to any associated submittal.

**1.4.4** The CONTRACTOR shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

**1.4.5** No material or equipment shall be purchased or fabricated specifically for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.

## **Materials**

### **2.1 Earthwork Materials**

**2.1.1 Common Backfill.** Common backfill shall be granular material consisting of hard sand and gravel so graded that, of the material passing the No. 4 sieve, not more than 35% shall pass the No. 200 sieve. Common backfill shall be free of organic matter, trash, roots or other

deleterious material and shall contain no stone measuring greater in any dimension than two-thirds of the loose lift thickness, or 8 inches, whichever is smaller. Common backfill material shall be capable of forming a firm, stable base when spread and compacted in accordance with this specification. In addition, common backfill shall be non-plastic (plasticity index zero, defined as liquid limit minus plastic limit). Common backfill materials may be obtained from either on-site excavations or from off-site sources. Any materials excavated from the trench and not conforming to this specification shall be properly disposed of as specified and replaced with approved material, as required, at no additional cost to the OWNER or DEPARTMENT.

**2.1.2 Sand Blanket Material.** Sand blanket material required for installation of the sewer mains, services, and appurtenances shall meet the following gradation requirements, 100% passing the ½ inch sieve and, of the material passing the #4 sieve, no more than 12% passing the #200 sieve.

**2.1.3 Gravel Fill.** Gravel fill shall consist of hard, durable gravel free from trash, organic matter, clay, surface coatings, and other deleterious materials. Gravel fill shall have a maximum stone size of two-thirds of the loose lift thickness, or 6 inches, whichever is smaller. That portion passing the 4 inch sieve shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

<u>Sieve Size</u>	<u>Percent Passing</u>
6 inch	100
No. 4	25-70
No. 200 *	0-12

\* Based on fraction passing the No. 4 sieve.

**2.1.4 Crushed Gravel (NHDOT Item 304.3).** Crushed gravel shall consist of hard durable sand and gravel, free from trash, organic matter, clay, surface coatings, and other deleterious materials. Crushed gravel material shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

<u>Sieve Size</u>	<u>Percent Passing</u>
3 inch	100
2 inch	95-100
1 inch	55-85
No. 4	27-52
No. 200*	0-12

\* Based on fraction passing the No. 4 sieve.

**2.1.5 Bedding and Initial Backfill.** Bedding and initial backfill for pipes shall be crushed stone conforming to ASTM C 33 stone size No. 67 gradation requirements.

**2.2 Sanitary Sewer.** All products and materials shall conform to the latest ASTM, ANSI or other appropriate standards and as otherwise specified herein.

**2.2.1 Gravity Polyvinyl Chloride Pipe** shall be SDR-35, push-on joint conforming with ASTM D 3034. Fittings shall comply with ASTM D 3034. Joints shall comply with ASTM D 3212.

**2.2.1.1** Each length of pipe shall have an integral bell and shall be supplied in 12.5 foot lengths.

**2.2.1.2** Joint shall be push-on type using elastomeric gasket designed to prevent slipping during jointing. The gaskets shall be factory installed and secured in place prior to delivery to the job site.

**2.2.1.3** Wye branch connections shall be supplied for service connections.

**2.2.1.4** All pipe, fittings, gasket material, and lubricant shall be supplied by the same manufacturer. Petroleum base lubricants shall not be used.

**2.2.1.5** Physical and chemical properties of pipe couplings shall be equal to those properties of the pipe.

**2.2.4 Flexible Couplings and Transition Couplings** for non-pressure sewer pipe shall be resilient elastomeric plastic with recessed stainless steel bands at each end for fastening.

**2.2.5 Couplings** used to join plain ends of PVC pipes shall be PVC double bell couplings, which shall conform to ASTM D 3034 for materials and ASTM D 3212 for joints.

**2.2.6 Identification.** Each pipe length and fitting shall be clearly marked with:

**2.2.6.1** Manufacturer's name and trademark.

**2.2.6.2** Nominal pipe size with sidewall dimension ratio.

**2.2.6.3** Material designation.

**2.5 Casing pipe** for stream crossing shall be Galvanized Steel Pipe conforming to ASTM A53 Grade B. Steel pipe shall be furnished in lengths of the CONTRACTOR 's choice which shall be field joined by full-penetration butt-welding all around.

**2.5.1 Casing Pipe:**

<u>Description</u>	<u>12" Casing Pipe</u>
Nominal Casing Size	12 in
Outside Diameter	12.8 in
Wall Thickness (min)	0.375 in
Type of Joint	Butt Welded

**2.5.2** Not used.

**2.5.3 Pipe Spacers** shall be a two-piece 14-gauge T-304 stainless steel assembly with stainless steel bolts. Assembly shall be the restrained positioning type. The runners shall be a ultra high molecular weight polymer with a maximum coefficient of friction of 0.12. The runners shall be attached to the support structures (risers) at appropriate positions to properly support the carrier pipe within the casing and to ease installation. The support heights are to be adjusted to provide the carrier (PVC sewer) pipe with the desired slope. The assembly shell liner shall be 0.090 inch ribbed PVC with 85-90 durometer.

**2.5.4 Carrier Pipe** shall be PVC per section 2.2.1.

**2.5.5 Bulkhead Materials** shall be one of the following (see plan for type):

**2.5.5.1 Brick and Mortar.** Brick for bulkheads shall be sound, uniformly burned and shall comply with ASTM C 32, Grade SA. Mortar shall consist of one part cement, one-quarter part lime, and two parts sand. Sand shall comply with ASTM C 144; lime shall comply with ASTM C 207, Type S; cement shall comply with ASTM C 150, Type II.

**2.5.5.2 Rubber Seal.** Rubber shall have one adhesive side for initial attachment to the pipe. Bonding agent shall be as recommended by the seal manufacturer. Three-quarter-inch stainless steel bands shall be used to secure the rubber seal to the casing and carrier pipes. Rubber seal shall be Model CCES as manufactured by Cascade Waterworks MFG Co., BWM Company, or approved equal.

### **Construction Requirements**

**3.1 General.** The CONTRACTOR shall furnish all sanitary sewer pipe, fittings, services and related material and appurtenances, labor, tools and equipment, and granular material; and perform all operations and incidentals necessary for complete excavation, installation, backfill and testing, as outlined herein and on the plans; and maintaining service at all times.

**3.1.1** The CONTRACTOR shall be responsible for the layout of the work. The sanitary sewer and appurtenances shall be built at the locations indicated on the plan to facilitate reconstruction of other facilities within this area of the project.

**3.1.2** The CONTRACTOR shall be responsible to field locate all existing sewer service laterals for the purpose of connecting them to the proposed sewer. This may involve exploratory test pits of which payment will be made under Item 206.19 – Common Structure Excavation Exploratory.

**3.1.3** Consequential damages resulting from the CONTRACTOR not locating the facilities as shown on the plan are the responsibility of the CONTRACTOR.

**3.1.4** Location of new sewer services for all lots throughout the project area as part of the new sewer line shall be as determined by the OWNER and ENGINEER.

**3.1.5** The CONTRACTOR, at the completion of each part of the work, shall furnish the as-built locations of the sewer main, and appurtenances referenced to the OWNER. The as-built locations shall be to an accuracy of plus or minus 0.10 feet in plan and elevation.

**3.1.6** Any deviations from the locations shown on the plans require the OWNER's and ENGINEER's approval. Any discrepancies with locations shown on the plans shall be brought to the ENGINEER's attention and subsequently resolved between the OWNER, the ENGINEER and the CONTRACTOR.

**3.1.7** CONTRACTOR shall submit detail layout plans and written descriptions of the entire construction procedure of, bypass sewage flow and shoring, dewatering, removal of pipe, installing pipe, connection to existing manholes, and installation of pipe spacers to keep PVC sewer at proper slope.

## **3.2 Excavation**

**3.2.1 General** - Excavation, dewatering, sheeting, and bracing shall be carried out in such a manner as to eliminate any possibility of undermining or disturbing the foundations of any existing structure, utilities or any work previously completed under this contract.

**3.2.2** On paved surfaces that will not be resurfaced under this contract, the CONTRACTOR shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are so shaped as to allow cutting or damage of such surfaces during excavation or other phases of the work.

**3.2.3** All lawns, paved surfaces, roadways, and structures which have been damaged or disturbed by the CONTRACTOR's operations outside of the project work areas shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations or as specified on the plans.

**3.2.4** The CONTRACTOR shall provide trench shoring and dewatering, if necessary, to provide a stable and dry trench at all times. The pipe trench must be dewatered to 1 foot 6 inches (0.5 m) below the invert of the new sewer pipe. Trench width shall be 2 feet plus the diameter of the pipe or a minimum of 3 feet, whichever is greater. Cover on the gravity sewer pipe shall be a minimum of 5 feet or as shown on the contract drawings. Trench depth shall extend to 6 inches below the invert of the pipe.

**3.2.5** As the excavation approaches pipes, conduits, or other underground structures, digging by conventional trenching machine methods shall be discontinued. Only manual methods of excavating shall be employed around buried utilities.

**3.2.6** Prior to doing any work outside the right-of-way line on private property or disturbing private property, the CONTRACTOR shall advise the property owner of the work and/or disturbance of the person's property that shall be performed, and the restoration thereof.

**3.2.7** The CONTRACTOR shall maintain utilities, utility services and water pipes encountered in the excavation, and repair or replace them to their owner's satisfaction and be responsible for consequential damages thereof.

**3.2.8** The CONTRACTOR shall not be compensated for any additional work required in working in close proximity to a utility line, water or underground structure in the trench line above or below the sewer pipe, except for common structure excavation (if required).

**3.2.9** Excavations shall be kept dry until the pipes and appurtenances to be built therein have been completed to such extent that they shall not be damaged.

**3.2.9.1** Provide, operate and maintain any dewatering system required to lower and control groundwater levels and groundwater hydrostatic pressure during the construction of the Work as required by this Section and the Contract Documents. The CONTRACTOR shall assume full responsibility and expense for the adequacy of the dewatering system with no additional time for performance.

**3.2.9.2** The dewatering system shall be capable of developing an excavated subgrade relieved of any hydrostatic pressure that could cause a decrease in the stability of the excavated subgrade and which shall provide the necessary groundwater control for the proper performance required for completion of the Work.

**3.2.9.3** Properly dispose of subsurface water collected in a manner which conforms to all applicable local and state ordinances, statutes and laws. Obtain all permits required for operation of the dewatering system.

**3.2.9.4** Maintain continual and complete effectiveness of the dewatering system operation to provide a firm, stable, excavated subgrade at all times as required for proper performance of the Work.

**3.2.9.5** Provide dewatering necessary to maintain the groundwater table 18 inches below the base of the proposed structure and/or pipe at all times.

**3.2.9.6 Erosion Control.** Provide adequate protection from erosion from any of the dewatering operations utilized during the course of the construction. Any damage, disruption or interference to newly constructed work or existing properties, buildings, structures, utilities and/or other work resulting directly or indirectly from dewatering operations conducted under this Contract shall be remedied by the CONTRACTOR, at no cost to the OWNER or DEPARTMENT.

**3.2.9.7 Treatment of Dewatering Operations Discharges.** Provide such additional treatment devices as may be required to meet the provisions of the Contract. This may include the construction of sumps and/or settling basins, stone rip-rap, silt fences or other requirements. The treatment devices shall be later removed and/or filled in with acceptable backfill material, and restored to original conditions once they are no longer needed, at no additional cost to the OWNER or DEPARTMENT.



**3.2.10 Over-Excavation.** If, in the opinion of the ENGINEER together with the OWNER, the material at or below the depth of the excavation is unsuitable for foundation, it shall be removed to such depths as directed by the OWNER and ENGINEER and shall be replaced with Granular Backfill (Sand), conforming to 209.2.1.1, and placed as provided in Section 209.3.

**3.2.10.1** If the bottom of the excavation is deeper than the depth shown on the plans, by error of the CONTRACTOR, the condition shall be corrected by refilling to the proper grade with compacted Granular Backfill (Sand), conforming to 209.2.1.1. All costs shall be borne by the CONTRACTOR.

**3.2.11 Rock and Boulder Excavation.** Rock and boulder excavation shall be in accordance with Section 206.

**3.2.12 Excess and Unsuitable Excavation.** Excavation not used for backfill, and unsuitable excavation shall be removed from the site and disposed of by the CONTRACTOR in accordance with local, State or Federal regulations.

### **3.3 Backfill**

**3.3.1 General.** After the pipe has been placed and has been inspected by the OWNER together with the ENGINEER, backfilling shall be performed without delay.

**3.3.2 Bedding** shall extend the full width of the trench from 6 inches below the pipe invert, to the springline (horizontal centerline) of the pipe. Compact the bedding material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922 prior to placement of the pipe and initial backfill.

**3.3.3 Initial Backfill Material** shall be placed from the springline of the pipe to a minimum of 12 inches above the pipe crown. The trench shall be backfilled by placing and compacting the initial backfill material in lifts of 6 inches or less to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. The filling shall be carried up evenly on both sides of the pipe with care being taken not to raise or otherwise disturb the pipe. Backfill to this depth shall be thoroughly compacted with approved hand-operated devices.

**3.3.4 Backfill** shall be placed from 12 inches above the pipe crown to the underside of the pavement select material profile, or to the underside of gravel and loam areas, with common backfill described herein and as approved by the ENGINEER.

**3.3.4.1** Backfill shall be placed and compacted in layers of 6 inches or less. Compact the backfill material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. Compaction shall be by hand-operated compactors or other approved method.

**3.3.4.2** Jetting and bucket compaction are not acceptable means of compaction.

**3.3.4.3** Trench areas improperly backfilled or having excessive settlement, as determined by the ENGINEER, shall be reopened to the required grade, backfilled using proper techniques,

and repaved as necessary. The CONTRACTOR shall receive no additional compensation for repair of trenches constructed under this Contract.

### **3.4 Pipe Installation**

#### **3.4.1 General**

**3.4.1.1** Pipe and fittings shall be handled with care to ensure that the pipe and fittings are in sound, undamaged condition. Particular care shall be taken to prevent damage to pipe coating and lining (if any).

**3.4.1.2** The CONTRACTOR shall furnish slings, straps and/or other approved devices to support the pipe when it is lifted. Pipe and fittings shall not be dropped from trucks onto the ground or into the trench. Transporting pipe and fittings from storage areas shall be restricted to operations which shall not cause damage to the pipe or lining (if any).

**3.4.1.3** All pipe and fittings shall be examined before laying, and no pipe or fittings shall be installed which are found to be defective. Damaged pipe coatings and/or lining (if any) shall be repaired as approved or directed by the ENGINEER at no additional cost to the OWNER or NHDOT.

**3.4.1.4** Any pipe showing a distinct crack with no evidence of incipient fracture beyond the limits of the visible crack, if approved, may have the cracked portion cut off by, and at the expense of, the CONTRACTOR before the pipe is laid so that the pipe used is sound. The cut shall be made in the sound portion of the barrel at least 12 inches from the visible limit of the crack.

**3.4.1.5** If any defective pipe is discovered after it has been laid, the CONTRACTOR shall remove the defective pipe and replace it with sound pipe at no additional cost to the OWNER or DEPARTMENT.

**3.4.1.6** In general, gravity pipe laying shall proceed upgrade with spigot ends pointing in the direction of the flow.

**3.4.1.7** Flow from existing service connections and main lines shall be maintained at all times by pumping or other methods approved by the ENGINEER. Under no circumstances will the dumping of raw sewage on private property, in municipal streets or into waterways, be allowed.

#### **3.4.2 Control of Alignment and Grade**

**3.4.2.1** Easement and property and other control lines necessary for locating the Work, as well as elevations and benchmarks used in the design of the Work, are shown on the Plans. The CONTRACTOR shall use this information to set line and use a level or transit to set grade.

**3.4.2.2** The CONTRACTOR shall use laser equipment to assist in setting the pipe and casing and must demonstrate satisfactory skill in its use.

**3.4.2.3** The use of string levels, hand levels, carpenter's levels or other similar devices for transferring grade or setting pipe will not be permitted.

**3.4.2.4** During construction provide the OWNER, upon request, all reasonable and necessary materials, opportunities, and assistance for setting stakes and making measurements, including the furnishing of one or two rodmen as needed at intermittent times.

**3.4.2.5** The CONTRACTOR shall not proceed until he has made timely request of the ENGINEER for, and has received, such controls and instructions as may be necessary as Work progresses. The Work shall be done in strict conformance with such controls and instructions.

**3.4.2.6** The CONTRACTOR shall carefully preserve benchmarks, reference points and stakes, and in case of willful, careless, or accidental destruction by his own workers, he shall be responsible for the resulting expense to re-establish such destroyed control data and shall be responsible for any mistakes or delay that may be caused by the loss or disturbance of such control data.

**3.4.2.7** Maintain good alignment while laying pipe. No deflection is allowed for gravity sewer pipes. Provide fittings, if required, in addition to those shown on the Drawings when pipe crosses utilities encountered when excavating the trench. Use solid sleeves only where shown on the plans unless otherwise approved by ENGINEER.

### **3.4.3 Installing Pipe and Fittings**

**3.4.3.1** The CONTRACTOR shall have on the job site with each pipe laying crew, all the proper tools to handle and cut the pipe.

**3.4.3.2** All pipe and fittings shall be thoroughly cleaned before laying and shall be kept clean until installed.

**3.4.3.3** Pipe shall be laid in the dry trench conditions. At no time shall water in the trench be permitted to flow into the pipe. At any time that work is not in progress, or the trench is unattended, the end of the pipe in the trench shall be suitably closed to prevent the entry of animals, earth, water, etc. using watertight expandable plugs.

**3.4.3.4** Lay PVC pipe and fittings in accordance with the requirements of AWWA C900, except as provided herein. PVC pipe shall not be installed when temperatures are below 32 ° F unless approved by the ENGINEER.

**3.4.3.5** Lay ductile iron pipe and fittings in accordance with the requirements of AWWA C600, except as provided herein.

**3.4.3.6** Excavation shall conform to the Section shown on the plans.

**3.4.3.7** As soon as excavation has been completed to the proper depth place and compact bedding materials, as specified in the Section, to the elevation necessary to bring the pipe to grade. The compacted material shall be shaped so that the bottom quadrant of the pipe rests firmly on the

bedding for the entire length of pipe barrels. Suitable holes shall be dug for bells or couplings to provide ample space for jointing pipe.

**3.4.3.8** Each pipe section shall be placed into position on the pipe bed in such a manner and by such means required to avoid injury to all persons, property and pipe involved.

**3.4.3.9** Permanent blocking under the pipe is not permitted, except where a concrete cradle is required, in which case precast concrete blocks shall be used.

**3.4.3.10** Jointing shall conform to the manufacturer's instructions and appropriate ASTM Standards.

**3.4.3.11** Any debris, tools, etc. shall be removed from the pipe.

**3.4.3.12** After placing the pipe on the bedding, the remaining bedding material shall be placed and compacted to the springline of the pipe.

**3.4.3.13** Following placement of the bedding material, the initial backfill material shall be placed and compacted from the springline to 12 inches above the crown of the pipe.

**3.4.3.14** After placement of the initial backfill material the pipe shall be checked for alignment and grade. If the pipe has been properly installed, the CONTRACTOR may refill or backfill the remainder of the trench in conformance with the Trenching Section, and details shown on the plans.

**3.4.3.15** At the end of each day's work, or more frequently, the ENGINEER will view the pipe installation with the CONTRACTOR. Unsatisfactory work shall be dug up and reinstalled to meet the requirements of the Contract Documents with no additional time allowed for completion of the Work and at no additional cost to the OWNER or DEPARTMENT.

**3.4.3.16** When cutting of pipe is required, the cutting shall be done by machine (power cutter) without damage to the pipe or cement lining (if any). Cut ends shall be smooth and at right angles to the long axis of the pipe. Pipe ends to be used with a rubber gasket joint shall be beveled and filed or ground smoothly to conform to a manufactured spigot.

#### **3.4.4 Protection of Water Supplies**

**3.4.4.1** There shall be no physical connection between a public or private potable water supply system and a sewer, or sewer appurtenance, which would permit the passage of any sewage or polluted water into the potable supply. No water pipe shall pass through or come in contact with any part of a sewer manhole.

**3.4.4.2** Sewers shall be located outside a 400-foot radius centered at a municipal well; a 200 foot radius centered at a small public well; and a 75 foot radius centered at a private well.

**3.4.4.3** Sewers shall be located during design with at least 10 feet of horizontal separation distance from any existing or proposed water main; except in cases to avoid subsurface structures,

including telecommunication chambers, interference of building foundations shall be allowed, provided that the sewer is constructed as follows:

**3.4.4.3.1** Sewer pipe shall be class 52 ductile iron for a minimum distance of 75 feet each side of the obstruction.

**3.4.4.3.2** Joints shall be mechanical type water pressure rated with zero leakage when tested at 25 psi for gravity sewers and 1-1/2 times working pressure for force mains.

**3.4.4.4** Whenever sewers must cross water mains, the sewer shall be constructed as follows:

**3.4.4.4.1** Vertical separation of the sewer and water main shall not be less than 18 inches.

**3.4.4.4.2** Sewer pipe shall be class 52 ductile iron for a minimum distance of 9 feet each side of the crossing.

**3.4.4.4.3** Joints shall be mechanical type water pressure rated with zero leakage when tested at 25 psi for gravity sewers and 1-1/2 times working pressure for force mains and joints shall not be located within 9 feet of the crossing.

### **3.4.5 Service Connections**

**3.4.5.1** House service lines shall be laid from the wye connection on the main line sewer to the edge of trench, as directed by the OWNER.

**3.4.5.2** New service connections shall match diameter of existing service connections.

**3.4.5.3** New services shall terminate as shown on the plans, be capped with a watertight cap, and the end shall be marked with a ferrous metal rod or pipe terminating at finish grade.

### **3.4.6 Testing**

#### **3.4.6.1 General**

**3.4.6.1.1** Leakage tests under the direction of the ENGINEER shall be conducted on all pipes installed under this section of the Work. Deflection tests shall be conducted on PVC pipe as ordered by the ENGINEER. The ENGINEER will witness all tests. The CONTRACTOR shall supply all plugs, pumps, weirs, gauges, water, water trucks, mandrels, etc., necessary to conduct the tests. Should the Work fail the leakage or deflection tests, corrective action shall be taken by the CONTRACTOR in a manner approved by the ENGINEER and, if directed by the ENGINEER, the CONTRACTOR shall dig up and relay the failed section with no additional time allowed for completion of the Work and at no additional cost to the OWNER or DEPARTMENT.

**3.4.6.1.2** The use of sealants, applied from the inside of the pipe, is not acceptable.

**3.4.6.1.3** Flush all piping systems with water prior to testing.

**3.4.6.1.4** Testing forms which indicate all testing information and results shall be submitted to the ENGINEER.

### **3.4.6.2 Gravity Sanitary Sewer Pipe Testing**

**3.4.6.2.1** Air Test: Leakage testing shall be by means of low-pressure air in accordance with the procedures described in UNI-B-6 with all service connections capped. The maximum allowable pressure drop from the test pressure shall be 1.0 psig (6.89 kPa) during the minimum holding time.

Test pressure psi (kPa) shall be calculated using the following equation:

$$P = 3.5 + (H/2.31)$$

*P = Test pressure (max. = 9 psi)*  
*H = Height (ft) of groundwater above invert*

Minimum holding time required for a 1.0 psig maximum pressure drop shall be calculated using the following chart:

Pipe Dia. (in.)	Min. Time (min:sec)	Length For Min. Time (ft)	Time For Longer Length (sec)	Time (min:sec) for Length (L) Shown					
				100 ft	150 ft	200 ft	250 ft	300 ft	350 ft
4	3:46	597	.380 L	3:46	3:46	3:46	3:46	3:46	3:46
6	5:40	398	.854 L	5:40	5:40	5:40	5:40	5:40	5:40
8	7:34	298	1.520 L	7:34	7:34	7:34	7:34	7:36	8:52
10	9:26	239	2.374 L	9:26	9:26	9:26	9:53	11:52	13:51
12	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56
15-16	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09
18	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52
21	19:50	114	10.470 L	19:50	26:10	34:54	43:37	52:21	61:00
24	22:40	99	13.674 L	22:47	34:11	45:34	56:58	68:22	79:46
27	25:30	88	17.306 L	28:51	43:16	57:41	72:07	86:32	100:57
30	28:20	80	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38
33	31:10	72	25.852 L	43:05	64:38	86:10	107:43	129:16	150:43
36	34:00	66	30.768 L	51:17	76:55	102:34	128:12	153:50	179:29

**3.4.6.3** CCTV Inspection of PVC sewer main: After installation of new PVC sewer main is complete, CONTRACTOR shall inspect the pipe with CCTV equipment. CCTV work shall be completed and delivered per the National Association of Sewer Service Companies (NASSCO) Pipeline Assessment and Certification Program (PACP) standards. Operators of CCTV equipment shall be NASSCO PACP certified. Any standing water, detectable leaks, improper joints or any other unacceptable feature detected by the television inspection will be corrected by removing and resetting pipe at no additional cost to the Owner.

**3.4.6.4 Force Mains** shall be tested for pressure and leakage in accordance with AWWA C600, except as amended or added below:

**3.4.6.4.1** Water shall be furnished by CONTRACTOR.

**3.4.6.4.2** Test Duration shall be two (2) hours.

**3.4.6.4.3** Test Pressure shall be one hundred and fifty percent (150%) of maximum operating pressure, or 100 psi, or the greater of the two, as determined by the ENGINEER.

**3.4.6.4.4 Allowable Pressure Loss.** Pressure shall not vary more than  $\pm 5$  psi for the duration of the pressure test.

**3.4.6.4.5 Allowable Leakage.** Allowable leakage shall be determined by the following formula:

$$L = \frac{SD(P)^{0.5}}{133200}$$

L = allowable leakage, in gallons per hour.  
 S = length of pipe tested, in feet.  
 D = nominal pipe diameter, in inches.  
 P = average test pressure, in psi (gauge).

Allowable leakage, in gallons per hour, per 1,000 feet of pipe line can be determined from the following chart.

Avg. Test Pressure psi	Nominal Pipe Diameter-in.										
	3	4	6	8	10	12	14	16	18	20	24
450	0.48	0.64	0.95	1.27	1.59	1.91	2.23	2.55	2.87	3.18	3.82
400	0.45	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.99
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70
200	0.32	0.43	0.64	0.85	1.06	1.28	1.48	1.70	1.91	2.12	2.55
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80

### 3.4.7 Casing Installation

**3.4.7.1** The casing pipe shall be installed through the vertical legs of the precast rigid frame utilizing the block-outs as indicated on the plans. The casing pipe shall be set to the appropriate

elevation to ensure the carrier pipe is at the proper line and grade prior to grouting into place using non-shrink grout. The casing pipe shall extend a minimum of 5-feet from the outside face of the precast concrete rigid frame leg. This work shall be completed prior to backfilling the precast rigid frame.

**3.4.7.2** The carrier pipe shall be installed by open-cut, with bedding and cover material as depicted on the plans. At the stream crossing, the carrier pipe shall be installed along the existing alignment and grade through the proposed precast rigid frame walls using the casing pipe as shown on the plans.

**3.4.8 Carrier Pipe Installation** –The casing pipe shall be cleaned of dirt and debris prior to inserting the carrier pipe. Pipe spacers shall be attached to carrier pipe as shown on the plans to ensure proper grade and the carrier pipe shall be tested for leakage prior to sealing in accordance with the plans and final backfilling. After the casing pipe has been fully installed and accepted by the OWNER and ENGINEER, bulkheads shall be constructed at each end of the casing pipe.

**3.4.8.1** On brick bulkheads, a “one brick” opening shall be left in the bulkhead at the top of the casing pipe at each end and covered with polyethylene to prevent entry of backfilling materials. The portion of the carrier pipe passing through the brick bulkhead shall be wrapped with three layers of fifteen-pound asphalt-impregnated felt before the bulkhead is constructed.

**3.4.8.2** On rubber sealed bulkheads, apply bonding agent to seal the two ends of the rubber seal. Three-quarter inch stainless steel bands shall secure the rubber seal to the casing and carrier pipes.

### **Method of Measurement**

**4.1** Temporary sewer system, temporary diversion, and bypass pumping will be measured as a unit. This unit shall consist of furnishing, installing, operating, and removal of temporary system or pipe.

**4.2** Sanitary gravity sewer pipe of the kind, type and size specified will be measured by the linear foot to the nearest 0.1 foot for the furnished, installed and operational sewer pipe.

**4.3** The OWNER must be involved in and approve the measurement of any pay item.

### **Basis of Payment**

**5.1** The accepted quantity of Bypass Pumping System will be paid for at the Contract price per unit and shall include compensation for furnishing all labor, materials, tools, fuel, electrical costs, and equipment necessary for bypass pumping and temporary piping, maintaining sewer flows and sewer service to all users, notices to abutters, traffic control, restoration of the ground surface, temporary paving and permanent paving, removal of the complete system upon completion of the work, and all appurtenant work as needed for a complete system. (Item 612.1131)



**5.2** The accepted quantity of sanitary sewer pipe, of kind and type specified will be paid for at the contract price per linear foot complete in place as shown on the plans and specified herein, and shall include excavation, bedding, blanket, backfill, furnishing and installing carrier pipe, furnishing and installing casing pipe, pipe spacers, grout installation, furnishing and installing sewer service wyes, board insulation, appurtenances, and all other work required for, or incidental to, the completion of this item. Work under this item shall also include sewer line cleaning, disposal of material removed from the sewer and casing pipe, CCTV of the PVC sewer immediately after installation (SMH 3 to SMH 4), video DVDs and written logs, all excavation and backfill, testing, erosion control, protection of surface waters, sheeting and shoring of the excavation, dewatering, notices to abutters, restoration of the ground surface, and all appurtenant work as needed to complete the work. (Item 612.615081)

**5.3** Any work not specifically having a pay item and necessary for a complete and operational sanitary sewer, as herein specified and called for on the plans, shall be considered incidental and subsidiary to the pay item work specified herein. The work considered as subsidiary and not separately paid for shall include but not be limited to the following:

- 5.3.1** Pipe material handling and storage on site.
- 5.3.2** Excavation, bedding, blanket and backfill.
- 5.3.3** Sheeting, shoring, and dewatering of trenches (if applicable).
- 5.3.4** Removal and disposal of existing PVC sewer piping and casing pipe.
- 5.3.5** Installation and sealing of casing pipe.
- 5.3.6** Restoration of property including loam and seed, utilities, and water lines (if applicable).
- 5.3.7** Pressure testing and lamping.
- 5.3.8** Restoration of and connections to existing sewers including couplings.
- 5.3.9** Plugging abandoned sewers.
- 5.3.12** Record plans.

**Pay items and units:**

612.1131	BYPASS PUMPING SYSTEM	Unit
612.615081	SEWER MAIN REPLACEMENT	LF

**SPECIAL PROVISION****SECTION 1008 – ALTERATIONS AND ADDITIONS AS NEEDED****Item 1008.9 – Testing of Materials****Description**

- 1.1 The Contractor shall employ an independent, qualified testing laboratory approved by the Engineer for conducting all required initial tests of concrete, structural steel inspection and weld testing, trench backfill and embankment compaction and other like materials as specified and directed by the Engineer. Test results and laboratory recommendations shall immediately be made available to the Engineer. Three (3) certified copies of the test results bearing the name of the testing company, type of test, test number, date and location test was conducted, are to be presented to the Engineer promptly enabling the Engineer to make his determination of the acceptability or unacceptability of the material to meet these specifications.
- 1.2 All additional tests necessitated by the failure of initial tests as determined by the Engineer shall be conducted as directed by the Engineer. The Contractor shall take immediate corrective measures as suggested by the testing laboratory and/or directed by the Engineer to make the materials meet or exceed these specifications.

**Construction Requirements****3.1 Concrete Testing**

- 3.1.1 All concrete to be used in the work shall be subject to testing to determine whether it conforms to the requirements of the specifications. The methods of testing shall conform to Section 520 of the Standard Specifications. The place, time, frequency and method of sampling will be determined by the Engineer in accordance with the particular conditions of this project.
  - 3.1.1.1 Field tests of concrete for compressive strength shall be taken, cured and tested by the approved testing laboratory as directed by the Engineer. A minimum of four (4) test specimens shall be made for each test. One specimen shall be broken at 7 days, one at 14 days, the other at 28 days. Specimens shall be made and tested in accordance with AASHTO T 22, AASHTO T 23 and AASHTO T 141 as specified in Section 520. Where there is any question as to the quality of the concrete in the structures, the

Engineer will require the Contractor at his expense, to have tests made by an approved independent testing and inspection laboratory. Such tests shall be in accordance with the "Standard Methods of Securing, Preparing and Testing Specimens of Hardened Concrete for Compressive and Flexural Strengths" (ASTM Designation C42) or Sections 202 and 203 of the current A.C.I. Building Code for Reinforced Concrete (A.C.I.318) as may be required. The criteria for acceptability of the concrete under the latter shall be that given therein. Concrete failing to meet the specification requirements shall be removed and replaced at the Contractor's expense.

### **3.2 Structural Steel Inspection and Weld Testing**

**3.2.1** All fabricated structural steel and field welding to be used in the work shall be subject to testing to determine whether it conforms to the requirements of the specifications. The methods of testing shall conform to Section 550 of the Standard Specifications. The place, time, frequency and method of sampling will be determined by the Engineer in accordance with the particular conditions of this project and as defined in Section 550.

### **3.3 Trench Backfill, Roadway Bases & Embankment Compaction Testing**

**3.3.1** The Contractor shall provide samples of each backfill material from the proposed sources of supply. The Contractor shall allow sufficient time for testing and evaluation of results before material is needed. Samples from alternate sources shall be submitted if required. The Engineer will be the sole and final judge of the suitability of all materials. The requirements of Section 203.3.8 apply to this section. When dual specifications are present or conflict, the more stringent shall govern.

**3.3.2** Materials in question pending tests results shall not be used. Any materials rejected shall be removed and replaced with new acceptable materials whether in stockpiles or in place.

**3.3.3** Compaction shall continue until the unit dry weight of the fill reaches a value of not less than the specified maximum unit dry weight attained in a laboratory compaction test performed under the specifications of ASTM D1557-64T, Method "A" (Backfill material of a stony nature shall be tested under Method "C" or "D" of the same ASTM Designation) or other approved ASTM or AASHTO Specifications. Such tests shall also be used for establishing the optimum moisture content of the material. The in-place dry unit weight of the compacted material shall be determined by methods specified under ASTM "D" 1556-58T or other approved ASTM or AASHTO Specifications. The in-place compaction test to be consistent with the approved laboratory compaction test.

**3.3.4** At least one laboratory compaction test shall be performed for each distinctive type of material to be incorporated. These laboratory tests to be taken at the suggestion of the testing laboratory and/or as directed by the Engineer. A minimum of two (2) in-place moisture-density determinations shall be made for each 100 linear feet of trench backfilled, roadway base constructed per 2 lifts of granular backfill installed. The actual number of compaction tests, their locations and depth shall be determined by the Engineer. The

percentage compaction of the fill at the point of the in-place moisture-density test shall be computed as follows:

Percentage compaction =  $DF \times 100 / DL$  in which:

DF= Unit dry weight in pound/cubic feet of sample in field moisture density determinations.

DL= Maximum unit dry weight in pound/cubic feet obtained in the specified laboratory compaction test on a sample of the same type of material.

**3.3.5** If the percentage compaction at any point is found to be unacceptable, additional compaction with or without modification of the field moisture content as directed shall be performed and additional moisture-density determinations made. This procedure shall be repeated until satisfactory compaction is obtained.

**3.3.6** The Contractor will cooperate with the testing laboratory in obtaining field samples of in-place materials after compaction. Also, incidental field labor and equipment necessary to dig and backfill test holes shall be furnished by the Contractor.

### **Basis of Payment**

**5.1** All payment for initial testing of concrete, granular bridge backfill, trench backfill, roadway bases and embankment compaction and other like materials as specified and directed by the Engineer will be made by the Owner to the Contractor based on and in the amount of submitted invoices from the testing firm. The Contractor shall not be entitled to any mark-up on the submitted invoices.

**5.2** All additional tests necessitated by the failure of initial tests as determined by the Engineer shall be conducted as directed by the Engineer and all costs incurred from these additional tests shall be borne by the Contractor.

**5.3** All work performed by the Contractor in connection with this Section shall be considered incidental to other contract items bid.

Pay Items and Units:

1008.9	Alternations and Additions as Needed – Testing of Materials	Dollar
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The allowance for Item 1008.9 on this project has been set at \$5,000.00.

August 2024

## SPECIAL PROVISION

### SECTION 1008 – ALTERATIONS AND ADDITIONS AS NEEDED

#### Item 1008.91 – Water Main Relocation

##### Description

##### 1.1 General Description of Work.

The location of the water line along the north side of Melendy Road is approximate and believed to pass under the brook and existing bridge. The Contractor shall excavate two test pits in the presence of the Engineer, one on each side of the bridge, to locate the water line and identify pipe materials. In the event the water line is within the proposed footing limits of the new bridge, the Contractor shall replace the existing water line and install a split-sleeve casing pipe around the replacement water main extending a minimum of 5 feet beyond the footing on each side of the bridge. If the water line is located below the proposed footing and found in good condition by the Engineer, a split-sleeve casing pipe shall be installed around the existing waterline and extend a minimum of 5 feet beyond the footing on each side of the bridge.

**1.1.1** The Town of Hudson, NH or its Designated Agent, hereinafter called OWNER, together with the ENGINEER, will inspect, accept and/or reject work related to the water facilities herein specified.

**1.1.2** The CONTRACTOR shall furnish all materials, labor, tools and equipment, and perform all operations, testing, and incidentals necessary for a complete operating water facilities installation, as outlined herein and on the plans.

**1.2 Sequence/Maintenance of Service.** The CONTRACTOR is responsible for maintaining continuous water service to affected customers, except when construction requires an interruption of water service. A service interruption may last no longer than six hours. The CONTRACTOR must obtain written approval from the OWNER prior to interruption of water service to affected water users. The OWNER requires that a written notice be sent to all water customers 48 hours in advance of the scheduled shutdown. The OWNER will provide written notification, but it is the CONTRACTOR's responsibility to establish and address needs, and shall coordinate with the ENGINEER and the OWNER.

**1.3 Reference Drawings and Information.** The OWNER/ENGINEER do not guarantee the accuracy or completeness of existing conditions shown on the construction plans for this water facilities work. Sufficient investigations shall be made by the CONTRACTOR so that the CONTRACTOR is knowledgeable of existing conditions prior to tendering a bid.

## **1.4 Submittals**

**1.4.1** Shop Drawings are required for each and every element of the water facilities installation work. Six (6) copies of shop and working drawings for water facilities shall be submitted to the Town of Hudson or its Designated Representative, together with the ENGINEER for approval in accordance with 105.02. Each shop drawing shall be assigned a sequential number for purposes of easy identification, and shall retain its assigned number, with appropriate subscript, on required resubmissions.

**1.4.2** Shop Drawings are generally defined as all fabrication and erection drawings, diagrams, brochures, schedules, bills of material, manufacturers data, spare parts lists, and other data prepared by the CONTRACTOR, his subcontractors, suppliers, or manufacturers which illustrate the manufacturer, fabrication, construction, and installation of the work, or a portion thereof.

**1.4.3** Shop Drawings shall be submitted as a complete package by Special Provision section, unless otherwise reviewed and approved by the ENGINEER. It is the intent that all information, materials and samples associated with each specification section be included as a single submittal for the ENGINEER's review. Any deviation from this requirement, such as submitting miscellaneous metals grouped by structure, shall be requested in writing prior to any associated submittal.

**1.4.4** The CONTRACTOR shall be responsible for the prompt and timely submittal of all shop and working drawings so that there shall be no delay to the work due to the absence of such drawings.

**1.4.5** No material or equipment shall be purchased or fabricated specifically for the Contract until the required shop and working drawings have been submitted as hereinabove provided and reviewed for conformance to the Contract requirements. All such materials and equipment and the work involved in their installation or incorporation into the Work shall then be as shown in and represented by said drawings.

## **Materials**

### **2.1 Earthwork Materials**

**2.1.1 Common Backfill.** Common backfill shall be granular material, consisting of hard sand and gravel so graded that, of the material passing the No. 4 sieve, not more than 35 percent shall pass the No. 200 sieve. Common backfill shall be free of organic matter, trash, roots or other deleterious material and shall contain no stone measuring greater in any dimension than two-thirds of the loose lift thickness or 8 inches, whichever is smaller. Common backfill shall be capable of forming a firm, stable base when spread and compacted in accordance with this specification. In addition, common backfill shall be non-plastic (plasticity index zero, defined as liquid limit minus plastic limit). Common backfill may be obtained from either on-site excavations or off-site sources. Any materials excavated from the trench not conforming to this specification shall be properly disposed of as specified and replaced with approved material, as required, at no additional cost to the OWNER.

**2.1.2 Sand Bedding and Blanket.** Sand bedding and blanket material required for installation of the water mains, services, and appurtenances shall meet the following gradation requirements: 100% passing the ½ inch sieve and, of the material passing the #4 sieve, no more than 12% shall pass the #200 sieve.

**2.1.3 Gravel Fill.** Gravel fill shall consist of hard, durable gravel free from trash, organic matter, clay, surface coatings, and other deleterious materials. Gravel fill shall have a maximum stone size of two-thirds of the loose lift thickness, or 6 inches, whichever is smaller. That portion passing the 4 inch (100 mm) sieve shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

<u>Sieve Size</u>	<u>Percent Passing</u>
6 inch	100
No.4	25-70
No. 200 *	0-12

\* Based on fraction passing the No. 4 sieve.

**2.1.3.1** When approved by the OWNER, gravel fill used for pipe bedding shall have a maximum stone size of 1½ inches.

**2.1.4 Crushed Gravel.** Crushed gravel shall consist of hard durable sand and gravel, free from trash, organic matter, clay, surface coatings, and other deleterious materials. Crushed gravel material shall meet the following gradation requirements, as determined by ASTM C 136 and ASTM C 117:

<u>Sieve Size</u>	<u>Percent Passing</u>
3 inch	100
2 inch	95-100
1 inch	55-85
No.4	27-52
No. 200 *	0-12

\* Based on fraction passing the No. 4 (4.75 mm) sieve.

**2.2 Water Mains and Appurtenances.** All products and materials shall conform to the latest appropriate section of American Water Work Association (AWWA) and American National Standards Institute (ANSI) Standards and as otherwise specified hereinafter.

### **2.2.1 Ductile Iron Water Main Pipe**

**2.2.1.1 Push-On Type Ductile Iron Water Pipe** for temporary and permanent systems shall be ductile iron complying with ANSI A21.51 and AWWA C151, Class 52. Pipe shall be double cement-lined 1/8 inch thick, and seal coated inside and out in accordance with ANSI A21.4 and AWWA C104. Joints shall be rubber gasket, push-on type in accordance with ANSI A21.11 and AWWAC 111. Use only lubricant that is specified by the pipe manufacturer.

**Mechanical Joint (MJ) Ductile Iron Pipe** for use in pipe sleeves shall conform to ANSI

A21.51/AWWA C151 Class 52. Mechanical joint fittings shall be ductile iron conforming to ANSI A21.10/AWWA C110. Pipe and fitting joint shall meet ANSI A21.11/AWWA C111 standards and shall include plain rubber gaskets. Pipe and fittings shall be double cement lined and seal coated inside and outside in accordance with ANSI A21.4/AWWA C104. All pipes and fittings shall be furnished with ductile iron retainer glands.

### 2.2.2 Blank.

**2.2.3 Ductile Iron Fittings** shall be mechanical joint type with a 350 psi pressure rating in accordance with ANSI A21.10 and AWWA C110. Fittings shall be double cement-lining  $\frac{1}{8}$  inch thick and seal coated inside and out in accordance with ANSI A21.4 and AWWA C104. Fitting shall be Tyler or approved equal. See section 2.3 for thrust restraint.

**2.2.4 Mechanical Joint Restraining Devices** shall be used with all mechanical joints. Glands shall be manufactured of ductile iron conforming to ASTM A 536. The ring shall be grade 65-45-12 ductile iron in accordance with ASTM A 536. The glands shall specifically be designed for use on PVC pipe when PVC pipe is used. Mechanical joint restraining devices shall be "Megalug" as manufactured by EBAA Iron Works, "Romagrip" as manufactured by Romac Industries, Inc. or approved equal.

**2.2.5 Couplings** shall be mechanical joint ductile iron solid sleeve type meeting the requirements stated above for ductile iron fittings.

### 2.2.6 Valves

**2.2.6.1 Gate Valves** shall be in accordance with AWWA C509. Gate valves shall be resilient-wedge type with a non-rising bronze stem, 2 inch AWWA operating nut and fusion bonded epoxy coated both inside and out. Gate valves shall have mechanical joints as specified above. The valves shall be American Flow Control - 2500, Mueller 2360, or approved equal. Valves shall open RIGHT.

**2.2.6.2 Butterfly Valves** shall be in accordance with AWWA C504. Butterfly valves shall be used for sizes above 12 inches. The valves shall be Henry Pratt Co. 'Groundhog', Dresser 450BF, or approved equal. Valves shall open RIGHT.

**2.2.6.3 Insertion Valves** shall be manufactured of ductile iron and feature a resilient wedge valve and shall be in accordance with AWWA C-509-01. The gate valve shall feature resilient-wedge type gate with a non-rising bronze stem and a 2 inch AWWA operating nut. Valve shall open RIGHT. Valve shall be Advanced Valve Technologies "EZ Valve" or approved equal.

**2.2.6.4 Valve Boxes** shall be heavy pattern cast iron, two piece, slip type, 5 inch shaft, with extension pieces sufficient to allow proper cover. Valve boxes shall weigh at least 100 pounds with cover. The upper section of the box shall be top-flange type to prevent settlement. The lower section shall be belled type to enclose the operating nut of the valve. For boxes on valve with a large depth of burial, a three-section box shall be used where all sections are from the same manufacturer. The cover shall be cast iron with the word "WATER" plainly cast thereon. Valve boxes shall be Tyler, Mueller, Quality Water Products, or approved equal.

**2.2.7.5. Tapping Sleeves** shall be mechanical joint, split sleeve with outlet flange conforming to AWWA C-110 section 10-14 with drilling recessed for tapping valve. The sleeve shall be ductile



iron construction and include a ¾ inch FIP threaded test plug in the body of the sleeve. Side rubber gaskets shall be rectangular in cross section and fit into grooved channels in the casting. These gaskets shall not require cutting or trimming to match the mechanical joint end gaskets. Tapping sleeves shall be furnished with standard accessories including, but not limited to: glands, gaskets, and Cor-Ten bolts and nuts or equivalent. All flange bolts shall be 316 stainless steel. Interior and exterior of sleeve shall be bituminous coated with a minimum of 4 mils dry thickness. Tapping sleeves shall be capable of accepting a full sized tapping cutter.

**2.2.7.6 Tapping Gate Valves** shall be resilient wedge style open left valves meeting the same specifications as gate valves under section 2.2.7.1 of these specifications except that one end of the valve shall be equipped with a flange conforming to AWWA C-110 section 10-14 for attachment to the tapping sleeve.

## 2.3 Insulation

**2.3.1 Board Insulation** shall be rigid extruded polystyrene 8 feet long, 2 feet wide, and 2 inches thick having an R value of 10 and conforming to ASTM C 578, Type VII, and shall be STYROFOAM HI-60 as manufactured by Dow Coming Chemical Co. or approved equal.

**2.3.2 Round Insulation** shall be a rigid pipe insulation supplied in half shells to completely cover the exterior of the pipe, joints and expansion joint with three inches of insulation to yield a minimum R-value of 15 (R=5 per inch of thickness). The compressive strength of the insulation shall be 24-PSI minimum in accordance with ASTM D 1621. The water absorption shall be 0.7% maximum in accordance with ASTM C 272. Service temperature range shall be -50°F to 150° F.

**2.3.2.1 PVC Jacket.** PVC jacket shall consist of a hard PVC wrapped cover completely surrounding the pipe and insulation and have a nominal thickness of ¼ inch. The jacket shall be factory wrapped around the insulated pipe and fittings, and sealed. Pipe shall be joined to have the middle of the pipe centered over the drain pipe.

## 2.4 Casing Pipe.

**2.4.1** Steel pipe casing pipe for roadway crossing shall be of the straight seam welded type and shall be in accordance with ASTM A36 and ASTM A 139 Grade B. Steel pipe shall be furnished in lengths of the CONTRACTOR 's choice which shall be field joined by full-penetration butt-welding all around.

<u>Description</u>	<u>12" Carrier Pipe</u>
Nominal Casing Size	30 in
Outside Diameter	30 in
Wall Thickness (min)	0.375 in
Yield Strength (min)	35,000 psi
Type of Joint	Butt Welded
Type of Coating	Galvanized

**2.4.2 Tolerance.** Out-of-round tolerance shall not exceed 0.50 inch.

**2.4.3 Pipe Spacers** shall be a two-piece 14-gauge T-304 stainless steel assembly with stainless steel bolts. Assembly shall be the restrained positioning type. The runners shall be an ultra-high molecular weight polymer with a maximum coefficient of friction of 0.12. The assembly shell liner shall be 0.090-inch ribbed PVC with 85-90 durometer. Spacer assembly shall be as manufactured by Cascade Waterworks MFG Co., BWM Company, or approved equal.

**2.4.4 Carrier Pipe** shall be existing 12-inch ductile iron pipe.

**2.4.5 Bulkhead Materials** shall be one of the following (see plan for type):

**2.4.5.1 Brick and Mortar.** Brick for bulkheads shall be sound, uniformly burned and shall comply with ASTM C 32, Grade SA. Mortar shall consist of one part cement, one-quarter part lime, and two parts sand. Sand shall comply with ASTM C 144; lime shall comply with ASTM C 207, Type S; cement shall comply with ASTM C 150, Type II.

**2.4.5.2 Rubber Seal.** Rubber shall have one adhesive side for initial attachment to the pipe. Bonding agent shall be as recommended by the seal manufacturer. Three-quarter-inch stainless steel bands shall be used to secure the rubber seal to the casing and carrier pipes. Rubber seal shall be Model CCES as manufactured by Cascade Waterworks MFG Co., BWM Company, or approved equal.

### Construction Requirements

**3.1 General.** The CONTRACTOR shall furnish all water main pipe, fittings, services and related material and appurtenances, labor, tools and equipment, granular material, and concrete; and perform all operations and incidentals necessary for complete excavation, installation, backfill, and testing as outlined herein and on the plans; and maintain service at all times.

**3.1.1** The CONTRACTOR shall be responsible for the layout of the work. The DEPARTMENT will provide control points as described in Section 105.08. The temporary and permanent water mains, service connections and appurtenances shall be built at the locations indicated on the Plans to facilitate reconstructing other facilities within this area of the project.

**3.1.2** The CONTRACTOR shall be responsible to field locate all existing water services for the purpose of connecting them to the proposed mains. This may involve exploratory test pits of which payment will be subsidiary to Item 1008.91.

**3.1.3** Location of new water services for all lots throughout the project area as part of the new water line will be as determined by the OWNER.

**3.1.4** Consequential damages resulting from the CONTRACTOR not locating the facilities as shown on the Plans are the responsibility of the CONTRACTOR.

**3.1.5** The CONTRACTOR, at the completion of each part of the work, shall furnish the as-built locations of the water main and appurtenances referenced to NHDOT's Construction Base Line and Benchmarks. The as-built locations shall be to an accuracy of plus or minus 0.10 feet in plan and elevation.

**3.1.6** Any deviations from the locations shown on the Plans require the OWNER's and the ENGINEER's approval. Any discrepancies with locations shown on the plans shall be brought to the ENGINEER's attention and subsequently resolved between the OWNER, the ENGINEER and the CONTRACTOR.

### **3.2 Temporary Water System**

**3.2.1** The CONTRACTOR shall provide a forty-eight (48) hour written notice to all water users regarding any disruption in service related to the installation and removal of by-pass and temporary service piping.

**3.2.2** The temporary main shall be installed as shown on the Drawings.

**3.2.3** Services that are to be connected to the temporary main shall be identified by the CONTRACTOR.

**3.2.4** New temporary services shall be connected to existing service piping and installed in accordance with these specifications. Materials shall be as specified herein and shall include piping, saddles, corporation stops, copper tubing and compression couplings.

**3.2.5** The temporary system shall be pressure ~~and leakage~~ tested and properly disinfected in accordance with applicable AWWA specifications.

### **3.3 Trench Excavation**

**3.3.1 General.** Excavation, dewatering, sheeting, and bracing shall be carried out in such a manner as to eliminate any possibility of undermining or disturbing the foundations of any existing structure, utilities or any work previously completed under this contract.

**3.3.2** On paved surfaces that will not be resurfaced under this contract, the CONTRACTOR shall not use or operate tractors, bulldozers, or other power-operated equipment with treads or wheels which are so shaped to allow cutting or damage of such surfaces during excavation or other phases of the work.

**3.3.3** All lawns, paved surfaces, roadways, and structures which have been damaged or disturbed by the CONTRACTOR's operations outside of the project work areas shall be restored to a condition at least equal to that in which they were found immediately prior to the beginning of operations or as specified on the plans.

**3.3.4** The CONTRACTOR shall provide trench shoring and dewatering, if necessary, to provide a stable and dry trench at all times. The pipe trench must be dewatered to 1 foot 6 inches below the invert of the new water pipe. Trench width shall be 2 feet plus the diameter of the pipe. Cover on pipe shall be a minimum of 5 feet 6 inches. Trench depth shall extend to 6 inches below the invert of the pipe.

**3.3.5** As the excavation approaches pipes, conduits, or other underground structures, digging by conventional trenching machine methods shall be discontinued. Only manual methods of excavating shall be employed around buried utilities.

**3.3.6** Prior to doing any work outside the right-of-way line on private property for connection of water services, the CONTRACTOR shall advise the property owner of the work and/or disturbance of the person's property that shall be performed, and the restoration thereof.

**3.3.7** The CONTRACTOR shall maintain utilities, utility services and sewer pipe encountered in the excavation, and repair or replace them to their owner's satisfaction and be responsible for consequential damages thereof.

**3.3.8** The CONTRACTOR shall not be compensated for any additional work required in working in close proximity to a utility line, sewer or underground structure in the trench line above or below the water pipe, except for common structure excavation (if required).

**3.3.9** Excavations shall be kept dry until the pipes and appurtenances to be built therein have been completed to such extent that they shall not be damaged.

**3.3.9.1** Provide, operate and maintain any dewatering system required to lower and control groundwater levels and groundwater hydrostatic pressure during the construction of the Work as required by this Section and the Contract Documents. The CONTRACTOR shall assume full responsibility and expense for the adequacy of the dewatering system with no additional time for performance.

**3.3.9.2** The dewatering system shall be capable of developing an excavated subgrade relieved of any hydrostatic pressure that could cause a decrease in the stability of the excavated subgrade and which shall provide the necessary groundwater control for the proper performance required for completion of the Work.

**3.3.9.3** Properly dispose of subsurface water collected in a manner that conforms to all applicable local and state ordinances, statutes and laws. Obtain all permits required for operation of the dewatering system.

**3.3.9.4** Maintain continual and complete effectiveness of the dewatering system operation to provide a firm, stable, excavated subgrade at all times as required for proper performance of the Work.

**3.3.9.5** Provide dewatering necessary to maintain the groundwater table 18 inches (450 mm) below the base of the proposed structure and/or pipe at all times.

**3.3.9.6 Erosion Control.** Provide adequate protection from erosion from any of the dewatering operations utilized during the course of the construction. Any damage, disruption or interference to newly constructed work or existing properties, buildings, structures, utilities

and/or other work resulting directly or indirectly from dewatering operations conducted under this Contract shall be remedied by the CONTRACTOR, at no cost to the OWNER or DEPARTMENT.

**3.3.9.7 Treatment of Dewatering Operations Discharges.** Provide such additional treatment devices as may be required to meet the provisions of the Contract. This may include the construction of sumps and/or settling basins, stone rip-rap, silt fences or other requirements. The treatment devices shall be later removed and/or filled in with acceptable backfill material, and restored to original conditions once they are no longer needed, at no additional cost to the OWNER.

**3.3.10 Over-Excavation.** If, in the opinion of the ENGINEER together with the OWNER, the material at or below the depth of the trench is unsuitable for foundation, it shall be removed to such depths as directed by the OWNER and ENGINEER and shall be replaced with compacted Granular Backfill (Sand), conforming to 209.2.1.1, and placed as provided in 209.3.

**3.3.11** If the bottom of the excavation is deeper than the depth shown on the plans, by error of the CONTRACTOR, the condition shall be corrected by refilling to the proper grade with compacted Granular Backfill (Sand), conforming to 209.2.1.1. All costs shall be borne by the CONTRACTOR.

**3.3.12 Rock and Boulder Excavation** shall be in accordance with Section 206.

**3.3.13 Excess and Unsuitable Excavation.** Excavation not used for backfill and unsuitable excavation shall be removed from the site and properly disposed of by the CONTRACTOR in accordance with local, State or Federal regulations.

### **3.4 Trench Backfill**

**3.4.1 General.** After the pipe has been placed and has been inspected by the OWNER together with the ENGINEER, backfilling shall be performed without delay.

**3.4.2 Bedding** shall extend the full width of the trench from 6 inches below the pipe, to the springline (horizontal centerline) of the pipe. Compact the bedding material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922 prior to the placement of the blanket material.

**3.4.3 Blanket Material** shall be placed from the springline of the pipe to a minimum of 12 inches above the pipe crown. The trench shall be backfilled by placing and compacting the blanket material in lifts of 6 inches or less to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. The filling shall be carried up evenly on both sides of the pipe with care taken not to raise or otherwise disturb the pipe. Compact the blanket material with approved hand-operated devices.

**3.4.4 Backfill** shall be placed from 12 inches above the pipe crown to the underside of the pavement select material profile, or to the underside of loam and grassed areas, with common backfill described herein and as approved by the ENGINEER.

**3.4.4.1** Backfill shall be placed and compacted in layers of 6 inches or less. Compact the backfill material to 95% Modified Proctor in accordance with ASTM D 157 and ASTM D 2922. Compaction shall be by hand-operated compactors, or other approved method.

**3.4.4.2** Jetting and bucket compaction are not acceptable means of compaction.

**3.4.4.3** Trench areas improperly backfilled or having excessive settlement, as determined by the ENGINEER, shall be reopened to the required grade, backfilled using proper techniques, and repaved as necessary. The CONTRACTOR shall receive no additional compensation for repair of trenches constructed under this Contract.

**3.4.5 Trench Pavement Patch.** All pavement patching of water main-related trenches shall be in accordance with Section 401.3. The water main trench pavement edges shall be saw-cut prior to permanent patching.

### **3.5 Pipe Installation**

#### **3.5.1 General.**

**3.5.1.1** Pipe and fittings shall be handled with care to ensure that the pipe and fittings are in sound, undamaged condition. Particular care shall be taken to prevent damage to pipe coating and lining (if any).

**3.5.1.2** The CONTRACTOR shall furnish slings, straps and/or other approved devices to support the pipe when it is lifted. Pipe and fittings shall not be dropped from trucks onto the ground or into the trench. Transporting pipe and fittings from storage areas shall be restricted to operations which shall not cause damage to the pipe or lining (if any).

**3.5.1.3** All pipe and fittings shall be examined before laying, and no pipe or fittings shall be installed which are found to be defective. Damaged pipe coatings and/or lining (if any) shall be repaired as approved or directed by the ENGINEER at no additional cost to the OWNER. The OWNER and/or ENGINEER may elect to not allow damaged pipe to be used in the work and the CONTRACTOR shall immediately remove the pipe from the project and replace the pipe at no additional cost to the OWNER. If the damage is existing, payment will be made for the replacement pipe; however, if the damage was caused by the CONTRACTOR'S operations, the pipe shall be replaced at the CONTRACTOR'S expense.

**3.5.1.4** Any pipe showing a distinct crack shall immediately be removed from the project and replaced with new pipe by the CONTRACTOR at no additional cost to the OWNER. If the damage is existing, payment will be made for the replacement pipe; however, if the damage was caused by the CONTRACTOR'S operations, the pipe shall be replaced at the CONTRACTOR'S expense.

**3.5.1.5** If any defective pipe is discovered after it has been laid, the CONTRACTOR shall remove the defective pipe and replace it with sound pipe at no additional cost to the OWNER.

**3.5.1.6** Pipe and accessories shall be kept in a sound, undamaged condition. They shall, at all times, be handled with care and shall not be dropped, dumped or bumped against any other object. Damaged material shall be replaced at no cost to OWNER, at any time during the construction that the damage is identified or occurs.

**3.5.1.7** Pipe shall be stored off the ground.

**3.5.2 Buried Pipe Installation.** Installation of all buried piping shall be in accordance with AWWA Standard for installation of ductile iron water mains and their appurtenances, AWWAC600.

**3.5.2.1** Pipe and fittings shall be thoroughly cleaned before they are placed. All lumps, blisters, and excess coal tar coating shall be removed from the spigot and from the interior of the bell, and these surfaces shall be wire-brushed, wiped clean and dry, and be free from oil and grease before the pipe is laid.

**3.5.2.2** The interior of pipe, fittings and valves shall be kept clean and free of foreign material or soils at all times during storage and installation, or the material will be subject to rejection by the OWNER and ENGINEER.

**3.5.2.3** All pipes and appurtenances laid in open trench excavation shall be bedded and uniformly supported over their full-length on bedding of the types specified herein and shown on the drawings. All work shall be performed in a dry trench.

**3.5.2.4** Pipe and fittings shall be laid accurately to the line and grades. Care shall be taken to provide a firm bearing for the pipe along its entire length. Pipes shall not be laid in water, nor shall water be allowed to flow through them.

**3.5.2.5** At all times when pipe laying is not actually in progress, the open ends of pipe in the trench shall be closed by temporary water-tight plugs or by other approved means. If water is in the trench when work is resumed, the plug shall not be removed until all danger of water entering the pipe has passed.

**3.5.2.6** Wherever it is necessary to deflect pipe from a straight line, either in the vertical or horizontal plane, the amount of deflection allowed shall not exceed that required for making a satisfactory joint and shall be subject to the approval of the OWNER and ENGINEER.

**3.5.2.7** For mechanical joints, the spigot shall be centrally located in the bell, and adequate anchorage shall be provided at abrupt changes in direction and at dead-ends. All surfaces in contact with the rubber gaskets shall be brushed thoroughly with a wire brush immediately prior to assembly. The clean surfaces shall then be brushed with manufacturer's recommended lubricant prior to slipping the gasket over the spigot and into the bell. Lubricant shall also be brushed over the gasket prior to installation for the purpose of removing loose dirt and lubricating the gasket as it is forced into its retaining space. The CONTRACTOR shall use wrenches as recommended by the manufacturer. When tightening bolts, it is essential that the gland be drawn toward the pipe flange evenly, maintaining approximately the same distance between the gland and the face of the flange at all points around the socket.

**3.5.2.8** For push-on joints, all foreign matter in the gasket seat in the socket shall be removed and the gasket wiped clean and flexed before placing in its seat. A thin film of lubricant shall be applied to the inside surface of the gasket. The plain end of the next pipe, after wiping clean, shall be aligned and carefully entered into the socket until it just makes contact with the gasket. Joint assembly shall be completed by forcing the end of the pipe past the gasket until it makes contact with the bottom of the socket. Final joint assembly of pipe 8 inches and smaller shall be accomplished by pushing against the face of bell of the entering pipe with a crow-bar or other tool. For larger pipe, the assembly shall be made with a jack and suitable slings.

**3.5.2.9** When pipe is cut in the field, the cut end shall be tapered back approximately  $\frac{1}{8}$  inch at an angle of 30 degrees with the centerline of the pipe with a coarse file or grinder to remove any rough edges which might injure the gasket.

**3.5.2.10** The CONTRACTOR shall furnish and install all supports necessary to hold the piping and appurtenances in a firm, substantial manner at the lines and grades indicated on the drawings or as directed by the OWNER and ENGINEER.

**3.5.2.11** Bends, tees, and other fittings in pipe lines buried in the ground shall be backed up with thrust restraint Class B concrete,  $\frac{1}{2}$  cubic yard minimum, against undisturbed earth (bearing area as shown on the plans). If the soil does not provide firm support, then bridle rods, clamps, etc. shall be provided to brace the fittings properly. All accessories shall be seal-coated thoroughly and heavily with an approved material per AWWA C104 after assembly and shall be subsidiary to the ductile iron fitting unit price. Thrust blocks are to be poured in place unless otherwise approved by the ENGINEER.

**3.5.2.12** Insulation shall be installed as shown on the plans or as directed by the ENGINEER.

**3.5.2.12.1** Board insulation shall be installed as shown on the Plans over water mains having less than 5 foot 6 inches cover with all joints overlapped and extending 8 feet either side of the centerline of the new culvert. The total thickness of the insulation shall be 4 inches. The width of the installed insulation shall be 4 feet.

## **3.6 Casing Installation**

**3.6.1** Casing pipe shall be installed by open cut with bedding and cover material as shown on the plans. Split casing pipe shall be longitudinally cut and field welded for installation around existing carrier pipe.

**3.6.2** Casing pipe ends shall be beveled with a single V-groove for field welding. Pipe joints shall be butt welded and shall be a full penetration on the outside circumference of the pipe. The single V-groove butt weld shall conform to the latest AWS Welding Code. All joints of the casing pipe shall be butt welded by a welder certified by the State of New Hampshire for the specific application.



**3.7 Carrier Pipe Installation.** After lower half of casing pipe has been installed and cleaned of dirt and debris, pipe spacers shall be attached to carrier pipe as shown on the plans. After the casing pipe has been fully installed and accepted by the OWNER and ENGINEER, bulkheads shall be constructed at each end of the casing pipe.

**3.7.1** On brick bulkheads, a “one brick” opening shall be left in the bulkhead at the top of the casing pipe at each end and covered with polyethylene to prevent entry of backfilling materials. The portion of the carrier pipe passing through the brick bulkhead shall be wrapped with three layers of fifteen-pound asphalt-impregnated felt before the bulkhead is constructed.

**3.7.2** On rubber sealed bulkheads, apply bonding agent to seal the two ends of the rubber seal. Three-quarter inch stainless steel bands shall secure the rubber seal to the casing and carrier pipes.

**3.8 Valve Installation.** Valves and boxes shall be set with the stem vertical and box vertically centered over the operating nut. Valves shall be set on a firm foundation and supported by tamping selected excavated material under and at the sides of the valve. The gate box shall be supported during backfilling and maintained in vertical alignment with the top flush with finish grade. Valve boxes shall be inspected for alignment after installation. If the valve box is not centered on the valve, the box shall be re-excavated and backfilled to rectify the mis- alignment.

**3.9 Service Installation.** Install corporation stops on the new water main. The tapping machine shall be rigidly fastened to the pipe halfway between the horizontal and vertical position. The length of travel of the tap should be established so that when the stop is inserted and tightened with a 14 inch wrench, not more than one to three threads shall be exposed on the outside. When a wet tapping machine is used, the corporation stop shall be inserted with the machine while it is in place. Stops shall be tightened only sufficiently enough to give water- tightness, and care must be constantly exercised not to over-tighten them.

**3.9.1** Service saddles shall be used on all PVC pipes and will be required as indicated by the following chart for ductile iron pipe:

<u>Pipe Size</u>	<u>Saddle Requirements for Class 52 D.I. Pipe</u>
6 inch	Taps > $\frac{3}{4}$ inch
8 inch	Taps > $\frac{3}{4}$ inch
10 inch	Taps > 1 inch
12 inch	Taps > 1-1/4 inch
16 inch	Taps > 2 inch
20 inch	Taps > 2 inch

**3.9.2** Install copper tubing, from the corporation stop to the curb stop, in a trench with a depth of at least 6 feet. Care shall be exercised in the placing and laying of copper tubing to be sure that the pipe does not have kinks. Place at least 6 inches of sand adjacent to and below the tubing and 12 inches above the tubing.

**3.9.3** Install curb stops and curb boxes at the approximate property line, or as indicated on the plans, and connect with new copper tubing coming from the new main. Place concrete block or flat stone beneath curb stop. Install curb box vertically centered over the operating key, with the elevation of the top adjusted to conform to the finished grade. Prior to backfilling, the CONTRACTOR shall ensure corporation stops are in the open position and curb stops are fully shut. Adequately support the box during backfilling to maintain vertical alignment. Care must be taken to ensure that the curb box does not rest on the curb stop.

**3.9.4** Make connections of new copper services to existing services as directed by the ENGINEER. Connection shall be made using suitable couplings.

**3.10 Inspection.** Each section of installed water main will be visually inspected by the OWNER and ENGINEER. The pipe shall be true to both line and grade, shall contain no broken pipe, shall show no leaks, and shall contain no debris or other deposits of which shall in any way reduce the full cross-sectional area of the pipe.

**3.10.1** Any section of water pipe which does not comply with these inspection criteria, as determined by the OWNER and ENGINEER, shall be promptly corrected, replaced or repaired by the CONTRACTOR at no cost to the OWNER. Such methods as are employed for the correction shall be approved by the OWNER.

**3.11 Pressure and Leakage Testing.** The CONTRACTOR shall furnish all necessary equipment and labor for, and perform, pressure testing and leakage tests on the water pipe in accordance with AWWA C600 Specifications.

**3.11.1** The CONTRACTOR shall make any taps and furnish all necessary caps, plugs, etc., as required in conjunction with testing, and also furnish a test pump, gauges, and any other equipment required in conjunction with carrying out the hydrostatic tests. The CONTRACTOR shall at all times protect the new water mains and the existing water mains against the entrance of polluting material.

**3.11.2 Testing Requirements:**

1. Test duration: Two (2) hours, minimum.
2. Test pressure: One hundred and fifty percent (150%) of maximum operating pressure as determined by the ENGINEER, or 100 psi; whichever is higher.
3. Allowable pressure loss: Pressure shall not vary more than 5 psi for the duration of the pressure test.
4. Allowable leakage: Allowable leakage shall be determined by the following formula:

ENGLISH
$L = \frac{SD(P)^{0.5}}{148,000}$
L = allowable leakage, in gallons <b>per hour</b> . S = length of pipe tested, in feet. D = nominal pipe diameter, in inches. P = average test pressure, in psi (gauge).

5. Acceptance of installation shall be determined on the basis of allowable leakage. If any test of pipe laid discloses leakage greater than that specified, the CONTRACTOR shall, at his own expense, locate and make repairs as necessary until the leakage is within the specified allowance.
6. All visible leaks are to be repaired regardless of the amount of leakage.
7. The leakage test shall be constructed concurrently with the pressure test.

**3.12 Disinfection.** Before being placed in service, all new and temporary water pipelines shall be chlorinated by the CONTRACTOR in accordance with the requirements of AWWA C651. The procedure shall be discussed with the OWNER and ENGINEER prior to proceeding with the work.

**3.12.1** The location of the chlorination and sampling points will be determined by the OWNER and ENGINEER in the field. Taps for chlorination and sampling shall be uncovered and backfilled by the CONTRACTOR, as required. The general procedure for chlorination shall be first to flush all dirty or discolored water from the lines, and then introduce chlorine in approved dosages through a tap at one end, while water is being withdrawn at the other end of the line. The chlorine solution shall remain in the pipeline for a minimum of 24 hours.

**3.12.2** Following the chlorination period, all treated water shall be flushed from the lines at their extremities, and replaced with water from the distribution system. Bacteriological sampling and analysis of the replacement water shall then be made after the replacement water has occupied the chlorinated pipeline for a minimum of 16 hours. Bacteriological analysis shall be completed by a state-certified laboratory in full accordance with AWWA C651. The CONTRACTOR shall re-chlorinate at no cost to the OWNER or DEPARTMENT if the test fails to achieve satisfactory results, as approved by the ENGINEER. The line shall not be placed in service until the requirements of the NHDES, Water Supply Engineering Bureau are met.

**3.12.3** Special disinfection procedures, such as soaking or swabbing approved by the ENGINEER, shall be used in connections to existing mains and where the method outlined above is not practical.

**3.13 Spare Parts.** The CONTRACTOR will be required to have on-site, at all times, the following spare parts:

11 1/4° bends	2 for each size pipe
22 1/2° bends	2 for each size pipe
45° bends	2 for each size pipe
Solid sleeve couplings	2 for each size pipe
SDR 35 PVC pipe	2 lengths of 6" and 8"
Dresser couplings	2 for each size pipe
Retainer glands	2 for each size pipe

### Method of Measurement

**4.1** Water main pipe of the kind, type and size specified will be measured by the linear foot to the nearest 0.1 foot for the furnished, installed, and operational water main pipe.

**4.1.1** Common structure excavation required for the removal and disposal of unsuitable material below the typical trench section will be measured as provided in Section 206.

**4.1.2** Rock structure excavation and common structure excavation exploratory will be measured as provided under Section 206.

**4.1.3** Granular backfill (sand) to replace material excavated under 5.2.1 will be measured as provided in Section 209.

**4.2** Encasement of the kind, type and size specified will be measured by the linear foot to the nearest 0.1 foot.

**4.3** Fittings (bends and tees), solid sleeves, valves, expansion joints, and couplings will be measured by the each for the number of units furnished and installed.

**4.4** Board insulation will be measured by the square yard to the nearest .01 of a square yard of area covered for the thickness specified.

**4.4.1** Round rigid pipe insulation and jacket will be measured by the linear foot to the nearest 0.1 linear foot for the thickness specified. Measurement will be from end to end along the top (or bottom) of the insulation.

**4.5** The ENGINEER must be involved in and approve the measurement of any pay item.

### Basis of Payment

**5.1** All payment for relocation and replacement of the water main as specified and directed by the ENGINEER will be made by the OWNER to the CONTRACTOR based on and in the amount of submitted invoices from the CONTRACTOR based on time and materials.

Pay Items and Units:

1008.91	Alterations and Additions as Needed – Water Main Relocation	Dollar
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The allowance for Item 1008.91 on this project has been set at \$75,000.00.

## **FEDERAL REQUIREMENTS**

06/24/08

Supercedes: 9/11/06, 12/5/90

**WAGE RATES**  
**FEDERAL AID PROJECTS**

This proposal contains minimum wage determinations as specified by the U.S. Secretary of Labor. Copies of the attached wage determination(s) shall be posted on the bulletin board at the work site and furnished to employees upon request. Furthermore, the wage determination(s) shall be incorporated into all subcontract agreements.

If the Contractor, any subcontractor or lower-tier contractor intend to employ a classification of labor not listed in the attached determination(s), it shall submit a Request for Additional Work Classification(s) to the New Hampshire Department of Transportation, Labor Compliance Office at (603) 271-2467. The Contractor is responsible for ensuring that a Request is submitted for any additional classification of work to be employed by itself, any subcontractor or lower-tier contractor 3-4 weeks before the classification is utilized.

This contract is subject to the Work Hours Act of 1962, P.L. 87-581 and implementing regulations.

"General Decision Number: NH20240039 01/05/2024

Superseded General Decision Number: NH20230039

State: New Hampshire

Construction Type: Highway

County: Hillsborough County in New Hampshire.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:	<ul style="list-style-type: none"><li>◆ Executive Order 14026 generally applies to the contract.</li><li>◆ The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.</li></ul>
If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:	<ul style="list-style-type: none"><li>◆ Executive Order 13658 generally applies to the contract.</li><li>◆ The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours performing on that contract in 2024.</li></ul>

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number      Publication Date  
0                              01/05/2024

SUNH2019-008 11/22/2022

Rates                      Fringes



CARPENTER (Form Work Only).....	\$ 23.11	1.06
CARPENTER, Excludes Form Work....	\$ 26.23	2.51
CEMENT MASON/CONCRETE FINISHER...	\$ 21.81	0.00
ELECTRICIAN.....	\$ 29.00	2.78
FENCE ERECTOR (Chain Link Fence).....	\$ 19.59	0.00
HIGHWAY/PARKING LOT STRIPING: Painter.....	\$ 20.87	0.00
INSTALLER - GUARDRAIL.....	\$ 29.25	5.56
IRONWORKER, REINFORCING.....	\$ 22.59	2.00
IRONWORKER, STRUCTURAL.....	\$ 34.45	17.20
LABORER: Asphalt, Includes Raker, Shoveler, Spreader and Distributor.....	\$ 23.03	8.88
LABORER: Common or General.....	\$ 18.62	2.60
LABORER: Landscape.....	\$ 18.34	2.85
LABORER: Pipelayer.....	\$ 19.02	2.72
OPERATOR: Auger.....	\$ 26.07	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 24.98	7.21
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 20.21	3.98
OPERATOR: Broom/Sweeper.....	\$ 23.09	5.09
OPERATOR: Bucket.....	\$ 30.00	0.00
OPERATOR: Bulldozer.....	\$ 25.97	6.59
OPERATOR: Crane.....	\$ 29.76	3.29
OPERATOR: Grader/Blade.....	\$ 25.96	6.00
OPERATOR: Loader.....	\$ 25.40	7.51
OPERATOR: Mechanic.....	\$ 25.12	3.44
OPERATOR: Milling Machine.....	\$ 29.25	5.47
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 28.25	6.51
OPERATOR: Pounder.....	\$ 35.06	7.75
OPERATOR: Roller.....	\$ 27.19	6.12
PAINTER: Spray.....	\$ 27.29	6.95
TRAFFIC CONTROL: Flagger.....	\$ 14.82 **	1.37

TRUCK DRIVER: Dump Truck.....\$ 19.06 3.37

TRUCK DRIVER: Lowboy Truck.....\$ 22.75 4.95

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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\*\* Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

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The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

#### Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this

classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

#### Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

#### Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

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#### WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- \* an existing published wage determination
- \* a survey underlying a wage determination
- \* a Wage and Hour Division letter setting forth a position on a wage determination matter
- \* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests

for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations  
Wage and Hour Division  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board  
U.S. Department of Labor  
200 Constitution Avenue, N.W.  
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

**SPECIAL ATTENTION**

**FY 2019 National Defense Authorization Act (NDAA)**

**Prohibition of Certain Telecommunications and Video Surveillance Services and  
Equipment from Specific Producers**

The United States Department of Transportation (USDOT)/Federal Highway Administration (FHWA) continues to monitor suppliers and equipment to ensure that the safety and security of equipment and the ITS network can be maintained. The Contractor shall be aware that the Department has received notification from USDOT/FHWA that per 2 CFR 200.216, 2 CFR 200.471, and Section 889(b) of the FY 2019 NDAA, that no equipment shall be purchased by manufacturers, or known associates of manufacturers, as shown on the Department's *Restricted Equipment Manufacturer List* ([www.nhtmc.com/forms/index.html](http://www.nhtmc.com/forms/index.html)). The Department reserves the right to reject previously approved equipment submissions for any equipment throughout the life of the contract if a manufacturer or their equipment is added to the restricted list.

## **SPECIAL ATTENTION**

### **BUILD AMERICA, BUY AMERICA**

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed into law (the Bipartisan Infrastructure Law, or BIL), which includes the Build America, Buy America Act (BABA) (Pub. L. No. 117-58). BABA strengthens existing Buy America regulations and specifically states that no Federal funds made available for infrastructure may be obligated for a project unless all the iron, steel, and Construction Materials permanently incorporated into the project are produced in the United States. Any project within the scope of a finding, determination, or decision under the National Environmental Policy Act (NEPA), regardless of the funding source for the individual project, are subject to BABA regulations if at least one contract within the scope of the NEPA decision is funded Federally.

This project is subject to BABA and will require certification of compliance from the Contractor in the following item categories (an item, article, material, or supply shall only be classified into one of the categories below):

1. **Iron and Steel:** All iron and steel permanently incorporated into the project must be produced in the United States. The only exception to this requirement is the production of pig iron and the processing, pelletizing, and reduction of iron ore, which may occur in another country. This means all manufacturing processes, from the initial melting stage through the application of coatings, must occur in the United States.
  - Steel products include, but are not limited to, structural steel, piles, reinforcing steel, structural plate, steel culverts, guardrail, steel supports for signs, signals (mast arms), and luminaires.
  - Iron products include, but are not limited to, cast iron frames, grates, and detectable warning devices.

Existing De Minimis Use Exemption for Iron and Steel: The requirements of the law and regulations do not prevent a minimal use of foreign steel and iron materials if the cost of such materials used does not exceed one-tenth of one percent (0.1%) of the total construction contract price or \$2,500.00, whichever is greater.

2. **Construction Materials:** Items, articles, materials, or supplies that consist of only one of the items listed below:
  - i. Non-ferrous metals;
  - ii. Plastic and polymer-based products (including polyvinylchloride, composite building materials, and polymers used in fiber optic cables);
  - iii. Glass (including optic glass);
  - iv. Fiber optic cable;
  - v. Optical fiber;
  - vi. Lumber;
  - vii. Engineered wood; and
  - viii. Drywall.

Note: Minor additions of articles, materials, supplies, or binding agents to a Construction Material do not change the categorization of the Construction Material.

10/11/23

SSD: 03/09/90, 12/05/90, 04/04/92, 02/22/93, 04/24/95, 06/05/98, 06/02/10, 10/26/22

Page 2 of 3

All Construction Materials permanently incorporated into the project must be produced in the United States. For the Construction Material to be considered “produced in the United States,” it must meet the following standards:

- i. Non-ferrous metals. All manufacturing processes, from initial smelting or melting through final shaping, coating, and assembly, occurred in the United States.
- ii. Plastic and polymer-based products. All manufacturing processes, from initial combination of constituent plastic or polymer-based inputs, or where applicable, constituent composite materials, until the item is in its final form, occurred in the United States.
- iii. Glass. All manufacturing processes, from initial batching and melting of raw materials through annealing, cooling, and cutting, occurred in the United States.
- iv. Fiber optic cable (including drop cable). All manufacturing processes, from the initial ribboning (if applicable), through buffering, fiber stranding, and jacketing, occurred in the United States. All manufacturing processes also include the standards for glass and optical fiber, but not for non-ferrous metals, plastic, and polymer-based products, or any others.
- v. Optical fiber. All manufacturing processes, from the initial preform fabrication stage through the completion of the draw, occurred in the United States.
- vi. Lumber. All manufacturing processes, from the initial debarking through treatment and planing, occurred in the United States.
- vii. Drywall. All manufacturing processes, from initial blending of mined or synthetic gypsum plaster and additives through cutting and drying of sandwiched panels, occurred in the United States.
- viii. Engineered wood. All manufacturing processes, from the initial combination of constituent materials until the wood product is in its final form, occurred in the United States.

A Certificate of Compliance, conforming to the requirements of Section 106.04, shall be furnished for all above materials.

For iron and steel materials and for Manufactured Products produced predominantly of iron or steel or a combination of both\*, records to be maintained by the Contractor for compliance with this Special Attention shall include a signed mill test report and a signed certification by each supplier, distributor, fabricator, and manufacturer that has handled the materials affirming that every process, including the application of a coating, performed on the iron or steel has been carried out in the United States of America, except as allowed by the de minimis use exemption and this Special Attention. The lack of these certifications will be justification for rejection of the material provided.

*\*Predominantly of iron or steel or a combination of both means that the cost of the iron and steel content exceeds 50% of the total cost of all its components. The cost of iron and steel is the cost of the iron or steel mill products, castings, or forgings utilized in the manufacture of the product and a good faith estimate of the cost of the iron or steel components.*

For Construction Materials, the manufacturer’s or producer’s certificate of compliance must identify where the Construction Material was produced and attest specifically to compliance with BABA.

10/11/23

SSD: 03/09/90, 12/05/90, 04/04/92, 02/22/93, 04/24/95, 06/05/98, 06/02/10, 10/26/22

Page 3 of 3

Upon completion of the project, the Contractor shall certify in writing as to compliance with BABA and provide the total project delivered cost of all foreign steel and iron or Construction Materials provided under this requirement that are permanently incorporated into the project. The form for this certification is entitled “Build America, Buy America Certificate of Compliance” and can be found on the NHDOT website ([www.dot.nh.gov/doing-business-nhdot/contractors](http://www.dot.nh.gov/doing-business-nhdot/contractors)).

### **Manufactured Products**

FHWA has a longstanding Buy America nationwide General Applicability Waiver for Manufactured Products. Manufactured Products are defined as items, articles, materials, or supplies that have been: (1) processed into a specific form and shape; or (2) combined with other articles, materials, or supplies to create a product with different properties than the individual articles, materials, or supplies. As of the date of this Special Attention, FHWA has not modified the waiver, and the waiver continues to apply to Manufactured Products that are not predominantly of iron or steel or a combination of both (see note above (\*) for clarification regarding this statement).

### **Public Interest Waiver of Buy America Requirements for De Minimis Costs and Small Grants**

The US Department of Transportation issued a public interest Waiver of Buy America Requirements for De Minimis Costs and Small Grants. The waiver is intended to ensure that state DOTs make efficient use of resources by focusing domestic sourcing efforts on products that provide the greatest manufacturing opportunities for American workers and firms. The waiver is applicable to contracts advertised on or after August 16, 2023, and applies to Manufactured Products and Construction Materials. The “De Minimis Costs” portion of the waiver (first bullet below) does not apply to iron and steel, which are already subject to a separate de minimis use exemption as detailed herein. The Waiver for De Minimis Costs and Small Grants exempts Manufactured Products and Construction Materials produced outside the United States for which:

- The total value of the non-compliant products is no more than the lesser of \$1,000,000 or 5% of total applicable costs for the project (De Minimis Cost portion); or
- The total amount of Federal financial assistance applied to the Contract, through awards or subawards, is below \$500,000 (Small Grants portion).

**De Minimis Cost Clarification:** The obligation to track costs throughout the life of the contract is the Contractor’s responsibility. The term “total applicable costs” is defined as the total actual final material cost of the compliant and non-compliant iron and steel, Manufactured Products, and Construction Materials. Tracking applicable costs is critical to compliance, especially when non-compliant materials are being used, as actual costs change throughout the life of a contract due to change orders, quantity adjustments, material overruns and underruns, etc. NHDOT will compare the declared value (total actual final material cost) of non-compliant Construction Materials to the total actual final material cost of the project upon submission of the required declaration at the end of the project.

**Small Grants Clarification:** Tracking is also very important as it pertains to the Small Grants portion of the waiver. This portion of the waiver utilizes the total actual final construction cost (materials, equipment, labor, etc.) of the project, including adjustments and change orders that occur throughout construction, to determine whether the project is eligible for exemption. At the onset, the awarded contract value will be used to determine applicability. The Contractor is required to track costs throughout construction to ensure eligibility for the exemption of BABA requirements continues for the life of the contract.



**SPECIAL ATTENTION****SHIPPING**

In accordance with the **Title 46 - Shipping** requirements of the Federal regulations (46 CFR 381.7), contractors must comply with the Cargo Preference Act (CPA) requirements and implementation regulations for all Federal-aid projects awarded after February 15, 2016. **Title 46 - Shipping** reads as follows:

**Title 46 - Shipping**

Volume: 8

Date: 2014-10-01

Original Date: 2014-10-01

Title: Section 381. 7 - Federal Grant, Guaranty, Loan and Advance of Funds Agreements.  
Context Title 46 - Shipping. CHAPTER II - MARITIME ADMINISTRATION, DEPARTMENT OF TRANSPORTATION. SUBCHAPTER J - MISCELLANEOUS. PART 381 - CARGO PREFERENCE-U.S.FLAG VESSELS.

**§ 381.7 Federal Grant, Guaranty, Loan and Advance of Funds Agreements.**

In order to insure a fair and reasonable participation by privately owned United States-flag commercial vessels in transporting cargoes which are subject to the Cargo Preference Act of 1954 and which are generated by U.S. Government Grant, Guaranty, Loan and/or Advance of Funds Programs, the head of each affected department or agency shall require appropriate clauses to be inserted in those Grant, Guaranty, Loan and/or Advance of Funds Agreements and all third party contracts executed between the borrower/grantee and other parties, where the possibility exists for ocean transportation of items procured, contracted for or otherwise obtained by or on behalf of the grantee, borrower, or any of their contractors or subcontractors. The clauses required by this part shall provide that at least 50 percent of the freight revenue and tonnage of cargo generated by the U.S. Government Grant, Guaranty, Loan or Advance of Funds be transported on privately owned United States-flag commercial vessels. These clauses shall also require that all parties provide to the Maritime Administration the necessary shipment information as set forth in § 381 .3. A copy of the appropriate clauses required by this part shall be submitted by each affected agency or department to the Secretary, Maritime Administration, for approval no later than 30 days after the effective date of this part. The following are suggested acceptable clauses with respect to the use of United States-flag vessels to be incorporated in the Grant, Guaranty, Loan and/or Advance of Funds Agreements as well as contracts and subcontracts resulting therefrom:

- (a) *Agreement Clauses.* Use of United States-flag vessels:
- (1) Pursuant to Pub. L. 664 (43 U.S.C. 1241(b)) at least 50 percent of any equipment, materials or commodities procured, contracted for or otherwise obtained with funds granted, guaranteed, loaned, or advanced by the U.S. Government under this agreement, and which may be transported by ocean vessel shall be transported on privately owned United States-flag commercial vessels, if available.

(2) Within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (a)(1) of this section shall be furnished to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(b) *Contractor and Subcontractor Clauses.* Use of United States-flag vessels: The contractor agrees

(1) To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels.

(2) To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b) (1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills--of-lading) and to the Division of National Cargo, Office of Market Development, Maritime Administration, Washington, DC 20590.

(3) To insert the substance of the provisions of this clause in all subcontracts issued pursuant to this contract.

**SPECIAL ATTENTION****CONVICT PRODUCED MATERIAL**

In accordance with the requirements of the Federal regulations (23 U.S.C. 114(b)(2), 23 CFR 635.417), essentially all convict produced material is prohibited from Federal-aid highway construction projects. More specifically, materials produced after July 1, 1991, by convict labor, may only be incorporated in a Federal-aid construction projects if: 1) such materials have been produced by convicts who are on parole, supervised release, or probation from a prison; or 2) such material has been produced in a qualified prison facility, e.g., prison industry, with the amount produced during any 12-month period, for use in Federal-aid projects, not exceeding the amount produced, for such use, during the 12-month period ending July 1, 1987\*.

\* Because the Department, Federal Highway Administration, nor New Hampshire Correctional Industries can produce documents to meet condition 2 above, this condition cannot be met for New Hampshire convict produced material.

1/2001  
Supersedes 3/90  
ALL FA PROJECTS

**SPECIAL ATTENTION**

**LOBBYING**

UNITED STATES DEPARTMENT OF TRANSPORTATION  
FEDERAL HIGHWAY ADMINISTRATION

**SUBJECT: LIMITATION ON USE OF GRANT OR CONTRACT FUNDS FOR LOBBYING**

The lobbying restrictions were established by Section 319 of Public Law 101-121 (Department of the Interior and Related Agencies Appropriations Act for Fiscal Year 1990).

The law prohibits Federal funds from being expended by the recipient or any lower tier subrecipients of a Federal contract, grant, loan, or cooperative agreement to pay any person for influencing or attempting to influence a Federal agency or Congress in connection with the awarding of any Federal contract, the making of any Federal grant or loan, or the entering into of any cooperative agreement. The extension, continuation, renewal, amendment or modification of any Federal contract, grant, loan, or cooperative agreement is also covered.

Federal-aid contractors, and consultants, as well as lower tier subcontractors and subconsultants are also subject to the lobbying prohibition. To assure compliance, a certification provision is included in all Federal-aid construction solicitations and contracts, and consultant agreements exceeding \$100,000 in Federal funds.

The Contractor shall be aware that by signing and submitting this proposal, he or she is attesting to the requirements of the certification provisions.

During the period of performance of a grant or contract, recipients and subrecipients must file disclosure form (Standard Form LLL) at the end of each calendar year quarter in which there occurs any event that requires disclosure or that materially affects the accuracy of the information contained in any previously filed disclosure form.

Lower tier certifications should be maintained by the next tier above (i.e., prime contractors will keep the subcontractors' certification on file, etc.). Copies of Standard Form LLL will be included in the subcontract package for distribution to successful bidders.

December 24, 1998  
Supersedes Spec. Attn. dated 3/29/88 & 12/5/90

FHWA Projects

**SPECIAL ATTENTION**

**CONTRACT AFFIDAVIT - CERTIFICATION REGARDING DEBARMENT  
SUSPENSION**

The separate form entitled, CONTRACT AFFIDAVIT (As Required by Section 112(c) of Title 23 USC) has been deleted from this proposal.

Bidders are advised that the last page of the bidding proposal has been revised to include the same reference, **IN BOLD PRINT**, relative to the non-collusion statement included on the discontinued form.

X X X X X X X X X X X X X X

The Contractor is advised that 49 CFR 29.510, Appendix A, requires that the Contractor, including all principals, certify that they are not currently under debarment or suspension or have not been under debarment or suspension within the past three years. (For certification instructions see next page).

The certification has been added, **IN BOLD PRINT**, onto the next to the last page of the bidding proposal.

The Contractor is further advised that Appendix B of 49 CFR 29.510 regarding certification of lower tier transactions has been added to Form FHWA-1273.

Appendix A - Certification regarding Debarment, Suspension, and other Responsibility Matters -  
Primary Covered Transactions.

Instruction for Certification

1. By signing and submitting this proposal, the prospective primary participant is providing the certification set out below.
2. The inability of a person to provide the certification required below will not necessarily result in denial of participation in this covered transaction. The prospective participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective primary participant to furnish a certification or an explanation shall disqualify such person from participation in this transaction.
3. The certification in this clause is a material representation of fact upon which reliance was placed when the department or agency determined to enter into this transaction. If it is later determined that the prospective primary participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause of default.
4. The prospective primary participant shall provide immediate written notice to the department or agency to whom this proposal is submitted if at any time the prospective primary participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances.
5. The terms "covered transaction," "debarred," "suspended," "ineligible," "lower tier covered transaction," "participant," "person," "primary covered transaction," "principal," "proposal," and "voluntarily excluded," as used in this clause, have the meanings set out in the Definitions and Coverage sections of the rules implementing Executive Order 12549. You may contact the department or agency to which this proposal is being submitted for assistance in obtaining a copy of these regulations.
6. The prospective primary participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction.
7. The prospective primary participant further agrees by submitting this proposal that it will include the clause titled "Certification" Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," provided by the department or agency entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions.
8. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant may decide the method and frequency by which it determines the eligibility of its principals. Each participant may, but is not required to, check the Nonprocurement List.
9. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of a participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.
10. Except for transactions authorized under paragraph 6 of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default.

## **SPECIAL ATTENTION**

### **SUMMARY OF REQUIREMENTS FOR FEDERAL-AID PROJECTS**

#### **1. Subletting on Federal-aid Contracts:**

- a. On Federal-Aid projects, the following documents are required to be incorporated in and made a part of, every subcontract agreement; including lower-tier subcontract agreements, and companies, and/or independent contractors that perform testing, monitoring, inspection services such as ground penetrating radar, erosion control monitoring, video inspection, SWPPP, POP, environmental testing/monitoring or vibration monitoring, require subcontractor approval:
  - [NHDOT Subcontracting Procedure](#) and Forms:
    - Updated [Annual Assurances](#) (annual requirement). Contractors will not be approved or authorized to work until all Office of Federal Compliance's (OFC) Annual Assurance requirements have been fulfilled.
    - OFC Form 15 - Transmittal Request
    - OFC Form 14 - Contractor Acknowledgment Certification
    - OFC Form 26 - Work Certificate
  - A signed written contract, including:
    - A valid Certificate of Insurance, listing NHDOT as the Certificate holder. OFC staff will verify coverage with the NH Department of Labor (NHDOL). Workers Compensation Insurance needs to be on the [National Council on Compensation Insurance \(NCCI\)](#) database and company must be in good standing with [NH Secretary of State](#).
    - Per NH RSA 228:4-b, Workers' Compensation Insurance must cover all individuals performing work on site and shall remain in effect for the duration of the contractor's work on the project. No excluded individual, owner, or officer may perform work on site without exception. All persons working on site must have Workers' Compensation coverage on file with the NHDOL.
    - Attention of the Contractor is called to [NHDOT Standard Specifications](#) 107.02 and [NH RSA 293- A:15.01](#), which, among other provisions, requires that all Contractors, including those based out-of-state, register their business name with the [NH Secretary of State's Office](#) and remain active or in good standing throughout the period of participation.
  - Required Contract Provisions (FHWA-1273)
  - Disadvantaged Business Enterprise (DBE) Program Requirements (Standard Specification 103.06)
  - Prompt Payment to Subcontractors ([Standard Specification 109.09](#))

- [41 CFR 60-4 Affirmative Action Requirements](#)
  - Applicable only to contracts or subcontracts in excess of \$10,000
- U.S. Department of Labor (USDOL) wage rates entitled “GENERAL WAGE DECISION” (as contained in the Contract)
  - Does not apply to companies performing Davis-Bacon exempt work (such as testing, monitoring, and inspection services).
- b. Prime Contractors shall submit consent to sublet packages to the NHDOT **at least 5** working days prior to said subcontractor (or lower-tier subcontractor) performing work on site. On Local Public Agency (LPA) projects, the Prime Contractor shall also provide a courtesy copy to the town or the town’s consultant, if applicable.
- c. LPA Projects Only: OFC is the sole approval authority for all LPA construction project sub approvals. Consents to sublet shall be submitted directly to the OFC.

## **2. FHWA Form 1273, Required Contract Provisions:**

- a. The Prime Contractor shall insert in each subcontract all the stipulations contained in the Required Contract Provisions. Primes shall further require their inclusion in any lower-tier subcontract or purchase order that may in-turn be made. The Required Contract Provisions shall not be incorporated by reference in any case.
- b. In accordance with Section I, Paragraph 1, the Prime Contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor, or service provider. This shall include any unpaid wages found to be owed that is not paid by a subcontractor or lower-tier subcontractor.
- c. In accordance with Section I, Paragraph 3, “A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension/debarment or any other action determined to be appropriate by the contracting agency and FHWA.”

## **3. Certified Payrolls and Time Sheets:**

- a. Submission Format: Payrolls, as required by FHWA Form 1273, shall be submitted electronically (email) as a pdf document to the NHDOT Contract Administrator, consistently named in the following format: Contractor’s name (abbreviated is acceptable) followed by the “week ending” date (yyyy/mm/dd). The Contractor’s and each Subcontractor’s payroll shall be submitted as separate, individual files.

*Example: Plow Brothers Inc 2017-12-09*

- b. Multiple Counties/States or Categories (Highway/Building/Heavy): Whenever Contracts have multiple wage determinations, contractors shall indicate, on each payroll submission, which wage determination is applicable to the work. In the instance that there are multiple counties within the Contract the payroll shall indicate which county the work was performed.
- c. Project Specific: Except for weekly gross pay, deductions, and weekly net pay, all information shown on certified payrolls shall be project specific. Please reference FHWA Form 1273 for additional payroll requirements and limitations.



- d. **Time Sheets:** Every contractor shall create and maintain time sheets for every worker performing work on the project. This includes salaried employees who perform work in a classification, either intermittently or full time. Time sheets shall record all work performed during the work week, both Federal and non-Federal, shop time, travel time considered work time, including any time considered “hours worked” as described under the Fair Labor Standards Act, Part 785. When requested, Contractors shall provide copies of time sheets to the OFC in support of certified payroll report information being provided. Time sheets, payroll records, and other basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years from final invoice for all laborers and mechanics working at the site of work.

#### **4. Sign-In Sheets:**

- a. **State Managed Projects:** The use of daily sign-in sheets is required for subcontractors performing asbestos abatement. The OFC may also direct the use of daily sign-in sheets on other State managed projects for any contractor who does not accurately report all workers performing work on site on their payrolls. The sign-in sheets shall be administered as described below.
- b. **LPA Projects:** The use of daily sign-in sheets is **mandatory** on all LPA projects. Every worker must sign in, on a daily basis, prior to performing work on site. The OFC Form 20- Daily Sign-In Record shall be used for this purpose. The Prime Contractor is responsible to ensure all sign-in sheet requirements are met and that sign-in sheets are turned in to the Contract Administrator on a daily basis. Contract Administrators shall review and initial sign-in sheets daily; cross matching what employees have indicated for their specific work classification and what employers are indicating on certified payroll reports, and also verifying employers of workers signing in have been approved to work by the NHDOT. Sign-in sheets shall be co-located with certified payrolls and filed in a 3-ring binder; newest sign-in sheets on top. Sign-in sheets are an inspection item.

#### **5. Requesting Work Classifications, Classifying Workers, and/or Payment of Wages.**

- a. The Prime Contractor is required to submit an additional request to the NHDOT for any classification of labor/equipment that they or their subcontractors shall be utilizing under the Contract that is not contained in the Proposal’s Federal General Decision.
- b. Conformance submissions shall be in accordance with U.S. Department of Labor Memorandum No. 213, dated March 22, 2013. A copy of the Memorandum can be found at [www.wdol.gov/aam/aam213.pdf](http://www.wdol.gov/aam/aam213.pdf).
- c. Unless otherwise instructed by the OFC, a SF 1444 shall be used for this purpose.
- d. Requests must be submitted to the NHDOT prior to any work being performed in the classification(s).
- e. Contractors who do not receive a USDOL conformance decision from the OFC within 45 days of submission should follow-up with the OFC.

- f. Once a decision is received from the USDOL, the OFC will notify the Prime Contractor. In cases when the USDOL stipulates a higher rate of pay than the one proposed by the Contractor, and the Contractor elects not to submit an appeal, restitution, if due, shall be paid to employees within 10 calendar days of being notified by the OFC. Restitution requirements of the NHDOT shall apply.
- g. Appeals shall be filed with the USDOL within 30 calendar days and a courtesy copy forwarded to the OFC at the same time. Restitution, if applicable, does not need to be paid during the time the appeal is under review by the USDOL.
- h. Contractors shall immediately inform the OFC whenever appeal decisions (including reconsideration requests) are received from the USDOL.
- i. In cases when a contractor indicates to the OFC he/she plans to appeal the USDOL decision but fails to provide the OFC proof of submission within 30 calendar days, the contractor shall comply with the original USDOL decision. The OFC will subsequently notify the Contractor that proof of an appeal was not received within 30 days and restitution, if applicable, must be paid to workers within 10 calendar days. Contractors who fail to provide restitution will be deemed “in non-compliance.”
- j. OFC payment release authorization letters (Okay to Pay letters) cannot be accomplished until all wage conformances have been deemed closed (USDOL responses have been received), any pending contractor wage appeals have been finalized, with restitution paid if applicable, and all Prompt Pay requirements have been met.
- k. Job Classifications Descriptions (Laboring Category): While most of skilled and unskilled crafts appearing in Wage Determinations are self-explanatory, the below classifications (not all inclusive) have been described by the NHDOT and are consistent with USDOL requirements. Questions involving correct classification of workers should be addressed prior to performing work on the project. Workers performing in these classifications, according to the description, will be classified by contractors accordingly:
  - 1) Asbestos Abatement: All work associated with asbestos abatement shall be classified as “Laborer,” unless said work involves piping that will be reinsulated. In these cases, “Asbestos Abatement Worker” shall be used.
  - 2) Blaster: Supervises and assists in locating, loading, and firing blast holes with explosives to break up hard materials. This work includes any of the following duties on-site: determining the spacing and depth of drilled holes; determining the amount of explosives, timing, and placement of detonators; handling blasting materials in the work area; loading holes with detonators, primers, and explosives; tamping and stemming holes; directing the placement of blasting mats or other flyrock controls; and detonating the charges.
  - 3) Brick Mason (also called Brick Layers): Builds and repairs walls, floors, paths/sidewalks, partitions, fireplaces, chimneys, and other structures with brick, pavers, precast masonry panels, concrete block, and other masonry materials, with or without mortar.

- 4) Carpenter (Form Work Only): Formwork carpenters build the molds that retain wet concrete in the construction of bridges, foundations, and other concrete structures. This also includes pre-manufactured forms made of steel, wood, or heavy plastic. Work under this class also includes bracing required to hold the forms in place.
- 5) Carpenter (Excluding Form Work): Involves all carpentry work not directly related to the pouring of concrete. This includes, without limitation, scaffolding, safety rail, platforms, walkways, stairs, demo containment, buildings, and bracing that is not in direct contact with concrete.

Note 1: Any work to dismantle where workers can simply “tear it apart” and where no safety concerns are present can be performed by Common or General Laborers.

Note 2: Questions involving these classes should be addressed prior to performing work on the project.

- 6) Drill Operator: Unless a hand-held tool, which can then be classified and performed as a Common/General Laborer, all drill work shall be performed in the “Drill Operator” classification. Conformances, if needed, shall be consistent with this requirement.
- 7) Guardrail Installer: Except for the “pounder,” each person performing guardrail installation work shall be classified as “Guardrail Installer.”
- 8) Ironworker (Reinforcing): Positions and secures steel bars to placement of reinforced concrete; determines number, size, shape, and location of reinforcing rods from plans, specifications, sketches and/or oral instructions; places and ties reinforcing steel using wire and pliers, sets rods in place, spaces and secures reinforcing rods. May bend steel rods with hand tools or operate a rod-bending machine; may reinforce concrete with wire mesh; may perform other related duties.
- 9) Ironworker (Structural): Performs any combination of the following duties to set beams, hang diaphragms, install bolts, torque bolts, test bolts, raise, place and unite girders, columns and other structural steel members to form completed structures or structure frameworks, working as a member of a crew; sets up hoisting equipment for raising and placing structural steel members; fastens steel members to cable of hoist using chain, cable or rope; signals worker operating hoisting equipment to lift and place steel members. Guides member using guy line (rope) or rides on member to guide it into position. Reads plans; rigs, assembles, and erects structural members requiring riveting or welding. May perform other related duties.
- 10) Lead Abatement Worker: All work associated with lead abatement shall be classified as “Lead Abatement Worker”.
- 11) Stone Mason: Builds stone walls, as well as set stone exteriors and floors, lays/sets all cut stone, marble, slate, or stone, with or without mortar. They work with natural cut stone, such as marble, granite, limestone, and artificial stone made of concrete, marble chips, or other masonry materials.

- 12) Sweeper/Broom Operators: Whenever Sweeper or Broom does not appear in the Wage Determination, contractors may use the Truck Driver classification for this service if the equipment used is of the over the road type (only). However, anytime the Contract has an established classification/rate for “Sweeper or “Broom,” this classification must be used and the minimum rate, as it appears in the contract, shall apply.
- 13) Traffic Coordinator: Performs sign placement and maintenance, including proper set up and relocation of construction sign packages and message boards; designs lane closures in accordance with local, state, and Federal requirements. Please do not confuse this classification with Flagger.

**6. Prompt Pay to Subcontractors and Material Suppliers:** Prompt pay requirements are outlined in the [NHDOT Standard Specifications Section 109.09](#). Submissions are due to OFC at [laborcompliance@dot.nh.gov](mailto:laborcompliance@dot.nh.gov) no later than the 10th calendar day of each month.

- a. State managed projects: Contractors may use the OFC Form 18 or utilize their own document that contains the same required information unless otherwise instructed by the OFC.
- b. LPA projects: Contractors shall use the OFC Form 12.
- Contractors may use the OFC Form 18 or utilize their own document that contains the same required information unless otherwise instructed by the OFC.
  - If no payments were made for a State managed or LPA project during the reporting period, contractors shall submit the appropriate certification form or email indicating “no payments made to subcontractors.”

**7. Mandatory Training:** Prime Contractors who fail to obtain an annual average (based on the calendar year) of at least 60% “Satisfactory” ratings on all OFC Compliance Field Audit Reports may be required to attend a mandatory 4-hour Contractor Compliance Training Class each spring (as scheduled by the OFC). A principal owner or executive officer of the company, and his/her payroll accountant shall attend.

- a. Compliance ratings will be averaged over all projects if a Prime Contractor has multiple projects.
- b. The OFC has at least two Contractor Compliance Training Seminars each year. Every contractor participating on Federal-aid construction projects is encouraged to attend.

**8. Restitution:** If required, restitution shall be performed in accordance with the OFC guidelines. The OFC Form 8 - Restitution Worksheet and Affidavit shall be used.

**9. Corrective Action Plan**

- ~~a.~~ Any Contractor, Subcontractor, or Lower-tier Subcontractor found to be in violation of Required Contract Provisions, made part of its contract may be suspended to work on existing or future projects and/or required to provide a Corrective Action Plan (CAP). Other sanctions may be imposed by the Department as appropriate.

Corrective action will include, but not limited to, the submission of certified payrolls or other records and reports necessary to verify compliance with the Provisions.

- b. Any Contractor, regardless of the tier, found to have repeatedly violated the Required Contract Provisions, may be required to complete 4-hours of Contractor Compliance Training conducted by the Department. When mandated, a principal owner and/or company executive and his/her payroll accountant shall attend Contractor Compliance Training must be completed before participation on future projects is authorized. This requirement does not relieve the Contractor of its obligations under the prime contract, nor does it prevent the Department from seeking other remedies or enforcement actions, as provided by the governing Rules and Laws and Federal Regulations.
- c. Companies will be notified of violations in writing. Actions the company must take to have participation privileges restored will be clearly indicated. Companies will also be advised that if a satisfactory response is not received within 7 days of the requested CAP, the company will be considered “non-responsive.” In cases where lower tier companies are non-responsive, matter will then be deferred to the Prime Contractor for payment of outstanding payments as provided in Required Contract Provisions.

**10. Right to Withhold Payment:** The Department may withhold payments claimed by the Contractor on account of:

- a. Failure of the Contractor to make payments to Subcontractors for materials or labor.
- b. Regulatory non-compliance or enforcement.
- c. Failure to comply with OFC Field Audit Report requirements.
- d. Failure to comply with monthly reporting requirements, as applicable.
- e. For projects with an On-The-Job Training (OJT) requirement, failure to submit OJT Form 1 - On-The-Job Training Acknowledgement and Statement of Intent within 30 days of the project start date.
- f. Failure to submit closeout documentation.
- g. All other causes that the Department reasonably determines negatively affect the State’s interest.

**11. Final Payment Release:** Once final project records are transferred to the OFC, a final review shall be performed to determine compliance with the Federal provisions. Release of any final payment shall not be made to the Contractor until the OFC issues a payment release letter (Okay to Pay) certifying:

- a. All required payrolls, labor, and Equal Employment Opportunity (EEO) documentation have been received and deemed complete and correct.
- b. DBE requirements stipulated in the Contract and/or the Required Contract Provisions have been fulfilled.

**12. Deposits in Escrow:** Every attempt is made to complete compliance actions and resolve any disputes before the project is completed and final payments are made. Sometimes, however, corrective actions or disputes continue after completion and provisions must be made to ensure that funds are available to pay any wage restitution that is ultimately found due. In these cases, the project can proceed to final closing provided the Prime Contractor, from payments already provided him/her, provides written evidence a deposit of an amount equal to the potential liability for wage restitution and liquidated damages, if applicable, has been deposited in an

escrow account. When a final decision is rendered, the Prime Contractor makes disbursements from the account in accordance with the decision. Deposit/escrow accounts are established for one or more of the following reasons:

- a. Where the parties have agreed to amounts of wage restitution that are due but the employer has not yet furnished evidence that all the underpaid workers have received their back wages. The deposit is equal to the amount of restitution due to workers lacking payment evidence. As proper documentation is received, an amount corresponding to the documentation is returned to the depositor. Amounts for any workers who cannot be located are held in the escrow account for three (3) years. Amounts remaining in the account not disbursed by the end of this three-year period shall be returned to the Prime Contractor.
- b. Where underpayments are suspected or alleged and an investigation has not yet been completed. The deposit is equal to the amount of wage restitution and liquidated damages, if applicable, that is estimated to be due. If the final determination of wages due is less than the amount estimated and placed in the escrow account, the escrow will be reduced to the final amount and the difference will be returned to the depositor. If the parties agree to the investigative findings, the amounts due to workers will be disbursed from the escrow account in accordance with the schedule of wages due. Amounts for unfound workers will be retained for a period of three (3) years and subsequently disbursed to the depositor as described above in Paragraph 12a.
- c. Where the parties are waiting for the outcome of an administrative hearing that has been or will be filed contesting a final determination of wages due. The deposit shall be equal to the amount of wage restitution and liquidated dates, if applicable, that have been determined to be due. Once the final decision is rendered, disbursements from the escrow account are made in accordance with the decision.

Please direct questions relating to any information in this document to the OFC at [laborcompliance@dot.nh.gov](mailto:laborcompliance@dot.nh.gov). See the [OFC website \(www.nh.gov/dot/org/administration/ofc/documents.htm\)](http://www.nh.gov/dot/org/administration/ofc/documents.htm) for forms, documents, and other helpful material.

## **SPECIAL ATTENTION**

### **Disadvantaged Business Enterprise (DBE)**

**Disadvantaged Business Enterprise (DBE) Policy.** It shall be the policy of the New Hampshire Department of Transportation (NHDOT) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBE's) to participate in the performance of all contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT), Federal Highway Administration and as set forth below.

**1. Policy.** It is the policy of the United States Department of Transportation to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 Code of Federal Regulation (CFR) Part 26, to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 applies to this contract.

**2. Disadvantaged Business Enterprise (DBE) Obligation.** The State and its Contractor agree to ensure nondiscriminatory opportunity for disadvantaged business enterprises, as defined in 49 CFR Part 26, to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. **Prime Contractors and subcontractors who further sublet must include this assurance in every subcontract:** *The Contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The Contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by any contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this Contract or such other remedy, as the NHDOT deems appropriate.*

**3. Sanctions of Non-Compliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this Contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and, after notification of the United States Department of Transportation, may result in termination of this Contract or such remedy as the State deems appropriate.

**Overall Statewide DBE Goals.** The NHDOT currently employs a race/gender neutral DBE policy to attain its overall statewide DBE goals. This means that unless otherwise stated in the Contract, the NHDOT relies on the voluntary cooperation of all contractors to utilize DBE's on every project, sufficient to meet or exceed the current statewide DBE goal. Although the majority of statewide DBE goals are currently voluntary, failure of the NHDOT to meet or exceed the overall statewide DBE goal as required by the Federal Highway Administration (FHWA), could necessitate placement of mandatory DBE participation requirements on all future statewide projects.

**Disadvantaged Business Enterprise (DBE) Program Goals.** The New Hampshire Department of Transportation is required to set an overall DBE goal for participation in all transportation related Federal-aid projects. The goal is determined following guidelines set forth in 49 CFR 26.45, and based on the availability of ready, willing and able DBE's who submitted bids for transportation related projects, compared as a percentage of all available contractors who submitted bids for transportation related projects during the same time period. The DBE goal may be adjusted to take into account other factors impacting DBE utilization, in an effort to narrowly tailor the overall DBE goal. The detailed goal setting methodology and current overall DBE goal may be viewed on the NHDOT website at [www.nh.gov/dot](http://www.nh.gov/dot).

**Disadvantaged Business Enterprise (DBE) Definition.** A DBE is defined as a business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purpose of this definition:

- A. "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is a Woman, Black, Hispanic, Portuguese, Native American, Asian American, or a member of another group, or an individual found to be disadvantaged by an individual determination of social disadvantage as described in 49 CFR 26 appendix E, determinations of social and economic disadvantage.
- B. "Owned and controlled" means a business which is:
  - (1) A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
  - (2) A partnership, joint venture or limited liability Company in which at least 51% of the beneficial ownership interests is legitimately held by a disadvantaged person(s).
  - (3) A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests are legitimately held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with the percentage of ownership. Disadvantaged participation in a joint venture must also be based on the sharing of real economic interest and must include proportionate control over management, capital, and earnings, as above. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of this program, a firm is considered a bona fide DBE.

**Certified DBE Directory.** The current New Hampshire Unified Disadvantaged Business Enterprise (DBE) Directory is available online at [www.nh.gov/dot](http://www.nh.gov/dot). This directory contains all currently certified DBE's available for work in New Hampshire, and is updated monthly. Only firm's listed in this directory are eligible for DBE credit on NH Federal-aid projects. If you have questions about DBE certification, or do not have access to the Internet, please call the DBE Coordinator at (603) 271-6612 for assistance.

**Counting DBE Participation For Project Goals.** In order for payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a commercially useful function (CUF). The DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by actually performing, managing, and supervising the work involved, consistent with standard industry practices. This means that:

- A. The DBE must also be responsible for ordering its own materials and supplies, determining quantity and quality, negotiating price, installing (where applicable) and paying for the material itself;
- B. The DBE must perform work commensurate with the amount of its contract;
- C. The DBE's contribution cannot be that of an extra participant or a conduit through which funds are passed in order to obtain the appearance of DBE participation;
- D. The DBE must exercise responsibility for at least fifty percent of the total cost of its contract with its own work force;
- E. None of the DBE's work can be subcontracted back to the Prime Contractor, nor can the DBE employ the prime's, or other subcontractor's supervisors currently working on the project;



7/29/2013

Page 3 of 4

- F. The DBE's labor force must be separate and apart from that of the Prime Contractor or other subcontractors on the project. Transferring crews between primes, subcontractors, and DBE contractors is not acceptable;
- G. The DBE owner must hold a Public Works license and any other professional or craft licenses required for the type of work he/she performs on the project;
- H. The DBE may rent or lease, at competitive rates, equipment needed on the project from customary leasing sources or from other subcontractors on the project.

**Allowable credit for payments made to DBEs for work performed.** A contractor may take credit for payments made to a certified DBE that satisfies (CUF) requirements at the following rate.

- A. A DBE Prime Contractor; count 100% of the value of work performed by own forces, equipment and materials count towards DBE goals.
- B. An approved DBE subcontractor; count 100% of the value of work performed by the DBE's own forces, equipment and materials, excluding the following:
  - The cost of materials/supplies purchased from a non-DBE Prime Contractor.
  - The value of work provided by non-DBE lower tier subcontractors, including non-DBE trucking to deliver asphalt to a DBE contractor.
- C. A DBE owner-operator of construction equipment; count 100% of expenditures committed.
- D. A DBE manufacturer; count 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Prime Contractor.
- E. A regular DBE dealer/supplier; count 60% of expenditures committed.  
A regular dealer/supplier is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment, in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A person may be a dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business, if the person both owns and operates distribution equipment for the products, by the means of a long term agreement, and not by a contract by contract basis.
- F. A DBE Broker; count for DBE credit only the fees or commissions charged for assistance in the procurement, and, fees and transportation charges for the delivery of materials or supplies required at the job site, but not the cost of materials procured. A broker is defined as any person(s) or firm who arranges or expedites transactions for materials or supplies, and does not take physical possession of the materials or supplies at their place of business for resale.
- G. A DBE renter of construction equipment to a contractor; count 20% of expenditures committed, with or without operator.
- H. A bona fide DBE service provider; count 100% of reasonable fees or commissions.  
Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
- I. A trucking, hauling or delivery operation, count 100% of payments when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the materials and supplies. 100% of payments when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees, or commissions, the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
- J. Any combination of the above.

7/29/2013

Page 4 of 4

**Reporting Requirements for Payments Made To DBE's:** On all Federal-aid projects, the Prime Contractor is required to report payments made to DBE's during the life of the contract, on a quarterly basis, for the periods covering January 1st–March 31st, April 1st–June 30th, July 1st–September 30th and October 1st–December 31st. The NHDOT will provide the Prime Contractor with a quarterly DBE payments report, detailing all DBE's subcontracted by the Prime Contractor, per project. The Prime Contractor shall report any payments made to DBE's during the requested reporting period. This documentation shall be submitted to the Office of Federal Compliance within the time period stated on the NHDOT quarterly request. Failure of the Prime Contractor to submit this information may result in the Department withholding progress payments.

**Removal of Approved DBE From Transportation Related Project:** Contractors may not terminate for convenience, any approved DBE subcontractor and perform the work with their own forces, without prior written consent from the NHDOT.

**MUNICIPAL PROJECTS ONLY: Timely submission of invoices to Municipalities:** Prime Contractors must submit all invoices received for satisfactorily completed work, from any subcontractor/lower-tier subcontractor/material supplier, to Municipalities for payment within 30 days of receipt.

**SPECIAL PROVISION**

**SECTION 107 -- LEGAL RELATIONS AND RESPONSIBILITIES TO PUBLIC**

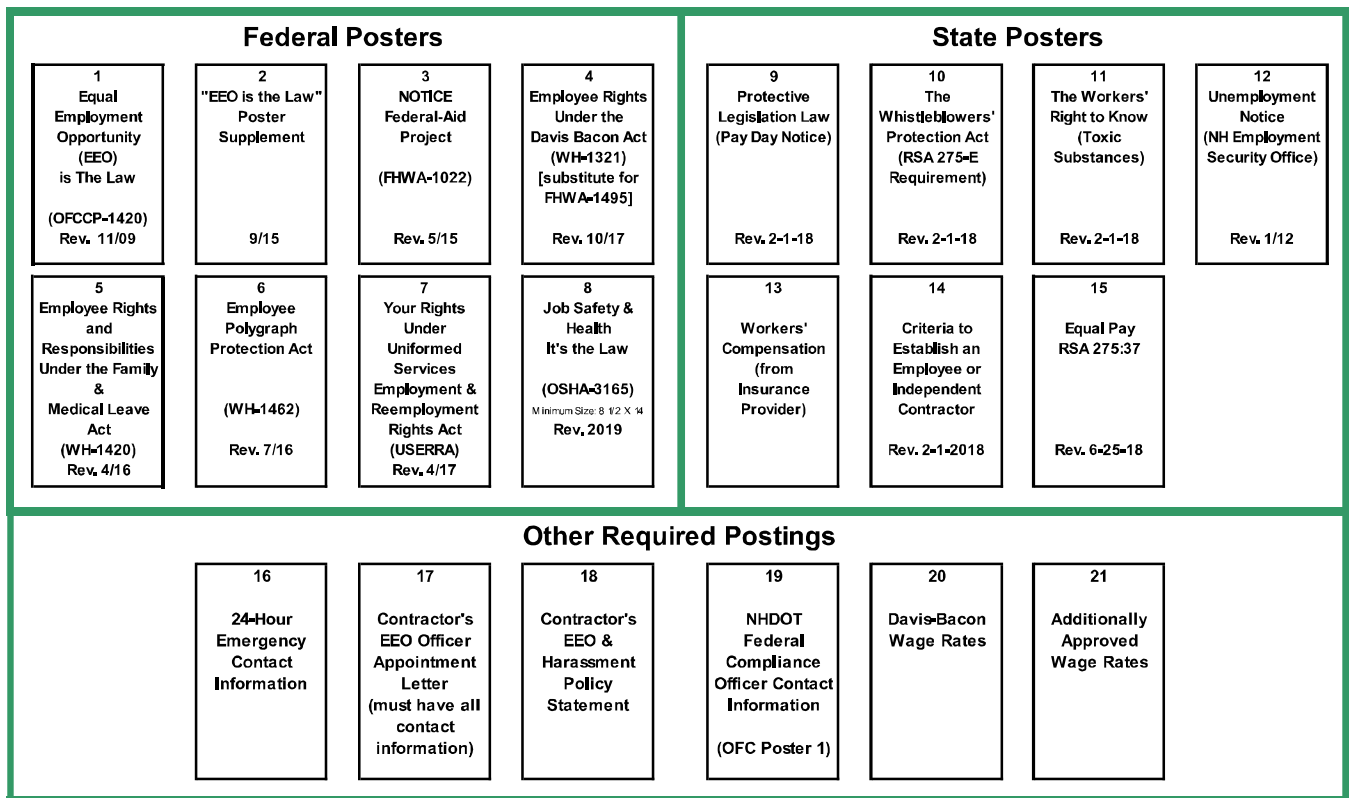
**SUBSECTION 107.01 – LAWS TO BE OBSERVED**

*The intent of this Special Provision is to clarify Bulletin Board requirements.*

**Add** to 107.01’s third paragraph titled *Bulletin Board Requirements* the following:

**New Hampshire Department of Transportation Bulletin Board Diagram**  
(Revision 3-8-2022)

**NHDOT PROJECT: (PROJECT NAME) (PROJECT NUMBER)**



## 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.

**REQUIRED CONTRACT PROVISIONS  
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

**ATTACHMENTS**

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

**I. GENERAL**

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

**II. NONDISCRIMINATION** (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

**1. Equal Employment Opportunity:** Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

**2. EEO Officer:** The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

**3. Dissemination of Policy:** All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

**4. Recruitment:** When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

**5. Personnel Actions:** Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

#### **6. Training and Promotion:**

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

**7. Unions:** If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

**8. Reasonable Accommodation for Applicants / Employees with Disabilities:** The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

**9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment:** The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

#### **10. Assurances Required:**

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

**11. Records and Reports:** The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:



(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

### III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

### IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

#### 1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

*c. Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to [DBAconformance@dol.gov](mailto:DBAconformance@dol.gov). The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to [DBAconformance@dol.gov](mailto:DBAconformance@dol.gov), refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

*d. Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

*e. Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

*f. Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

## **2. Withholding (29 CFR 5.5)**

*a. Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

*b. Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

### 3. Records and certified payrolls (29 CFR 5.5)

*a. Basic record requirements (1) Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

*(2) Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

*(3) Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

*(4) Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

*b. Certified payroll requirements (1) Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

*(2) Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker ( e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

*(3) Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract,

*(4) Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

#### **4. Apprentices and equal employment opportunity** (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

**5. Compliance with Copeland Act requirements.** The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

**6. Subcontracts.** The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

**7. Contract termination: debarment.** A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

**8. Compliance with Davis-Bacon and Related Act requirements.** All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

**9. Disputes concerning labor standards.** As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

**10. Certification of eligibility.** a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

**11. Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

## V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

**1. Overtime requirements.** No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

**2. Violation; liability for unpaid wages; liquidated damages.** In the event of any violation of the clause set forth in paragraph 1, of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)\* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

\* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

### 3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

**4. Subcontracts.** The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

**5. Anti-retaliation.** It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

- a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;
- b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;
- c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or
- d. Informing any other person about their rights under CWHSSA or this part.

### VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

## **VII. SAFETY: ACCIDENT PREVENTION**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

## **VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat, 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

**IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)**

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

**X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

**1. Instructions for Certification – First Tier Participants:**

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract), "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

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**2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:**

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;.

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default, 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

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**3. Instructions for Certification - Lower Tier Participants:**

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180,300, 180,320, 180,330, and 180,335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

\* \* \* \* \*

#### **4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:**

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

\* \* \* \* \*

#### **XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING**

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

#### **XII. USE OF UNITED STATES-FLAG VESSELS:**

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS  
PREFERENCE FOR APPALACHIAN DEVELOPMENT  
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS  
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

## Training Special Provisions

This Training Special Provision supersedes subparagraph 7b of the Special Provision entitled “Specific Equal Employment Opportunity Responsibilities”, and is in implementation of 23 U.S.C. 140(a).

As part of the Contractor's Equal Employment Opportunity Affirmative Action Program, training shall be provided as follows:

The Contractor shall provide on-the-job training aimed at developing full journeymen in the type of trade or job classification involved.

The number of trainees to be trained under the special provisions will be \_\_\_\_ (amount to be filled in by State highway department).

In the event that a contractor subcontracts a portion of the contract work, he shall determine how many, if any, of the trainees are to be trained by the subcontractor, provided, however, that the contractor shall retain the primary responsibility for meeting the training requirements imposed by this special provision. The contractor shall also insure that this training special provision is made applicable to such subcontract. Where feasible, 25 percent of apprentices or trainees in each occupation shall be in their first year of apprenticeship or training.

The number of trainees shall be distributed among the work classifications on the basis of the contractor's needs and the availability of journeymen in the various classifications within a reasonable area of recruitment. Prior to commencing construction, the contractor shall submit to the State highway agency for approval the number of trainees to be trained in each selected classification and training program to be used. Furthermore, the contractor shall specify the starting time for training in each of the classifications. The contractor will be credited for each trainee employed by him on the contract work who is currently enrolled or becomes enrolled in an approved program and will be reimbursed for such trainees as provided hereinafter.

Training and upgrading of minorities and women toward journeymen status is a primary objective of this Training Special Provision. Accordingly, the contractor shall make every effort to enroll minority trainees and women (e.g., by conducting systematic and direct recruitment through public and private sources likely to yield minority and women trainees) to the extent that such persons are available within a reasonable area of recruitment. The contractor will be responsible for demonstrating the steps that he has taken in pursuance thereof, prior to a determination as to whether the contractor is in compliance with this Training Special Provision. This training commitment is not intended, and shall not be used, to discriminate against any applicant for training, whether a member of a minority group or not.

No employee shall be employed as a trainee in any classification in which he has successfully completed a training course leading to journeyman status or in which he has been employed as a journeyman. The contractor should satisfy this requirement by including appropriate questions in the employee application or by other suitable means. Regardless of the method used the contractor's records should document the findings in each case.

The minimum length and type of training for each classification will be as established in the training program selected by the contractor and approved by the State highway agency and the Federal Highway Administration. The State highway agency and the Federal Highway Administration shall approve a program if it is reasonably calculated to meet the equal employment opportunity obligations of the contractor and to qualify the average trainee for journeyman status in the classification concerned by the end of the training period. Furthermore, apprenticeship programs registered with the U.S. Department of Labor, Bureau of Apprenticeship and Training, or with a State apprenticeship agency recognized by the Bureau and training programs approved but not necessarily sponsored by the U.S. Department of Labor, Manpower Administration, Bureau of Apprenticeship and Training shall also be considered acceptable provided it is being administered in a manner consistent with the equal employment obligations of Federal-aid highway construction contracts. Approval or acceptance of a training program shall be obtained from the State prior to commencing work on the classification covered by the program. It is the intention of these provisions that training is to be provided in the construction crafts rather than clerk-typists or secretarial-type positions. Training is permissible in lower level management positions such as office engineers, estimators, timekeepers, etc., where the training is oriented toward construction applications. Training in the laborer classification may be permitted provided that significant and meaningful training is provided and approved by the division office. Some offsite training is permissible as long as the training is an integral part of an approved training program and does not comprise a significant part of the overall training.

Except as otherwise noted below, the Contractor will be reimbursed 80 cents per hour of training given an employee on this contract in accordance with an approved training program. As approved by the engineer, reimbursement will be made for training persons in excess of the number specified herein. This reimbursement will be made even though the contractor receives additional training program funds from other sources, provided such other does not specifically prohibit the contractor from receiving other reimbursement. Reimbursement for offsite training indicated above may only be made to the contractor where he does one or more of the following and the trainees are concurrently employed on a Federal-aid project; contributes to the cost of the training, provides the instruction to the trainee or pays the trainee's wages during the offsite training period.

No payment shall be made to the Contractor if either the failure to provide the required training, or the failure to hire the trainee as a journeyman, is caused by the contractor and evidences a lack of good faith on the part of the contractor in meeting the requirements of this Training Special Provision. It is normally expected that a trainee will begin his training on the project as soon as feasible after start of work utilizing the skill involved and remain on the project as long as training opportunities exist in his work classification or until he has completed his training program. It is not required that all trainees be on board for the entire length of the contract. A contractor will have fulfilled his responsibilities under this Training Special Provision if he has provided acceptable training to the number of trainees specified. The number trained shall be determined on the basis of the total number enrolled on the contract for a significant period.

Trainees will be paid at least 60 percent of the appropriate minimum journeyman's rate specified in the contract for the first half of the training period, 75 percent for the third quarter of the training period, and 90 percent for the last quarter of the training period, unless apprentices or trainees in an approved existing program are enrolled as trainees on this project. In that case, the appropriate rates approved by the Departments of Labor or Transportation in connection with the existing program shall apply to all trainees being trained for the same classification who are covered by this Training Special Provision.

The Contractor shall furnish the trainee a copy of the program he will follow in providing the training. The contractor shall provide each trainee with a certification showing the type and length of training satisfactorily completed.

The contractor will provide for the maintenance of records and furnish periodic reports documenting his performance under this Training Special Provision.

[40 FR 28053, July 3, 1975. Correctly redesignated at 46 FR 21156, Apr. 9, 1981]

## **NEW HAMPSHIRE DEPARTMENT OF TRANSPORTATION POLICY**

Failure to complete the Training Special Provision requirement: When a Contractor fails to complete this Training Special Provision requirement and fails to make and document good faith efforts to fulfill the requirements of this provision, the New Hampshire Department of Transportation Office of Federal Compliance (OFC) shall notify the Prequalification Committee in writing. The Prequalification Committee will inform the Contractor of the OFC notification and require the Contractor to submit a Corrective Action Plan to the OFC. Failure to provide an acceptable Corrective Action Plan could lead to partial or full suspension consistent with the prequalification rules.

# 41 CFR 60-4 Affirmative Action Requirements

## 41 CFR 60-4.2 Solicitations

### Notice of Requirement for Affirmative Action To Ensure Equal Employment Opportunity (Executive Order 11246)

The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.

The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

	Goals for minority participation for each trade	Goals for female participation in each trade
<b><u>STANDARD METROPOLITAN STATISTICAL AREAS (SMSA)</u></b>		
<b>SALEM-PLAISTOW</b>	<b>4.0</b>	<b>6.9</b>
<b>MANCHESTER-NASHUA</b>	<b>0.7</b>	<b>6.9</b>
<b><u>NON-SMSA COUNTIES</u></b>		
<b>COOS, GRAFTON, SULLIVAN</b>	<b>0.8</b>	<b>6.9</b>
<b>BELKNAP, MERRIMACK, CARROLL, STRAFFORD</b>	<b>3.6</b>	<b>6.9</b>
<b>CHESHIRE</b>	<b>5.9</b>	<b>6.9</b>
<b>ROCKINGHAM</b>	<b>4.0</b>	<b>6.9</b>
<b>HILLSBOROUGH</b>	<b>0.7</b>	<b>6.9</b>

These goals are applicable to all contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and nonfederally involved construction.

The Contractor's compliance with Executive Order and the regulations in 41 CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by specifications set forth in 41 CFR 60-4.3(a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade, and the contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

The Contractor shall provide written notification to the Director of the Office of Federal contract compliance programs within 10 working days of award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation addressed as follows:

Director  
Federal Contract Compliance Program  
US Department of Labor  
JFK Building, Room 1612-C  
Boston, MA 02203

The notification shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; estimated starting and completion dates of the subcontract; and the geographical area in which the subcontract is to be performed as noted within in the Contract Special Provisions for Affirmative Action to ensure Equal Employment Opportunity.

**STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY  
CONSTRUCTION CONTRACT SPECIFICATIONS (EXECUTIVE ORDER 11246)**

1. As used in these specifications:

a. "Covered area" means the geographical area described in the solicitation from which this contract resulted;

b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority;

c. "Employer identification number" means the Federal Social Security number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

d. "Minority" includes:

(i) Black (all persons having origins in any of the Black African racial groups not of Hispanic origin);

(ii) Hispanic (all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish Culture or origin, regardless of race);

(iii) Asian and Pacific Islander (all persons having origins in any of the original peoples of the Far East, Southeast Asia, the Indian Subcontinent, or the Pacific Islands); and

(iv) American Indian or Alaskan Native (all persons having origins in any of the original peoples of North America and maintaining identifiable tribal affiliations through membership and participation or community identification).

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000 the provisions of these specifications and the Notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in a Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or Subcontractor participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. The overall good faith performance by other Contractors or Subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or Subcontractor's failure to take good faith efforts to achieve the Plan goals and timetables.

4. The Contractor shall implement the specific affirmative action standards provided in paragraphs 7 a through p of these specifications. The goals set forth in the solicitation from which this contract resulted are expressed as percentages of the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. Covered Construction contractors performing construction work in geographical areas where they do not have a Federal or federally assisted construction contract shall apply the minority and female goals established for the geographical area where the work is being performed. Goals are published periodically in the Federal Register in notice form, and such notices may be obtained from any Office of Federal Contract Compliance Programs office or from Federal procurement contracting officers. The Contractor is expected to make substantially uniform progress in meeting its goals in each craft during the period specified.

5. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom the Contractor has a collective bargaining agreement, to refer either minorities or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.

6. In order for the nonworking training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.

7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity. The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully, and shall implement affirmative action steps at least as extensive as the following:

a. Ensure and maintain a working environment free of harassment, intimidation, and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment, with specific attention to minority or female individuals working at such sites or in such facilities.



## Source 41 CFR 60-4.3 Equal Opportunity Clauses

b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available, and maintain a record of the organizations' responses.

c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.

d. Provide immediate written notification to the Director when the union or unions with which the Contractor has a collective bargaining agreement has not referred to the Contractor a minority person or woman sent by the Contractor, or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.

e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under 7b above.

f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction work is performed.

g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with onsite supervisory personnel such as Superintendents, General Foremen, etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.

h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, specifically including minority and female news media, and providing written notification to and discussing the Contractor's EEO policy with other Contractors and

Subcontractors with whom the Contractor does or anticipates doing business.

i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notification to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's work force.

k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR part 60-3.

l. Conduct, at least annually, an inventory and evaluation at least of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.

m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment related activities to ensure that the EEO policy and the Contractor's obligations under these specifications are being carried out.

n. Ensure that all facilities and company activities are nonsegregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.

o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.

p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.

8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under 7a through p of these Specifications provided that the contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, ensures that the concrete benefits of the program are reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and

## Source 41 CFR 60-4.3 Equal Opportunity Clauses

timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's noncompliance.

9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is underutilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex, sexual orientation, gender identity, or national origin.

11. The Contractor shall not enter into any Subcontract with any person or firm debarred from Government contracts pursuant to Executive Order 11246.

12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, termination and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.

13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations, or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.

14. The Contractor shall designate a responsible official to monitor all employment related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade, union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice trainee, helper, or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.

15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application of requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

(b) The notice set forth in 41 CFR 60-4.2 and the specifications set forth in 41 CFR 60-4.3 replace the New Form for Federal Equal Employment Opportunity Bid Conditions for Federal and Federally Assisted Construction published at 41 FR 32482 and commonly known as the Model Federal EEO Bid Conditions, and the New Form shall not be used after the regulations in 41 CFR part 60-4 become effective.

[ 43 FR 49254, Oct. 20, 1978; 43 FR 51401, Nov. 3, 1978, as amended at 45 FR 65978, Oct. 3, 1980; 79 FR 72995, Dec. 9, 2014]

**The United States Department of Transportation (USDOT)**  
**Standard Title VI/Non-Discrimination Assurances**

**DOT Order No. 1050.2A**

**APPENDIX A**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Non-discrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Non-discrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, or national origin in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor's obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, or national origin.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations, and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor's noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
  - a. withholding payments to the contractor under the contract until the contractor complies; and/or
  - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment,

**The United States Department of Transportation (USDOT)**

**Standard Title VI/Non-Discrimination Assurances**

**DOT Order No. 1050.2A**

unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

**The United States Department of Transportation (USDOT)**  
**Standard Title VI/Non-Discrimination Assurances**

**DOT Order No. 1050.2A**

**APPENDIX E**

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

**Pertinent Non-Discrimination Authorities:**

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21.
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131-12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration's Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures Non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of Limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

**NOTICE TO ALL BIDDERS**

In accordance with the Section "NOTICE OF REQUIREMENT FOR AFFIRMATIVE ACTION TO ENSURE EQUAL EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)", the New Hampshire Department of Transportation has the authority and responsibility to notify the Office of Federal Contract Compliance Program of the United States Department of Labor if they become aware of any possible violations of Executive Order 11246 and 41 Code of Federal Regulation Chapter 60.

The Office of Federal Contract Compliance Programs is the sole authority for determining compliance with Executive Order 11246 and 41 Code of Federal Regulation Chapter 60 and the Contractor should contact them regarding related compliance issues.

**NOTICE TO ALL BIDDERS**

To report bid rigging activities call:

1-800-424-9071

To the U.S. Department of Transportation (DOT) operates the above toll-free "hotline" Monday through Friday, 8:00 a.m. to 5:00 p.m., Eastern Time. Anyone with knowledge of possible bid rigging, bidder collusion, or other fraudulent activities should use the "hotline" to report such activities.

The "hotline" is part of the DOT's continuing effort to identify and investigate highway construction contract fraud and abuse and is operated under the direction of DOT Inspector General. All information will be treated confidentially and caller anonymity will be respected.

TE/CMAQ Program  
Construction Proposal

It is proposed:

To execute the Contract and begin work within 10 days from the date specified in the "Notice to Proceed" and to prosecute said work so as to complete the \_\_\_\_\_ and its appurtenances on or before \_\_\_\_\_.

To furnish a Contract Bond in the amount of 100 per cent of the Contract award, as security for the construction and completion of the \_\_\_\_\_ and its appurtenances in accordance with the Plans, Specifications and Contract. The Contractor's attention is called to Section 103.05 of the NHDOT Standard Specifications for road and bridge construction which provides the following guidance: unless specifically waived in the Proposal, upon execution of the Contract, the successful Bidder shall furnish the Agency a surety bond or bonds equal to the sum of the Contract amount. The form of the bond(s) shall be acceptable to the Agency and the bonding Company issuing the bond(s) shall be licensed to transact business in the State of New Hampshire, and....

To certified that the Bidder, in accordance with the requirements of 103.06 and 108.01, intends to sublet, assign, sell, transfer or otherwise dispose of one or more portions of the work and (1) has contacted the appropriate listed disadvantaged businesses and afforded such disadvantaged businesses equal consideration with non-disadvantaged business for all work the Bidder currently proposes to sublet, assign, sell, transfer or otherwise dispose of, (2) may contact additional appropriate disadvantage businesses and will afford such businesses equal consideration with non-disadvantaged businesses for all work the Bidder in the future proposes to sublet, assign, sell, transfer or otherwise dispose of, and (3) will complete enclosed "DISADVANTAGED BUSINESS ENTERPRISE COMMITMENT FORM" and Letters of Intent for each disadvantaged business. The name of the person in the Bidder's organization who has been designated as the liaison officer to administer the disadvantaged business enterprise program is:

\_\_\_\_\_  
(To be completed by the Bidder)

To guarantee all of the work performed under this Contract to be done in accordance with the Specifications and in good and workmanlike manner, and to renew or repair any work which may be rejected, due to defective materials or workmanship, prior to final completion and acceptance of the project.

Enclosed herewith find certified check or bid bond in the amount of \_\_\_\_\_ dollars (\$ \_\_\_\_\_), made payable to the Agency as a proposal guarantee which it is understood will be forfeited in the event the Contract is not executed, if awarded by the Agency to the undersigned.

**Certification Regarding Debarment, Suspension, and Other Responsibility Matters – Primary Covered Transactions.**

(1). The prospective primary participant certifies to the best of its knowledge and belief, that it and all its principals: (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency; (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or Local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or Local) with commission of any of the offenses enumerated in Paragraph (1) (b) of this certification and (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or Local) terminated for cause or default. (2). Where the prospective primary participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this proposal.



Contract Affidavit

I/We declare under penalty of perjury under the laws of the United States and the State of New Hampshire that, in accordance with the provisions of Title 23 USC, Section 112(c), have not either directly or indirectly entered into any agreement, participated in any collusion or otherwise taken any action in restraint of free competitive bidding in connection with this Proposal.

Dated: \_\_\_\_\_

(If a firm or individual)

Signature of Bidder \_\_\_\_\_

By \_\_\_\_\_

Address of Bidder \_\_\_\_\_

Names and Addresses of Members of the Firm:

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

(If a Corporation)

Signature of Bidder \_\_\_\_\_

Title \_\_\_\_\_

By \_\_\_\_\_

Business Address \_\_\_\_\_

Incorporated under the laws of the State of \_\_\_\_\_

Names of Officers:

President \_\_\_\_\_  
Name Address

Secretary \_\_\_\_\_  
Name Address

Treasurer \_\_\_\_\_  
Name Address

**APPENDIX B**  
**NHDES Permit**



The State of New Hampshire  
**Department of Environmental Services**



**Robert R. Scott, Commissioner**

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**WETLANDS AND NON-SITE SPECIFIC PERMIT 2023-03249**

**NOTE CONDITIONS**

**PERMITTEE:** TOWN OF HUDSON  
ELVIS DHIMA PE  
12 SCHOOL ST  
HUDSON NH 03051

**PROJECT LOCATION:** MELENDY ROAD (ROW, 3 & 12), HUDSON  
TAX MAP #182-215-000, LOT #183-099-000

**WATERBODY:** FIRST BROOK

**APPROVAL DATE:** FEBRUARY 06, 2024      **EXPIRATION DATE:** FEBRUARY 06, 2029

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Based upon review of permit application 2023-03249 in accordance with RSA 482-A and RSA 485-A:17, the New Hampshire Department of Environmental Services (NHDES) hereby issues this Wetlands and Non-Site Specific Permit. To validate this Permit, signatures of the Permittee and the Principal Contractor are required.

**PERMIT DESCRIPTION:**

Dredge and fill a total of 997 square feet within the bed and banks of First brook (tier 3; impacting 72 linear feet) to include 504 square feet of permanent impacts and 492 square feet of temporary impacts in order to replace the existing bridge, footings and wingwalls.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING PROJECT-SPECIFIC CONDITIONS:**

1. In accordance with Env-Wt 307.16 and Env-Wt 324.05(b), all work shall be done in accordance with the approved plans dated July, 2023 by Wright-Pierce, as received by the NH Department of Environmental Services (NHDES) on December 18, 2023.
2. 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.
3. In accordance with Env-Wt 307.11(a), 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.
4. In accordance with Env-Wt 307.05(e), 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).
5. In accordance with Env-Wt 307.03(b), all work, including management of soil stockpiles, shall be conducted so as to minimize erosion, minimize sediment transfer to surface waters or wetlands, and minimize turbidity in surface waters and wetlands.
6. In accordance with Env-Wt 904.02(b), 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.

[www.des.nh.gov](http://www.des.nh.gov)

29 Hazen Drive • PO Box 95 • Concord, NH 03302-0095

NHDES Main Line: (603) 271-3503 • Subsurface Fax: (603) 271-6683 • Wetlands Fax: (603) 271-6588

TDD Access: Relay NH 1 (800) 735-2964

7. In accordance with Env-Wt 307.10(c), turbidity controls shall be installed prior to construction and maintained during construction such that no turbidity escapes the immediate dredge area; and remain in place until suspended particles have settled and water at the work site has returned to normal clarity.
8. In accordance with Env-Wt 307.10(f), 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.
9. In accordance with Env-Wt 307.03(c)(2), all manufactured erosion and sediment control products shall not contain plastic, or multifilament or monofilament polypropylene netting or mesh with an opening size of greater than 1/8 inches.
10. In accordance with Env-Wt 307.11(c), slopes shall be immediately stabilized by a method specified in Env-Wq 1506 or Env-Wq 1508, as applicable, to prevent erosion into adjacent wetlands or surface waters.
11. In accordance with Env-Wt 307.12(d), mulch used within an area being restored shall be natural straw or equivalent non-toxic, non-seed-bearing organic material.
12. In accordance with Env-Wt 307.03(e), all exposed soils and other fills shall be permanently stabilized within 3 days following final grading.
13. In accordance with Env-Wt 307.12(f), 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.
14. In accordance with Env-Wt 307.03(g), the person in charge of construction equipment shall inspect such equipment for leaking fuel, oil, and hydraulic fluid each day, repair any leaks prior to entering surface waters or wetlands or operating in an area where such fluids could reach groundwater, surface waters, or wetlands, and maintain oil spill kits and diesel fuel spill kits so as to be readily accessible at all times during construction.

**THIS PERMIT IS SUBJECT TO THE FOLLOWING GENERAL CONDITIONS:**

1. Pursuant to RSA 482-A:12, a copy of this permit shall be posted in a secure manner in a prominent place at the site of the approved project.
2. In accordance with Env-Wt 313.01(a)(5), and as required by RSA 482-A:11, II, work shall not infringe on the property rights or unreasonably affect the value or enjoyment of property of abutting owners.
3. In accordance with Env-Wt 314.01, a standard permit shall be signed by the permittee, and the principal contractor who will build or install the project prior to start of construction, and will not be valid until signed.
4. In accordance with Env-Wt 314.03(a), the permittee shall notify the department in writing at least one week prior to commencing any work under this permit.
5. In accordance with Env-Wt 314.08(a), the permittee shall file a completed notice of completion of work and certificate of compliance with the department within 10 working days of completing the work authorized by this permit.
6. In accordance with Env-Wt 314.06, transfer of this permit to a new owner shall require notification to, and approval of, the NHDES.
7. The permit holder shall ensure that work is done in a way that protects water quality per Env-Wt 307.03; protects fisheries and breeding areas per Env-Wt 307.04; protects against invasive species per Env-Wt 307.05; meets dredging activity conditions in Env-Wt 307.10; and meets filling activity conditions in Env-Wt 307.11.
8. This project has been screened for potential impact to known occurrences of protected species and exemplary natural communities in the immediate area. Since many areas have never been surveyed, or only cursory surveys have been performed, unidentified sensitive species or communities may be present. This permit does not absolve the permittee from due diligence in regard to state, local or federal laws regarding such communities or species. This permit does not authorize in any way 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.
9. In accordance with Env-Wt 307.06(a) through (c), no activity shall jeopardize the continued existence of a threatened or endangered species, a species proposed for listing as threatened or endangered, or a designated or proposed critical habitat under the Federal Endangered Species Act, 16 U.S.C. §1531 et seq.; State Endangered Species Conservation Act, RSA 212-A; or New Hampshire Native Plant Protection Act, RSA 217-A.

10. In accordance with Env-Wt 307.02, and in accordance with federal requirements, all work in areas under the jurisdiction of the U.S. Army Corps of Engineers (USACE) shall comply with all conditions of the applicable state general permit.

APPROVED:



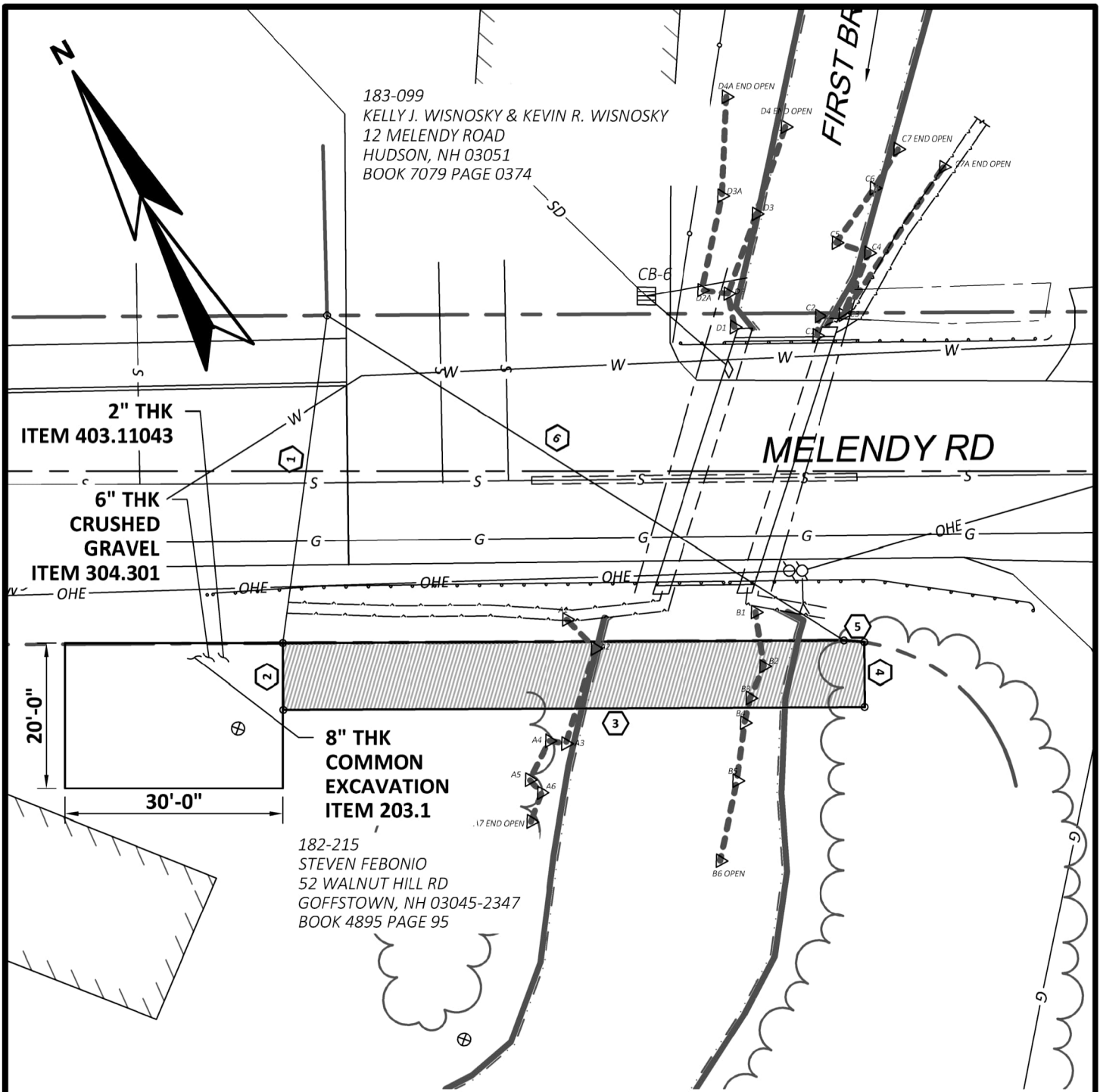
Eben M. Lewis  
Southeast Region Supervisor, Wetlands Bureau  
Land Resources Management, Water Division

**THE SIGNATURES BELOW ARE REQUIRED TO VALIDATE THIS PERMIT (Env-Wt 314.01).**

\_\_\_\_\_  
PERMITTEE SIGNATURE (required)

\_\_\_\_\_  
PRINCIPAL CONTRACTOR SIGNATURE (required)

**APPENDIX C**  
**Right-of-Way Plans**



183-099  
 KELLY J. WISNOSKY & KEVIN R. WISNOSKY  
 12 MELENDY ROAD  
 HUDSON, NH 03051  
 BOOK 7079 PAGE 0374

182-215  
 STEVEN FEBONIO  
 52 WALNUT HILL RD  
 GOFFSTOWN, NH 03045-2347  
 BOOK 4895 PAGE 95

2" THK  
 ITEM 403.11043  
 6" THK  
 CRUSHED  
 GRAVEL  
 ITEM 304.301

20'-0"  
 30'-0"

8" THK  
 COMMON  
 EXCAVATION  
 ITEM 203.1

**PLAN**  
 SCALE: 1"=20'

**LEGEND**

 PROPOSED TEMPORARY  
 RIGHT OF ENTRY (740 ± SF)

**NOTE:**  
 SEE FIGURE 2 - TABLE 1 FOR  
 BEARING AND DISTANCE  
 MEASUREMENTS






TOWN OF HUDSON, NEW HAMPSHIRE MELENDY ROAD OVER FIRST BROOK (114/083) BRIDGE REPLACEMENT	NO.	REVISIONS		
				
<b>WRIGHT-PIERCE</b> 	DRAWN BY: M. PIERRE	DATE: JUNE 2024	PROJ NO: 21383	
	APPROVED BY: W. NUHN	REFERENCE DWG:	FIGURE: 1	
<b>RIGHT-OF-WAY IMPACT PLAN</b>				

TABLE 1		
NO.	BEARING	DISTANCE
1	S36° 24' 05"W	45.44'
2	S28° 27' 55"W	9.19'
3	S61° 31' 07"E	80.00'
4	N28° 28' 53"E	8.94'
6	N29° 08' 21"W	83.99'
	LENGTH	RADIUS
5	2.82'	25.00'

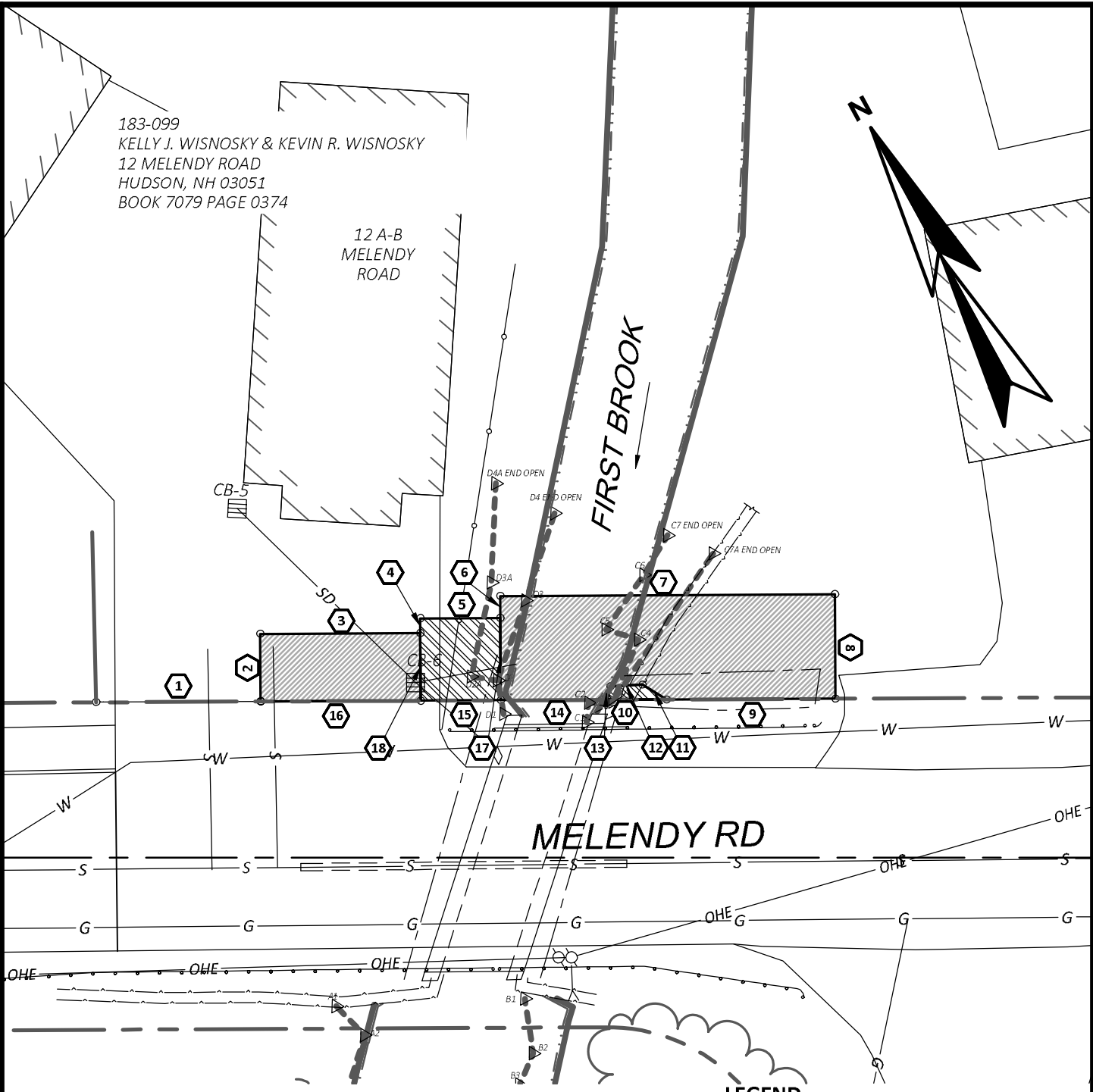
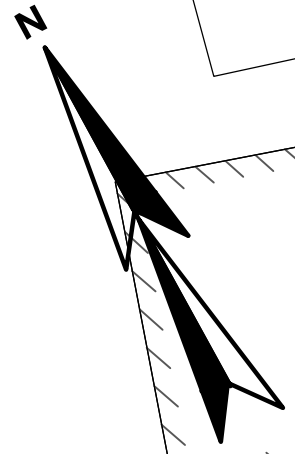
TOWN OF HUDSON, NEW HAMPSHIRE MELENDY ROAD OVER FIRST BROOK (114/083) BRIDGE REPLACEMENT	NO.	REVISIONS	
	1		
	DRAWN BY: M. PIERRE	DATE: FEBRUARY 2024	PROJ NO: 21383
	APPROVED BY: W. NUHN	REFERENCE DWG:	FIGURE: 2
<b>RIGHT-OF-WAY IMPACT PLAN</b>			



183-099  
 KELLY J. WISNOSKY & KEVIN R. WISNOSKY  
 12 MELENDY ROAD  
 HUDSON, NH 03051  
 BOOK 7079 PAGE 0374

12 A-B  
 MELENDY  
 ROAD

FIRST BROOK



NOTE:  
 SEE FIGURE 2 - TABLE 1 FOR  
 BEARING AND DISTANCE  
 MEASUREMENTS

**PLAN**  
 SCALE: 1"=20'



**LEGEND**

- PROPOSED PERMANENT IMPACT (140 ± SF)
- PROPOSED TEMPORARY RIGHT OF ENTRY (855 ± SF)



TOWN OF HUDSON, NEW HAMPSHIRE  
 MELENDY ROAD OVER  
 FIRST BROOK (114/083)  
 BRIDGE REPLACEMENT

NO.	REVISIONS		
1			
DRAWN BY:	M. PIERRE	DATE:	FEBRUARY 2024
APPROVED BY:	W. NUHN	REFERENCE DWG:	
			PROJ NO: 21383
			FIGURE: 1

**WRIGHT-PIERCE**

**RIGHT-OF-WAY IMPACT PLAN**

TABLE 1		
NO.	BEARING	DISTANCE
1	S61° 32' 05"E	22.64'
2	N28° 24' 10"E	9.29'
3	S61° 35' 34"E	22.00'
4	N28° 24' 26"E	2.00'
5	S61° 35' 34"E	11.00'
6	N28° 24' 26"E	3.00'
7	S61° 35' 34"E	46.00'
8	S28° 24' 17"W	14.37'
9	N61° 32' 05"W	23.23'
10	N61° 32' 05"W	8.86'
11	N29° 18' 14"W	3.88'
12	N65° 07' 40"W	4.42'
13	S61° 27' 56"W	2.14'
14	N61° 32' 05"W	13.91'
15	N61° 32' 05"W	11.00'
16	N61° 32' 05"W	22.00'
17	N28° 24' 14"E	11.32'
18	N28° 24' 11"E	9.31'

TOWN OF HUDSON, NEW HAMPSHIRE MELENDY ROAD OVER FIRST BROOK (114/083) BRIDGE REPLACEMENT	NO.	REVISIONS		
				
	DRAWN BY: M. PIERRE	DATE: FEBRUARY 2024	PROJ NO: 21383	
	APPROVED BY: W. NUHN	REFERENCE DWG:	FIGURE: 2	
	<b>RIGHT-OF-WAY IMPACT PLAN</b>			

**APPENDIX D**  
**NEPA Documents**

KTN

STATE OF NEW HAMPSHIRE  
INTER-DEPARTMENT COMMUNICATION

DATE August 9, 2024

FROM Kevin T. Nyhan  
Administrator

AT (OFFICE) Department of  
Transportation

SUBJECT **Environmental Commitments Memo**

**HUDSON**  
**X-A005(563)**  
**44653**  
**Melendy Road bridge replacement**

TO Tony Puntin  
Project Manager  
Bureau of Planning and Community Assistance

An environmental document has been prepared for the subject project. A fully executed copy of this memorandum and the environmental document are available on the v:\drive at: <V:\Towns\Hudson\44653\Environment> [44653Commits.pdf](#) and [446534Envdoc.pdf](#) respectively. *In addition, this memorandum has been uploaded to the project "Document Center" in ProMIS.*

In accordance with Stipulation IV.A.1.a. of the *Programmatic Agreement* executed by the Department and the Federal Highway Administration on 05/03/2021, the subject project has been determined to qualify for processing programmatically as a *Categorical Exclusion (CE)* (effective 08/09/2024). In documenting this CE, the Department has identified the applicable CE action number (#28), ensured that any constraints or conditions are met, verified that unusual circumstances do not apply, and has addressed any and all other environmental approvals. This project qualifies for use of the *Programmatic Flood Plain Finding* and the *Programmatic Wetlands Finding*. **As such, this concludes the NEPA process.**

The NEPA process for this project began on or about 06/01/2023 and was completed on 08/09/2024.

Environmental commitments have been made as noted on page 7 of the environmental document, and as detailed below:

1. The contractor shall be required to follow the conditions of the issued NHDES Dredge & Fill permit (#2023-03249). (Contractor)
2. The contractor shall be required to follow the New Hampshire Department of Transportation: Best Management Practices for Roadside Invasive Plants throughout construction. (Contractor)
3. Temporary and Permanent Easements for work outside the Town right-of-way shall be acquired prior to the start of construction. (Town of Hudson)
4. Stormwater and Erosion Control measures shall be installed prior to the start of construction and shall be inspected and maintained throughout construction. (Contractor)
5. Access to all properties shall be maintained throughout construction. (Contractor)
6. Hazardous waste remediation sites are located within 1000' of the project area. While concerns associated with these sites are not anticipated during construction, if any visual or olfactory observations indicate the presence of contamination during excavation, the NH Department of Environmental services shall be notified immediately and construction shall be discontinued until the situation is assessed. (Town of Hudson, Contractor)

7. One monitoring well has been identified in proximity to but outside the project limits. While impacts to this monitoring well are not anticipated, the Contractor shall take care to avoid impacts to any monitoring wells within the project area. However, should impacts be necessary, the Contractor shall contact the NH Department of Environmental Services for further guidance prior to disturbing any monitoring wells. (Town of Hudson, Contractor)
8. The Towns of Nashua and Hudson are known to contain unidentified asbestos disposal sites in areas of existing fill. While impacts to areas of fill containing asbestos materials are not anticipated, the contractor shall be made aware of the potential to encounter asbestos containing materials during excavation. Should any materials be which are suspected of containing asbestos be encountered during excavation, all excavation in the area shall cease and the NH Department of Environmental Services shall be contacted for further guidance regarding the proper handling and disposal of these materials prior to any further excavation. (Town of Hudson, Contractor)

**Project classification is contingent upon successful implementation of these environmental commitments.**

Please be advised, if project changes occur this bureau should be consulted to determine if a follow-up review of environmental impacts is required.

KTN:ktn  
Encl.

c.c. A. Puntin  
J. Evans  
S. LaBonte  
D. Rae  
J. Sikora  
D. Herrick  
Bureau 30

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**WRIGHT-PIERCE** <sup>TM</sup>  
Engineering a Better Environment