

Special Provisions for: Ryegate IM CULV(28)

1. SUPPLEMENTAL SPECIFICATIONS AND CONTRACT REQUIREMENTS. The Contractor's attention is directed to the following specifications and contract requirements included in the Proposal form and effective for this Contract:

Stream Alteration Consultation Title 19 #HD-4-1045, dated 3/21/16.  
Army Corps of Engineers Permit NAE-2016-0240 dated 3/21/16.

2. ENVIRONMENTAL. The northern long-eared bat (NLEB) is federally listed as a threatened species under the Endangered Species Act effective April 2015. This project shall be subject to Avoidance and Minimization Measures to protect the habitat and hibernacula of this species. These measures include, but are not limited to, Time of Year (TOY) restrictions for cutting habitat trees [and demolition of bridges]. It is anticipated that the Contractor will be required to remove trees within the identified project limits as part of the work. TOY restrictions will be placed on tree cutting activity. Trees can only be cut between September 1<sup>st</sup> to April 15<sup>th</sup>, unless the contractor conducts acoustic surveys, and no presence of the NLEB is detected.

The contractor is hereby made aware of the potential for TOY restrictions related to proposed Waste, Borrow and Staging areas. Cutting trees outside of the contract project limits shall require review under Section 105.25 Control of Waste, Borrow, and Staging Areas.

3. INTERSTATE HIGHWAY PARKING RESTRICTIONS. Only such trucks and equipment as are necessary for the construction of this project will be permitted to stop or park on the shoulders or right-of-way of the highway. Trucks or equipment stopped or parked shall be at least 4 feet from the edge of the thru traffic lanes. Parking or stopping on the traveled portion of the roadway or ramps, or at locked gate access locations, will not be permitted unless authorized by the Engineer to meet field conditions.

Private automobiles of workers will not be permitted to stop or park on the shoulders or right-of-way of the interstate highway. This restriction shall include all park and ride lots and rest areas within the project limits.

Each of the Contractor's trucks or equipment used for the construction of this project and permitted to park or stop as provided above shall be equipped with flashing light signals on the front and rear and the signals shall be operating at all times when parked or stopped on the highway unless otherwise authorized by the Engineer. Equipment, materials, or vehicles must be parked or placed a minimum of 30 feet from the edge of pavement in all directions or a minimum of 10 feet behind guardrail when not being utilized.

The flashing light signals shall be visibly distinct from and physically separate from the hazard warning system required by Federal and State motor vehicle laws and regulations. At least one of these flashing light signals shall be visible to traffic approaching from any angle at all times.

Qualified traffic control personnel shall be employed whenever the Contractor's vehicles or equipment (including that which belongs to the individual workers) enter or leave the traffic flow. All movement, in or out of the traffic flow, shall be with the flow of traffic.

4. U-TURNS. The contractor's attention is directed to the provisions of subsection 105.17 requiring the maintenance and repair of roadways within the construction limits, which includes U-turns located within the construction area.
5. SPECIAL CONSTRUCTION REQUIREMENTS.

- a. Unless otherwise permitted in writing by the Engineer, the Contractor shall not work during the holiday periods for Labor Day, Veterans Day, Thanksgiving Day, Memorial Day, and July Fourth. The Engineer shall give a written order designating the time of observance of these holidays and of any additional holidays required by the season, anticipated traffic, and local custom. As specified in Subsection 105.14, construction operations shall not be performed on any Sunday without the specific authorization of the Engineer.

Designated holiday periods shall begin at 12:00 noon on the day before the weekend or holiday, whichever applies, and shall end at 7:00 a.m. on the day after the holiday or the weekend, as appropriate.

- b. Except during holiday periods, the Contractor shall maintain a minimum of one-lane traffic through the project at all times. During holiday periods, the Contractor shall maintain two-lane traffic through the project at all times. Wherever one-way traffic is maintained by the Contractor, the travelling public shall not be delayed more than 10 minutes unless otherwise directed by the Engineer.
- c. The Contractor shall maintain a safe access to all ramps and U-turns at all times during the construction of this project.
- d. The Contractor shall position Portable Changeable Message Signs as directed by the Engineer warning Northbound and Southbound motorists of the reduced roadway widths ahead. The message to be displayed shall be submitted to the Engineer in advance for approval. The displayed message should accurately reflect what motorists can expect to encounter through the project area. The cost of providing the Portable Changeable Message Signs shall be paid for under Contract item 641.15. The Contractor shall also install and maintain appropriate

construction signing warning the travelling public of the reduced roadway widths.

- e. Two-way radios shall be provided by the Contractor when requested by the Engineer for use by traffic control personnel. All costs for furnishing and using two-way radios will not be paid for directly, but will be considered incidental to Contract item 900.645 Special Provision (Traffic Control, All-Inclusive).
- f. The Contractor shall have available on the project the current editions of the Manual on Uniform Traffic Control Devices (MUTCD) and the Standard Highway Signs and Markings (SHSM) Book. Information for obtaining these publications may be found at: <http://mutcd.fhwa.dot.gov/index.htm>.

SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN

- 6. SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN, is hereby made a new Section of the Specifications as follows:
- 7. 652.01 DESCRIPTION. This work shall consist of designing, furnishing, and submitting for acceptance modifications to the Contract Erosion Prevention & Sediment Control Plan (hereinto known as the EPSC Plan), becoming a co-permittee with the Agency of Transportation, State of Vermont on associated permits, monitoring the EPSC Plan using an On-Site Plan Coordinator, and maintaining the erosion prevention and sediment control measures to ensure the effectiveness of the EPSC Plan.
- 8. 652.02 MATERIALS. Materials required for the field work maintenance of the EPSC Plan shall meet all requirements of the appropriate Section of the VAOT Standard Specifications for Construction.  
  
Materials including manuals, checklists, forms, and other supporting documentation necessary to meet the requirements of these provisions and maintain compliance with associated permits shall be made available to the Engineer by the Contractor and maintained on site by the Contractor. Supporting documents associated with the requirements of General Permit 3-9020 are available upon request to ANR or from the ANR Stormwater web page. The VTrans Erosion Prevention and Sediment Control Plan Contractor Checklist and Low Risk Site Inspection Form are available from the VTrans Construction Environmental Engineer.
- 9. 652.03 QUALIFICATIONS. Modifications to the EPSC Plan shall be prepared and signed by a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent, hereinafter called the "Preparer."
- 10. 652.04 EROSION PREVENTION & SEDIMENT CONTROL PLAN. The EPSC Plan, developed using a combination of structural, non-structural, and vegetative practices to adequately prevent erosion and control sedimentation, and meeting the requirements of the VTrans Erosion

Prevention & Sediment Control Plan Designer Checklist (Non-Jurisdictional and Low Risk) or the Vermont Standards & Specifications for Erosion Prevention & Sediment Control based on area of disturbance and risk, has been included in the Contract Documents.

The Contractor shall use the EPSC Plan included in the Contract and, at the onset of construction as well as throughout the duration of the project, modify it to describe changing conditions and illustrate how the criteria of the determined risk will be upheld. For Non-Jurisdictional and Low Risk projects, the Contractor shall use the VTrans Erosion Prevention and Sediment Control Plan Contractor Checklist. For Moderate Risk projects, the Contractor shall modify the Contract EPSC Plan in accordance with the General Permit 3-9020 Parts 4 through 6. If a modification to the EPSC Plan at a Low or Moderate Risk project alters any criteria of the determined risk, an updated Risk Evaluation shall be prepared.

The Contractor may use the Agency's EPSC Plan sheet(s) as a basis for necessary modifications; however, if necessary to convey the sequential nature and phases of construction activities and associated erosion prevention and sediment control measures, several plan sheets showing successive site conditions are recommended.

All work shown in the EPSC Plan shall be included in the Contractor's CPM Progress Schedule, as required by Subsection 108.03.

11. 652.05 SUBMITTALS. Three sets of the modified EPSC Plan as well as the updated Risk Evaluation, stamped and signed by the Preparer, shall be submitted to the Construction Engineer as Construction Drawings in accordance with Section 105. Submittals shall occur after award of the Contract but not later than the Pre-Construction Conference to allow time for review by the Agency. An Acceptance Memo or comments will be provided to the Contractor within 10 working days.

The Contractor shall respond to comments as soon as possible, but not more than 10 days after the date of VTrans initial correspondence. Agency review time for response to comments will be completed within an additional 10 working days. Modifications or additions to the EPSC Plan will not be considered as an acceptable delay of the work under Subsection 108.11.

All subsequent modifications to the EPSC Plan and updates to the Risk Evaluation will be reviewed and forwarded to the ANR by the Agency as appropriate.

Construction activities for EPSC Plan modifications that do not require authorization from the ANR shall commence only after the EPSC Plan has been accepted by the Agency. Construction activities for EPSC Plan modifications that do require authorization from the ANR shall commence only after that authorization has been granted.

12. 652.06 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN. The Contractor shall designate a person (On-Site Plan Coordinator) who is directly responsible for the on-site implementation of the EPSC Plan. This person shall generally be on-site on a daily basis during active construction and have the authority to halt construction activities if necessary. The On-Site Plan Coordinator shall have demonstrated

experience in construction practices as they relate to erosion prevention and sediment control as well as a general understanding of State and Federal environmental regulations and permits pertaining to the National Pollutant Discharge Elimination System Construction Program. The On-Site Plan Coordinator shall be proficient at reading and interpreting engineering and EPSC plans. Preference will be given to a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent. The qualifications of the On-Site Plan Coordinator shall be included in the EPSC Plan. The Engineer, if not satisfied with the performance of this individual, may at any time request a replacement.

During active construction and periods of inactivity, the On-Site Plan Coordinator shall be responsible for inspections and reporting.

- (a) Active Construction. Inspections shall occur once every seven calendar days and within 24 hours of the end of a storm event that results in a discharge of stormwater from the site. During the winter construction season (October 15<sup>th</sup> to April 15<sup>th</sup>, inclusive), inspections at all sites shall occur daily.

For Non-Jurisdictional and Low Risk projects, inspections shall be conducted using the Agency's EPSC Plan Inspection Report (Non-Jurisdictional and Low Risk Projects).

For Moderate Risk projects, inspections shall be conducted using the General Permit 3-9020 Inspection Report for Moderate Risk Projects referenced in the Permit and available upon award of the Contract.

Immediate action shall be taken to correct the discharges of sediment, including halting or reducing construction activities as necessary, until the discharge and/or the condition is fully corrected. Corrective actions shall be recorded on the monitoring reports and shown on the EPSC Plan. Each report shall be signed by the On-Site Plan Coordinator.

- (b) Inactive Construction. Periods such as shutdown during the winter season shall require inspection and reporting of erosion prevention and sediment control measures. The Contractor shall contact the Engineer prior to conducting any inspections. The inspections shall be conducted at least once every 30 days and within 24 hours of any storm or significant snow melt event that may cause stormwater runoff to leave the construction site. The Contractor shall provide, within 24 hours, the necessary personnel, equipment, and materials to repair or correct any deficiencies identified during inspection. All deficiencies and corrective measures taken shall be documented on the reports.

Copies of all reports shall be submitted to the Engineer within 24 hours of inspection or when corrective measures were taken. Copies of all reports shall be kept on site in the Contractor's project files.

13. 652.07 MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN. This work shall consist of providing all labor and equipment necessary for field maintenance of erosion prevention and sediment control items in the

Contract, and providing materials and labor necessary for installing, monitoring, maintaining and, where necessary, removing additional measures needed to correct deficiencies that develop during construction that lessen the performance of the EPSC Plan. Erosion prevention and sediment control measures shall be maintained by the Contractor and removed when authorized by the Engineer. The Contractor shall establish vegetation in all areas disturbed during removal of the erosion prevention and sediment control measures.

Any maintenance required due to the failure of the Contractor to follow the EPSC Plan in its accepted form shall be performed at no additional cost to the Agency.

## SECTION 900 - SPECIAL PROVISION ITEMS

### CORRUGATED PIPE LINER

14. DESCRIPTION. This work shall consist of lining an existing culvert(s) (pipe(s)) at the location(s) indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 601 of the Standard Specifications.

15. MATERIALS. Materials for the Corrugated Pipe Liner system shall meet the following requirements:

(a) Pipe Liner.

(1) Corrugated Aluminum Alloy Pipe (CAAP) Liner. Pipe liner shall meet the requirements of Section 601.

(2) High Density Polyethylene (HDPE) Liner. High Density Polyethylene (HDPE) Liner shall meet the requirements of Subsection 710.03.

(3) Polymeric Coated Corrugated Steel Pipe (PCCSP) Liner. Pipe liner shall meet the requirements of Section 601.

(b) Rubber Gaskets. Rubber gaskets at pipe liner joints shall meet the requirements of Subsection 707.11.

(c) Caulking Compound. Caulking compound meeting the requirements of Subsection 707.13 shall be used as necessary to provide adequate grout seal on the pipe liner.

(d) Mortar. Mortar used to fill the annular space between the existing culvert and pipe liner shall meet the requirements of Subsection 707.03.

The minimum 28-day compressive strength shall be 1380 kPa (200 lb./in<sup>2</sup>) and the maximum unit weight shall be 17.3 kN/m<sup>3</sup> (110 lb./ft.<sup>3</sup>). A foaming agent or other modification to the mix design may be required to achieve this unit weight. Alternative mix designs shall be submitted for approval.

16. HYDRAULIC CAPACITY. The pipe liner shall have a minimum diameter as shown on the Plans. The hydraulic cross section shall be maintained as large as possible.
17. SUBMITTALS. Prior to installing the pipe liner, the Contractor shall submit a work plan that will include necessary forming details, method of placement, and methods of maintaining the location of the liner during installation operations. The work plan shall be approved by the Engineer prior to commencing with the work.
18. INSTALLATION.
- a. Temporary Relocation of Stream. Temporary relocation of stream, when required, shall be performed in accordance with the requirements of TEMPORARY RELOCATION OF STREAM of Section 900.
  - b. Internal Debris and Obstructions. The Contractor, when required, shall remove all internal debris and obstructions from the existing pipe, and perform any necessary repairs to existing pipe conditions that would interfere with the installation of the pipe liner, in accordance with the manufacturer's recommendations and as directed by the Engineer.
  - c. Setting Liner. The Contractor shall be responsible for all measures required for positioning the pipe liner inside the existing pipe, including resisting flotation forces encountered during placement.
  - d. Dewatering. The Contractor shall dewater the culvert prior to applying mortar to the annular space between the existing culvert and pipe liner.
19. BASIS OF PAYMENT. The accepted quantity of Special Provision (Corrugated Pipe Liner) will be included in the unit price for Special Provision (Lump Sum Project). Payment will be full compensation for furnishing, transporting, handling, and placing the materials specified; for cleaning and repairing the existing pipe prior to pipe liner installation; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

TEMPORARY ACCESS ROAD AND STAGING AREAS, CULVERT

20. DESCRIPTION. This work shall consist of constructing a temporary access road and associated staging areas for accessing an existing culvert location(s), and restoring the disturbed area to their original condition in accordance with the Plans and as directed by the Engineer.
21. MATERIALS. Materials shall meet the requirements of the following Subsections:

Geotextile for Roadbed Separator. . . . .	.649.02
Earth Borrow . . . . .	.703.02
Aggregate Surface Course . . . . .	.704.12
Project Demarcation Fence . . . . .	.727.04

Topsoil . . . . .	.755.02
Seed . . . . .	.755.04
Fertilizer . . . . .	.755.06
Temporary Erosion Matting . . . . .	755.11(a)

22. GENERAL REQUIREMENTS. Prior to construction, the Contractor shall submit to the Engineer site-specific plans, including necessary traffic control and locations of guardrail removal, and proposed temporary access road, staging area, and maintenance details associated with the work.

These plans shall also include limits for Project Demarcation Fence and locations of erosion prevention and sediment control measures in the project areas affected by temporary access road and staging area construction. All work shall be performed within the Project Demarcation Fence limits.

23. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Access Road and Staging Areas, Culvert) will be included in the unit price for Special Provision (Lump Sum Project). Payment will be full compensation for preparing a site plan; constructing and removing the temporary access road and associated staging areas at the location(s) specified; performing any necessary excavation; removing and resetting guardrail; restoring the site to its original condition; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

TEMPORARY RELOCATION OF STREAM

24. DESCRIPTION. This work shall consist of temporary stream relocation including erosion prevention and sediment control, channel maintenance, and debris removal in accordance with these specifications.

25. MATERIALS. Materials shall meet the requirements of the following Subsections:

Geotextile Fabrics.....	649.02
Stone Fill, Type II.....	706.04(b)

Other materials may be used. These shall be detailed on the EPSC Plan and are subject to approval.

26. GENERAL. Prior to their construction, the Contractor shall submit to the Engineer site-specific plans, including all construction, erosion prevention and sediment control, and maintenance details, for providing temporary stream relocations at stream crossings specified in the Plans. These details shall be developed in accordance with the requirements of Section 652 and will be considered a component of the overall project EPSC Plan.

All relocation plans must be approved by the Agency of Natural Resources prior to being submitted to the Engineer. These plans shall provide for a flow equal to twice the average daily flow, as a minimum, and shall be designed and stamped by a Professional Engineer registered in the State of Vermont. The plans shall address erosion prevention and sediment control, channel maintenance, debris removal, removing equipment from the stream and preparing the site if a significant rain event occurs while

working in the stream, and the materials and methods of creating the upstream diversion from the existing stream channel. These plans shall conform to any permits, both State and Federal, which have been issued for this project.

The Contractor shall provide for crossing the relocated stream channel for the duration of its existence so as not to impact the free flow of the stream or to increase any flood levels or potential for property damage upstream or downstream of the project site. This work shall be scheduled such that it is performed during a period that heavy rains or storm events are not anticipated.

It shall be incumbent upon the Contractor to determine the level of protection required to protect the work. However, the protection of existing facilities, structures, and property must also be undertaken and any damage thereto shall be repaired by the Contractor at no additional expense to the State. In addition, the temporary diversion shall not increase in any way flood levels or property damage upstream or downstream of the project site.

In-stream construction shall be undertaken during the period from June 1st through October 1st. Any changes to this period shall be approved in writing by the Vermont Agency of Natural Resources. It shall be the responsibility of the Contractor to obtain any variances to the in-stream construction period.

Excavation for the relocated stream channel shall be made in conformance with the requirements for channel excavation as specified in Subsection 203.06.

Furnishing and installing Geotextile Fabrics and Stone Fill shall be in conformance with the requirements of Sections 649 and 613, respectively.

Furnishing and installing pipes shall be in conformance with Section 601.

The upstream diversion shall be done in such a manner as to minimize erosion and sedimentation. Upstream diversion shall not be done when stream conditions are such that the possibility of excessive erosion and sedimentation will occur.

The relocation shall be maintained, throughout the time it is in place, free from debris, logs, stumps, and other obstructions which might impair the free-flow of water through the diversion.

After completion of the new permanent channel improvements and the re-diversion of channel flow through the new permanent channel, the entire length of the temporary channel shall be excavated to remove all muck, sediment, debris, and foreign matter.

Any portion of the temporary channel which falls outside of the embankment limits shall be restored to match the existing ground and shall be included in the unit price bid for Temporary Relocation of Stream.

Any turf establishment required outside of the embankment limits shall be paid for under the appropriate Contract items.

27. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Relocation of Stream) will be included in the unit price for Special Provision (Lump Sum Project). Payment will be full compensation for designing, as necessary, constructing, including all required materials, maintaining, and removing each temporary stream relocation.

LUMP SUM PROJECT

28. DESCRIPTION. This item is for payment of all work done on the project with the exception of the work included under Item 900.645 Special Provision (Traffic Control, All Inclusive). All work shall meet the requirements of the VAOT Specifications associated with that item of work.
29. METHOD OF MEASUREMENT. The quantity of Special Provision (Lump Sum Project) to be measured for payment will be on a lump sum basis for the complete and accepted work.
30. BASIS OF PAYMENT. The accepted quantity of Special Provision (Lump Sum Project) will be paid for at the Contract lump sum price.

Partial payments will be made as follows:

- (a) The first 20% of the Contract lump sum price will be paid when the precast structure is accepted by AOT.
- (b) An additional 20% of the Contract lump sum price will be paid when the contractor is mobilized.
- (c) An additional 50% of the Contract lump sum price will be paid upon substantial completion.
- (d) The remaining 10% of the Contract lump sum price will be paid when all contract work is accepted and contractor is completely demobilized.

Payment will be full compensation for performing all Contract work. The work under each individual item shall be performed in accordance with the corresponding specification for that item. Payment will be full compensation for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Lump Sum Project) <u>TRAFFIC CONTROL, ALL-INCLUSIVE</u>	Lump Sum

31. DESCRIPTION. This work shall consist of establishing and maintaining traffic control measures to protect the traveling public and construction operations as indicated in the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 641 of the Standard Specifications.

32. SUBMITTALS. The Contractor shall submit to the Engineer for approval a site-specific traffic control plan in accordance with Subsection 105.03. The traffic control plan shall conform to the requirements of the MUTCD and all applicable Agency Standard Drawings. Where conflicts exist, the MUTCD will govern. Each phase of construction shall be included in the submitted traffic control plan. The Contractor shall allow the Agency 14 calendar days to review and respond to the proposed traffic control plan.
33. TRAFFIC CONTROL DEVICES. Temporary traffic barrier shall meet the requirements of Section 621. Traffic control devices shall meet the requirements of Section 641.
34. METHOD OF MEASUREMENT. The quantity of Special Provision (Traffic Control, All-Inclusive) to be measured for payment will be on a lump sum basis for providing traffic control in the complete and accepted work.
35. BASIS OF PAYMENT. The accepted quantity of Special Provision Traffic Control, All-Inclusive) will be paid for at the Contract lump sum price.

Partial payments will be made as follows:

- (a) The first 15% of the Contract lump sum price will be paid upon approval of the Contractor's traffic control plan.
- (b) The remaining 85% of the Contract lump sum price will be paid on a prorated basis for the estimated duration of the Contract work remaining.

Payment will be full compensation for preparing, implementing, inspecting, maintaining, and removing the applicable traffic control plan and required traffic control devices, including but not limited to: Uniformed Traffic Officers, Flaggers, temporary traffic barrier, temporary pavement markings, and signing; and for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Traffic Control, All-Inclusive)	Lump Sum