

TECHNICAL SPECIFICATIONS

TOWN OF HAMPDEN BRIDGE NO. H-04-007, SOUTH ROAD OVER BALLARD BROOK BRIDGE SUPERSTRUCTURE REPLACEMENT

SPECIAL PROVISIONS TO THE MASSACHUSETTS DEPARTMENT OF TRANSPORTATION – HIGHWAY DIVISION STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES

DIVISION II

All work under this Contract shall be done in conformance with the *2025 Standard Specifications for Highways and Bridges*, the *Supplemental Specifications* contained in this book, the *Construction Standard Details* in effect as of June, 2025, the *1990 Standard Drawings for Signs and Supports*, the *2015 Overhead Signal Structure and Foundation Standard Drawings*, the *2009 Manual on Uniform Traffic Control Devices (MUTCD) with Revisions 1, 2, and 3* and the *November 2022 Massachusetts Amendments to the MUTCD*, the *1968 Standard Drawings for Traffic Signals and Highway Lighting*, the latest edition of *The American Standard for Nursery Stock*, the Plans and these Special Provisions.

This project involves the replacement of the superstructure of the subject bridge. Work includes removing the existing steel beams, reinforced concrete deck slab, concrete safety curbs with railings, and wearing surface; and replacing them with a new bridge superstructure composed of mild-reinforced adjacent concrete deck beams with a reinforced concrete topping slab and metal three beam bridge railings. It also includes a temporary repair to the bridge superstructure to support traffic during construction, concrete repairs to the bridge substructure, approach guardrail, bridge pavement, and milling and paving of approach roadways. It is anticipated that the work will be completed in two stages. Suggested traffic management plans to perform the work are shown on the construction drawings.

Payment for materials or work shown on the Plans as being part of the bridge or bridge approaches not specifically included for payment under the Contract shall be considered incidental to the work performed. Where used within the contract documents, the terms “Department”, “Municipality”, and “Town” shall be taken to mean the Town of Hampden. The term “Engineer” shall be taken to mean the authorized representative or Project Manager for the Town of Hampden.

WORK SCHEDULE

No lane closures on the existing roadways shall be allowed from 6:00AM to 9:00AM and from 3:00PM to 6:00PM, without prior approval by the Town.

Work on this project is restricted to a normal eight-hour day, five-day week, with the Contractor and all Subcontractors working on the same shift.

No work shall be done on this Contract on Saturdays, Sundays or holidays or on the day before or the day after a long weekend that involves a holiday without prior approval by the Town.

RECORD PLANS AND DETAIL DRAWINGS

1938 Existing Bridge Plans are available upon request and can be provided by the Engineer.

SHOP DRAWING SUBMITTALS

The Contractor shall submit shop drawing electronically via PDF to the Town and the Engineer. No hard copies will be required at this time.

PLANS AND DETAIL DRAWINGS

(Supplementing Subsection 5.02)

The Contractor shall furnish Mylar "AS BUILT" plans of the completed project to the Engineer. These "AS BUILT" plans shall be furnished prior to the date of final acceptance. Full compensation for these plans shall be included in the prices bid for the various Contract items of work and no additional compensation will be allowed therefore.

The Engineer will make the original drawings available to the Contractor for use in preparing the as-built drawings. However, the Contractor may request a CADD version of the contract drawings as an alternative method for preparing the "AS BUILT" plans. In either case, final "AS BUILT" plans shall contain all information shown on the contract drawings and shall clearly indicate areas where changes were made during construction.

The "AS BUILT" plans shall be titled "AS BUILT" and stamped and dated by a Professional Engineer registered in the Commonwealth of Massachusetts. The Professional Engineer's stamp is required to certify any changes made to the contract drawings and shall not dictate responsibility for the original design drawings.

The "AS BUILT" plans will provide a record of constructed improvements for future reference, therefore partial plan sets will not be accepted. The Contractor may elect to use a combination of reproducible duplicates of the design drawings and revised CAD drawings to provide a complete set of "AS BUILT" plans.

COOPERATION OF THE CONTRACTOR

(Supplementing Subsections 5.05 and 5.06)

Agents of various public service agencies, municipal and State Departments, and private site contractors may be entering on the work site to remove existing utilities, to construct or place new facilities or to make alterations to existing facilities.

The Contractor shall perform the work in cooperation with the various agencies in a manner which causes the least interference with the operations of the aforementioned agencies and shall have no claim for delay which may be due, or result, from said work of these agents.

PROTECTION OF UTILITIES AND PROPERTY

(Supplementing Subsection 7.13)

The bridge plans may indicate the location of existing known utilities in the vicinity of the work. Bidders are cautioned to verify this information, as its accuracy and completeness are not guaranteed in any manner.

The Contractor is responsible for the protection of vehicular and pedestrian areas on and under the bridge being worked on. The Contractor at no additional compensation (unless otherwise, provided in this Contract) shall take all necessary precautions, including the use of shielding, to protect vehicles and pedestrians from debris.

SURVEY REQUIREMENTS

The Contractor shall be responsible for establishing line and grade for the project, using the provided control points on the plans. The control points provided on the plans are not guaranteed to be in place upon commencement of the project and the Contractor may need to reestablish control points on site at no additional cost to the Town.

CONSTRUCTION STAKING

(Supplementing Subsection 5.07)

The Contractor will be furnished information and ties for the survey baseline and benchmarks. The Contractor shall perform any and all survey required for the work.

Construction staking is considered incidental to the overall project, and no separate payment will be provided.

PUBLIC SAFETY AND CONVENIENCE

(Supplementing Subsection 7.09)

The Contractor shall provide necessary access for fire apparatus and other emergency vehicles through the work zones to abutting properties at all times.

Sweeping and cleaning of surfaces beyond the limits of the project required to clean up material caused by spillage or vehicular tracking during the various phases of the work shall be considered as incidental to the work being performed under the Contract and there will be no additional compensation.

HOLIDAY WORK RESTRICTIONS

(Supplementing Subsection 7.09)

The Town may authorize work to continue during these specified time periods if it is determined that the work will not negatively impact the traveling public.

Below are the holiday work restrictions:

HOLIDAY WORK RESTRICTIONS (Continued)

New Years Day (Federal Holiday)

No work on the day before until the normal start of business on the next subsequent business day without permission by the Town.

Martin Luther King's Birthday (Federal Holiday)

No work on the holiday without permission by the Town.

President's Day (Federal Holiday)

No work on the holiday without permission by the Town.

Patriot's Day (State Holiday)

No work on the holiday without permission by the Town.

Memorial Day (Federal Holiday)

No work on the day before until the normal start of business on the next subsequent business day without permission by the Town.

Juneteenth (State Holiday)

No work on the holiday without permission by the Town.

Independence Day (Federal Holiday)

No work on the day before until the normal start of business on the next subsequent business day without permission by the Town.

Labor Day (Federal Holiday)

No work on the day before until the normal start of business on the next subsequent business day without permission by the Town.

Columbus Day (Federal Holiday)

No work on the Friday before, until the normal start of business on the following day.

Veterans' Day (Federal Holiday)

No work restrictions due to traffic concerns.

Thanksgiving Day (Federal Holiday)

No work on the day before until the normal start of business on the following Monday without permission by the Town.

Christmas Day (Federal Holiday)

No work on the day before until the normal start of business on the next subsequent business day without permission by the Town.

NOTICE TO OWNERS OF UTILITIES

(Supplementing Subsection 7.13)

Written notice shall be given by the Contractor to all public service corporations or municipal and State officials owning or having charge of publicly or privately owned utilities at least one week in advance of the commencement of operations that will affect the utilities. The Contractor shall, at the same time, file a copy of such notice with the Town.

The following are the names of owners and representatives of the principal utilities affected, but completeness of this list is not guaranteed by the Town:

TOWN OF HAMPDEN

Town of Hampden
Highway Department
589 Main Street
Hampden, MA 01036

Mark Langone
Phone: (413) 556-8842
Email: highway@hampdenma.gov

Hampden Fire Department
19 North Road
Hampden, MA 01036

Chief Ed Poulin
Phone: (413) 566-3314
Email: fireassistant@hampdenma.gov

Hampden Police Department
100 Allen Street
Hampden, MA 01036

Chief Scott Trombly
Phone: (413) 566-8011
Email: admin@hampdenpolice.com

ELECTRIC

National Grid
55 Bearfoot Road
Northborough, MA 01532

Manny Munoz
Phone: (401) 895-9726
Email: manuel.munoz@nationalgrid.com

TELEPHONE

Verizon
385 Myles Standish Boulevard
Taunton, MA 02780

Karen Mealey
Phone: (774) 409-3160
Email: karen.m.mealey@verizon.com

GAS

Eversource Gas
995 Belmont Street
Brockton, MA 02301

Jocelyn Forcier
Email: jocelyn.forcier@eversource.com

Tennessee Gas Pipeline Company
8 Anngina Drive
Enfield, CT 06085

David Wood
Phone: (860) 763-6005
Email: KMEncroachmentsNorth@kindermorgan.com

NOTICE TO OWNERS OF UTILITIES (Continued)

CABLE

Charter Communications
301 Barber Avenue
Worcester, MA 01606

Pat O'Malley
Phone: (774) 243-9787
Email: Patrick.Omalley@charter.com

Crown Castle
80 Central Street
Boxborough, MA 01719

Mark Bonanno
Phone: (508) 616-7818
Email: mark.bonanno@crowncastle.com

OTHER COMMUNICATIONS

Local Linx
30 Elmview Circle
Dover, NH 03820

Jason Wing
Phone: (403) 538-4545
Email: jason.wing@locallinx.com

Verizon Wireless Small Cell
20 Alexander Drive
Wallingford, CT 06492

Elizabeth Glidden
Email: elizabeth.glidden@vzw.com

OTHER AFFECTED PARTIES

Vanasse Hangen Brustlin, Inc.
120 Front Street, Suite 500
Worcester, MA 01608

Matthew Houston, P.E.
Project Manager
Phone: (508) 513-2748

NATIONAL GRID EMERGENCY TELEPHONE NUMBERS

ELECTRIC:

Outage/ Emergency: 1-800-465-1212
New Service: 1-800-375-7405
Customer Support: 1-800-322-3223

EVERSOURCE EMERGENCY TELEPHONE NUMBERS

GAS:

Outage/ Emergency: 800-592-2000
New Service: 866-678-2744
Customer Support: 800-592-2000

PROTECTION OF UNDERGROUND FACILITIES

The Contractor's attention is directed to the necessity of making his own investigation in order to assure that no damage to existing structures, drainage lines, traffic signal conduits, etcetera, will occur.

The Contractor shall notify Massachusetts DIG SAFE and procure a Dig Safe Number for each location prior to disturbing existing ground in any way.

The telephone number of the "Dig Safe" Call Center is 811 or 1-888-344-7233.

PERSONAL PROTECTIVE SAFETY EQUIPMENT FOR CONTRACTOR PERSONNEL

The Contractor is responsible to ensure that all personnel, including all subcontractors, working on the project are issued and are wearing all necessary personal protective safety equipment while working within the project limits. This equipment shall include, as a minimum, a hard-hat, and a safety vest, regardless of the type of work being performed. Other safety equipment shall be added as required to perform the work in which they are engaged and in accordance with all local, state, and federal requirements in effect. Safety equipment shall be provided at no additional cost to the Town.

PROTECTION OF UTILITIES AND PROPERTY

(Supplementing Subsection 7.13)

The Contractor, in constructing or installing facilities alongside or near sewers, drains, water or gas pipes, electric or telephone conduits, poles, sidewalks, walls, vaults or other structures shall sustain them securely in place. The Contractor shall coordinate with the officers and agents of the various utility companies and municipal departments to assure that the services of these structures are maintained. The Contractor shall also be responsible for the repair or replacement, at no additional cost to the Owner (Town of Southborough), of any damage to such structures caused by construction operations. The Contractor is responsible to leave them in the same condition as they existed prior to commencement of the work. In case of damage to utilities, the Contractor shall promptly notify the utility owner and shall, if requested by the Town, furnish labor and equipment to work temporarily under the utility owner's direction. Pipes or other structures damaged by the operation of the Contractor may be repaired by the Town or by the utility owner which suffers the loss. The cost of such repairs shall be borne by the Contractor, without compensation therefor.

If during construction there is an existing utility and/ or structure found to be in conflict with the proposed work under this Contract, the Contractor shall protect and maintain the services to the utilities and structures. The Town will, as soon as possible identify the utilities to be relocated or other such activities deemed suitable for resolution.

If live service connections are to be interrupted by excavations of any kind, the Contractor shall not break the service until new services are provided. Abandoned services shall be plugged off or otherwise made secure.

Full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in protecting or repairing property as specified in this Section, shall be considered included in the prices paid for the various Contract items of work and no additional compensation will be allowed therefor.

WORK IN THE IMMEDIATE VICINITY OF CERTAIN UNDERGROUND STRUCTURES AND UTILITY POLES

For overhead connections, the Electric Company servicing the area will make the connection from the top of the riser on the utility pole to the power source. The Contractor shall supply all labor, materials and equipment to install the service connection, complete in place and in accordance with the Electric Company procedures, from the controller to and including the riser with enough wire coiled above the riser to permit the Electric Company servicing the area to make the final connection.

For underground connections, the Electric Company servicing the area will perform the actual wiring of the service connections from its power source to the sweep at the local controllers, but all steel sweeps, ducts, entrance holes into manholes, patching and all other necessary labor, materials and equipment required to install the electric service, complete in place, shall be furnished by the Contractor.

The Contractor shall pay the Electric Company servicing the area for their services rendered for the connection of overhead and underground service connections.

PRESERVATION OF ROADSIDE GROWTH

(Section 8.08 shall be amended as follows)

The Contractor shall take all necessary care when excavating or working in the vicinity of existing trees and shrubs so that the root systems, trunks, and branches are not damaged. All precautions shall be taken to ensure that heavy equipment does not damage any roots, including those that lie below the limits of excavation.

Do not store equipment or stockpile materials within drip line of trees or in areas enclosed by tree protection fencing. Avoid any direct soil contamination in root zone area by petroleum, petroleum products or solvents, salts, or any other pollutant during construction.

Trees and or shrubs that, in the judgment of the Town, have been irreparably damaged by the Contractor shall be replaced in kind and in size, or, with a quantity of 2-inch caliper replacement trees (the quantity of which shall be determined by the Town) such that the cumulative caliper of the replacement trees will be up to the equivalent of diameter of the lost tree at breast height. Cost of replacement trees or shrubs shall be paid by the Contractor. Cost of removal of destroyed trees or shrubs, including roots and stump, as well as the cost of replacement trees, shall be paid for by the Contractor.

PROVISIONS FOR TRAVEL AND PROSECUTION OF WORK

(Supplementing Subsection 8.03)

Before starting any work under this Contract, the Contractor shall prepare, and submit to the Town for approval, a plan (based on the Contract traffic management plans) that indicates the traffic routing proposed by the Contractor during the various stages and time periods of the work and the temporary barricades, signs, drums and other traffic control devices to be employed during each stage and time period of the work to maintain traffic and access to abutting properties.

A full closure of South Road at the bridge is not allowed. A minimum of one lane of alternating two-way traffic shall be maintained at all times. The Contractor is advised that existing exterior steel beams are in a deteriorated condition and that repairs to the northern exterior beam must be completed prior to shifting traffic to the north side of the road.

PROVISIONS FOR TRAVEL AND PROSECUTION OF WORK (Continued)

Particular care shall be taken to establish and maintain methods and procedures that will not create unnecessary or unusual hazards to public safety. Traffic control devices required only during working hour operations shall be removed at the end of each working day.

Signs having messages that are irrelevant to normal traffic conditions shall be removed or properly covered at the end of each work period. Signs shall be kept clean at all times and legends shall be distinctive and unmarred.

The Contractor shall notify the abutters and the Town of Hampden in writing at least two (2) weeks in advance of any proposed commencement of the work. In addition, the Contractor shall submit a Schedule of Operations outlining the tasks and timeline to perform the work and submit for approval as stated in Subsection 8.02.

The work shall be fully completed by October 31, 2027 unless written approval for an extension is provided by the Town. Upon completion of the work, the Contractor shall propose a date for the Final Walk-Through. The Final Walk-Through shall be attended by a representative from the Town, Designer, and the Contractor. During the Final Walk-Through, the Town and Designer will determine if the project has been completed to their satisfaction and identify any issues that need to be addressed before the project can be Closed Out.

TEMPORARY ACCESS TO AREA MERCHANTS AND BUSINESSES (Supplementing Subsections 8.02 and 8.06)

The work is in a predominantly residential section of the Town of Hampden. Access to all properties must be maintained at all times.

The Contractor shall provide safe and ready means of ingress and egress to any businesses or residences in the project area, both day and night, for the duration of the project.

WORK DONE BY OTHERS

Relocation and/or resetting to new grades of all private utilities, including utility poles, made necessary by the construction of this project, will be accomplished by the respective utility companies.

DRAINAGE

Payment items have been included for the cleaning of existing drainage structure and pipes only for locations where structures are located within the limits of work and where pipes are serving as an outlet for a structure located within the limits of work.

SAFETY CONTROLS FOR CONSTRUCTION OPERATIONS

(Supplementing Subsections 850.21 AND 850.61)

Safety controls for construction operations shall be done in accordance with the relevant provisions of Section 850 of the Standard Specifications, the Manual on Uniform Traffic Control Devices, MassDOT Traffic Management Plans and Detail Drawings, and the MassDOT Work Zone Safety Temporary Traffic Control.

The Contractor is responsible for implementing and maintaining traffic control devices necessary to secure their work area in compliance with all applicable local, state, and federal requirements throughout the duration of the project. The Town may order additional safety measures if insufficient safety devices are being employed. In such instances, the Contractor shall erect in place said safety devices immediately.

Positioning, adjusting and re-positioning of all devices such as traffic cones, high level warning devices, etc., not otherwise classified and paid for under other items in this contract, is considered incidental and no separate payment will be made.

POLICE SERVICES

The Contractor shall furnish police services, as required by the Town, to direct traffic on existing roadways where traffic is maintained.

The Contractor shall provide such police officers as may be deemed necessary by the Town for the direction and control of all traffic traveling within and through the project area. The police officers shall be obtained from the town police department. The police officers shall be paid directly by the Contractor at the prevailing rate of wages established by the Town. The Contractor will be reimbursed for the cost of police services and shall include support documentation as part of payment requisitions.

The Contractor is required to alert the town police department of cancellation four hours in advance of Scheduled work, otherwise the contractor will compensate the police officers for the entire workday.

Police employed by the contractor on a temporary basis are considered to be employees of the Contractor, and the Contractor shall issue W-2 "statements of earnings and taxes withheld" to the Employees and must submit copies thereof to the Massachusetts Department of Taxation and Corporations in the usual manner prescribed by law.

SAWCUTS

Existing pavements to remain shall be sawcut at all openings for utility work, for new or reset curb and at all joints with proposed full-depth hot mix asphalt pavement, as shown on the plans and as directed by the Town. Sawcutting of joints in pavement at the ends of the bridge shall be paid for under Item 482.31. No other payment will be made for sawcutting pavement, but all costs in connection therewith shall be included in the unit prices bid for the various items.

PROPERTY BOUNDS

The Contractor shall exercise due care when working around all property bounds which are to remain. Should any damage to a bound result from the actions of the Contractor, the bound shall be replaced and/or realigned by the Contractor at no cost to the Town.

RESTRICTED MATERIALS

All new construction materials shall be asbestos-free including any roofing felt, adhesives, waterproofing materials, grout, or sealer that may be used in project construction.

All yellow temporary and permanent pavement markings, including all pavement marking tape, placed as part of this project shall be lead-free.

EMERALD ASH BORER ADVISORY

To the extent possible, all trees and brush shall be disposed on site, typically chipped and spread in place. When trees or brush must be removed, such as in urban, or otherwise populated areas, Contractor shall identify proposed location for disposal, and provide written notification to the Engineer for approval. Disposal shall be in city or town of project, or at minimum, within county, of construction operations.

NEW INTRODUCTIONS OF INVASIVE PLANTS INTO OR AROUND THE SITE

(Supplementing Subsections 7.01(D) Plant Pest Control and 7.13 Protection and Restoration of Property)

The Contractor shall ensure that no invasive plant species, as defined and listed by the Massachusetts Invasive Plant Advisory Group, are introduced or moved around the site by construction activities either by improperly cleaned construction equipment or importation of infected materials such as borrow, compost, nursery stock, seed, or hay bales. Corrective measures, if necessary, shall be made by the Contractor as directed by the Town. The Contractor shall be solely responsible for all costs associated with ensuring that invasive species are not introduced or moved around the site by construction activities and for all corrective measures required for as long as necessary to eliminate the introduced invasive plant species and prevent re-establishment of same.

DISPOSAL OF EXCESS MATERIAL

Surplus materials obtained from any type of excavation, and all existing and other materials not required to be removed and stacked or needed for use on the project shall become the property of the Contractor and disposed of subject to the regulations and requirements of local authorities governing the disposal of such materials, at no additional compensation.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL

Demolition and work involving painted steel shall conform to the requirements of Section 961.

Work Involving Painted Steel

Hazardous materials shall be removed in the immediate area of any intended welding, heating, saw cutting or burning of steel. Hazardous material removal is required to allow the demolition of structural steel, railings, drainage systems, utility supports, steel lamp posts, etc.

The Contractor shall assume that the coatings on the steel contain lead (Pb), unless otherwise determined by testing. The Contractor shall certify in writing to the Engineer the results of all testing, and shall also certify that any lead (Pb) coated steel removed from the project was not reused or buried, but was sent to a scrap metal recycling facility.

Implement and maintain programs and procedures, which comply with the requirements of this specification and all applicable standards and regulations. Comply with all applicable regulations even if the regulation is not specifically referenced herein. If a state or local regulation is more restrictive than the regulation of this specification, follow the more restrictive requirements.

This requirement is intended only for the demolition and preparation prior to repair and does not include provisions for recoating of steel.

Environmental

All applicable portions of Sections 961.65 “Worker Protection” and 961.66 “Environmental Protection and Monitoring” shall be followed when performing this work.

During chemical stripping a hand washing facility may be used in lieu of a decontamination/changing facility.

Hazardous material shall be collected during the disassembly and disposed of as outlined in Section 961.68 “Handling of Hazardous Waste and Reporting Release Programs”.

The applicable submittals shall be according to Section 961.69 “Submittals”.

Cleaning/Removal

Cutting Or Burning Of Steel

All surfaces to be welded, heated, saw cut or burned shall be cleaned so as to remove all contaminants and/or hazardous materials, which could be discharged to the environment as a function of the subsequent operations.

Lead paint shall be removed in its entirety in an area prescribed by a 6 inch (15 cm) minimum offset from the required work. The paint removal operation may be dry abrasive blasting, wet abrasive blasting or chemical stripping.

GENERAL REQUIREMENTS FOR DEMOLITION AND WORK INVOLVING PAINTED STEEL (Continued)

Proper level of containment shall be used when performing this work in accordance with Section 961.67 "Containment". Full containment is not required during chemical stripping operation however; the Contractor shall install proper shielding and/or tarpaulins under the chemical stripping operations in order to catch all debris generated during this procedure. A cleaned area must be inspected and approved before the demolition operations are started.

During cleaning operations the Contractor shall be required to furnish and erect temporary floodlights illuminating the steel surface at a minimum of 30-foot candles. This lighting shall be used in areas where there is insufficient lighting for proper cleaning operations and inspection. The Contractor shall supply electrical power.

The Contractor shall provide support for interim and final inspection of the bridge during cleaning operations. This support shall include the necessary traffic controls and safe access to the work.

Mechanical Disassembly Of Steel

All surfaces to be mechanically disassembled by shear cutting or removing bolts or rivets shall not require deleading. When shear cutting or removing bolts or rivets, the Contractor shall not use any method that will cause dust and/or particles to be emitted and/or dispersed into the environment to an extent that would expose the workers above the Action Levels of $30\mu\text{g}/\text{m}^3$.

For purposes of limiting the lead (Pb) dust, the Contractor will be required to dampen the lead paint work areas.

The Contractor shall install a proper shielding and/or tarpaulins under all lead-paint-coated surfaces to be shear cut or bolts or rivets ordered removed in order to catch any loose lead paint chips, dust or particles.

PIGEON WASTE

The Contractor shall remove and dispose of any pigeon waste and any other debris accumulated on the steel members and bridge seats in areas where work is being performed. Pigeon waste and debris material contaminates will require special handling and disposal in accordance with all Federal, state, and local requirements.

NORTHERN LONG-EARED BAT PROTECTION

The U.S. Fish and Wildlife Service has listed the northern long-eared bat as threatened under the Endangered Species Act (ESA) and the following requirements exist to protect the bat and its habitat. If additional tree cutting is proposed by the Contractor that is outside the scope of this contract, additional review is required by the Engineer and time of year restrictions may apply to such tree cutting.

ORDERS OF CONDITIONS

This project is subject to Section 401 of the federal Clean Water Act, 33 USC 1341, and Massachusetts Clean Water Act, M.G.L. c 21, § 26-53, and has been issued Orders of Conditions by the Hampden Conservation Commission. The Order of Conditions are considered to be part of this contract and a copy of the Orders of Conditions, and all plans/attachments shall be on-site while activities regulated by the Orders of Conditions are being performed.

The Contractor's attention is directed to the fact that special conditions and other requirements are associated with the Orders of Conditions. It is the Contractor's responsibility to be aware of and comply with these conditions and requirements and plan his/her work and schedule accordingly. **The Contractor is hereby notified that he/she will be responsible and held accountable for performing any/all work necessary to satisfy and comply with the entire Orders of Conditions.**

The Order of Conditions are attached. The Contractor is advised that no additional compensation will be allowed for work required to establish, achieve, and maintain compliance with the Order of Conditions, as payment for the work shall be included in the various bid items.

Signs shall be displayed in accordance with the Massachusetts Department of Environmental Protection Order of Conditions. All signs shall be incidental to the project.

ENVIRONMENTAL REQUIREMENTS

If Contractor's proposes or performs any work, laydown, storage, or other procedures that may occur in or otherwise impact water or wetland resource areas, which are not allowed by existing environmental permits, the Contractor is advised that no associated work can occur until all required environmental permits have been either amended or obtained allowing such work. The Contractor must notify the Engineer in writing at least 60 days prior to commencement of the proposed activity. All environmental submittals, including any contact with Local, State, or Federal environmental agencies, must be coordinated through the Engineer. The Contractor is expected to fully cooperate with requests for information and provide the same in a timely manner.

The Contractor is further advised that the Engineer will not entertain a delay claim due to the time required to modify or obtain the environmental permits.

DESIGNER/ TOWN HIGHWAY SUPERINTENDENT

DESIGNER

Matthew Houston
Project Manager
Vanasse Hangen Brustlin, Inc.
120 Front Street, Suite 500
Worcester, MA 01608
508-513-2748

TOWN HIGHWAY DEPARTMENT

Mark Langone
Highway Superintendent
Hampden Highway Department
589 Main Street
Hampden, MA 01036
(413) 566-8842

ITEM 102.511**TREE PROTECTION – ARMORING AND PRUNING****EACH**

The work under this item shall conform to the relevant provisions of Subsection 771 of the Standard Specifications and the following:

Tree protection – armoring and pruning shall be used for instances where construction activity (the use of heavy equipment), comes within proximity to potentially damage tree trunk(s) or limbs.

The work shall include the furnishing and installing of temporary tree trunk protection, minor limb pruning, or removal of lower tree limbs to prevent injury to the tree from construction equipment and activities; as shown on the Drawings; and/or as required by the Engineer.

REFERENCES

If requested, the Contractor shall provide to the Engineer one copy of the latest edition of the American National Standards Institute (ANSI) A300 Standard Practices for Tree, Shrub, and Other Woody Plant Maintenance: Part 1-Pruning and Part 5-Construction Management Standard. Provision of reference shall be incidental to this Item.

MATERIALS

Trunk armoring shall be such that it prevents damage to the trunk from construction equipment. Material used for trunk armoring or mounting shall be such that installation and removal shall not damage the trunk.

Acceptable trunk armoring materials shall include two by four (2x4) wood cladding, mounted with wire or metal strapping, or when duration of construction activities is less than three months, slotted corrugated plastic pipe, mounted with duct tape. Eight (8) once untreated burlap shall be used to wrap the tree trunk prior to installation of cladding.

Alternative armoring methods or materials may be acceptable if approved by the Engineer.

The height of tree trunk cladding shall be measured from the base of the tree (including root flare) to the bottom of the first branch, or to a height of eight (8) feet, or as may be required by the Engineer.

METHODS OF WORK

Prior to construction activities, the Engineer, Contractor, and the Arborist (if item is included in the contract), shall review trees noted on the Drawings to be protected. Final decision and selection of trees to be armored and/or pruned shall be per the Engineer.

Care shall be taken to avoid damage to the bark during installation and removal of armoring. Trunk armoring shall be maintained such that it is effective for as long as required or replaced when materials are found to be damaged or ineffective, as determined by the Engineer. Replacement, if required, shall be incidental to the work. Armoring shall be removed immediately upon completion of work activities adjacent to the protected tree(s).

Pruning of limbs shall conform to the techniques and standards of the most recent ANSI A300 standards.

ITEM 102.511 (Continued)

DAMAGES OR LOSS

If trees designated for protection under this item are damaged, including root damage from unapproved trespassing onto the root zone, the Contractor shall, at his own expense, secure the services of an Arborist. The Arborist shall be approved by the Town.

If, based on the recommendation of the Arborist, the Engineer determines that damages can be remedied by corrective measures, such as repairing trunk or limb injury; soil compaction remediation; pruning; soil injection fertilization; and/or watering; the damage shall be repaired as soon as possible, within the appropriate season for such work and according to industry standards.

If, based on the recommendation of the Arborist, the Engineer determines that damages are irreparable, or that the damages are such that the tree is sufficiently compromised to pose a future safety hazard, the tree shall be removed. Tree removal shall include cleanup of all wood, grinding of the stump to a depth sufficient to plant a replacement tree or plant, removal of all chips from the stump site, and filling the resulting hole with topsoil. Such tree removal(s), grinding, debris removal, and topsoil filling, shall be at the Contractor's expense.

Tree removal from improper or inadequate tree protection shall result in the Engineer assessing the Contractor monetary damages consistent with industry standards for assessed value and/or replacement.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 102.511 will be measured and paid at the contract unit price per Each tree to be armored and pruned. This will include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract or as required by the Engineer.

Payment for work under this item will be scheduled as follows:

40% of the value shall be paid upon installation of trunk armoring and completion of pruning work, if required.

60% of the value shall be paid at the end of construction operations that would potentially damage the tree and after protection materials have been removed and properly disposed of by the Contractor. In the event of repairable damages, payment shall be made after the completion of remediation measures.

No separate payment will be made for costs of remedial actions, including Arborist services, tree removal, but all costs in connection therewith shall be included in the Contract unit price bid.

Tree damages assessed, due to lack of or improper tree and plant protective measures being taken, shall be deducted from the contract price of the work.

ITEM 114.1

**DEMOLITION OF SUPERSTRUCTURE
OF BRIDGE NO. H-04-007 (SMP)**

LUMP SUM

The work to be done under this Item shall conform to the relevant provisions of Subsections 112, 120, and 140 of the Standard Specifications, amended and or supplemented as follows:

The work to be done under this Item consists of the removal and satisfactory disposal of the existing bridge superstructure. This includes but is not limited to the steel beams and bearings, the reinforced concrete deck, the reinforced concrete safety curbs, the existing backwall, the existing asphalt wearing surface over the entire deck, and the existing bridge railings.

The Contractor shall be responsible for investigating the site to verify the extent of work prior to preparing the bid.

The Contractor shall submit his proposed method of demolition including equipment, tools, devices, etc. to the Engineer for approval. The demolition procedure and any necessary calculations and drawings shall be stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. Work under this Item may not commence until the Engineer has given written approval of the method of demolition.

No debris shall be allowed to fall in or adjacent to the existing stream and adjacent slopes and riverbanks. The Contractor shall be responsible for immediately removing all debris that falls on the ground or in the waterways during the demolition of the existing superstructure.

All materials removed under this item shall become the property of the Contractor and shall be disposed of away from the work site.

Cleaning Abutments

The horizontal surfaces of the abutments shall be swept clean of all debris, which may include but is not limited to, sand, gravel, bituminous material and bird droppings. This material shall be removed and disposed of as construction waste unless otherwise determined by the required testing. When the bridge is over water the Contractor shall take all precautions necessary so as not to have any bird droppings or other debris fall into the water below. After the debris has been removed the Contractor shall wash down the horizontal surfaces of the abutments with fresh water under pressure.

PAYMENT

Unless otherwise covered under other contract items, full payment for this work shall be included under the Lump Sum price bid for Item 114.1, Demolition of Superstructure and shall include all labor, equipment and materials necessary to complete the work.

ITEM 127.11**REINFORCED CONCRETE EXCAVATION -
SUBSTRUCTURE MODIFICATIONS****LUMP SUM****ITEM 127.12****REINFORCED CONCRETE EXCAVATION -
ABUTMENT REPAIRS****CUBIC YARD**

The Work shall conform to the relevant Provisions of Subsection 120 of the Standard Specifications and the following:

The work under Item 127.11 shall consist of the removal of the top of the existing abutments and wingwalls to accommodate the new superstructure of the bridge to the limits denoted on the Plans.

The work under Item 127.12 consists of the removal and disposal of all deteriorated and scaled concrete as required to repair the existing concrete abutments to the general lines identified on the drawings and as directed by the Engineer.

During the prosecution of the Work, the Engineer may reject the use of any method or equipment, which causes undue vibration or possible damage to the structure or any part thereof. Pneumatic hammers heavier than the nominal 25 pounds mass (Chicago Pneumatic No. 111 or equal) shall not be used, unless approved by the Engineer.

For abutment repairs, the minimum depth of excavation to sound concrete shall be 4". The edges of the patches shall be cut to a depth of 3/4" to neat lines by saw cutting or by methods approved by the Engineer, and the patch areas shall be made rectangular in shape, if possible, with horizontal and vertical edges and square corners.

The Contractor shall take all precautions necessary so as not to damage those portions of the Bridge including reinforcing steel that are to remain.

The Contractor shall carefully remove the concrete around any existing reinforcing steel designated to be reused in the proposed construction. It is noted that no reinforcing steel is identified on the original construction drawings. Proposed reinforcing steel shall be installed under Item 910.1. All reinforcing steel shall be tied tightly together using wire ties.

All excavations for repairs shall be squared off by sawcutting. The Contractor shall not remove any concrete beyond the specified limits unless ordered to do so by the Engineer. Any existing concrete designated to be retained during construction that is damaged by the Contractor's operation shall be replaced at the Contractor's expense.

Included under this Item are all costs in connection with the cleaning, cutting, and bending of any existing reinforcing steel designated to be retained in the proposed construction.

Immediately before preparation for placement of new concrete, the exposed area to be patched shall be free of foreign materials. These materials shall be removed by grit blasting or wire brushing and by use of compressed air. No grease, dust, rust, or laitance will be allowed to remain on reinforcing steel and exposed concrete surfaces.

ITEMS 127.11 and 127.12 (Continued)

The Contractor shall take all measures necessary to protect pedestrian and vehicular traffic from his construction operations. No debris, tools or incidental equipment of any kind will be permitted to fall into riverbed or river bank areas or where vehicular or pedestrian traffic exists. Any material that accidentally falls into such areas shall be removed immediately.

Surplus materials obtained from any type of excavation, and not needed for further use, as determined by the Engineer shall become the property of the Contractor and shall be properly disposed of by the Contractor outside the location at no additional compensation.

The Contractor is required to broom clean all work site areas after the removal of excavated debris regardless of preexisting conditions. This includes areas under the excavated repair area such as at riverbed, riverbank, or revetment areas. Removal of debris, site cleaning, and disposal of debris is incidental to the Contract and no additional payment will be made.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Work under Item 127.11 will be paid at the Lump Sum price bid. Payment for this work will be split with 50% to be paid upon removal, disposal and acceptance in Stage 1, and 100% to be paid upon removal, disposal, and acceptance under Stage 2.

Item 127.12 will be measured and paid at the Contract unit price per Cubic Yard of abutment and wingwall concrete excavated, removed and properly disposed. The Contract price shall include all labor, tools, equipment and incidental work necessary to complete the work, and final disposal of the excavated material necessary to complete the work as required by the Engineer.

ITEM 482.31**SAWING AND SEALING JOINTS IN ASPHALT
PAVEMENT AT BRIDGES****FOOT**

The work to be done under this Item consists of installing new saw cut joints at bridge approaches. The location of the sawcut joint shall be accurately recorded and reference marks shall be placed on the adjacent curb areas. Locate and reference the location of this new joint at the bridge deck ends per the proposed detail drawings prior to the placement of any pavement. Note that the saw cut joint shall be located at the end of deck.

The reconstruction of the sawcut joint shall consist of sawcutting, cleaning, and sealing transverse joints in the new finished asphalt pavement.

Joint seal material shall be a Hot Applied Crack Sealer meeting the requirements of M3.05.2 in accordance with the manufacturer's application instructions and restrictions regarding ambient and material temperatures. The crack sealer shall be thoroughly cured prior to opening the road to traffic. To reduce tackiness, only boiler slag aggregate (black beauty) shall be scattered over the sealer when required by the engineer. Conventional sand shall not be used for this purpose.

Sawcutting shall not be performed until the new hot mix asphalt pavement at the transverse joint location has thoroughly cooled and sufficiently aged to allow a clean cut to be made. The new sawcut joint must be done within seven (7) days after the placement of the wearing course of pavement. The Contractor is hereby advised that experience has shown that as little as a 1-inch deviation of the sawcut from the joint location can result in a reflective crack through the overlay above the joint rather than at the sawcut location. Extreme care must, therefore, be taken to reference the joint prior to the placement of the hot mix asphalt overlay.

The sawcut portion of the joint shall be made with an approved power-driven saw. The blade or blades shall be of such size and configuration that the desired dimensions of the sawcut can be made with one pass. The dimensions of the sawcut joint shall be as per the detail drawing included in this Contract. The sawcut shall be made with an abrasive blade and sawn dry or with a diamond blade and sawn wet.

Wet sawed joints shall be thoroughly cleaned with a water blast to remove any sawing slurry, dirt, or deleterious matter adhering to the joint walls or remaining in the joint cavity. The joints shall then be blown with air to provide dry joint surfaces prior to sealing. A Hot-Air-Lance shall be used for this operation. Dry sawed joints shall be thoroughly cleaned with a stream of air sufficient to remove any dirt, dust, and deleterious matter adhering to the joint walls or remaining in the cavity.

The Contractor shall conduct his operations so that the sawcutting of joints, cleaning, and sealing is a continuous operation. Sawcut joints shall be filled and cured prior to opening to traffic. If sawed joints are not sealed before traffic is allowed on the overlay, the joints shall be re-sawn, as directed by the Engineer, when sawing and sealing operations resume at no additional cost.

After cleaning, and just prior to sealing, bond breaker tape shall be placed in the bottom of the sawcut joint. Bond breaker tape shall consist of regular masking tape or a suitable bond breaker tape designed for use with poured sealants. The width of the tape may be equal to but not more than 1/8 inch narrower than the width of the sawcut.

ITEM 482.31 (Continued)

The joint sealant material shall be heated in a kettle or melter constructed as a double boiler, with a space between the inner and outer shells filled with oil or other heat transfer medium. The equipment shall include positive temperature controls, automatic and continuous mechanical agitation, recirculation pumps, and thermometers for continuous reading of temperature of both the sealing compound and the heat transfer medium. The melter shall be equipped with a thermostat to maintain the sealing compound within the range of the temperatures specified by the manufacturer.

Air compressors shall be capable of furnishing at least 175 cubic feet of air per minute at no less than 130 psi pressure at the nozzle. If the velocity of this unit is not sufficient enough to thoroughly clean the joint, as determined by the Engineer, a hot-air-lance must be used. The compressor shall be equipped with traps that will maintain the compressed air free of oil and water.

The joint seal shall be applied with a mobile carriage and a rubber or metal shoe and have a flow control valve that allows the joints to be filled to refusal so as to eliminate all voids or entrapped air and not to leave unnecessary surplus sealer on the pavement surface. Pour pots or similar devices shall not be used to fill sawed joints. The hot seal shall completely fill the joint such that after cooling, the level of the sealer will not be greater than 1/8 inch below the pavement surface. Any depression in the seal greater than 1/8 inch shall be brought up to the specified limit by the further addition of hot seal. Overfilling of the joints will not be allowed and spillage should be avoided.

The sealer shall be tack free prior to opening the location to traffic. Sand shall not be spread on the sealed joints to allow for roadway opening to traffic. Boiler slag aggregate (black beauty) shall be used when deemed necessary by the Engineer.

No sealing materials shall be applied in wet joints or where frost or snow or ice is present or where ambient temperature is below 40° F. Any given quantity of material shall never be heated at the pouring temperature for more than six (6) hours and shall never be reheated more than once.

All joints determined by the Engineer to be dried or rejuvenated shall be heated, prior to application of sealer, with a hot-air-lance that operates at 1100° F at 35 ft / min velocity. The lance shall have no exit flame that burns the asphalt.

All workmanship shall be of the highest quality. Excess or spilled sealer shall be removed from the pavement by approved methods and discarded. Any workmanship determined to be below the high standards of the particular craft involved will not be accepted and shall be corrected and replaced as required by the Engineer. Care shall be taken in the sealing of the joints so that the final appearance will present a neat fine line.

MEASUREMENT AND PAYMENT

Payment for work done under Item 482.31 will be made at the Contract unit price per Foot of sawed and sealed joints. Locating and referencing existing joints is considered incidental to this Item and shall be done without additional compensation.

ITEM 628.301

**TEMPORARY IMPACT ATTENUATOR,
NON-REDIRECTIVE, TL-1**

EACH

Work under this Item shall conform to the relevant provisions of Subsection 628 and the following:

Temporary impact attenuators shall be non-redirective and shall meet or exceed the requirements for MASH crash test level TL-1.

Temporary impact attenuators shall be used whenever a blunt end of the limited deflection temporary barrier system is facing traffic within the clear zone unless it is protected by a second barrier system or secured to a separate barrier system or bridge railing by a method approved by the manufacturer.

The Contractor shall submit product cut sheets to the Town for approval prior to ordering or installing any temporary impact attenuators.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement and payment for work under this item shall be made at the contract price per Each for temporary impact attenuators installed in place. This price shall include the cost of furnishing, installing, maintaining and final removal of all temporary impact attenuators including all incidental items necessary to complete the work.

Payment for removing and resetting of temporary impact attenuators will be under Item 628.4 Temporary Impact Attenuator, Removed and Reset.

ITEM 657.**TEMPORARY FENCE****FOOT**

The work under this item shall conform to the relevant provisions of Subsection 644 of the Standard Specifications and the following:

The work under this item consists of furnishing, installing, and final removal of 6-foot-high temporary fence and gates to separate construction activities from public access.

The temporary fence shall be installed around the construction site so as to prevent public access or as required by the Engineer. The Contractor shall install and maintain temporary construction fences around the construction site, stockpile areas, and all exposed excavations located outside the defined roadway area, accessible to the public until such time it is no longer necessary as determined by the Engineer. Protect all areas of the site from intrusion and trespass.

Unless otherwise indicated, the type of temporary chain link fencing shall be Contractor's option. Following types are acceptable:

1. New materials or previously used salvaged chain link fencing in good condition.
2. Posts: Galvanized steel pipe of diameter to provide rigidity. Post shall be suitable for setting in concrete footings, driving into ground, anchoring with steel base plates, or inserting in precast concrete blocks.
3. Fabric: Woven galvanized steel wire mesh. Provide in continuous lengths to be wire tied to fence posts or prefabricated into modular pipe-framed fence panels.
4. Gates: Provide personnel and vehicle gates of the quantity and size required for functional access to site.
 - a. Fabricate of same material as used for fencing.
 - b. Vehicle gates:
 - Minimum width: 20 feet to allow access for emergency vehicles.
 - Capable of manual operation by one person.

Fence fabric shall be fastened to posts by means of No. 6 gauge zinc coated wire clips. No post tops are required.

Installation of temporary fencing shall not deter or hinder access to existing or proposed fire hydrants. Maintain 3 feet diameter clear space around fire hydrants. Where a fire hydrant is blocked by fencing, provide an access gate. Access to fire hydrants shall be coordinated with the Engineer and local Fire Department.

MEASUREMENT AND PAYMENT

Item 657. will be measured and paid for at the Contract Unit Price per Foot, which price shall include all labor, materials, equipment, all posts including end, corner, and intermediate brace posts, all gates and gate posts, the replacement and/or restoration of fence damaged due to construction accidents, vandalism and/or any other manner, final removal, and incidental costs required to complete the work.

ITEM 657. (Continued)

The removing and resetting of temporary fencing to facilitate the Contractor's operations shall be considered as incidental to the work required under this item and no separate payment shall be made.

The fence shall not be removed without prior approval of the Engineer.

ITEM 692.11**BLOCK CURB REMOVED AND STACKED****FOOT**

The work to be done under this Item consists of removing the stacked concrete curb rectangular blocks at the NW corner of the bridge and stacked them on the project site for the Town or abutter to pick up. Blocks shall not be damaged during removal and shall be stacked within the limits of the Right of Way.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 692.11 shall be measured and paid at the contract unit price per Foot of block curb. This will include full compensation for all labor, equipment, materials, and incidentals for the satisfactory completion of the work and the subsequent removal and satisfactory disposal of the protective materials upon completion of the contract or as required by the Engineer.

ITEM 698.3**GEOTEXTILE FABRIC FOR SEPARATION****SQUARE YARD**

The work under this Item shall conform to the requirements of Subsection M9.50.0 of the Standard Specifications and the following:

The work includes the furnishing and installation of geotextile fabric under the proposed pavement milling mulch.

At locations of fabric installation, the subgrade shall first be graded and compacted. All rocks, vegetation, and other obstructions shall be removed before placement of fabric. The fabric shall be installed and fastened in place in conformance with the manufacturer's recommendations for each type of condition listed above.

Fabric shall conform to the requirements of AASHTO M288-Class 3 for Separation.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Geotextile fabric for separation will be measured for payment per Square Yard, complete in place; any overlaps shall be measured as a single layer of cloth.

Geotextile fabric for separation will be paid for at the Contract unit price per Square Yard, which price shall include all labor, tools, material, equipment and incidental costs required to complete the work.

ITEM 767.121**SEDIMENT CONTROL BARRIER****FOOT**

The work under this item shall conform to the relevant provisions of Subsections 751, Section 767, and Section 670 of the Standard Specifications and shall include the furnishing and placement of a sediment control barrier. Sediment Control Barrier shall be installed prior to disturbing upslope soil.

The purpose of the sediment control barrier is to slow runoff velocity and filter suspended sediments from storm water flow. Sediment barrier may be used to contain stockpile sediments, to break slope length, and to slow or prevent upgradient water or water off road surfaces from flowing into a work zone. Contractor shall be responsible for ensuring that barriers fulfill the intent of adequately controlling siltation and runoff.

Twelve-inch diameter (after installation) compost filter tubes are intended to be the primary sedimentation control barrier.

For small areas of disturbance with minimal slope and slope length, the Engineer may approve the following sediment control methods;

- Straw tubes/wattles which shall be trenched
- Straw bales which shall be trenched

Additional barriers (adding depth or height) shall be used at specific locations of concentrated flow such as at gully points, steep slopes, or identified failure points in the sediment capture line. Where specified or required by permits, silt fence shall be used in addition to compost filter tubes or straw bales and shall be incidental to the item.

MATERIALS AND CONSTRUCTION

Prior to initial placement of barriers, the Contractor and the Engineer shall review locations specified on the plans to ensure that the placement will provide maximum effectiveness.

Barriers shall be staked, trenched and/or wedged as specified herein and shall be securely in contact with existing soil such that there is no flow beneath the barrier.

Compost Filter Tube

Compost material inside the filter tube shall meet M1.06.0, except for the following: no manure or bio-solids shall be used; no kiln-dried wood or construction debris shall be allowed; material shall pass through a 2-inch sieve; and the C:N ratio shall be disregarded. Outer tube fabric shall be a knitted mesh with 1/8 - 3/8" openings and made of 100% biodegradable materials (i.e., cotton, hemp or jute). Compost filter tubes shall be a minimum of 12 inches in diameter installed. Tubes shall be placed, filled, and staked in place as required to ensure stability against water flows. All tubes shall be tamped, but not trenched, to ensure good contact with soil.

Where reinforcement is necessary, additional tubes shall be installed as shown on the plans.

Straw Bales

Straw bales shall conform to the requirements of Section M6.04.3 of the Standard Specifications and the following:

ITEM 767.121 (Continued)

Bales should be a minimum size of 12 x 16 x 36 inches and shall be placed in a single row, lengthwise on the contour, with ends of adjacent bales tightly abutting one another. The bales shall be trenched and backfilled. The trench shall be excavated the width of the bale and the length of the proposed barrier to a depth of 4 inches. After the bales are staked the excavated soil shall be backfilled against the barrier. Backfill soil shall conform to the ground level on the downhill side and shall be built up to 4 inches against the uphill side of the barrier.

Straw Wattle

Straw wattle shall be a minimum of 12 inches in diameter. Straw filling shall conform to the requirements of Section M6.04.3, shall be encased in durable netting, and shall have a density of 3 lb/foot. Straw wattle shall be trenched in 3 inches deep and staked according to the plans. The wattles shall be sufficiently secure on the upstream side to prevent water flowing underneath the wattle.

Silt Fence

Materials and Installation shall be per Section 670.40 of the Standard Specifications and the following:

Silt fence shall be used when specified by Orders of Condition or other permitting.

When used with compost filter tubes, the tube shall be placed on a minimum of 8 inches of folded fabric on the upslope side of the fence. Fabric does not need to be trenched.

When used with straw bales, an 8-inch deep and 4-inch wide trench or V-trench shall be dug on the upslope side of the fence line. One foot of fabric shall be placed in the bottom of the trench followed by backfilling with compacted earth or gravel. Stakes shall be driven 16 inches into the ground on the down slope side of the trench and shall be spaced such that the fence remains vertical and effective.

Width of fabric shall be sufficient to provide a 36-inch high barrier after fabric is folded or trenched. Sagging fabric will require additional staking or other anchoring.

MAINTENANCE

Barriers shall be inspected after each rainfall and at least daily during prolonged rainfall. Contractor shall remove accumulated sediments when they reach one half the height of the barrier or sediment fence.

The Contractor shall immediately correct all deficiencies, including, washouts, overtopping, clogging due to sediment, and erosion. The contractor shall review location of barriers in areas where construction activity causes drainage runoff so as to ensure that the barriers are properly located for effectiveness. Where deficiencies exist, such as overtopping or wash-out, additional staking or additional barriers shall be installed as required by the Engineer.

At specific locations, such as at gully points, steep slopes, or identified failure points in the sediment capture line, barriers shall be reinforced as required by the Engineer. Such reinforcing shall be incidental to the cost of this item and shall not exceed 10 percent of the overall length of barrier required for the project.

Barriers that are decomposing, cut, or otherwise compromised shall be repaired or replaced as directed by the Engineer. Repair and/or replacement shall be incidental to this item.

ITEM 767.121 (Continued)

DISMANTLING & REMOVING

Barriers shall be dismantled and/or removed when construction work is complete and when site conditions are sufficiently stable to prevent surface erosion and after receiving permission to do so from the Engineer.

For all instances, all nonbiodegradable material, including photobiodegradable fabric, plastic netting, nylon twine, and silt fence shall be removed and disposed off-site by the Contractor regardless of site context.

For naturalized areas, biodegradable, natural fabric and material shall be left in place to decompose on-site unless required otherwise by the Engineer. Compost filter tubes may be left as they are with stakes removed. Hay bales shall be broken down and spread evenly. All nylon or nonbiodegradable twine shall be removed along with silt fence. Wooden stakes may be left on site, placed neatly and discretely.

In urban or residential locations where aesthetics is a concern the following shall apply:

Filter tube fabric shall be cut and removed and compost shall be raked so as to blend evenly as a soil amendment or mulch and with no areas greater than 2 inches in depth on soil substrate.

Hay bales shall be removed and disposed off-site by the Contractor. Areas of trenching shall be raked smooth and disturbed soils stabilized with seed matching adjacent grasses with either a lawn or native grass mix.

Silt fence, stakes and other debris shall be removed and disposed off-site. Site shall look neat and clean upon completion.

Dismantling, removal and seeding shall be incidental to this item.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

This item will be measured and paid for at the Contract unit price per Foot which price shall include all labor, equipment, materials, maintenance, dismantling, removal, restoration of site, silt fence if required, and incidental costs required to complete the work.

ITEM 853.33 TEMPORARY BARRIER- LIMITED DEFLECTION (TL-3)

FOOT

Work under this Item shall conform to the relevant provisions of Subsection 853 and the following:

Temporary limited deflection barrier shall meet or exceed the requirements for MASH crash test level TL-2. The limited deflection temporary barrier system shall require an anchorage system on the bridge which provides a maximum twelve (12) inch dynamic lateral deflection requirement at the base as recorded in the crash test documentation. A minimum of 3'-0" for working width of the temporary barrier system shall be provided allowing for the maximum dynamic lateral deflection. In all cases, the clear area available behind the barrier shall be greater than the dynamic deflection of the barrier system. A single manufacturer system shall be used throughout the length of the project, with pinned to pavement barrier being compatible with the anchored to concrete bridge deck barrier.

Temporary impact attenuators shall be used whenever a blunt end of the limited deflection temporary barrier system is facing traffic within the clear zone unless it is protected by a second barrier system or secured to a separate barrier system or bridge railing by a method approved by the manufacturer. Payment for Temporary Impact Attenuators shall be made under Item 628.304 or 628.4, as appropriate.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Measurement and payment for work under this item shall be made at the contract price per Foot for limited deflection temporary barrier installed in place. This price shall include the cost of furnishing, installing, maintaining and final removal of all limited deflection temporary barrier systems including all incidental items necessary to complete the work.

For limited deflection temporary barrier systems that require anchorage systems, the cost of furnishing and installing the anchorage and hardware and the restoration of pavement surfaces, or adjacent permanent barrier systems to facilitate anchorage shall be considered incidental to the cost of the item.

Payment for removing and resetting of limited deflection temporary barrier will be under Item 853.21 Temporary Barrier Removed and Reset.

ITEM 905.**4000 PSI, 3/8 INCH, 660 CEMENT CONCRETE****CUBIC YARD**

Work performed under this Item shall be done in accordance with Subsection 901 of the Standard Specifications, and the following:

Work under this item shall consist of forming, providing, placing, and consolidating 4000 psi, 3/8 Inch, 660 Cement Concrete to perform abutment and wingwall repairs, as directed by the Engineer.

The Contractor shall obtain the approval of the Engineer that all concrete substructure excavation has been performed in accordance with the requirements of Items 127.11 and 127.12 prior to placing substructure repair concrete. Drilled and grouted dowels and welded wire reinforcing steel shall also have been installed and approved by the Engineer prior to placing substructure repair concrete. The existing concrete substructure surfaces shall be abrasively blast cleaned and pre-wetted for a minimum of 24 hours prior to placing substructure repair concrete.

The substructure repair concrete shall be properly consolidated by inserting 1" nominal head diameter pencil vibrators in openings at the tops of the forms at a maximum spacing of 1½ times the radius of action of the vibrator used.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Item 905 will be measured and paid at the Contract Unit Price per Cubic Yard of concrete provided, placed, and consolidated. This payment shall be considered full compensation for all labor, tools, equipment, materials, and all incidental items of work necessary to satisfactorily complete the repairs.

Reinforcing steel for concrete repairs shall be paid separately under Item 910.1 'Steel Reinforcement for Structures – Epoxy Coated'.

Drilled and grouted dowels for concrete repairs shall be paid separately under Item 912.4 'Drilled and Grouted #4 Dowels'.

ITEM 910.1

**STEEL REINFORCEMENT
FOR STRUCTURES – EPOXY COATED**

POUND

Work performed under this Item shall conform to the relevant provision of Subsection 901 of the Standard Specifications, and the following:

Work under this Item shall include the supply and installation of reinforcing steel that is to be used in the proposed cement concrete repairs to the abutments and wingwalls.

All epoxy coated reinforcing steel shall consist of 6 x 6 x W2.9 x W2.9 welded wire fabric and shall be placed in accordance with the repair drawings. The welded wire fabric shall be securely tied to drilled and grouted #4 dowels.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Steel Reinforcement for Structures – Epoxy Coated will be measured and paid at the Contract Unit Price per Pound of steel reinforcement installed and accepted by the Engineer. Payment for work under this Item shall be at the Contract Unit Price per pound of steel reinforcement placed. The supply and installation of #4 drilled and grouted dowels will be paid for separately under Item 912.4. The Contractor shall be responsible for all necessary labor, materials, tools, equipment and the disposal of all materials incidental to the work to the satisfaction of the Engineer.

ITEM 912.4**DRILLED AND GROUTED #4 DOWELS****EACH**

Work performed under this Item shall conform to the relevant provision of Subsection 901 of the Standard Specifications, and the following:

The work to be done under this item shall consist of drilling and grouting holes in the existing abutments and wingwalls for steel reinforcing dowels for existing concrete repairs as shown on the Plans, or as directed by the Engineer. The dowel embedment must be adequate to fully develop 125% of the yield strength of the bar. The embedment length, the method and equipment used to drill the dowel holes, and the diameter of the drilled hole shall at a minimum conform to the recommendations of the manufacturer and be submitted to the Engineer for approval.

MATERIALS

The grout to be used for these dowels shall be one of the following: "Garonite™ HD" as manufactured by Garon Products, Inc. of Wall, New Jersey; "Quik-Rok®" as manufactured by Ameristar of Tulsa, Oklahoma; "FX-228®" as manufactured by Fox Industries, Inc. of Baltimore, Maryland; "Five Star® Grout" as manufactured by Five Star Products, Inc. of Fairfield, Connecticut; or an approved equal. Grouting materials shall be on the MassDOT approved products list of materials. Epoxy, vinyl, or polyester resin adhesives shall not be utilized. The selected grouting material shall be field tested as specified below prior to being used on this project.

Two test dowel bars shall be installed in the existing concrete and tested by the Contractor for pullout. The pullout force shall correspond to 90% of the yield strength of the bar. If any of the tested bars pull out or if the surrounding concrete shows signs of cracking, the Contractor must adjust the hole diameter, embedment length, and/or grouting material to meet this test requirement.

All testing of the drilled and grouted dowels shall be performed by the Contractor and shall be considered incidental to the work under this item. The method of applying the tension test load to the dowels shall conform to ASTM E488. The details of the testing equipment used and the locations and details of the test dowels shall be submitted to the Engineer for approval. The Contractor shall perform this test as soon as possible in order to eliminate delays in construction due to the approval process. Dowels shall not be ordered until the Engineer has approved the embedment lengths.

Reinforcing steel dowels shall meet the requirements of ASTM A615 Grade 60. All reinforcing steel dowels shall be epoxy coated. Reinforcing steel dowels shall be incidental to the work under this item.

CONSTRUCTION METHODS

All dowel holes shall be air drilled provided that the minimum edge distance of 6 inches is observed. Should, in the Engineer's opinion, air drilling be inappropriate due to questionable strength of the existing concrete or insufficient edge distance, the dowel holes shall be diamond core drilled. The inner surfaces of diamond core drilled dowel holes shall be scored to develop sufficient keying action. The method of scoring of the dowel hole's inner surfaces shall be subject to the approval of the Engineer. The diameter of the drilled dowel holes shall be in accordance with the recommendations of the grout manufacturer. The holes shall be blown clear of any debris and shall have the approval of the Engineer prior to the placement of any grout material.

The drilling operation shall be performed without damage to any existing reinforcing or portion of the structure that is to remain in place. Any damage to any existing portion of the structure that is to remain in place shall be repaired to a condition equal to or better than that existing prior to the beginning of the Contractor's operations and shall be repaired at the Contractor's expense.

ITEM 912.4 (Continued)

The Contractor shall strictly follow the recommendations of the manufacturer for mixing and placing the grout material prior to the placement of the dowels. The Contractor shall, at a minimum, adhere to the ACI code requirements regarding minimum and maximum temperatures while placing the grout. Any excessive grout around the hole after placement of the dowel shall be struck off smooth while the grout is still fresh.

The Contractor shall arrange with the materials manufacturer or distributor to have the services of a competent field representative at the work site prior to any drilling of the proposed dowel holes to instruct the work crews in proper dowel installation procedures.

The field representative shall remain at the job site after work commences and continue to instruct until the representative and the Contractor, Inspector and/or Engineer are satisfied that the crew has mastered the technique of installing the dowels successfully. The representative shall make periodic visits to the project as the work progresses and shall confer on each visit with the Contractor, Inspector and/or Engineer. The manufacturer's field representative must be fully qualified to perform the work and shall be subject to the approval of the Engineer.

The Contractor shall be completely responsible for the expense of the services of the required field representative and the bid contract price shall be full compensation for all costs in connection therewith.

The Contractor shall have no claim for any variations in the diameter of the hole, the method of drilling the hole, or the type of grout used in anchoring the proposed dowels.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Drilled and Grouted #4 Dowels will be measured and paid at the Contract Unit Price per Each dowel installed and accepted by the Engineer. The Contractor shall be responsible for all necessary labor, materials, tools, equipment and the disposal of all materials incidental to the work to the satisfaction of the Engineer.

ITEM 950.5**TEMPORARY EXCAVATION SUPPORT****LUMP SUM**

All work under this Item shall conform to the relevant portions of Section 140 and 950 and the following:

The Contractor shall furnish, install, maintain and remove upon completion of work a temporary excavation support system to retain earth on the bridge approaches along the staged construction line. This earth support system shall be designed by the Contractor and shall provide sufficient space to allow for the installation of the bridge and to maintain traffic.

The temporary excavation support system shall consist of a concrete headwall or barrier along the stage line or any other system that satisfies the design criteria contained herein. The temporary earth support system must be capable of supporting all loads applied during construction, including adjacent traffic. The temporary excavation support system must be configured such that it will serve its intended purpose during construction without the need for reinstallation or major modifications.

All material used for the temporary earth support system shall be sound and free from strength impairing defects.

The Contractor shall submit to the Engineer for approval a temporary excavation support system design that is designed to carry the applicable loads, including, but not limited to, earth pressure and surcharge due to truck or equipment loading during construction. The temporary excavation support system must be designed and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts. No excavation work may begin without the Engineer's written approval of the detailed drawings and calculations for the temporary excavation support system.

The Contractor shall accurately locate all utility lines and structures to ensure that the proposed temporary excavation support system will not interfere with any existing utilities and structures.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

No measurement for the work to be done under this Item shall be performed. Payment for the work to be done under this Item shall be at the contract Lump Sum price bid. Such price shall be considered full compensation for all labor, equipment, materials and tools necessary to accomplish the specified work in a manner satisfactory to the Engineer. Payment shall be made based upon the following percentages: 10% upon approval of design, 60% upon complete installation, and 30% upon complete removal of temporary excavation support.

ITEM 960.111**TEMPORARY SUPPORT BEAM****LUMP SUM**

All work under this Item shall conform to the relevant portions of Section 140 and 960 and the following:

Work under this Item shall include all materials, equipment and labor needed to construct the following components: the temporary steel beam, sole plates, shim plates, bolsters and bolster cap plates, stiffeners, connection plates, diaphragms, and all connection elements.

The Contractor shall furnish, install, maintain and remove a temporary support beam to be installed as shown on the plans adjacent to the existing beam S1 during Stage 1. This temporary support beam shall be as specified on the Plans and an erection procedure shall be submitted to the Engineer for review.

The temporary support beam shall consist of a steel beam, Grade 50 steel or better. The beam shall be installed adjacent to the west fascia beam as shown in the Plans. The beam shall be installed tight to the underside of the existing concrete deck in order to transfer forces from the deck into the new temporary beam.

All material used for the temporary support beam, bearings and end diaphragms shall be in accordance with the notes on the Plans.

The Contractor shall submit to the Engineer for approval an installation procedure for the temporary support beam. The installation procedure shall be performed in a manner that does not cause damage to the existing portions of the bridge. The installation method shall ensure that the beam is tight to the underside of the deck and transfers deck loads into the beam.

An alternate Temporary Support Beam design may be submitted to the Engineer for review and approval prior to the Temporary Support Beam work. If the Contractor proposes the use of an alternative temporary support beam system, the installation procedure for the temporary support beam shall be designed and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts.

The Contractor shall accurately locate all utility lines and structures to ensure that the proposed temporary support beam system will not interfere with any existing utilities and structures.

Drilled and Grouted Threaded Rod

Drilled and grouted threaded rods for the connection of the bolsters to the faces of the abutments shall meet the following material, testing, and construction specifications.

Materials

The grout shall be a cementitious grout selected from the MassDOT approved products list of materials. Epoxy, vinyl, or polyester resin adhesives shall not be utilized. The selected grouting material shall be field tested as specified below prior to being used on this project.

Testing

Two test threaded rods, one at each abutment, shall be installed in the existing concrete and tested by the Contractor for pullout. The pullout force shall correspond to 90% of the yield strength of the rod. If any of the tested rods pull out, or if the surrounding concrete shows signs of cracking, the Contractor must adjust the hole diameter, embedment length, and/or grouting material to meet this test requirement.

ITEM 960.111 (Continued)

All testing of the rods shall be performed by the Contractor and shall be considered incidental to the work under this item. The method of applying the tension test load to the rod shall conform to ASTM E488. The details of the testing equipment used, and the locations and details of the test rods shall be submitted to the Engineer for approval. The Contractor shall perform this test as soon as possible in order to eliminate delays in construction due to the approval process. Threaded rods shall not be ordered until the Engineer has approved the embedment lengths.

Construction Methods

All rod holes shall be air drilled provided that a minimum edge distance as shown on the Plans is observed. Should, in the Engineer's opinion, air drilling be inappropriate due to questionable strength of the existing concrete or insufficient edge distance, the holes shall be diamond core drilled. The inner surfaces of diamond core drilled holes shall be scored to develop sufficient keying action. The method of scoring of the hole's inner surfaces shall be subject to the approval of the Engineer. The diameter of the drilled holes shall be in accordance with the recommendations of the grout manufacturer. The holes shall be blown clear of any debris and shall have the approval of the Engineer prior to the placement of any grout material.

The drilling operation shall be performed without damage to any existing reinforcing or portion of the structure that is to remain in place. Any damage to any existing portion of the structure that is to remain in place shall be repaired to a condition equal to or better than that existing prior to the beginning of the Contractor's operations and shall be repaired at the Contractor's expense.

The Contractor shall strictly follow the recommendations of the manufacturer for mixing and placing the grout material prior to the placement of the rods. The Contractor shall, at a minimum, adhere to the ACI code requirements regarding minimum and maximum temperatures while placing the grout. Any excessive grout around the hole after placement of the rod shall be struck off smooth while the grout is still fresh.

The Contractor shall arrange with the materials manufacturer or distributor to have the services of a competent field representative at the work site prior to any drilling of the proposed holes to instruct the work crews in proper installation procedures.

The field representative shall remain at the job site after work commences and continue to instruct until the representative and the Contractor, Inspector and/or Engineer are satisfied that the crew has mastered the technique of installing the rods successfully. The representative shall make periodic visits to the project as the work progresses and shall confer on each visit with the Contractor, Inspector and/or Engineer. The manufacturer's field representative must be fully qualified to perform the work and shall be subject to the approval of the Engineer.

The Contractor shall be completely responsible for the expense of the services of the required field representative and the bid contract price shall be full compensation for all costs in connection therewith.

The Contractor shall have no claim for any variations in the diameter of the hole, the method of drilling the hole, or the type of grout used in anchoring the proposed threaded rods.

ITEM 960.111 (Continued)

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

No measurement for the work to be done under this Item shall be performed. Payment for the work to be done under this Item shall be at the contract Lump Sum price bid. Such price shall be considered full compensation for all labor, equipment, materials and tools necessary to accomplish the specified work in a manner satisfactory to the Engineer. Payment shall be made based upon the following percentages: 10% upon approval of all construction submittals related to the temporary beam support (such as installation procedure) 60% upon complete installation, and 30% upon removal.

ITEM 994.01

TEMPORARY PROTECTIVE SHIELDING
BRIDGE NO. H-14-003 (5MP)

LUMP SUM

The work performed under this Item shall consist of designing, furnishing, installing, maintaining, removing and disposing of a protective shielding system for the bridge. The shielding shall protect the waterway from falling debris or flying debris during the demolition of the existing superstructure. The shielding shall prevent any debris, tools or incidental items from falling into the waterways below. The Contractor shall submit calculations and detailed working drawings of the proposed shielding to the Engineer for approval and these calculations and drawings shall be stamped by a professional engineer registered in State of Massachusetts.

Temporary protective shielding for the superstructure shall be placed beneath the bridge and shall be removable in advance of anticipated storm events when the water is expected to rise above the bottom of the shielding.

The shielding shall conform to the following:

1. Shielding shall be in place prior to the start of concrete removal to prevent any debris from falling into the waterway or ground surfaces below.
2. Shielding shall have all spaces along the perimeter and at the seams sealed to prevent dust and debris from escaping and falling onto the ground and water surfaces below the bridges.
3. Shielding shall be designed to safely withstand all anticipated loads. The allowable design stresses shall be in accordance with AASHTO Standard Specifications for Highway Bridges. and/or the AASHTO Guide Design for Temporary Works. The design shall also include a complete description of the equipment and construction methods proposed for the bridge. The shielding shall also be designed to withstand impact of the maximum size of excavated area should it fall during excavation or removal.
4. Shielding shall be installed or removed only upon approval of the Engineer.

If the Contractor's operations damage any existing portions of the bridges that have been designated to be retained in the proposed construction, such damage shall be repaired at the Contractor's expense.

All materials used in the shielding system shall become the property of the Contractor and shall be removed from the site at the completion of the project.

Removal of the Temporary Protective Shielding due to anticipated storm events will not be measured separately for payment.

METHOD OF MEASUREMENT AND BASIS OF PAYMENT

Payment and measurement will be made at the contract Lump Sum price bid for Item 994.01 with the first (1st) payment made upon completion of the shielding installation. The remaining payment of fifty percent (50%) of the lump sum price shall be made upon the removal and satisfactory disposal of the shielding from the project. This item shall include all labor, materials, equipment, tools, and incidentals necessary to carry out the work.

ITEM 995. **BRIDGE SUPERSTRUCTURE BRIDGE NO. H-04-007 (5MP)** **LUMP SUM**

The work to be done under this Item shall conform to the applicable provisions of Section 901 and Section 995 of the Standard Specifications and the specific requirements stipulated below for the component parts of this Item.

Work under this Item shall include all materials, equipment and labor needed to construct the following components of the bridge: the steel bridge planking, the full depth reinforced concrete replacement deck slab, the reinforced concrete safety curbs, the proposed steel beams, the elastomeric bearing pads, the installation of steel thrie beam bridge railings, and the application of membrane waterproofing to the deck surface.

Payment for materials shown on the plans as being part of this bridge structure or which may be incidental to its construction and are not specifically included for payment under another Item shall be considered incidental to the work performed under this Item and shall be included in the unit price of the component of which they are a part.

5000 PSI, ¾ IN., 685 HP CEMENT CONCRETE

5000 PSI ¾ IN., 685 HP CEMENT CONCRETE shall be used to construct the deck slab, deck closure pour, safety curbs, abutment caps and backwalls, and wingwall safety curbs. All concrete mixes shall conform to all material and placement, finishing, and curing requirements of the Standard Specifications.

Placement, finishing, and curing of the concrete bridge deck shall conform to 901.66, except that Section *F. Curing* shall be revised to require a curing period of not less than 7 days.

STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED

Steel reinforcement shall conform to the Standard Specifications.

DRILLED AND GROUTED #5 DOWELS

The work to be done under this item shall consist of drilling and grouting holes in the existing abutments for steel reinforcing dowels to be used to connect the proposed abutment cap to the existing abutments, the proposed safety curbs to the existing wingwalls, and the deck beams to the bridge seats.

The dowel embedment must be adequate to fully develop 125% of the yield strength of the bar. The embedment length, the method and equipment used to drill the dowel holes, and the diameter of the drilled hole shall at a minimum conform to the recommendations of the manufacturer.

Submittal Requirements

The proposed grout specifications along with installation procedure shall be submitted to the Engineer for review. The submittal shall include the method of drilling, the grout specifications, the spacing of the dowels, the edge distance of the dowel holes, the embedment depth, the curing time for the grout, the existing surface preparation, the grout preparation, and the pullout test procedure. The submittal shall include the pullout testing force to be applied to the test dowels, the testing equipment to be used, and the locations and details of the test dowels. The submittal shall include the information necessary to verify the required testing force, such as a table of the pressure to be shown on the pressure gage that corresponds to the required pullout testing force.

ITEM 995. (Continued)

Test Procedure

Two test dowel bars of the #5 bars shall be installed in the existing concrete and tested by the Contractor for pullout. The pullout force shall correspond to 90% of the yield strength of the bar. If tested bars show signs of failure or if the surrounding concrete shows signs of cracking, the Contractor must resubmit the test procedure with an adjusted hole diameter, embedment length, and/or grouting material and perform new testing.

All testing of the drilled and grouted dowels shall be performed by the Contractor and shall be considered incidental to the work under this item. The method of applying the tension test load to the dowels shall conform to ASTM E488. Dowels shall not be ordered until the Engineer has approved the embedment lengths.

Materials

Grouting materials shall be on the MassDOT approved products list of materials. The selected grouting material shall be field tested as specified below prior to being used on this project.

Reinforcing steel dowels shall meet requirements of AASHTO M31, Grade 60 (ASTM A615 Grade 60) and shall be galvanized.

Construction Methods

All dowel holes shall be air drilled provided that the minimum edge distance as specified on the Plans is observed. Should, in the Engineer's opinion, air drilling be inappropriate due to questionable strength of the existing concrete or insufficient edge distance, the dowel holes shall be diamond core drilled. The inner surfaces of diamond core drilled dowel holes shall be scored to develop sufficient keying action. The method of scoring the dowel hole's inner surfaces shall be subject to the approval of the Engineer. The diameter of the drilled dowel holes shall be in accordance with the recommendations of the grout manufacturer. The holes shall be blown clear of any debris and shall have the approval of the Engineer prior to the placement of any grout material.

The drilling operation shall be performed without damage to any existing reinforcing or portion of the structure that is to remain in place. Any damage to any existing portion of the structure that is to remain in place shall be repaired to a condition equal to or better than that existing.

The Contractor shall strictly follow the recommendations of the manufacturer for mixing and placing the grout material prior to the placement of the dowels. The Contractor shall, at a minimum, adhere to the ACI code requirements regarding minimum and maximum temperatures while placing the grout. Any excessive grout around the hole after placement of the dowel shall be struck off smooth while the grout is still fresh.

PRECAST CONCRETE DECK BEAMS (S36-12)

PRECAST CONCRETE DECK BEAMS (S48-12)

A. General.

The work under this Heading consists of fabricating, transporting and installing precast concrete deck beams, and includes all necessary labor, materials, and equipment to complete the work as shown on the Plans. The Precast Concrete Elements shall meet the requirements of Section M4: Cement Concrete and Related Materials.

ITEM 995. (Continued)

MATERIALS

A. Materials.

Materials shall conform to M4.09.1 and the following:

Non-Shrink Grout Products	M4.04.5
Welded Steel Wire Fabric	M8.01.2
Mechanical Reinforcing Bar Splicer	M8.01.9
Strand Chuck	M8.15.0
Lifting Devices	PCI MNL-116

1. Reinforcement.

The size and grade of steel reinforcement shall be as indicated on the plans. All reinforcing steel shall be epoxy coated, Grade 60.

2. Transverse Ties.

The transverse ties shall be low-relaxation strands meeting the requirements of AASHTO M 203. The size and grade shall be as indicated on the plans. The ties shall be supplied with a seamless polypropylene sheath which has corrosion inhibitor grease between the strand and sheath. The location of all transverse ties, shall be as shown on the plans.

3. Threaded Inserts

Threaded inserts are permissible in Precast Concrete Deck Beams for installing formwork, utility supports, or deck drains. Threaded inserts shall be hot dip galvanized or made of stainless steel and shall not come in contact with the reinforcing steel. The number of threaded inserts installed for the Contractor's convenience shall be kept to a minimum.

CONSTRUCTION METHODS – PLANT FABRICATION

A. Pre-Production Meeting.

The Contractor shall notify the Town to determine if a pre-production meeting will be required to review the specification, shop drawings, curing plan, schedule, and discuss any specific requirements. The meeting shall be held at least seven (7) days prior to the scheduled casting of any Precast Concrete Beam or control section. The Contractor shall schedule the meeting, which shall include representatives of the Fabricator and the Town.

B. Reinforcement.

The reinforcing bars shall be installed in accordance with Subsection 901.35 of the Standard Specifications, including tolerances for cover and horizontal spacing of bars. Components of mechanical reinforcing bar splicers shall be set with the tolerances shown on the plans. The reinforcing bars and mechanical reinforcing bar splicers shall be assembled into a rigid cage that will maintain its shape in the form and which will not allow individual reinforcing bars to move during the placement of concrete. This cage shall be secured in the form so that the clearances to all faces of the concrete, as shown on the plans, shall be maintained.

ITEM 995. (Continued)

C. Tolerances.

Fabrication shall comply with tolerances specified on the plans. Tolerances for steel reinforcement placement shall be in accordance with Subsection 901.35. In the absence of specifications on the plans, tolerances shall comply with the latest version of the PCI MNL 135, Precast Tolerance Manual.

D. Forms.

Concrete shall be cast in rigidly constructed forms, which will maintain the Precast Concrete Deck Beams within specified tolerances to the shapes, lines and dimensions shown on the approved fabrication drawings. Forms shall be constructed from flat, smooth, non-absorbent material and shall be sufficiently tight to prevent the leakage of the plastic concrete. When wood forms are used, all faces in contact with the concrete shall be laminated or coated with a non-absorbent material. All worn or damaged forms, which cause irregularities on the concrete surface or damage to the concrete during form removal, shall be repaired or replaced before being reused. If threaded inserts are cast into the elements for support of formwork, the inserts shall be recessed a minimum of 1 inch and shall be plugged after use with a grout of the same color as that of the precast cement concrete.

CONSTRUCTION METHODS – FIELD CONSTRUCTION

A. General.

All of the Contractor's field personnel involved in the erection and assembly of the Prestressed Concrete Beams shall have knowledge of and follow the approved Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly.

Prior to installation, the following documentation shall be reviewed and confirmed by the Town or designee:

- (a) QC Compressive Strength Test Report Forms attaining Design Strength, f'_c for the Prestressed Concrete Beam's representative subplot.
- (b) Certificate of Compliance generated by the Fabricator as described under the Fabricator Quality Control section.
- (c) QC Inspection Reports signed by the Quality Control Manager.

Field construction staff shall verify that the Resident Engineer has accepted all Prestressed Concrete Beams prior to installation.

B. Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly.

Prior to the erection, the Contractor shall submit an Erection Procedure and a Quality Control Plan for Prestressed Concrete Beam Assembly for approval by the Engineer. This submittal shall include computations and drawings for the transport, hoisting, erection and handling of the Prestressed Concrete Beams. The Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly shall be prepared and stamped by a Professional Engineer registered in the Commonwealth of Massachusetts with working knowledge of the Contractor's equipment, approved shop drawings, and materials to build the bridge. The Erection Procedure and Quality Control Plan for Prestressed Concrete Beam Assembly shall, at a minimum, include the following:

ITEM 995. (Continued)

1. Erection Procedure

The Erection Procedure shall be prepared to conform to the requirements of 960.61, Design, Fabrication and Erection and the applicable sections in Chapter 8 of the PCI Design Handbook (eighth edition) for handling, erection, and bracing requirements. At a minimum, the Erection Procedure shall provide:

- (a) Steel reinforcing details, and location and details of lifting devices
- (b) Minimum concrete compressive strength for handling the Prestressed Concrete Beams.
- (c) Concrete stresses during handling, transport, and erection.
- (d) Crane capacities, pick radii, sling geometry, and lifting hardware.
- (e) Verification that the equipment can handle all pick loads and weights with the required factor of safety.
- (f) Evaluation of construction sequence and evaluation of any geometric conflicts in the lifting of the Prestressed Concrete Beams and setting them on the abutments and piers.
- (g) Design of crane supports including verification of subgrade for support.
- (h) Location and design of all temporary bracing that will be required during erection.

2. Quality Control Plan for Prestressed Concrete Beam Assembly

The Quality Control Plan for Prestressed Concrete Beam Assembly is a document prepared and submitted by the Contractor prior to the start of work which requires the Contractor to identify and detail the sequence of construction in accordance with the project schedule and which clearly identifies all stages of field construction. The assembly procedures for the Prestressed Concrete Beams shall be submitted in PDF format on 24"x36" sheets. This document will be treated as a Construction Procedure and will be reviewed by both the Designer and the District Construction Office.

At a minimum, the Quality Control Plan for Prestressed Concrete Beam Assembly shall include the following:

- (a) Listing of the equipment, materials, and personnel including their assigned responsibilities that will be used to erect and assemble the Prestressed Concrete Beams on site.
- (b) Documentation of all preparatory work necessary for moving personnel, equipment, supplies, and incidentals to the project site before beginning work.
- (c) Detailed schedule showing the sequence of operations that the Contractor will follow to complete the field construction from setting working points and working lines to the casting of closure pours and the curing of the closure pour concrete, as described below and as called for on the plans.
- (d) Contractor's means for ensuring that the Prestressed Concrete Beam shall align to the roadway profile and cross slope and means for adjusting the final deck slab elevation.
- (e) Timeline and descriptions of Quality Control activities to be followed throughout the field construction operations including methods and procedures for controlling tolerance limits both horizontally and vertically.

C. Survey and Layout.

Working points, working lines, and benchmark elevations shall be established prior to placement of all elements. The Contractor is responsible for field survey as necessary to complete the work. The Town reserves the right to perform additional independent survey. If discrepancies are found, the Contractor may be required to verify previous survey data.

ITEM 995. (Continued)

D. Adjacent Precast Concrete Deck Beams.

1. Beam Layout and Erection.

Precast concrete beams shall be installed to the line and grade shown on the plans in accordance with the Contractor's approved Erection Procedure and Assembly Plan. The location of the beams on the abutments and piers shall be laid out according to the nominal width of the beams as shown on the plans. Each beam shall be erected such that after erection, the beam shall lie entirely within the horizontal lines defined by its nominal width for its entire length and shall not infringe on the space allocated for any adjacent beam. The Contractor may adjust the width of the shear key between beams.

Immediately prior to erecting the beams, the keyway surfaces shall be cleaned at the job site of all dust, dirt, and carbonation using a high-pressure water blast.

After all beams are erected, the actual overall width of the beams as laid out shall not deviate from the nominal dimension shown on the framing plan beyond a tolerance of +0 inches and -1 inches.

After the beam layout has been accepted by the Engineer, the Contractor shall cut the lifting devices off below the top of the beam.

2. Transverse Tie Tensioning.

Unless shown otherwise on the plans, the transverse ties shall be tensioned to 5,000 pounds before the keyways are filled. After the keyways are filled with mortar (M4.04.5) and the mortar has cured, the ties shall be tensioned as specified on the plans. No traffic or heavy equipment shall be allowed on the bridge until all transverse ties have been properly tensioned and the deck has been cast and cured.

3. Mortaring of Keyways.

The precast concrete keyways that will receive mortar shall be free of materials such as paint, oil, curing compound, bond breaker, dirt etc. that will inhibit bonding. The precast concrete keyways shall be hydro-blasted with equipment that can remove asphaltic material, oils, dirt, rubber, curing compounds, paint carbonation, laitance, and other potentially detrimental materials, which may interfere with the bonding of the mortar and precast concrete.

Exposed reinforcing steel in the precast beam shall be protected from damage during the cleaning of the keyways. Damaged epoxy coating of steel reinforcement shall be repaired, and the reinforcing steel shall be cleaned as directed by the Engineer.

Mortar (M4.04.5) shall be placed in strict accordance with the manufacturer's recommendations and instructions.

The keyways shall be filled flush to the top of the beams and any vertical misalignment between beams shall be feathered out on a slope of 1 to 12. Curing shall be performed in strict accordance with the manufacturer's recommendations. The keyways shall not be filled in cold weather when either the ambient temperature or the prestressed concrete beam's temperature is below the mortar manufacturer's recommendation. No localized heating of either the prestressed concrete beams or of the air surrounding the keyway will be permitted in an attempt to reach application temperatures.

ITEM 995. (Continued)

If the keyways are not filled within five days after the beams are erected, the Contractor shall cover and protect the keyways from weather and debris until they are filled.

4. Concrete Deck Slab Placement.

Prior to casting the concrete deck slab, the top of the beam shall be clean and free of all laitance or bond inhibiting agents. The concrete deck slab shall be placed after the transverse ties have been fully tensioned. Deck concrete shall be placed against the beam concrete without the use of any bonding agents.

After the formwork has been removed, all threaded inserts that have been cast into the beams for support of the formwork shall be plugged after use with a grout of the same color as that of the precast cement concrete.

5. Backwalls.

The backwalls shall be cast only after the beam layout has been accepted. Closed cell foam shall be attached to the bridge beams to the limits and thickness as shown on the plans and the backwall concrete shall be placed directly against it.

ELASTOMERIC BRIDGE BEARING PADS

The bearing pads shall be plain elastomeric pads sized according to the plans. They shall be 60 durometer hardness. They shall meet M9.14.5 of the MassDOT Standard Specifications, except that testing shall be waived.

SHEET MEMBRANE WATERPROOFING FOR BRIDGE DECKS

Membrane waterproofing applied to the surface of the concrete topping slab as indicated on the plan shall consist of preformed rubberized asphalt sheet systems. The preformed sheet membrane shall meet M9.08.0.

All concrete surfaces which are to be waterproofed shall be screeded to the true cross section. Depressions shall be filled to a smooth flush surface with 1:2 mortar (1 part cement to two parts sand) or an approved rapid setting patching mortar. Other surfaces shall be trimmed free of rough spots, projections or other defects which might cause puncture of the membrane.

METAL THRIE BEAM BRIDGE RAILING WITH HANDRAIL

The work to be performed under this heading shall consist of the fabrication and installation of a Thrie Beam Bridge Rail with Handrail system. This item shall be fabricated by a MassDOT Approved Fabricator of Bridge Components (CPT). Work shall conform to the relevant provisions of Section 975, Metal Bridge Railings and Protective Screen, of the Standard Specifications for Highways and Bridges and the following.

Thrie beam panels shall be double nested (2 layers) 12-gauge panels or 1 layer of 10-gauge panels and shall conform to AASHTO M 180 Class B. The posts, base plates, and thrie beam rail panels shall be galvanized after fabrication in accordance with AASHTO M111.

Timber offset blocks shall conform to Section M8.07.0.B of the MassDOT Standard Specifications.

The steel pipe handrail shall be ASTM A53 Standard pipe, and shall be galvanized after fabrication in accordance with ASTM A123. Mounting hardware shall be galvanized in accordance with ASTM A153.

ITEM 995. (Continued)

SCHEDULE OF BASIS FOR PARTIAL PAYMENT

The Contractor shall submit a schedule of unit prices for the major component Sub-Items that make up Item 995. as well as his/her total Bridge Superstructure Lump Sum cost. The Bridge Superstructure breakdown quantities provided in the proposal form are estimated and not guaranteed. The total of all partial payments to the Contractor shall equal the contract Lump Sum price bid regardless of the accuracy of the quantities furnished by the Engineer of the individual bridge components. The cost of labor and materials for any Item not listed but required to complete the work shall be considered incidental to Item 995. No further compensation will be allowed.

Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item. Sub-Item numbering is presented for information only in coordination with MassDOT Standard Nomenclature.

ITEM 995. **ESTIMATED LUMP SUM BREAKDOWN QUANTITIES**
(NOT GUARANTEED)

<u>SUB-ITEM NO.*</u>	<u>DESCRIPTION</u>	<u>QTY.</u>	<u>UNIT</u>	<u>UNIT PRICE</u>	<u>TOTAL</u>
904.3	5000 PSI ¾ INCH, 685 HP CEMENT CONCRETE (CAST-IN-PLACE)	30	CY		
910.1	STEEL REINFORCEMENT FOR STRUCTURES – EPOXY COATED (FOR CAST-IN-PLACE CONCRETE)	3500	LB		
912.5	DRILLED AND GROUTED #5 DOWELS	200	EA		
930.301	PRECAST CONCRETE DECK BEAMS (36-12)	32	FT		
930.302	PRECAST CONCRETE DECK BEAMS (48-12)	111	FT		
933.	ELASTOMERIC BRIDGE BEARING PAD	20	EA		
966.1	PREFORMED SHEET MEMBRANE WATERPROOFING FOR BRIDGE DECKS	630	SF		
975.8	METAL THRIE BEAM BRIDGE RAILING WITH HANDRAIL	84	FT		

Total Lump Sum Cost of Item 995. =

The above schedule applies only to Bridge Superstructure, Bridge No. H-04-007 (5MP). Payment for similar materials and construction at locations other than at this bridge structure shall not be included under this Item. * - Sub-Item numbering is presented for information only in coordination with MassDOT Standard Nomenclature.

CONTRACT ALLOWANCE PAYMENT ITEMS

The quantity to be paid for under these items shall be the actual amount paid by the Contractor to provide satisfactory testing operations as stipulated and required. Any associated Contractor overhead costs and profit shall be considered incidental to the cost of the contract.

ITEM 999.300

**MATERIALS INSPECTION, SAMPLING
AND TESTING SERVICES**

ALLOWANCE

Allowance for Verification and Testing

Materials inspection, sampling and testing services shall be provided by independent testing consultants or firms that shall be retained by the Contractor to ensure compliance with the Standard Specifications and these Special Provisions. These services will include, but are not limited to the following:

- Precast Concrete Beam Fabrication Inspection and Testing
- Bridge Railing Fabrication
- Cast-in-Place Concrete Inspection and Testing

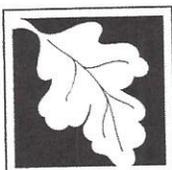
The firm(s) selected to provide these services must be pre-qualified by MassDOT in the discipline of Materials Inspection and Testing. The Contractor shall coordinate with the firm(s) and the Town's Resident Engineer as necessary while the work is ongoing to ensure that the appropriate materials inspection, sampling and testing is occurring. Test reports shall be provided to the Engineer with copies to the Contractor. Work on materials that fail to meet the requirements of these Special Provisions shall be promptly corrected by the Contractor in accordance with the standard specifications. The cost of tests that fail to show compliance will not be reimbursed to the Contractor. The Contractor shall be reimbursed under this allowance for testing based on paid invoices from the independent testing consultant.

The Contractor shall include an allowance of \$5,000 in the price bid for this item.

ATTACHMENT - ORDER OF CONDITIONS

*****END OF SPECIAL PROVISIONS*****

ATTACHMENT - ORDER OF CONDITIONS



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 173-0243
 MassDEP File #
 eDEP Transaction #
 Hampden
 City/Town

A. General Information

Please note:
 this form has been modified with added space to accommodate the Registry of Deeds Requirements

Important:
 When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



1. From: Hampden
 Conservation Commission

2. This issuance is for (check one):
 a. Order of Conditions b. Amended Order of Conditions

3. To: Applicant:

Mark Langone
 a. First Name b. Last Name

Town of Hampden
 c. Organization

625 Main Street
 d. Mailing Address

Hampden Ma 01036
 e. City/Town f. State g. Zip Code

4. Property Owner (if different from applicant):

Town of Hampden Town of Hampden
 a. First Name b. Last Name

625 Main Street
 c. Organization

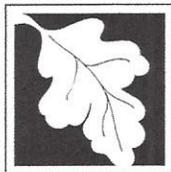
Hampden Ma 01036
 d. Mailing Address e. City/Town f. State g. Zip Code

5. Project Location:

South Rd. Over Ballard Brook Hampden
 a. Street Address b. City/Town

N/A N/A
 c. Assessors Map/Plat Number d. Parcel/Lot Number

Latitude and Longitude, if known: 53W42.d062m19Ns 72d413m53Ws
 d. Latitude e. Longitude



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A. General Information (cont.)

6. Property recorded at the Registry of Deeds for (attach additional information if more than one parcel):

N/A	N/A
a. County	b. Certificate Number (if registered land)
N/A	N/A
c. Book	d. Page

7. Dates: 11/26/2024 ~~11/15/2025~~ 02/05/2025 ~~11/15/2025~~ 02/05/2025
 a. Date Notice of Intent Filed b. Date Public Hearing Closed c. Date of Issuance

8. Final Approved Plans and Other Documents (attach additional plan or document references as needed):

Bridge Repairs: South Rd Over Ballard Brook	
a. Plan Title	
vhb. Bridget Hilgendorff	Olivia Richards
b. Prepared By	c. Signed and Stamped by
December 2, 2024	1" = 20'
d. Final Revision Date	e. Scale
Letter from NHESP File# 19105. Heritage Hub Form ID RC-90598	
f. Additional Plan or Document Title	12/26/2024
	g. Date

B. Findings

1. Findings pursuant to the Massachusetts Wetlands Protection Act:

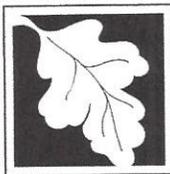
Following the review of the above-referenced Notice of Intent and based on the information provided in this application and presented at the public hearing, this Commission finds that the areas in which work is proposed is significant to the following interests of the Wetlands Protection Act (the Act). Check all that apply:

- | | | |
|---|---|---|
| a. <input type="checkbox"/> Public Water Supply | b. <input type="checkbox"/> Land Containing Shellfish | c. <input checked="" type="checkbox"/> Prevention of Pollution |
| d. <input checked="" type="checkbox"/> Private Water Supply | e. <input type="checkbox"/> Fisheries | f. <input checked="" type="checkbox"/> Protection of Wildlife Habitat |
| g. <input type="checkbox"/> Groundwater Supply | h. <input type="checkbox"/> Storm Damage Prevention | i. <input type="checkbox"/> Flood Control |

2. This Commission hereby finds the project, as proposed, is: (check one of the following boxes)

Approved subject to:

- a. the following conditions which are necessary in accordance with the performance standards set forth in the wetlands regulations. This Commission orders that all work shall be performed in accordance with the Notice of Intent referenced above, the following General Conditions, and any other special conditions attached to this Order. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, these conditions shall control.



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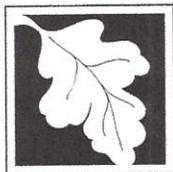
B. Findings (cont.)

Denied because:

- b. the proposed work cannot be conditioned to meet the performance standards set forth in the wetland regulations. Therefore, work on this project may not go forward unless and until a new Notice of Intent is submitted which provides measures which are adequate to protect the interests of the Act, and a final Order of Conditions is issued. **A description of the performance standards which the proposed work cannot meet is attached to this Order.**
- c. the information submitted by the applicant is not sufficient to describe the site, the work, or the effect of the work on the interests identified in the Wetlands Protection Act. Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides sufficient information and includes measures which are adequate to protect the Act's interests, and a final Order of Conditions is issued. **A description of the specific information which is lacking and why it is necessary is attached to this Order as per 310 CMR 10.05(6)(c).**
- 3. Buffer Zone Impacts: Shortest distance between limit of project disturbance and the wetland resource area specified in 310 CMR 10.02(1)(a) _____ a. linear feet

Inland Resource Area Impacts: Check all that apply below. (For Approvals Only)

Resource Area	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
4. <input checked="" type="checkbox"/> Bank	104 LF a. linear feet	104 LF b. linear feet	104 LF c. linear feet	104LF d. linear feet
5. <input type="checkbox"/> Bordering Vegetated Wetland	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
6. <input type="checkbox"/> Land Under Waterbodies and Waterways	_____ a. square feet _____ e. c/y dredged	_____ b. square feet _____ f. c/y dredged	_____ c. square feet	_____ d. square feet
7. <input type="checkbox"/> Bordering Land Subject to Flooding	_____ a. square feet Cubic Feet Flood Storage _____ e. cubic feet	_____ b. square feet _____ f. cubic feet	_____ c. square feet _____ g. cubic feet	_____ d. square feet _____ h. cubic feet
8. <input type="checkbox"/> Isolated Land Subject to Flooding	_____ a. square feet Cubic Feet Flood Storage _____ c. cubic feet	_____ b. square feet _____ d. cubic feet	_____ e. cubic feet	_____ f. cubic feet
9. <input checked="" type="checkbox"/> Riverfront Area	_____ a. total sq. feet 4350 Sq ft within 100 ft _____ c. square feet Sq ft between 100-200 ft _____ g. square feet	_____ b. total sq. feet 4350 _____ d. square feet _____ h. square feet	_____ e. square feet _____ i. square feet	_____ f. square feet 4350 _____ j. square feet



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B. Findings (cont.)

Coastal Resource Area Impacts: Check all that apply below. (For Approvals Only)

	Proposed Alteration	Permitted Alteration	Proposed Replacement	Permitted Replacement
10. <input type="checkbox"/> Designated Port Areas	Indicate size under Land Under the Ocean, below			
11. <input type="checkbox"/> Land Under the Ocean	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
12. <input type="checkbox"/> Barrier Beaches	Indicate size under Coastal Beaches and/or Coastal Dunes below			
13. <input type="checkbox"/> Coastal Beaches	_____ a. square feet	_____ b. square feet	_____ c. nourishment cu yd	_____ d. nourishment cu yd
14. <input type="checkbox"/> Coastal Dunes	_____ a. square feet	_____ b. square feet	_____ c. nourishment cu yd	_____ d. nourishment cu yd
15. <input type="checkbox"/> Coastal Banks	_____ a. linear feet	_____ b. linear feet		
16. <input type="checkbox"/> Rocky Intertidal Shores	_____ a. square feet	_____ b. square feet		
17. <input type="checkbox"/> Salt Marshes	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
18. <input type="checkbox"/> Land Under Salt Ponds	_____ a. square feet	_____ b. square feet		
	_____ c. c/y dredged	_____ d. c/y dredged		
19. <input type="checkbox"/> Land Containing Shellfish	_____ a. square feet	_____ b. square feet	_____ c. square feet	_____ d. square feet
20. <input type="checkbox"/> Fish Runs	Indicate size under Coastal Banks, Inland Bank, Land Under the Ocean, and/or inland Land Under Waterbodies and Waterways, above			
	_____ a. c/y dredged	_____ b. c/y dredged		
21. <input type="checkbox"/> Land Subject to Coastal Storm Flowage	_____ a. square feet	_____ b. square feet		
22. <input type="checkbox"/> Riverfront Area	_____ a. total sq. feet	_____ b. total sq. feet		
Sq ft within 100 ft	_____ c. square feet	_____ d. square feet	_____ e. square feet	_____ f. square feet
Sq ft between 100-200 ft	_____ g. square feet	_____ h. square feet	_____ i. square feet	_____ j. square feet



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B. Findings (cont.)

* #23. If the project is for the purpose of restoring or enhancing a wetland resource area in addition to the square footage that has been entered in Section B.5.c (BVW) or B.17.c (Salt Marsh) above, please enter the additional amount here.

23. Restoration/Enhancement *:

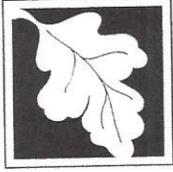
 a. square feet of BVW _____ b. square feet of salt marsh _____
24. Stream Crossing(s):

 a. number of new stream crossings _____ b. number of replacement stream crossings _____

C. General Conditions Under Massachusetts Wetlands Protection Act

The following conditions are only applicable to Approved projects.

1. Failure to comply with all conditions stated herein, and with all related statutes and other regulatory measures, shall be deemed cause to revoke or modify this Order.
2. The Order does not grant any property rights or any exclusive privileges; it does not authorize any injury to private property or invasion of private rights.
3. This Order does not relieve the permittee or any other person of the necessity of complying with all other applicable federal, state, or local statutes, ordinances, bylaws, or regulations.
4. The work authorized hereunder shall be completed within three years from the date of this Order unless either of the following apply:
 - a. The work is a maintenance dredging project as provided for in the Act; or
 - b. The time for completion has been extended to a specified date more than three years, but less than five years, from the date of issuance. If this Order is intended to be valid for more than three years, the extension date and the special circumstances warranting the extended time period are set forth as a special condition in this Order.
 - c. If the work is for a Test Project, this Order of Conditions shall be valid for no more than one year.
5. This Order may be extended by the issuing authority for one or more periods of up to three years each upon application to the issuing authority at least 30 days prior to the expiration date of the Order. An Order of Conditions for a Test Project may be extended for one additional year only upon written application by the applicant, subject to the provisions of 310 CMR 10.05(11)(f).
6. If this Order constitutes an Amended Order of Conditions, this Amended Order of Conditions does not extend the issuance date of the original Final Order of Conditions and the Order will expire on _____ unless extended in writing by the Department.
7. Any fill used in connection with this project shall be clean fill. Any fill shall contain no trash, refuse, rubbish, or debris, including but not limited to lumber, bricks, plaster, wire, lath, paper, cardboard, pipe, tires, ashes, refrigerators, motor vehicles, or parts of any of the foregoing.



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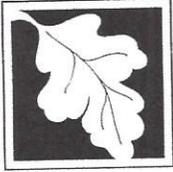
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C. General Conditions Under Massachusetts Wetlands Protection Act

8. This Order is not final until all administrative appeal periods from this Order have elapsed, or if such an appeal has been taken, until all proceedings before the Department have been completed.
9. No work shall be undertaken until the Order has become final and then has been recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land upon which the proposed work is to be done. In the case of the registered land, the Final Order shall also be noted on the Land Court Certificate of Title of the owner of the land upon which the proposed work is done. The recording information shall be submitted to the Conservation Commission on the form at the end of this Order, which form must be stamped by the Registry of Deeds, prior to the commencement of work.
10. A sign shall be displayed at the site not less than two square feet or more than three square feet in size bearing the words,

"Massachusetts Department of Environmental Protection" [or, "MassDEP"]
 "File Number 173-0243 "
11. Where the Department of Environmental Protection is requested to issue a Superseding Order, the Conservation Commission shall be a party to all agency proceedings and hearings before MassDEP.
12. Upon completion of the work described herein, the applicant shall submit a Request for Certificate of Compliance (WPA Form 8A) to the Conservation Commission.
13. The work shall conform to the plans and special conditions referenced in this order.
14. Any change to the plans identified in Condition #13 above shall require the applicant to inquire of the Conservation Commission in writing whether the change is significant enough to require the filing of a new Notice of Intent.
15. The Agent or members of the Conservation Commission and the Department of Environmental Protection shall have the right to enter and inspect the area subject to this Order at reasonable hours to evaluate compliance with the conditions stated in this Order, and may require the submittal of any data deemed necessary by the Conservation Commission or Department for that evaluation.
16. This Order of Conditions shall apply to any successor in interest or successor in control of the property subject to this Order and to any contractor or other person performing work conditioned by this Order.



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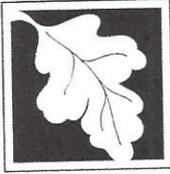
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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

17. Prior to the start of work, and if the project involves work adjacent to a Bordering Vegetated Wetland, the boundary of the wetland in the vicinity of the proposed work area shall be marked by wooden stakes or flagging. Once in place, the wetland boundary markers shall be maintained until a Certificate of Compliance has been issued by the Conservation Commission.
18. All sedimentation barriers shall be maintained in good repair until all disturbed areas have been fully stabilized with vegetation or other means. At no time shall sediments be deposited in a wetland or water body. During construction, the applicant or his/her designee shall inspect the erosion controls on a daily basis and shall remove accumulated sediments as needed. The applicant shall immediately control any erosion problems that occur at the site and shall also immediately notify the Conservation Commission, which reserves the right to require additional erosion and/or damage prevention controls it may deem necessary. Sedimentation barriers shall serve as the limit of work unless another limit of work line has been approved by this Order.
19. The work associated with this Order (the "Project")
- (1) is subject to the Massachusetts Stormwater Standards
- (2) is NOT subject to the Massachusetts Stormwater Standards

If the work is subject to the Stormwater Standards, then the project is subject to the following conditions:

- a) All work, including site preparation, land disturbance, construction and redevelopment, shall be implemented in accordance with the construction period pollution prevention and erosion and sedimentation control plan and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Construction General Permit as required by Stormwater Condition 8. Construction period erosion, sedimentation and pollution control measures and best management practices (BMPs) shall remain in place until the site is fully stabilized.
- b) No stormwater runoff may be discharged to the post-construction stormwater BMPs unless and until a Registered Professional Engineer provides a Certification that:
- i.* all construction period BMPs have been removed or will be removed by a date certain specified in the Certification. For any construction period BMPs intended to be converted to post construction operation for stormwater attenuation, recharge, and/or treatment, the conversion is allowed by the MassDEP Stormwater Handbook BMP specifications and that the BMP has been properly cleaned or prepared for post construction operation, including removal of all construction period sediment trapped in inlet and outlet control structures;
- ii.* as-built final construction BMP plans are included, signed and stamped by a Registered Professional Engineer, certifying the site is fully stabilized;
- iii.* any illicit discharges to the stormwater management system have been removed, as per the requirements of Stormwater Standard 10;



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

- iv. all post-construction stormwater BMPs are installed in accordance with the plans (including all planting plans) approved by the issuing authority, and have been inspected to ensure that they are not damaged and that they are in proper working condition;
- v. any vegetation associated with post-construction BMPs is suitably established to withstand erosion.
- c) The landowner is responsible for BMP maintenance until the issuing authority is notified that another party has legally assumed responsibility for BMP maintenance. Prior to requesting a Certificate of Compliance, or Partial Certificate of Compliance, the responsible party (defined in General Condition 18(e)) shall execute and submit to the issuing authority an Operation and Maintenance Compliance Statement ("O&M Statement") for the Stormwater BMPs identifying the party responsible for implementing the stormwater BMP Operation and Maintenance Plan ("O&M Plan") and certifying the following:
- i.) the O&M Plan is complete and will be implemented upon receipt of the Certificate of Compliance, and
 - ii.) the future responsible parties shall be notified in writing of their ongoing legal responsibility to operate and maintain the stormwater management BMPs and implement the Stormwater Pollution Prevention Plan.
- d) Post-construction pollution prevention and source control shall be implemented in accordance with the long-term pollution prevention plan section of the approved Stormwater Report and, if applicable, the Stormwater Pollution Prevention Plan required by the National Pollution Discharge Elimination System Multi-Sector General Permit.
- e) Unless and until another party accepts responsibility, the landowner, or owner of any drainage easement, assumes responsibility for maintaining each BMP. To overcome this presumption, the landowner of the property must submit to the issuing authority a legally binding agreement of record, acceptable to the issuing authority, evidencing that another entity has accepted responsibility for maintaining the BMP, and that the proposed responsible party shall be treated as a permittee for purposes of implementing the requirements of Conditions 18(f) through 18(k) with respect to that BMP. Any failure of the proposed responsible party to implement the requirements of Conditions 18(f) through 18(k) with respect to that BMP shall be a violation of the Order of Conditions or Certificate of Compliance. In the case of stormwater BMPs that are serving more than one lot, the legally binding agreement shall also identify the lots that will be serviced by the stormwater BMPs. A plan and easement deed that grants the responsible party access to perform the required operation and maintenance must be submitted along with the legally binding agreement.
- f) The responsible party shall operate and maintain all stormwater BMPs in accordance with the design plans, the O&M Plan, and the requirements of the Massachusetts Stormwater Handbook.



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C. General Conditions Under Massachusetts Wetlands Protection Act (cont.)

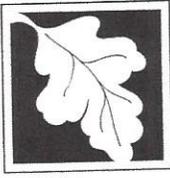
- g) The responsible party shall:
1. Maintain an operation and maintenance log for the last three (3) consecutive calendar years of inspections, repairs, maintenance and/or replacement of the stormwater management system or any part thereof, and disposal (for disposal the log shall indicate the type of material and the disposal location);
 2. Make the maintenance log available to MassDEP and the Conservation Commission ("Commission") upon request; and
 3. Allow members and agents of the MassDEP and the Commission to enter and inspect the site to evaluate and ensure that the responsible party is in compliance with the requirements for each BMP established in the O&M Plan approved by the issuing authority.
- h) All sediment or other contaminants removed from stormwater BMPs shall be disposed of in accordance with all applicable federal, state, and local laws and regulations.
- i) Illicit discharges to the stormwater management system as defined in 310 CMR 10.04 are prohibited.
- j) The stormwater management system approved in the Order of Conditions shall not be changed without the prior written approval of the issuing authority.
- k) Areas designated as qualifying pervious areas for the purpose of the Low Impact Site Design Credit (as defined in the MassDEP Stormwater Handbook, Volume 3, Chapter 1, Low Impact Development Site Design Credits) shall not be altered without the prior written approval of the issuing authority.
- l) Access for maintenance, repair, and/or replacement of BMPs shall not be withheld. Any fencing constructed around stormwater BMPs shall include access gates and shall be at least six inches above grade to allow for wildlife passage.

Special Conditions (if you need more space for additional conditions, please attach a text document):

The Commission must be notified 48 hrs before the project begins

SEE ATTACHED

20. For Test Projects subject to 310 CMR 10.05(11), the applicant shall also implement the monitoring plan and the restoration plan submitted with the Notice of Intent. If the conservation commission or Department determines that the Test Project threatens the public health, safety or the environment, the applicant shall implement the removal plan submitted with the Notice of Intent or modify the project as directed by the conservation commission or the Department.



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D. Findings Under Municipal Wetlands Bylaw or Ordinance

1. Is a municipal wetlands bylaw or ordinance applicable? Yes No
 2. The _____ hereby finds (check one that applies):

Conservation Commission
 a. that the proposed work cannot be conditioned to meet the standards set forth in a municipal ordinance or bylaw, specifically:

1. Municipal Ordinance or Bylaw _____ 2. Citation _____

Therefore, work on this project may not go forward unless and until a revised Notice of Intent is submitted which provides measures which are adequate to meet these standards, and a final Order of Conditions is issued.

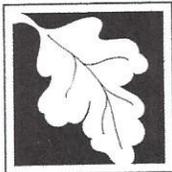
b. that the following additional conditions are necessary to comply with a municipal ordinance or bylaw:

Town of Hampden Wetland By-Law and Regulations
 1. Municipal Ordinance or Bylaw _____ 2. Citation _____

3. The Commission orders that all work shall be performed in accordance with the following conditions and with the Notice of Intent referenced above. To the extent that the following conditions modify or differ from the plans, specifications, or other proposals submitted with the Notice of Intent, the conditions shall control.

The special conditions relating to municipal ordinance or bylaw are as follows (if you need more space for additional conditions, attach a text document):

!0.02 (a) Areas subject to protection: No one shall remove, dredge, build upon or alter land within 25 ft of a Resource Area except in those cases where the commission determines that a hardship will occur and subject to those conditions imposed by the commission to protect the wetland values of this By-Law.



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E. Signatures

This Order is valid for three years, unless otherwise specified as a special condition pursuant to General Conditions #4, from the date of issuance.

Please indicate the number of members who will sign this form.
 This Order must be signed by a majority of the Conservation Commission.

The Order must be mailed by certified mail (return receipt requested) or hand delivered to the applicant. A copy also must be mailed or hand delivered at the same time to the appropriate Department of Environmental Protection Regional Office, if not filing electronically, and the property owner, if different from applicant.

February 5, 2025
~~January 15, 2025~~
 1. Date of Issuance
3
 2. Number of Signers

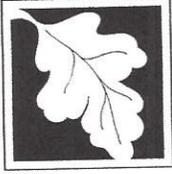
Hampden Conservation Commission

Signature <i>[Handwritten Signature]</i>	Thomas Page
Signature <i>[Handwritten Signature]</i>	Printed Name
Signature <i>[Handwritten Signature]</i>	Greg D'agostino
Signature _____	Printed Name
Signature _____	Scott Thomas
Signature _____	Printed Name
Signature _____	Wenda Luff
Signature _____	Printed Name

by hand delivery on
February 10, 2025
 Date

by certified mail, return receipt requested, on

 Date



Massachusetts Department of Environmental Protection
 Bureau of Resource Protection - Wetlands
WPA Form 5 – Order of Conditions
 Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

Provided by MassDEP:
 173-0243
 MassDEP File #

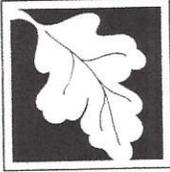
eDEP Transaction #
 Hampden
 City/Town

F. Appeals

The applicant, the owner, any person aggrieved by this Order, any owner of land abutting the land subject to this Order, or any ten residents of the city or town in which such land is located, are hereby notified of their right to request the appropriate MassDEP Regional Office to issue a Superseding Order of Conditions. The request must be made by certified mail or hand delivery to the Department, with the appropriate filing fee and a completed Request for Departmental Action Fee Transmittal Form, as provided in 310 CMR 10.03(7) within ten business days from the date of issuance of this Order. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.

Any appellants seeking to appeal the Department's Superseding Order associated with this appeal will be required to demonstrate prior participation in the review of this project. Previous participation in the permit proceeding means the submission of written information to the Conservation Commission prior to the close of the public hearing, requesting a Superseding Order, or providing written information to the Department prior to issuance of a Superseding Order.

The request shall state clearly and concisely the objections to the Order which is being appealed and how the Order does not contribute to the protection of the interests identified in the Massachusetts Wetlands Protection Act (M.G.L. c. 131, § 40), and is inconsistent with the wetlands regulations (310 CMR 10.00). To the extent that the Order is based on a municipal ordinance or bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.



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G. Recording Information

Prior to commencement of work, this Order of Conditions must be recorded in the Registry of Deeds or the Land Court for the district in which the land is located, within the chain of title of the affected property. In the case of recorded land, the Final Order shall also be noted in the Registry's Grantor Index under the name of the owner of the land subject to the Order. In the case of registered land, this Order shall also be noted on the Land Court Certificate of Title of the owner of the land subject to the Order of Conditions. The recording information on this page shall be submitted to the Conservation Commission listed below.

Conservation Commission

Detach on dotted line, have stamped by the Registry of Deeds and submit to the Conservation Commission.

To:

Conservation Commission

Please be advised that the Order of Conditions for the Project at:

Project Location

MassDEP File Number

Has been recorded at the Registry of Deeds of:

County

Book

Page

for: Property Owner

and has been noted in the chain of title of the affected property in:

Book

Page

In accordance with the Order of Conditions issued on:

Date

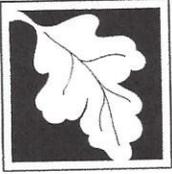
If recorded land, the instrument number identifying this transaction is:

Instrument Number

If registered land, the document number identifying this transaction is:

Document Number

Signature of Applicant



Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands

DEP File Number: _____

Request for Departmental Action Fee Transmittal Form

Provided by DEP _____

Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

A. Request Information

1. Location of Project

_____	_____
a. Street Address	b. City/Town, Zip
_____	_____
c. Check number	d. Fee amount

2. Person or party making request (if appropriate, name the citizen group's representative):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

3. Applicant (as shown on Determination of Applicability (Form 2), Order of Resource Area Delineation (Form 4B), Order of Conditions (Form 5), Restoration Order of Conditions (Form 5A), or Notice of Non-Significance (Form 6)):

Name

Mailing Address

City/Town

State

Zip Code

Phone Number

Fax Number (if applicable)

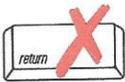
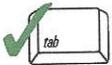
4. DEP File Number:

B. Instructions

1. When the Departmental action request is for (check one):

- Superseding Order of Conditions – Fee: \$120.00 (single family house projects) or \$245 (all other projects)
- Superseding Determination of Applicability – Fee: \$120
- Superseding Order of Resource Area Delineation – Fee: \$120

Important:
When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.





Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands
**Request for Departmental Action Fee
Transmittal Form**

DEP File Number:

Provided by DEP

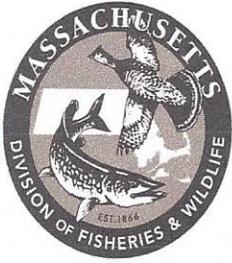
Massachusetts Wetlands Protection Act M.G.L. c. 131, §40

B. Instructions (cont.)

Send this form and check or money order, payable to the *Commonwealth of Massachusetts*, to:

Department of Environmental Protection
Box 4062
Boston, MA 02211

2. On a separate sheet attached to this form, state clearly and concisely the objections to the Determination or Order which is being appealed. To the extent that the Determination or Order is based on a municipal bylaw, and not on the Massachusetts Wetlands Protection Act or regulations, the Department has no appellate jurisdiction.
3. Send a **copy** of this form and a **copy** of the check or money order with the Request for a Superseding Determination or Order by certified mail or hand delivery to the appropriate DEP Regional Office (see <https://www.mass.gov/service-details/massdep-regional-offices-by-community>).
4. A copy of the request shall at the same time be sent by certified mail or hand delivery to the Conservation Commission and to the applicant, if he/she is not the appellant.



MASSWILDLIFE

DIVISION OF FISHERIES & WILDLIFE

1 Rabbit Hill Road, Westborough, MA 01581
p: (508) 389-6300 | f: (508) 389-7890
[MASS.GOV/MASSWILDLIFE](https://www.mass.gov/masswildlife)

December 26, 2024

Mark Langone
Town of Hampden
625 Main Street
Hampden, Massachusetts 01036

Hampden Conservation Commission
Town Hall
625 Main Street
Hampden, MA 01036

RE: Applicant: Mark Langone, Town of Hampden
 Project Location: South Road over Ballard Brook
 Project Description: Bridge repairs
 DEP Wetlands File No.: 173-0243
 NHESP File No.: 24-19105
 Heritage Hub Form ID: RC-90598

Dear Commissioners & Applicant:

The Natural Heritage & Endangered Species Program of the Massachusetts Division of Fisheries & Wildlife (the "Division") received a Notice of Intent with site plans (dated 8/30/24) in compliance with the rare wildlife species section of the Massachusetts Wetlands Protection Act Regulations (310 CMR 10.58(4)(b), 10.59). The Division also received the MESA Review Checklist and supporting documentation for review pursuant to the MA Endangered Species Act Regulations (321 CMR 10.18).

WETLANDS PROTECTION ACT (WPA)

Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not adversely affect** the actual Resource Area Habitat of state-protected rare wildlife species. Therefore, it is our opinion that this project meets the state-listed species performance standard for the issuance of an Order of Conditions.

Please note that this determination addresses only the matter of rare wildlife habitat and does not pertain to other wildlife habitat issues that may be pertinent to the proposed project.

MASSACHUSETTS ENDANGERED SPECIES ACT (MESA)

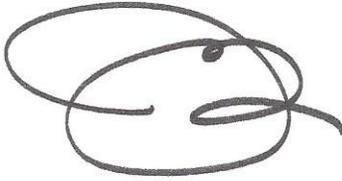
Based on a review of the information that was provided and the information that is currently contained in our database, the Division has determined that this project, as currently proposed, **will not result in a prohibited Take** of state-listed rare species. This determination is a final decision of the Division of Fisheries and Wildlife pursuant

MASSWILDLIFE

to 321 CMR 10.18. Any changes to the proposed project or any additional work beyond that shown on the site plans may require an additional filing with the Division pursuant to the MESA. This project may be subject to further review if no physical work is commenced within five years from the date of issuance of this determination, or if there is a change to the project.

Please note that this determination addresses only the matter of state-listed species and their habitats. If you have any questions regarding this letter please contact Melany Cheeseman, Endangered Species Review Assistant, at Melany.Cheeseman@mass.gov, (508) 389-6357.

Sincerely,

A handwritten signature in black ink, appearing to read 'Jesse Leddick', with a stylized flourish at the end.

Jesse Leddick
Assistant Director

cc:

*****END OF SPECIAL PROVISIONS*****