Special Provisions for: Woodstock Village BF 020-2(43)

1. LABOR SUPPLY. Available workers for this Contract may be obtained from the Vermont Department of Employment & Training's webpage at the following address: http://www.vtlmi.info/region.cfm and from the VTrans Office of Civil Rights and Labor Compliance's webpage at the following address: http://vtrans.vermont.gov/sites/aot/files/civilrights/documents/edhc/EmploymentResourceList.pdf.

2. CONTRACT COMPLETION DATE. This Contract shall be completed on or before June 8, 2018.

xx. NOTICE TO BIDDERS. U.S. Department of Labor Davis-Bacon wage rates are applicable to this Contract. Copies of the applicable rates are included in this proposal.

In the included wage rates, the requirements of Executive Order 13658 do not apply to this Contract.

xx. CONTACT WITH THE AGENCY. From the time of advertising until the actual bid opening for this Contract, all prospective Contractors, subcontractors, and suppliers shall direct all inquiries related to this project solely to the Agency's Office of Contract Administration AOT.ConstructionContractingInquiry@vermont.gov.

The deadline for submitting inquiries related to this project to the Office of Contract Administration is 4:30 p.m. Eastern Standard Time on September 15, 2017. No exceptions will be made to this requirement.

xx. NOTICE TO BIDDERS. The Contractor is hereby notified that in the absence of the Engineer, the Agency's Safety Officer and the Agency's Hazardous Materials and Waste Coordinator shall each have the authority to suspend work when they determine that a serious safety or environmental violation exists on the job site. The period of time work is suspended due to a serious safety or environmental violation will not be justification for an extension of time.

xx. NOTICE TO BIDDERS – ELECTRONIC DOCUMENT MANAGEMENT.

The Contractor is hereby notified that the Contractor, their subcontractors, and suppliers shall use Doc Express for collection and management of electronic documents. Doc Express is a web based document management program which accepts electronic documents and provides security as appropriate for each submittal. All Contract required documents, such as Working Drawings as defined in subsection 105.03 of the 2011 Standard Specifications for Construction, Progress Schedules, Mix Designs, Weld Procedures, Requests for Information and Erosion Control Plans shall be submitted at the following link: https://docexpress.com. The entire submittal and review process shall occur within Doc Express except payroll and material acceptance requirements.

All costs associated with the use of Doc Express will be considered incidental to Item 635.11, Mobilization/Demobilization. The State will manage the Doc Express platform including Contract setup upon Contract execution.

For more information regarding the use of Doc Express see the information at the following link:

https://outside.vermont.gov/agency/vtrans/external/docs/construction/Contracting/DocExpressOverviewforContractors.docx

xx. STANDARD SPECIFICATIONS. The provisions of the 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, as modified herein, shall apply to this Contract.

xx. 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:

Required Contract Provisions for Federal-Aid Construction
Standard Federal EEO Specifications
VT Agency of Transportation Contractor Workforce Reporting Requirements
Workers' Compensation; State Contracts Compliance Requirement
General Special Provisions dated October 12, 2016
Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants
Vermont Minimum Labor & Truck Rates
Disadvantaged Business Enterprise (DBE) Policy Contract Requirements
U.S. Department of Labor Davis-Bacon Wage Rates
Asphalt Price Adjustment Provisions dated April 6, 2010
Section 520 – Membrane Waterproofing Spray Applied dated August 6, 2013
River Management Consultation #HD-09-0104 (email) dated December 21, 2016
Impervious Surfaces Plan Sheet dated October 20, 2016
Earth Disturbances Plan Sheet dated October 20, 2016
USPS – Certificate of Understanding
Certification for Federal-Aid Contracts
Contractor's EEO Certification Form
Debarment & Non-Collusion Affidavit

xx. NOTICE TO BIDDERS – CONTRACT INSURANCE REQUIREMENTS. The Contractor is hereby notified that in the event of a discrepancy between the stated insurance requirements of Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants and those of Subsection 103.04 of the Standard Specifications for Construction, the requirements of Subsection 103.04 of the Standard Specifications for Construction shall govern.

xx. NOTICE TO BIDDERS – ADDITIONAL CONTRACT REQUIREMENT. For construction and transportation projects over $250,000.00, a payroll process by which during every pay period the Contractor collects from the subcontractors or independent contractors a list of all workers who were on the jobsite during the pay period, the work performed by those workers on the jobsite, and a daily census of the jobsite. This information, including confirmation that Contractors, subcontractors, and independent contractors have the appropriate workers' compensation coverage for all workers at the jobsite, and similar information for the subcontractors regarding their subcontractors shall also be provided to the Department of Labor and to the Department of Banking, Insurance, Securities, and Health Care Administration, upon request, and shall be available to the public.

xx. NOTICE TO BIDDERS-CARGO PREFERENCE REQUIREMENT. The contractor is hereby notified that the Contractor and Subcontractor(s) are required to follow the requirements of 46 CFR 381.7 (a)-(b). For guidance on requirements of Part 381 – Cargo Preference – U.S.Flag Vessels please go to the following web link: https://www.fhwa.dot.gov/construction/cqit/cargo.cfm.

xx. NOTICE TO BIDDERS – RE-DESIGNATION OF VTRANS OFFICIALS. The Contractor is hereby notified of the following re-designation of VTrans officials as referenced in the Contract Documents:

Where in the Contract Documents it reads:	It shall be read as and shall mean:
Director of Program Development	Chief Engineer
Assistant Director of Program Development	Deputy Chief Engineer
Roadway, Traffic, and Safety Engineer; Roadway Program Manager; Highway Safety & Design Engineer;	Highway Safety and Design Program Manager
Structures Engineer	Structures Program Manager
Chief of Local Transportation Facilities	Director of Municipal Assistance Bureau
Construction Engineer; Materials and Research Engineer	Director of Construction and Materials Bureau
Director of Operations	Director of Maintenance and Operations Bureau

xx. NOTICE TO BIDDERS - INCENTIVE/DISINCENTIVE (I/D). The Agency's intent is to have the bridge closure period (BCP) be as short a duration as possible. To encourage the Contractor to provide a maximum effort to complete the Identified Work for I/D within the period as defined below, the Agency is willing to pay an incentive.

(a) Dates. The allowable BCP shall start at 7:00 a.m. and end twenty-one (21) consecutive calendar days later by 6:59 a.m. The duration shall be between April 2, 2018 and May 7, 2018, inclusive. The twenty-one (21) consecutive calendar day BCP is herein defined as the I/D period.

During the BCP, the Contractor will be allowed to work on the Bridge for 24 hours per day, 7 days per week, including holiday periods.

Night work during the BCP. See Special Provision No. xx NOTICE TO BIDDERS - REQUIREMENTS FOR NIGHTTIME WORK and No. xx NOTICE TO BIDDERS – NIGHTTIME WORK RESTRICTIONS for additional information and requirements.

The Contractor shall submit to the VAOT Construction Section for review and approval a certified letter indicating the BEGIN CONSTRUCTION DATE for the BCP work. This letter shall be received by the Construction Section a minimum of seven (7) calendar days prior to the BEGIN CONSTRUCTION DATE indicated in the letter. The BEGIN CONSTRUCTION DATE shall be determined by the Contractor.

The I/D period as established above for this Contract is absolutely fixed and will not be changed for any Act of God, omission, improper action, direction of the Engineer, or any other reason unless done

so by the Secretary and only under extreme conditions as determined by the Secretary.

There shall be a pre-closure meeting held on site with the Contractor's Superintendent, Contractor's Project Manager, the Engineer, the Project Manager, the Village of Woodstock, Town of Woodstock Fire Department, Woodstock Police Department, Vermont State Police, and Two Rivers-Ottauquechee Regional Commission (TRORC) to discuss durations of work, types of night work, work sequencing, etc. The Contractor shall be responsible for setting this meeting up and making appropriate contacts. This meeting shall be held a minimum of fourteen (14) days prior to the BCP.

There shall be a public information meeting. The Contractor's Superintendent and Contractor's Project Manager shall be available to attend. The Contractor shall be prepared to discuss the construction schedule with the public. The Public Outreach Coordinator shall be responsible for setting this meeting up and making appropriate contacts. This meeting shall be held a minimum of twenty-one (21)days prior to the BCP.

In addition, weekly meetings between the Contractor, Engineer, and other pertinent parties as determined by the Engineer shall be held to discuss the project progress and future construction activities, and current CPM progress schedules and narratives.

All prefabricated concrete elements shall be authorized for shipment prior to the BCP. The bridge shall remain open to traffic until the prefabricated elements are authorized for shipment.

(b) Identified Work. All work required to open the new Bridge to two-way vehicle traffic and one temporary pedestrian lane including:

(1) Bridge units and approach slabs placed and joints cured;

(2) Spray applied membrane installed

(3) Base course of pavement or gravel shim

(4) Temporary pedestrian access placed along one side of the project;

(5) Temporary traffic barrier placed allowing two (2) 11' – 0" minimum vehicle lanes; and

(6) Vehicle detour signs removed or covered up.

No daily lane closures will be allowed before the seven (7) days prior to the BCP to progress work items except work included in the EPSC Plan and Traffic Control Plan.

In the seven (7) days prior to the BCP, the contractor shall maintain a minimum of one-lane (11 feet wide), two way traffic during daytime hours and shall maintain two-lane, two-way traffic during nighttime hours. The contractor shall be allowed to close street parking in the project area. Pedestrian access shall be maintained on the upstream side of bridge.

(c) Pay Schedule. The Contractor will receive a lump sum compensation

of thirty-three thousand dollars ($33,000) for completing the Identified Work before the end of the I/D period.

In addition, the Contractor will be compensated at a rate of three hundred fifteen dollars ($315.00) per hour that the Identified Work is completed prior to the end of the I/D period, up to a maximum total payment as specified herein. Only full hours where the new bridge is opened by 6:00 a.m. will count toward this extra incentive payment.

The maximum amount payable under the incentive clause shall be sixty-six thousand dollars ($66,000) (including the lump sum payment).

For each hour after the end of the I/D period that the Identified Work remains uncompleted, the Contractor will be assessed a disincentive at a rate of three hundred fifteen dollars ($315.00) per hour. The full hourly disincentive amount will be assessed for each hour that traffic is not allowed on the bridge for any portion of the hour. There shall be no maximum on the disincentive amount.

This assessed disincentive is separate from, and will be imposed in addition to, liquidated damages which may be imposed for failure to complete the Contract on time.

(d) Underruns and Overruns. The proposal indicates an estimated quantity for each Contract pay item. The fact that the actual amounts used in the construction of this project may vary from the estimate will not be a basis or cause for changing any of the conditions for I/D.

The Agency recognizes that additional work beyond the work indicated in the Plans, is always possible in any construction contract. The Agency is willing to pay for necessary additional work in accordance with the terms and requirements of the Contract and the Standard Specifications for Construction, however, the Contractor shall absorb any resulting construction time within the original project and CPM Schedules, and there will be no adjustments or changes to the I/D dates or I/D conditions.

(e) Payment. Payment will be made as specified in Section 900.

xx. NOTICE TO BIDDERS – REQUIREMENTS FOR NIGHTTIME WORK. The Contractor is hereby notified that night work will be allowed during the bridge closure period.

Night work shall be performed in accordance with the National Cooperative Highway Research Program (NCHRP) Report 476 – "Guidelines for Design and Operation of Nighttime Traffic Control for Highway Maintenance and Construction". A copy of this guideline specification may be downloaded from the following website: http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_476.pdf.

Prior to beginning night work, the Contractor shall design a lighting system and present it to the Engineer for approval. The Contractor shall not perform any night work or activities within the project limits until the lighting system has been fully approved and is in place on the project.

The designed lighting system shall be mobile, shall be mounted separately from other construction equipment, shall illuminate the entire work area

to daylight intensity with minimal glare, and shall be a surrounding design that minimizes shadows in the work area as much as possible.

All costs associated with the lighting system will be considered incidental to Contract item 900.645 Special Provision (Traffic Control All-Inclusive.

xx. NOTICE TO BIDDERS - NIGHTTIME WORK RESTRICTIONS. The Contractor is hereby notified that during the bridge closure period, no work shall be performed between the hours of 9:00 p.m. and 6:00 a.m. that creates a noise level exceeding 75 decibels. The decibel level shall be measured from the point of activity to the nearest occupied residence.

Construction activities expected to reach this noise threshold include pneumatic hammers, hoe-ram, and similar impact type equipment.

The Contractor shall provide the Engineer, for the duration of the nighttime work, with a sound level meter capable of measuring this noise criteria during the bridge closure period.

Sound level meters shall be Rion NL-20, CESVA SC-160, Extech 407780 or an approved equal capable of meeting IEC60651: 1979 Type 2 and IEC60804: 1985 Type 2 Standards.

The cost for providing this equipment and meeting the specified noise level criteria will not be paid for separately, but will be considered incidental to all other Contract items.

xx. NOTICE TO BIDDERS. All temporary construction signs shall meet the following requirements:

A. Where sign installations are not protected by guardrail or other approved traffic barriers, all sign stands and post installations shall meet National Cooperative Highway Research Program (NCHRP) Report 350 or the AASHTO Manual for Assessing Safety Hardware (MASH). The appropriate resource shall be determined as described in the MASH publication. No sign posts shall extend over the top of the sign installed on said post(s). When anchors are installed, stub shall not be greater than 4 inches above existing ground.

B. As a minimum, roll up sign material shall have ASTM D 4956 Type VI fluorescent orange retroreflective sheeting.

C. All post-mounted signs and solid substrate portable signs shall have ASTM D 4956 Type VII, Type VIII, or Type IX fluorescent orange retroreflective sheeting.

D. All retroreflective sheeting on traffic cones, barricades, and drums shall be at a minimum ASTM D 4956 Type III sheeting.

E. All stationary signs shall be mounted on two 3 lb/ft flanged channel posts or 2 inch square steel inserted in 2 ¼" galvanized square steel anchors. No sign posts shall extend over the top edge of sign installed on said posts.

F. Prior to placing temporary work zone signs on the project, the Contractor must furnish for the Engineer's approval a detail for temporary work zone signs on steel posts showing stubs projecting a maximum of 4 inches above ground level and bolts for sign post.

G. Construction signs shall be installed so as to not interfere with nor obstruct the view of existing traffic control devices, stopping sight distance, and corner sight distance from drives and town highways.

H. Speed zones, if used, should be a maximum of 10 mph below existing posted speeds. Temporary speed limit certificates must be approved by the Chief Engineer.

xx. NOTICE TO BIDDERS. All retroreflective sheeting on permanent signs (signs to remain after the project is completed) shall be at a minimum ASTM D 4956 Type III sheeting, unless otherwise shown on the Plans.

xx. NOTICE TO BIDDERS – CONCURRENT CONSTRUCTION. The Contractor is made aware of the following VTrans construction project expected to be in progress within the area of this project during its construction.

Project	Contractor	Anticipated Contract Completion Date
Killington BF 020-2(42)	TBD	TBD
Woodstock STP SRIN(44)	TBD	TBD
Hartland STP FPAV(8)	TBD	TBD

The Contractor shall coordinate construction schedules and traffic control with the work required for these projects.

There will be no extra compensation paid to the Contractor for any inconvenience caused by working around these or other projects.

xx. ENVIRONMENTAL. This project shall be subject to Avoidance and Minimization Measures to protect the habitat and hibernacula of the northern long-eared bat. Measures applicable to this project include, Time-of-Year (TOY) restrictions for any potential impacts to suitable bat habitat, which include, but are not limited to trees ≥ 3" and/or habitat features on bridge structures.

It is anticipated that the Contractor will be required to cut trees ≥3" in diameter and/or conduct bridge related activities within the identified project limits as part of the work. An assessment of the project limits resulted in a finding of no suitable habitat. Therefore, tree cutting, and bridge related activities, within the project limits may occur without any TOY restrictions.

The Contractor is hereby made aware of the potential for TOY restrictions related to proposed Waste, Borrow and Staging areas. Cutting trees ≥ 3" in diameter outside of the contract project limits shall require review under Section 105.25 Control of Waste, Borrow, and Staging Areas.

xx. UTILITIES. Existing aerial facilities owned by Green Mountain Power will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Existing underground facilities owned by Green Mountain Power, located under the sidewalk near the northeast corner of the bridge, will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Existing underground facilities owned by FairPoint Communications will be adjusted, as necessary, in a coordinated effort between the Contractor and employees or agents of the above company, in accordance with the *"Approximate Underground Utility Relocation Route"* shown on the project plans.

The Contractor shall coordinate with FairPoint Communications to make the necessary arrangements for on-project assistance from FairPoint employees, or their designated agent, to lower the existing underground facilities to the elevation indicated in the project plans.

There shall be a meeting held with the Contractor's Superintendent, the Contractor's Project Manager, the Engineer, the Project Manager, and FairPoint Communications to coordinate utility relocation work with the Contractor's schedule. The Contractor shall be responsible for setting this meeting up. This meeting shall be held a minimum of twenty eight (28) days prior to the bridge closure period.

Existing underground water facilities owned by the Woodstock Aqueduct Company will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Existing underground, municipal sewer facilities owned by the Town of Woodstock will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Existing water valves owned by the Woodstock Aqueduct Company may require adjustments to match the new finished grade elevation. Necessary elevation adjustments to these water valves will be performed by the Contractor in accordance with Item 629.20, Adjust Elevation of Valve Box.

Contacts for the above listed utility companies are:

Caleb Hawley	Green Mountain Power	(802)234-5120	Cell(802)353-0172
Dan DeZafra	Comcast Communications	(603)678-8271	Cell(603)852-8903
John Pomeroy	FairPoint Communications	(802)295-8187	Cell(802)735-7029
Greg Povey	FairPoint Communications	(802)747-1040	Cell(802)236-7766
Eric Wegner	Woodstock Aqueduct Co.	(802)457-4497	
Wayland Lord	Woodstock Wastewater Super.	(802)457-1910	

Employees or agents of the above listed companies are to be allowed free and full access within the project limits with the tools, materials, and equipment necessary to install, operate, maintain, place, replace, relocate, and remove their facilities.

There will be no extra compensation paid to the Contractor for any inconvenience caused by working around and with the companies, or their facilities.

The Contractor is advised that exploratory excavation to locate existing underground facilities may be necessary to protect these facilities from damage. Where approved by the Engineer, these utilities shall be located and/or exposed by methods such as air/vacuum excavation and/or hand digging to determine their exact location. This exploratory work shall be classified as Trench Excavation of Earth, Exploratory and payment shall be through Pay Item 204.22, Trench Excavation of Earth, Exploratory.

Vermont Statutes Annotated, Title 30, Chapter 86 ("Dig Safe") requires notice to Dig Safe before starting excavation activities. The Contractor

must telephone Dig Safe at 811 at least 48 hours (excluding Saturdays, Sundays and legal holidays) before, but not more than 30 days before, starting excavation activities at any location. In addition, before excavation and/or pavement grinding in or on the state highway right-of-way, the Contractor must contact the Agency's District Transportation Administrator to obtain/verify the location of Agency's underground utility facilities or to confirm the absence of such facilities.

The Contractor is advised that many towns are not members of Dig Safe. It is the Contractor's responsibility to check with the towns prior to excavation and it shall protect and restore any utilities damaged within the project limits as set forth in Subsection 107.13 PROTECTION AND RESTORATION OF UTILITIES AND SERVICES.

Should the Contractor desire additional adjustments of the utility facilities for his/her convenience, proper arrangements shall be made in conformance with Subsection 105.07 of the Standard Specifications for Construction.

All Contractors, subcontractors, or material suppliers involved in any project-related activity shall comply with all applicable codes and regulations related to working around live electrical lines; including, but not limited to maintaining the required minimum clear distance from an electrical utility facility. The Contractor's Competent Safety Officer shall be well versed in OSHA and VOSHA regulations, and shall be capable of implementing a plan to conform to these regulations during prosecution of work.

xx. 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 or intersecting highways. Parking or stopping on the traveled portion of the roadway 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 highway or intersecting highways.

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.

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.

xx. SPECIAL CONSTRUCTION REQUIREMENTS.

A. Unless otherwise permitted in writing by the Engineer, the Contractor shall not work during the holiday periods Memorial Day, July Fourth, Labor Day, Columbus Day, Veterans Day, and Thanksgiving

Day. 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. The Contractor shall maintain a safe access to all drives and intersecting side roads at all times during the construction of this project.

C. During construction it will be necessary for the Contractor to maintain one-lane traffic for extended periods of time. In no case shall the paved width for this one-lane traffic, including shoulders, be reduced to less than 11 feet. This paved width shall remain free of obstructions and obstacles at all times.

D. All paving operations shall be conducted such that, to the extent possible, all travel lanes are covered full width in a single paver pass. Longitudinal construction joints within any travel lane will not be permitted. Screed extension to cover adjacent shoulders concurrent with any travel lane will be permitted considering the requirement for auger extensions.

E. The Contractor shall position Portable Changeable Message Signs at locations determined by the Engineer properly warning motorists of the roadway conditions ahead. As directed by the Engineer, these locations may change during construction as needs arise based on daily work activities. 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 traveling public of the expected roadway surface conditions.

F. Unless otherwise directed by the Engineer, the Contractor shall begin and end the wearing course of pavement for the project with a full depth butt joint constructed as directed by the Engineer. The costs of cutting the butt joint will not be paid for directly, but will be considered incidental to the Contract wearing course item.

G. Grass growing adjacent to pavement or through cracks in the pavement which may hamper the placement of new bituminous concrete shall be removed by the Contractor as directed by the Engineer. Payment for this work will not be made directly, but will be considered incidental to the Contract wearing course item.

H. Where possible, a 2 inch space should be maintained between all final pavement markings and parallel joints in bituminous concrete pavement. The Contractor shall conduct paving operations such that the paving joint between the travel lane and adjacent shoulder will be outside of the 6 inch white line.

I. Prior to final acceptance of the project, all drop inlets and bridge joints within the project limits shall be cleaned and all material within the drop inlets and bridge joints shall be removed. All paved areas adjacent to curbs shall be swept and cleaned of all extraneous material. Costs for this work will not be paid for directly, but will be considered incidental to all Contract items.

J. 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).

K. 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.

L. For this project, the Contractor shall have on hand on the project at all times all necessary materials, equipment, and labor to place any and all necessary interim pavement markings, including temporary line striping targets, required by the Plans or as directed by the Engineer. The markings shall be paid for under the appropriate Contract items.

The costs of maintaining marking capability at all times will not be paid for directly, but will be considered incidental to the pavement marking items in the Contract.

ASPHALT PRICE ADJUSTMENT

xx. SUPPLEMENTAL SPECIFICATION – ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, is hereby made a new Subsection of the Specifications, superseding all previous editions and their modifications.

xx. SUPPLEMENTAL SPECIFICATION – ASPHALT PRICE ADJUSTMENT, dated April 6, 2010, GENERAL REQUIREMENTS AND CONDITIONS, part (b) text, is hereby modified by being deleted in its entirety and replaced with text "NOT USED".

The index price for asphalt cement is $xxx.00 per ton. **(Found on Contract Admin website – updated monthly: http://vtrans.vermont.gov/contract-admin/construction)**

In addition to materials produced under Contract pay item(s) as allowed in GENERAL REQUIREMENTS AND CONDITIONS, part (a) of the Supplemental Specification, asphalt cement and emulsified asphalt produced under Contract items 900.680 Special Provision (Bituminous Concrete Pavement, Type IVB) and 490.30 Superpave Bituminous concrete Pavement will be included for adjustment.

If an emulsified asphaltic liquid is used in the Contract work under any Contract item subject to the Asphalt Price Adjustment provisions and that liquid is not included in the table under subpart (5) of PRICE ADJUSTMENT PROCEDURES of the Supplemental Specification, the ACEA as defined in subpart (5) for that liquid will be that as determined by averaging Contractor certified test results for the project.

SECTION 108 – PROSECUTION AND PROGRESS

X. 108.09 TEMPORARY SUSPENSION OF THE WORK, part (d) Seasonal Closure, is hereby modified by deleting the phrase "From December 1st to April 15th" and replacing it with the phrase "From December 16th to March 18th".

X. 108.09 TEMPORARY SUSPENSION OF THE WORK, part (d) Seasonal Closure, is hereby further modified by adding the sentence, "The seasonal closure dates have been modified for the work required to lower underground utilities prior to the BCP."

SECTION 501 – HPC STRUCTURAL CONCRETE

X. 501.02 MATERIALS, is hereby modified by adding the following:

Where a shrinkage admixture will be used in placing concrete as allowed by the Contract Documents, the following requirements shall be met:

A shrinkage compensating admixture shall be added during the initial concrete mixing phase or as recommended by the chemical manufacturer product representative. The shrinkage compensating admixture shall be one of the products listed below. The final dosage rate will be determined by the product representative and the concrete producer. The dosage rate volume is computed into the final water/cementitious ratio.

Manufacturer: Sika Construction Product Division
Product name: – Sika Control 40
Tel.: 1-800-933-7452
Website: http://www.sikaconstruction.com/tds-cpd-SikaControl40-us.pdf

Manufacturer: The Euclid Chemical Company
Product name: Eucon SRA
Tel.: 1-800-321-7628
Website: http://www.euclidchemical.com/fileshare/ProductFiles/techdata/euconsra.pdf

Manufacturer: BASF (Master Builders)
Product name: Tetraguard AS20
Tel.: 1-800-628-9900
Website: http://www.basf-admixtures.com/NR/rdonlyres/84C7EC12-F527-44FD-A8B9-3A007609FF76/0/TETRAGUARD AS20 DS307.pdf

Manufacturer: Grace Construction Products
Product name: Eclipse Plus
Tel.: 1-877-423-6491
Website: http://www.na.graceconstruction.com/concrete/download/EC-13B 2.pdf

SECTION 690 – FUEL PRICE ADJUSTMENT **(as required)**

xx. SECTION 690 – FUEL PRICE ADJUSTMENT, is hereby made a new Section of the Specifications as follows:

xx. 690.01 GENERAL REQUIREMENTS AND CONDITIONS

(a) This specification contains price adjustment provisions for fuel used on Vermont Agency of Transportation (Agency) construction

projects. This price adjustment clause is being inserted in this Contract to provide for either additional compensation to the Contractor or a payment to the Agency, depending upon an increase or decrease in the average price of diesel fuel or gasoline during the construction of this project.

(b) These provisions apply to this Contract only as specified herein through the fuel usage factors set forth in Table 1. No further fuel price adjustments will be allowed under this Contract.

(c) It is understood by the Contractor that a price adjustment increase may cause the Agency to decrease the quantities of the Contract pay items subject to adjustment under these provisions. Provisions providing for decreased quantities and item cancellation in this paragraph are separate and take precedence, notwithstanding any other provisions of this Contract.

(d) No price adjustment will be paid for work performed after the Contract Completion Date, as modified by Change Order, if applicable.

(e) Price Adjustment, Fuel will be determined for a pay item if each of the following criteria is met:

(1) the pay item is included in the original awarded Contract;

(2) the original awarded Contract bid quantity for the pay item equals or exceeds the quantity threshold indicated in Table 1.

(f) Any increase in the total Contract amount due to fuel price adjustment will not be justification for an extension of time under Subsection 108.11.

In such cases that estimated quantities are used to determine estimated fuel price adjustments throughout the duration of the Contract, reconciliation of those estimated adjustments will be made upon the determination of actual final quantities and final adjustments to the total final quantity made by prorating those estimated adjustments over the applicable fuel price adjustment periods previously paid. Reconciliation of any fuel price adjustment will only be performed in those instances where the actual final quantity differs by more than five percent from the total estimated quantity. Payments owed to either the Contractor or VTrans will not be subject to any applicable interest claims.

xx. 690.02 PRICE ADJUSTMENT PROCEDURES

(a) Prior to advertising for bids, Index Prices for both a gallon of diesel fuel and a gallon of gasoline will be established by the Agency using retail prices reported by the Energy Information Administration (EIA) for the New England Region. The Index Prices will be set monthly using the first EIA posting falling either on or after the 1st calendar day of that month. The Contract Index Prices will be the most recent Index Prices set by the Agency at the time of advertising for bids. These prices are included below and will be the base from which price adjustments are computed.

The index price (retail) for gasoline is $x.xx per gallon. The index price (retail) for diesel fuel is $x.xx per gallon. **(Found on**

Contract Admin website – updated monthly: http://vtrans.vermont.gov/contract-admin/construction)

(b) For the duration of the Contract, Posted Prices for both a gallon of diesel fuel and a gallon of gasoline will be established monthly by the Agency. The Posted Prices will be established in the same manner as the Index Prices.

(c) A Price Adjustment will be paid or credited for diesel fuel and/or gasoline only when the Posted Price of diesel fuel and/or gasoline increases or decreases 5 percent or more over its respective Index Price.

(d) Payment for Price Adjustment, Fuel will be based upon the quantity of fuel incorporated in the work as determined by the fuel usage factors in Table 1 of this specification for both diesel fuel and gasoline, multiplied by the algebraic difference between the Posted Price and the Index Price for either diesel fuel or gasoline, respectively.

(e) Payment for Price Adjustment, Fuel shall be computed as follows:

PA = Price Adjustment (LU in $)
IPD = Index Price, Diesel Fuel ($/gallon)
IPG = Index Price, Gasoline ($/gallon)
PPD = Posted Price, Diesel Fuel ($/gallon)
PPG = Posted Price, Gasoline ($/gallon)
FUFD = Fuel Usage Factor, Diesel Fuel (gallon/unit)
FUFG = Fuel Usage Factor, Gasoline (gallon/unit)

For PPD/IPD <= 0.95 or >= 1.05 and PPG/IPG > 0.95 and < 1.05:
PA = FUFD X Pay Item Quantity X (PPD – IPD)

For PPD/IPD > 0.95 and < 1.05 and PPG/IPG <= 0.95 or >= 1.05:
PA = FUFG X Pay Item Quantity X (PPG – IPG)

For PPD/IPD and PPG/IPG <= 0.95 or >= 1.05:
PA = [FUFD X (PPD – IPD) + FUFG X (PPG – IPG)] X Pay Item Quantity

(f) The Contract bid prices for the applicable pay items will be paid under the Contract. The price adjustment, when such adjustment is required as specified in part (c) of this Subsection, will be made subsequent to the month in which the applicable Contract work was performed and will be entered on the next bi-weekly estimate.

(g) Payment for Price Adjustment, Fuel shall be debited or credited against the Contract price (Lump Unit) bid for Price Adjustment, Fuel.

Payment will be made under:

Pay Item	Pay Unit
690.50 Price Adjustment, Fuel N.A.B.I.)	Lump Unit

Table 1
Pay Item Fuel Usage Factors and Quantity Thresholds

Work Category	Pay Item No.	Usage Factor Units	Diesel Fuel (FUFD)	Gasoline (FUFG)	Quantity Threshold
		English	English	English	English
Excavation	203.15	GAL/CY	0.29	0.15	3,000
	203.16	GAL/CY	0.39	0.18	2,500
	204.25	GAL/CY	0.35	0.16	2,500
	208.3	GAL/CY	0.35	0.16	2,000
	208.35	GAL/CY	0.39	0.18	2,000
Borrow	203.3	GAL/CY	0.29	0.15	3,000
	203.31	GAL/CY	0.29	0.15	3,000
	203.32	GAL/CY	0.29	0.15	3,000
Granular Backfill For Structures	204.3	GAL/CY	1	0.16	1,500
Cold Planing, Bituminous Pavement	210.1	GAL/SY	0.12	0	15,000
Subbase	301.25	GAL/CY	0.85	0.56	1,000
	301.35	GAL/CY	0.85	0.56	1,000
Reclaimed Stabilized Base	310.2	GAL/SY	0.04	0	35,000
Pavement	406.25	GAL/TON	3.06	0.86	500
	406.27	GAL/TON	3.06	0.86	500
	490.3	GAL/TON	3.06	0.86	500
Cold Mixed Recycled Bituminous Pavement, Portland Cement	900.675	GAL/SY	0.96	0.75	1
Hand-Placed Bituminous Concrete Material, Drives	900.675	GAL/SY	3.06	0.86	500
Bituminous Concrete Pavement, Small Quantity	900.680	GAL/TON	3.06	0.86	500
Material Transfer Vehicle	900.680	GAL/TON	0.1	0	1
Concrete	501.32	GAL/CY	0.75	0.25	1,000
	501.33	GAL/CY	0.75	0.25	1,000
	501.34	GAL/CY	0.75	0.25	1,000
Stone Fill	613.1	GAL/CY	0.39	0.18	2,000
	613.11	GAL/CY	0.39	0.18	2,000
	613.12	GAL/CY	0.39	0.18	2,000
	613.13	GAL/CY	0.39	0.18	2,000
Guardrail	621.2	GAL/LF	0.18	0.05	5,000
	621.205	GAL/LF	0.18	0.05	5,000
	621.21	GAL/LF	0.18	0.05	5,000
	621.215	GAL/LF	0.18	0.05	5,000

HIGH PERFORMANCE CONCRETE, CLASS A LOW CEMENT

**As approved by Structures Section 01/22/10.

The CONCRETE FINISHING Subsection of these provisions is specific to a bare deck application utilizing this material as the deck concrete.

**From Hartford BHF BPNT(12)

xx. DESCRIPTION. This work shall consist of furnishing and placing high performance portland cement concrete at the locations 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 501 of the Standard Specifications.

xx. MATERIALS. The coarse aggregate shall be conditioned so that 24 hours prior to the anticipated concrete placement time, the total moisture percentage is a minimum of 0.75% greater than the absorption percentage for that aggregate. The minimum moisture percentage shall be maintained throughout the 24 hour period.

xx. CLASSIFICATION AND PROPORTIONING. Proportioning of High Performance Concrete, Class A Low Cement shall meet the following requirements:

HPC Class	Req.** Cem. Mat. kg/m³ (lbs./cy)	Maximum Water-Cem. Mat. Ratio	Max. Slump mm (in.)	Air Content (%)	Coarse Aggregate Gradation Table	28-Day* Comp. Strength MPa (psi)	28-Day* Modulus of Rupture MPa (psi)
A Low Cement	362 (611)	0.44	150 (6)	7.0 ± 1.5	704.02B	30 (4000)	4.48 (650)

* The listed 28-day compressive strength or modulus of rupture will serve as the basis of designing or approving the concrete mix.
** See tables located below for required cementitious materials.

Required Cementitious Materials

Cement kg/m³ (lbs/cy)		Fly Ash kg/m³ (lbs/cy)		Silica Fume Admixture kg/m³ (lbs/cy)		Cementitious Materials kg/m³ (lbs/cy)
266 (449)	+	72 (122)	+	24 (40)	=	362 (611)

OR

Cement kg/m³ (lbs/cy)		GGBFS kg/m³ (lbs/cy)		Silica Fume Admixture kg/m³ (lbs/cy)		Cementitious Materials kg/m³ (lbs/cy)
248 (418)	+	90 (153)	+	24 (40)	=	362 (611)

OR

Blended Silica Fume Cement (8.0%) kg/m³ (lbs/cy)		Fly Ash kg/m³ (lbs/cy)		Cementitious Materials kg/m³ (lbs/cy)
290 (489)	+	72 (122)	=	362 (611)

OR

Blended Silica Fume Cement (8.0%) kg/m³ (lbs/cy)		GGBFS kg/m³ (lbs/cy)		Cementitious Materials kg/m³ (lbs/cy)
272 (458)	+	90 (153)	=	362 (611)

The Contractor will be responsible for providing a workable mix design.

xx. CONCRETE FINISHING.

(a) Finishing Bridge Decks with No Asphalt Wearing Surface.

(1) Rail Support Requirements. Finishing machine rail supports shall be accurately set and of substantial construction so that the finished deck surface will conform to the profile and transverse sections shown in the Plans. Finishing machine rail supports shall be placed and adjusted to properly provide for the deflection of forms, falsework, and structural supporting members which will occur during the placement of the concrete. Finishing machine rail supports shall not be attached by welding to portions of the flanges. The finishing machine rail supports shall be spaced at a maximum of 600 mm (2 feet) on center and of sufficient design as to secure the rail to prevent it from falling off the support.

(2) Straightness Check. Prior to texturing, the finished concrete surface shall be examined by the Contractor and the Engineer using a straightedge. The straightedge shall be not less than 3 m (10 feet) long. It shall be furnished by the Contractor and maintained in good, usable condition at the placement site at all times. While the concrete is still plastic, surface depressions shall be filled with concrete of the same Class as the placement in progress. The added concrete shall be worked sufficiently into the underlying concrete to ensure that it creates a single monolithic layer. Surface irregularities greater than 3 mm (1/8 inch) in 3 m (10 feet) in either the longitudinal or the transverse direction shall be corrected in a manner acceptable to the Engineer. Thin mortar or laitance, which may have accumulated ahead of the finishing machine screed, shall be removed from the work site. These materials shall not be used to fill depressions. All costs for providing a straightedge to test the trueness of the concrete finishing will be considered incidental to Contract item 631.16.

(3) Turf Drag. After finishing, the surface shall be given a suitable texture with an artificial turf drag made of molded polyethylene. The selection of turf drag should be capable of producing a surface texture with a horizontal peak to peak distance ranging from 0.5 mm to ≤ 6.35 mm (0.02 inch to ≤ 0.25 inch) and having a peak to peak amplitude of 0.1 mm to 20 mm (0.005 inch to 0.8 inch). Select a turf drag material that will minimize tearing and rolling of coarse aggregate from the surface. Past experience has shown that a turf drag in which the majority of the blades are orientated in a common direction should reduce those occurrences.

The Contractor shall apply texture in a transverse direction by hand methods. Other directions may be allowed with the approval of the Engineer. All texturing shall be performed from a work bridge immediately following the finishing operations and prior to curing operations. A second work bridge will be required for curing purposes unless a method utilizing a single work bridge has been approved by the Engineer.

One pass of the turf drag over the finished area is desired. The drag shall leave a seamless strip between passes. Texture resulting from the drag shall stop within 300 mm (1 foot) of the gutter line. Any build up of concrete at the beginning or end of the pass shall be hand troweled to provide an even transition. An acceptable broom finish may be applied to small areas of deck surface where a turf drag cannot be operated.

The drag should produce a transverse, skid resistant micro-texture acceptable to the Engineer, but should not tear the surface. If the drag is not producing an acceptable micro-texture, the Contractor shall adjust the means and methods until an acceptable micro-texture is achieved.

The Contractor shall check the drag material before the deck pour and from time to time during finishing for tears, worn surface, or hardened concrete. The Contractor should clean or replace the drag as often as necessary to maintain a well-defined micro-texture.

The turf drag should not be applied when the surface is so wet or plastic that the ridges formed flow back into the valleys when the drag has passed, nor should dragging be delayed until the concrete is so hard that sharp ridges cannot be formed by the drag. Surface conditions may not be fully uniform, however, and dragging should be timed to maximize skid resistance.

If the 10 minute maximum, as specified in Subsection 501.17(c), for applying the wet cure cannot be met, then fogging of the area shall be performed. Fogging shall be performed in a manner that keeps the relative humidity above the evaporation rate of the concrete surface, but not so excessive that water begins to collect on the surface prior to texturing or other surface manipulating procedures.

(4) Hand Finishing. In areas which are inaccessible to finishing machines, use of approved manual vibratory-equipped power screeds with approved grade control method may be used, with approval of the Engineer. Straightness shall be checked as specified in subpart (a)(2) of this Section and to ensure a smooth ride and seamless transition to the finishing machine's finished area. If manual vibratory-equipped power screeds are used, then initial vibration of the concrete for consolidation in those areas shall be of the minimal duration possible to avoid over vibration and loss of air entraining of the surface concrete in these areas.

Hand finishing shall be allowed only in areas inaccessible to finishing machines or manually driven vibratory-equipped power screeds. Hand screeds or bullfloats shall be magnesium and 250 mm (10 inches), or more, in width. Care shall be taken not to overwork the concrete surface during any finishing operation. Straightness shall be checked in any hand finished area as specified in subpart (a)(2) of this Section and to ensure a smooth ride and seamless transition to the finishing machine's finished area.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (High Performance Concrete, Class A Low Cement) to be measured for payment will be the number of cubic meters (cubic yards) of concrete placed in the complete and accepted work, as determined by the prismoidal method using dimensions shown on the Plans or as directed by the Engineer, including the volume of precast concrete stay-in-place forms, but excluding the volume of steel or other stay-in-place forms and form filling materials. No deductions will be made for the volume of concrete displaced by steel reinforcement, structural steel, expansion joint material, scuppers, weep holes, conduits, tops of piles, scoring, chamfers or corners, inset panels of 38 mm (1½ inches) or less in depth, or any pipe less than 200 mm (8 inches) in diameter.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (High Performance Concrete, Class A Low Cement) will be paid for at the Contract unit price per cubic meter (cubic yard). Payment will be full compensation for performing the work specified, including designing the mix, satisfactory finishing and curing, and for furnishing all forms, materials, including joint filler and bond breaker, labor, tools, admixtures, equipment, including automatic temperature recording units, trial batches, and incidentals necessary to complete the work.

The cost of heating materials and protecting the concrete against cold weather, and any additional cost for cement, will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Class A Low Cement).

The cost of furnishing testing facilities and supplies at the batch plant and the setting of inserts, bench marks, and bridge plaques furnished by the Agency will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Class A Low Cement).

Costs for all materials, labor, and incidentals for steel or other stay-in-place forms and form filling materials will not be paid for separately, but will be considered incidental to Special Provision (High Performance Concrete, Class A Low Cement).

Payment will be made under:

Pay Item	Pay Unit
900.608 Special Provision (High Performance Concrete, Class A Low Cement)(FPQ)	Cubic Meter (Cubic Yard)

HIGH PERFORMANCE CONCRETE, RAPID SET

XX. DESCRIPTION. This work shall consist of designing, furnishing, and placing a high early strength, high performance, Portland cement concrete at the locations 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 501 of the Standard Specifications.

XX. MATERIALS. Materials shall meet the requirements of Subsection 501.02 and the following:

High Early Strength Portland Cement……701.04

XX. MIX DESIGN SUBMISSION CRITERIA. Concrete shall meet the following requirements:

(a) The mix shall be classified as conventional or self-consolidating concrete (SCC) mix. If the intended slump is greater than 9″ then it shall be classified as an SCC mix.

(b) Compressive Strength.

28 day compressive strength - 5000 psi

(c) Permeability. 56 Day Permeability - 2500 coulombs (The permeability may be tested prior to 56 days but results must still be 2500 coulombs or less). Test shall be performed in accordance with Subsection 510.04(b)(6)f.

(d) Air Content. 7 ± 1.5%.

(e) Slump/Spread. The mix shall not exhibit segregation at the slump /spread being used.

(1) For SCC mix the Visual Stability Index (VSI) shall be equal to or less than 1.

(2) Spread range will be established for the initial submittal of mix for approval. The J-Ring Test will be conducted per ASTM C1621. The upper and lower ranges of the spread shall not have a difference of greater than 2 inches between the J-Ring and spread test or VSI greater than 1. Spread test, ASTM C1611, will be done for the production mix only, unless the Engineer requests J-Ring testing to be done.

(f) Alkali-Silica Reactivity (ASR). Test shall be performed in accordance with Subsections 510.04(b)(6)g and 510.04(b)(7).

(g) The mix may contain shrinkage–compensating admixture such that there will be no separation of concrete from adjacent precast units. The Contractor shall include results for the unrestrained shrinkage test method, ASTM C 157 by procedure 11.1.2 and readings for a minimum of 28 days after the curing period is complete. The maximum shrinkage allowed shall be 0.04%. Testing shall be performed by an independent lab that is CCRL accredited in AASHTO T 30 or ASTM C 1260.

(h) A proprietary concrete mix design meeting the same performance requirements may also be considered for use.

XX. SUBMITTALS. A minimum of fourteen (14) calendar days prior to placement (or prior to the pre-placement meeting, if one is required), the Contractor shall submit the mix design for approval. The mix design shall be submitted to the Agency's Materials Laboratory, attention Composite Materials Engineer. Concrete under this provision shall not be placed until the mix design has been approved.

(a) Trial Batch. Twenty-one (21) to seven (7) calendar days prior to the first placement, the Contractor shall produce and place a 2 cubic yard trial batch, at a location agreed upon by the Contractor and the Engineer. The purpose of this trial batch is to demonstrate that the mix is capable of producing the wet test results within the specified ranges. The Engineer shall be given a minimum notice of seven (7) calendar days prior to the trial batch pour. The trial batch shall be poured in the presence of the Engineer and the Composite Materials Engineer. The trial batch shall be produced and poured in the same manner, estimated concrete temperature, and time frames that will occur during construction. The slump/spread shall be within +/- 2 inches for conventional mix or +/- 3 inches for SCC, but still be within the established range limits for conventional or SCC. J-Ring test will be done for SCC mix with the difference between the J-Ring and spread test not greater than 2 inches. The Contractor shall provide qualified personnel to test spread, air content, and temperature of the trial batch. A trial batch will be required for each mix design used on the project.

If SCC will be used in work with a sloped finished surface, the Contractor shall produce a mock-up during the trial batch to demonstrate that the mix can be finished with the sloped surface.

(b) Mix Acceptance Criteria. The placed concrete will be tested for all mix design criteria as specified herein, with the exception of permeability, shrinkage, and ASR. The Contractor may test the load in accordance with 501.06(a)(2) for initial QC in order to make any needed adjustments. The sample shall be taken in accordance with AASHTO R-60 or ASTM C172. If the test results fall outside of the specified ranges for the tested criteria, the mix shall be subject to rejection.

XX. CURING CONCRETE. The method of wet curing used shall meet the requirements of Subsection 501.17. Concrete shall be wet cured until it has reached the minimum design strength as specified in the contract documents, verified by testing of field cylinders.

XX. LOADING OF CONCRETE. After the concrete has been placed and the finishing operations concluded, it shall not be walked on or disturbed in any manner, including the removal of forms, until curing is complete as specified herein.

Precast pile caps may be backfilled when the compressive strength of the concrete in the pile cavities has reached 2500 psi as determined by field-cured test cylinders.

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Concrete used within abutment connection blockouts and for bridge seat construction shall reach a minimum design strength of 3000 psi, as determined by field-cured test cylinders, prior to placement of beams.

A minimum compressive strength of 4000 psi, as determined by field-cured test cylinders, shall be achieved prior to allowing traffic on the structure.

A portable compression testing machine calibrated in accordance with Section 5 of ASTM C 39 shall be provided by the Contractor and available on-site for cylinder testing of field-cured cylinders for construction progress. There shall also be a hand held grinding stone included with the compression testing machine. The hand held grinding stone will be used to grind the top of the cylinders to relieve any sharp projections on the cylinder surface. All testing and equipment shall conform to ASTM C 39. Testing shall be performed, and equipment operated by, a qualified Agency project individual(s). The individual(s) shall be trained in the operation of the machine by the owner or representative of the machine who is proficient in the operations and functions of the machine.

If an independent lab is proposed to be used to test the field-cured cylinders instead of a portable compression testing machine, the Contractor shall submit documentation providing verification for the following:

(a) Calibration of the compression machine in accordance with Section 5 of ASTM C 39.

(b) Compression machine meets the requirements of ASTM C 39.

(c) Proficiency of the technician who will be performing the test methods.

The State at any time reserves the right to perform an independent proficiency of the technician for the test methods used and review of the testing facility.

XX. METHOD OF MEASUREMENT. The quantity of Special Provision (High Performance Concrete, Rapid Set) to be measured for payment will be the number of cubic meters (cubic yards) of concrete placed in the complete and accepted work, as determined by the prismoidal method using dimensions shown on the Plans or as directed by the Engineer, including the volume of precast concrete stay-in-place forms, but excluding the volume of steel or other stay-in-place forms and form filling materials. No deductions will be made for the volume of concrete displaced by steel reinforcement, structural steel, expansion joint material, scuppers, weep holes, conduits, tops of piles, scoring, chamfers or corners, inset panels of 38 mm (1 ½ inches) or less in depth, or any pipe less than 200 mm (8 inches) in diameter.

XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (High Performance Concrete, Rapid Set) will be paid for at the Contract unit price per cubic meter (cubic yard). Payment will be full compensation for performing the work specified, including designing the mix, satisfactory finishing and curing, and for furnishing all forms, materials, including joint filler and bond breaker, labor, tools, admixtures, equipment,

Commented [LG4]: Chelsea – Deck Replacement - added

Commented [LG5]: Huntington doesn't specify specific loading requirements – Abutment 1 on Piles, Abutment 2 on Spread footing on bedrock – covered by blanket statement below

Deleted: Unless otherwise specified in the contract documents, a compressive strength of 3500 psi shall be achieved prior to loading.¶
¶

including automatic temperature recording units, trial batches, and incidentals necessary to complete the work.

The cost of heating materials and protecting the concrete against cold weather, and any additional cost for cement, will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Rapid Set).

The cost of furnishing testing facilities and supplies at the batch plant and the setting of inserts, bench marks, and bridge plaques furnished by the Agency will not be paid for separately but will be considered incidental to Special Provision (High Performance Concrete, Rapid Set).

Costs for all materials, labor, and incidentals for steel or other stay-in-place forms and form filling materials will not be paid for separately, but will be considered incidental to Special Provision (High Performance Concrete, Rapid Set).

Payment will be made under:

Pay Item	Pay Unit
900.608 Special Provision (High Performance Concrete, Rapid Set)(FPQ)	Cubic Meter (Cubic Yard)

INCENTIVE/DISINCENTIVE (I/D)

XX. INCENTIVE/DISINCENTIVE (I/D), is hereby made a new Section of the Specifications as follows:

To provide a common proposal for all bidders and expedite the incentive payment process, the Agency has entered an amount of _____ ($XXX,XXX) dollars in the proposal to become part of the Contractor's total bid. _____ ($XXX,XXX) dollars amount is the maximum amount payable under the incentive clause but the actual payment/deduction will be computed and paid/deducted per this special provision and the stipulations of Special Provision No XX.

The payment of monies for performance under the Incentive/Disincentive (I/D) specifications contained in these Special Provisions shall be as follows:

1. The quantity of incentive to be paid will be the accepted quantity of incentive computed per the provisions of the special provision No XX. For the incentive payment as described in part (X) of Special Provision No. XX, the Contractor will be paid in the next bi-weekly estimate in which the Contractor has satisfactorily met the requirements of I/D.

2. The quantity of disincentive to be deducted will be the quantity of disincentive computed per the provisions of the special provision No XX. For the assessed disincentive as described in part (X) of Special Provision No. XX, the Engineer will deduct the amount due the Agency from the monies due the Contractor on the next bi-weekly estimate.

Payment will be made under:

Pay Item	Pay Unit
900.615 Special Provision (Incentive/Disincentive) (N.A.B.I.)	Dollar

CRITICAL PATH METHOD (CPM) SCHEDULE

XX. DESCRIPTION. This work shall consist of developing and furnishing a CPM Schedule, including narratives, updates, and revisions for the duration of the Contract.

These provisions shall supersede Subsection 108.03(a) of the Standard Specifications.

XX. SUBMISSIONS.

(a) The Contractor is responsible for the scheduling of all Contract work, which shall include, but is not limited to subcontracted work, complete and acceptable submissions, work component fabrications, and delivery of materials. The schedule shall include allowance for time for all aspects of the work including sufficient time for VTrans to perform its functions as indicated in the Contract, including but not limited to acceptance inspection and/or testing, and review and acceptance/approval of any required Working Drawings as defined in Section 105 or otherwise in the Contract Documents.

(b) Provide the following items with each schedule submission. The schedule shall be prepared with MS Project.

(1) An electronic copy in MS Project format with run date and version of the schedule;

(2) A PDF illustrated in color, depicting no more than 50 activities on each 280 by 430 mm (11 by 17 in.) sheet, and with each sheet including title, project name and number, match data for diagram correlation, and a key;

(3) A four-week look-ahead narrative to provide a more detailed plan of upcoming work highlighting the near term priorities. Indicate the anticipated workdays per week, number of shifts per day, number of hours per shift, crew sizes, and assumed resources. If the project requires a road closure, identify any changes in anticipated resources, or work schedule during the closure period.

(c) The CPM schedule shall include the following:

(1) Activities that describe the essential features of the work, activities that might delay Contract completion, and which activities are on the critical path;

(2) The planned start and completion dates for each activity and the duration of each activity stated in work days (field activities of more than 15 work days in duration shall be broken into two or more activities distinguished by location or some other logical feature); this estimated figure shall include considerations for permit limitations, seasonal limitations, and any other anticipated delays.

(3) When the project contains a defined Road or Bridge Closure Period of a minimum of 24 hours and up to a maximum of 28

days, the duration for work within the closure period shall be shown in hours instead of days. The maximum duration of each activity within the closure period shall be limited to twelve (12) hours;

(4) Finish-to-Start relationships among activities, without leads or lags unless justified in the narrative, and approved by the Engineer;

(5) Distinct columns showing Predecessors, Successors, Duration, Actual Start, and Actual Finish for each Activity;

(6) Project suspension or work inactivity that is three (3) days or longer;

(7) Dates related to the procurement of materials, equipment, and articles of special manufacture;

(8) Dates related to the submission of Working Drawings, plans, and other data specified for review or approval by the Agency;

(9) Key milestone dates specified in the Contract including but not limited to; Notice to Proceed, Interim Completion, Permit Restriction Dates, and Contract Completion Date. These shall be the only constraints in the schedule logic;

(10) Activities related to Agency or Third Party reviews and inspections.

(d) For contracts with an original Contract amount in excess of $8,000,000.00 the following additional information shall be shown on the CPM schedule:

(1) Each Contract bid item identified with at least one activity, except:

Lump Sum items, Lump Unit items, Contract items paid by the “Hour”, Contract items paid by the “Dollar”, Section 641 pay items, and Section 653 pay items.

(2) Each compensable activity shall identify the applicable Contract item(s), along with the total quantity intended to be placed during that activity.

XX. BASELINE SCHEDULE. The CPM Schedule submittal shall be received by the Engineer a minimum of seven (7) calendar days prior to the preconstruction meeting. The Engineer and Contractor may review the schedule at the preconstruction meeting. Any requested information and a revised schedule shall be submitted within seven (7) calendar days after receiving the Engineer’s request. The Engineer shall be allowed twenty-one (21) calendar days to review the schedule and provide a response. The Engineer will review the schedule by assessing the schedule’s compliance with these provisions and conformance with the Contract requirements. By accepting the schedule, the Engineer does not modify the Contract in any way. The Baseline Schedule shall be accepted before any field work begins. The accepted schedule will be used as the Baseline Schedule for the remainder of the project.

The schedule shall define and sequence activities so as to accurately describe the project and to meet Contract requirements for scope of work, phasing, accommodations for traffic, and interim, and project completion dates. Create the schedule, beginning with the date of the Notice to Proceed.

XX. SCHEDULE UPDATES. The schedule shall be updated during active construction at the end of every other bi-weekly estimate period (update period) and when directed by the Engineer. Projects with short duration road closures are of particular importance as the project float will be limited. The Contractor shall promptly inform the Engineer of any schedule delays or changes that occur during these periods. The Engineer shall be allowed ten (10) calendar days to review the update for compliance with these provisions and provide a response. Include the following with each update:

(1) Actual start dates of each activity started;

(2) Actual finish dates of each activity finished, or remaining durations of activities started but not yet completed;

(3) Narrative report describing progress during the update period, shifts in the critical activities from the previous update, sources of delay, potential problem areas, work planned for the next update period, and changes made to the schedule. Changes include additions, deletions, or revisions to activities due to the issuance of a Contract revision, changes to an activity duration, changes to relationships between activities, or changes to the planned sequence of work or the method and manner of its performance.

(4) The Original schedule shall be shown as a Baseline

XX. REVISIONS. Schedule revisions shall be submitted within ten (10) calendar days after any of the following:

(1) A written request to revise the schedule from the Engineer;

(2) A delay (actual or projected) to scheduled milestones or project completion dates;

(3) When actual progress falls behind the most recent schedule accepted by the Engineer, either by falling more than two (2) weeks behind schedule or by 5% of the total Contract time, the Contractor shall immediately inform the Engineer in writing. The Engineer may require the Contractor to submit a revised schedule. Neither the Engineer's acceptance of such revised schedule nor any Agency feedback regarding the revised schedule shall be construed as an approval of the revised schedule, nor should it be construed as the Agency's dictation of the Contractor's means and methods;

(4) Issuance of a Change Order/Supplemental Agreement(s) that by adding, deleting, or revising activities, changes the planned sequence of work or the method and manner of its performance;

(5) Issuance of a Change Order/Supplemental Agreement(s) that adds time to the Contract;

(6) The Contractor shall participate in progress meetings at the request of the Engineer to review and discuss the updated schedule information including any activity delay, coordination requirements, change orders, potential delays, and other relevant issues.

The Engineer shall review the revised schedule for compliance with these provisions, and provide a response within ten (10) calendar days.

XX. FLOAT. Any float in the schedule is to be credited to the project only.

XX. FAILURE TO SUBMIT SCHEDULE. Failure to submit a schedule (i.e. original baseline schedule, required updates, revisions, and when requested by the Engineer) in accordance with these provisions may be grounds for suspension of partial payments, as identified in Subsection 109.08, until a satisfactory schedule meeting the requirements of these provisions is received by the Engineer.

XX. METHOD OF MEASUREMENT. The quantity of Special Provision (CPM Schedule) to be measured for payment will be the number of each CPM Schedule (i.e. original baseline schedule, required updates, revisions, and when requested by the Engineer), accepted by the Engineer through the duration of the Contract.

XX. BASIS OF PAYMENT. The accepted quantity of Special Provision (CPM Schedule) will be paid for at the Contract unit price for each. Payment will be full compensation for preparing and submitting a schedule as specified, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item		Pay Unit
900.620	Special Provision (CPM Schedule)	Each

PARKING METERS

**From St. Johnsbury-Lyndon STP 2936(1)

xx. DESCRIPTION. This work shall consist of removing existing parking meter(s) and post(s), furnishing and installing new parking meter(s) and post(s), and removing and resetting existing parking meter(s) at the location(s) indicated in the Plans and as directed by the Engineer.

xx. MATERIALS. Materials shall meet the following requirements:

(a) Parking Meter. Parking meter shall be a POM APM-E (http://www.pom.com/APME.htm) parking meter, available from the following:

Municipal Supply Sales Co.
Chester, NH 03036
Contact: Michael Logue – Tel.: 800-221-6236

(b) Concrete. Concrete shall meet the requirements of Section 541 for Concrete, Class A.

(c) Parking Meter Post and Post Sleeve. Parking meter post shall be standard steel pipe, 1200 mm (48 inches) long with an inside diameter of 50 mm (2 inches), conforming to ASTM A 53 (Type E or S) Grade B. The post shall accommodate attachment of the existing parking meters.

Parking meter post sleeve shall consist standard steel pipe conforming to ASTM A53 (Type E or S) Grade B, 355 mm (14 inches) long with an inside diameter of 65 mm (2 1/2 inches), conforming to ASTM A 53 (Type E or S) Grade B.

The post and post sleeve shall be galvanized in accordance with Subsection 506.15 and painted in accordance with Section 513. Paint color shall be black conforming to Subsection 708.03.

xx. CONSTRUCTION REQUIREMENTS.

(a) Removing Existing Parking Meter Post and Sleeve. The existing post shall be removed by saw cutting a 450 mm (18 inch) square cut around the base of each post and removing the concrete sidewalk and post base. In areas where the existing sidewalk is not being replaced, the excavated area shall be filled and compacted with granular backfill approved by the Engineer to the depth of the bottom of the existing sidewalk. Concrete shall be placed and finished on top of the granular backfill.

(b) Installing New Parking Meter Post and Sleeve. Where a new parking meter post and sleeve are to be installed, a 450 mm (18 inch) square area of existing concrete sidewalk shall be saw cut and removed. In areas where the existing sidewalk is not being replaced, existing granular material under the sidewalk shall be removed to a depth of 300 mm (12 inches) below the finish grade of the existing sidewalk. The new post sleeve shall be placed such that the street side face of the post sleeve is 300 mm (12 inches) from the face of the curb and placed on the subgrade

material so that 50 mm (2 inches) of the sleeve will extend above the finish grade of the sidewalk. The entire excavated area shall then be filled with concrete to the grade of the existing concrete sidewalk. The Contractor shall use appropriate measures in doing this work to ensure the new post sleeve shall allow for the plumb installation of the actual meter post and not require bending of the post to achieve plumb. The new parking meter post shall extend 900 mm (36 inches) above the finish grade of the sidewalk. Once placed, the post shall be welded around the full circumference of the post sleeve.

(c) Installing New Parking Meter. New parking meter(s) shall be installed as shown on the Plans. Prior to beginning the work, the Contractor shall coordinate installation work with St. Johnsbury Police Chief Clement Houde [Tel.: (802)748-2314].

(d) Remove and Reset Parking Meter. Parking meter(s) shall be reset as shown in the Plans. Prior to beginning the work, the Contractor shall coordinate removal with St. Johnsbury Police Chief Clement Houde [Tel.: (802)748-2314]. The Contractor shall allow at least two (2) business days for the Town to remove the meter mechanism and money from the meter housings. The Contractor will be responsible for the removal, safe storage, and re-installation of the meter housings on a new post. The Contractor shall notify the Town at least two (2) business days in advance of re-installing the meter housings to allow the Town adequate time to reinstall the meter mechanisms. Prior to resetting, the Contractor shall clean the parking meter to the satisfaction of the Engineer.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Parking Meter) to be measured for payment will the number of each parking meter installed in the complete and accepted work.

The quantity of Special Provision (Parking Meter Post) to be measured for payment will the number of each parking meter post installed in the complete and accepted work.

The quantity of Special Provision (Remove and Reset Parking Meter) to be measured for payment will be the number of each parking meter removed and reset in the complete and accepted work.

The quantity of Special Provision (Remove Parking Meter) to be measured for payment will be the number of each parking meter removed in the complete and accepted work.

The quantity of Special Provision (Remove Parking Meter Post) to be measured for payment will the number of each existing parking meter post removed in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Parking Meter) will be paid for at the Contract unit price per each. Payment will be full compensation for removing existing concrete sidewalk as required; performing any excavation required; furnishing, transporting, and installing the parking meter post sleeve, concrete for base, parking meter post, and parking meter; backfilling with granular material; performing sidewalk repair as required; welding; and for

furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Special Provision (Parking Meter Post) will be paid for at the Contract unit price per each. Payment will be full compensation for removing existing concrete sidewalk as required; performing any excavation required; furnishing, transporting, and installing the parking meter post sleeve, concrete for base, and parking meter post; backfilling with granular material; performing sidewalk repair as required; welding; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Special Provision (Remove and Reset Parking Meter) will be paid for at the Contract unit price for each. Payment will be full compensation for removing, cleaning, and resetting the parking meter and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

The accepted quantity of Special Provision (Remove Parking Meter) will be paid for at the Contract unit price for each. Payment will be full compensation for removing the parking meter, including concrete base; for performing excavation incidental to the removal; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work. Removed parking meters shall be returned to the municipality.

The accepted quantity of Special Provision (Remove Parking Meter Post) will be paid for at the Contract unit price per each. Payment will be full compensation for removing existing concrete sidewalk as required; removing parking meter post sleeve and parking meter post; backfilling with granular material; performing sidewalk repair as required; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
900.620 Special Provision (Parking Meter)	Each
900.620 Special Provision (Parking Meter Post)	Each
900.620 Special Provision (Remove and Reset Parking Meter)	Each
900.620 Special Provision (Remove Parking Meter)	Each
900.620 Special Provision (Remove Parking Meter Post)	Each

BRIDGE RAILING, TEXAS

xx. DESCRIPTION. This work shall consist of furnishing and erecting cast-in-place concrete bridge railing (Texas railing) in accordance with the Plans and as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Sections 501 and 525 of the Standard Specifications.

xx.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Bridge Railing, Texas) to be measured for payment will be the number of meters (linear feet) of railing constructed in the complete and accepted work. Measurement will be made along the face of the railing between the pay limits specified.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Bridge Railing, Texas) will be paid for at the Contract unit price per meter (linear foot). Payment shall be full compensation for detailing, furnishing, handling, and placing the materials specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work, including the furnishing of all forms, reinforcing steel, joint filler, admixtures, trial batches, connection plates for approach railing terminal connectors, and satisfactory completion of any necessary repairs, surface finishing, and curing.

Payment will be made under:

Pay Item	Pay Unit
900.640 Special Provision (Bridge Railing, Texas)	Meter (Linear Foot)

Deleted: ,

Deleted: with the exception that the provisions of Subsection 525.03 do not apply.

Deleted: <#>MATERIALS.→Materials shall meet the following requirements:¶
<#>¶
<#>Concrete.→Concrete shall meet the requirements of Section 525.¶
<#>¶
<#>Reinforcing Steel.→Reinforcing→steel→shall→meet→the requirements of Section 507 for Level II Reinforcing Steel.¶
<#>¶
<#>(d)→Connection Plate.→Connection plate for anchoring approach railing terminal connector shall meet the requirements of Subsection 714.02.¶

Deleted: FORMS.→Forms shall conform to the railing design shown on the Plans and the forming requirements of Section 501. Forms shall be constructed to allow for checking and correcting the railing alignment and grade after the concrete has been placed and prior to initial set. The forms shall be reinforced in such a manner that finishing of the railing tops will not disturb the final adjusted alignment.

Deleted: <#>CONCRETE FINISHING.→Concrete bridge railing shall have a dressed finish.→In addition, the following work shall be performed:¶
<#>¶
<#>Repairs/Patching.→→Areas that contain minor defects shall be→repaired.→→Minor→defects→→are→→defined→→as→→holes, honeycombing,→or→spalls→→which→are→…

Deleted: <#>.→Repairs shall be made using an overhead and vertical concrete repair material satisfactory to→→→the Engineer.→The repair material shall be cured as specified …

Commented [GML5]: All of the following is covered in the plans and 2011 standard specification for construction. Bridge Rail specifications were written prior to this spec book, and the special provisions no longer need to contain this content.

Deleted: <#>Cracking.→Cracks less than 0.01 inch in width shall be sealed by a method approved by the Engineer. Cracks in excess of 0.01 inch may be cause for rejection. At the …

Deleted: <#>¶

Deleted: Water Repellent, Silane used within the pay limits of Bridge Railing, Texas will be paid for separately under Contract item 514.10.

Deleted: ¶

PEDESTRIAN HAND RAILING

**From Warren BRF 013-4(14)

xx. DESCRIPTION. This work shall consist of furnishing and erecting pedestrian hand railing at the locations 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 525 of the Standard Specifications.

xx. MATERIALS.

(a) General. Materials for pedestrian hand railing shall meet the requirements specified in the Contract Documents.

(b) Railing and Posts. Pedestrian hand railing and posts shall be made of 50 mm (2 inch) diameter standard steel pipe meeting the requirements of Subsection 714.02. Railing and posts shall be ground smooth and galvanized following fabrication in accordance with Subsection 726.08. The final railing configuration shall stand approximately 1.0 m (3.6 feet) high.

(c) Rail Anchorage. Anchor bolts shall meet the requirements of Subsection 714.07 and shall be galvanized in accordance with AASHTO M 232M/M 232. Base plate steel shall meet the requirements of Subsection 714.02. Base plates shall be ground smooth and galvanized following fabrication in accordance with Subsection 726.08. Mortar shall meet the requirements of Subsection 707.03.

xx. CONSTRUCTION REQUIREMENTS. Pedestrian hand railing shall be installed to the configuration shown in the Plans.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Pedestrian Hand Railing) to be measured for payment will be the number of meters (linear feet) of railing placed in the complete and accepted work, measured within the pay limits designated in the Plans.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Pedestrian Hand Railing) will be paid for at the Contract unit price per meter (linear foot). Payment will be full compensation for detailing, furnishing, handling, and placing the materials specified, including posts and post bases; for performing drilling and grouting necessary for post placement; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
900.640 Special Provision (Pedestrian Hand Railing)	Meter (Linear Foot)

PRESTRESSED CONCRETE SOLID SLABS

**From Fairfield BRF 0281(25) & Fairfield BRO 1448(41)

xx. DESCRIPTION. This work shall consist of manufacturing, transporting, and erecting precast prestressed concrete members.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 510 of the Standard Specifications.

xx. DESIGN AND DRAWINGS. All design details shall be in accordance with the most recent edition of the VTrans Structures Design Manual available on the Agency's website, the AASHTO LRFD Bridge Design Specifications, and the AASHTO LRFD Bridge Construction Specifications.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Prestressed Concrete Solid Slabs) to be measured for payment will be the number of meters (linear feet) of the specified type used in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Prestressed Concrete Solid Slabs) will be paid for at the Contract unit price per meter (linear foot) for the type specified. Payment will be full compensation for detailing, fabricating, repairing, quality control testing, transporting, handling, and installing the materials specified, including the concrete, reinforcement, prestressing steel, transverse ties, enclosures for prestressing steel, anchorages, mortar, anchor rods, any other material contained within or attached to the members, for furnishing and implementing the erection plan, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Any grouting work other than shear keys, such as fairing out unevenness between adjacent units and filling leveling screw holes, transverse anchor recesses, and dowel holes, is considered incidental to the work for Special Provision (Prestressed Concrete Solid Slabs).

Payment will be made under:

Pay Item		Pay Unit
900.640	Special Provision (Prestressed Concrete Solid Slabs)(15” x 48”)	Meter (Linear Foot)

CONSTRUCTION VIBRATION AND CRACK MONITORING

**From Burke BRF 0269(13)

xx. DESCRIPTION. This work shall consist of conducting pre-construction building surveys, developing appropriate vibration trigger levels, and installing vibration and crack monitoring devices to record conditions prior to and during construction activities at the project site.

xx. GENERAL. Vibration producing activities such as blasting, pile driving, vibratory compaction, pavement breaking, or operation of heavy construction equipment required for the construction of this project have the potential for creating damage to surrounding infrastructure and buildings. The Contractor is advised that structures are located in very close proximity to the proposed work and that construction activities shall be conducted so as to preclude damage to these structures. The Contractor is responsible for all damage caused by the Contractor's activities.

Structures immediately to the east of the project work area have been identified as historical and will require extra care to avoid damage.

xx. MATERIALS. The Contractor shall provide Instantel Blastmate III, or equivalent amplitude/frequency vibration monitors (www.instantel.com). These instruments shall be capable of measuring, recording, and producing a hard copy of the frequency and peak particle velocity in three mutually perpendicular axes (Instruments that record "Vector sum" only measurements are not acceptable). These instruments shall be capable of measuring Linear Scale (dB-L) sound levels.

The Contractor shall provide crack monitoring equipment from the following, or an approved equal:

Tell-Tale Crack monitors
RST Instruments Ltd.
Tel.: (800)665-5599
www.rstinstruments.com

Crack monitoring Equipment
Geotest Instrument Corp.
Tel.: (866)430-7645
www.crackgauge.com

Avongard Crack Monitor
Avongard Products U.S.A.
Tel.: (800)244-7241
www.avongard.com

xx. MONITORING CRITERIA.

(a) The Contractor shall provide the services of an independent qualified Engineering Consultant to perform pre-construction surveys of nearby buildings, develop site specific vibration limits that are protective of nearby structures, especially historical structures, and monitor the vibrations along active work zones and any crack monitoring identified as necessary during pre-construction building inspections or created by

current construction activities. The Engineering Consultant shall have at minimum a two year associate's college degree in science or engineering and at least 10 years of experience in seismic monitoring. The Engineering Consultant shall interpret the seismograph records to ensure that the seismograph data will be effectively utilized in the control of the construction activities with respect to the existing structures. The Engineering Consultant used shall be subject to the approval of the Engineer. The Engineering Consultant shall supervise the placement and operation of the seismographs.

The Contractor and Engineering Consultant shall be mindful of the historic nature of the Bed & Breakfast structure located within 15 feet of Abutment 2 of the proposed bridge and shall set appropriate vibration limits in the Vibration Monitoring Plan so that the Contractor does not damage existing above and/or below ground features of this structure during construction.

(b) The Contractor shall provide a description of proposed construction methods, including amplitude descriptions of each vibration producing activity, and a vibration monitoring plan for each activity, including the format for reporting the vibration readings. A minimum of two construction vibration monitoring devices shall be placed within or along the construction zone. These devices shall be placed at locations nearest buildings or structures closest to active construction to optimize evaluation and assessment of potential damage to surrounding features. Additional devices may be required as directed by the Engineer.

(c) In order to establish background conditions, vibration monitoring equipment should be set to record data for at least one full week prior to construction activities. A full report of this information will be provided to the Engineer prior to any construction activities beginning. If the Contractor’s construction means and methods create ground vibrations that result in damage to surrounding buildings or structures, the Engineer will direct that all activities related to those causing the vibration be stopped. The Engineer may also, at any time, halt construction activities if vibration levels exceed those developed by the Engineering Consultant or if there are signs of damage to surrounding buildings and structures. In the event of work being stopped as a result of ground vibrations, the Contractor shall submit to the Engineer a report giving the construction parameter data and include the proposed corrective action for future construction events. In order to proceed with any further vibration producing activities, written permission must be obtained from the Engineer.

(d) Vibration monitoring equipment shall be capable of continuously recording the peak particle velocity and providing a permanent record of the entire vibration event. Copies of all vibration records and associated construction activity (blasting, pile driving, pavement breaking, compaction, etc.) data shall be provided to the Engineer in a format approved by the Engineer.

(e) The Engineering Consultant shall measure the magnitude of each vibration event with at least two vibration instruments,

generally located adjacent to the closest or most critical structures. The vibration monitors shall be amplitude and frequency sensitive and shall be operated during vibration producing activities that produce measurable ground vibrations. In the event that the Contractor chooses to have concurrent vibration producing activities at more than one location adjacent to buildings, the Contractor shall notify the Engineer prior to the commencement of such activities. The Engineer may require additional vibration monitoring instruments at each location depending on site parameters. No vibration producing activities may be started until the appropriate instrumentation is provided by the Contractor and approved by the Engineer.

(f) All vibration instruments shall be powered with rechargeable batteries, and the Contractor shall supply extension geophone and microphone cables so that the instruments can be placed within structures if outside temperatures drop below 32°F.

(g) All vibration instruments shall be supplied with current calibration documents and shall be recalibrated on approximately a six-month use interval. All geophones shall be securely coupled to the ground.

(h) The Contractor shall be responsible for instrument maintenance. If the Contractor does not maintain a sufficient number of instruments to monitor the buildings/structures adjacent to the vibration producing activity, the Engineer may direct that all vibration activities cease until a sufficient number are working. The Contractor’s consultant will be responsible for placing the instruments at measuring locations designated in the monitoring plan, and reading and recording the pertinent vibration levels during pile driving and other construction activities designated by the engineer.

(i) Crack displacement monitoring gages will be installed as appropriate across any significant existing cracks in buildings or structures identified and deemed necessary by the Contractor and Engineer during the Pre-Construction Building Inspections and agreed to by the Property Owner. Readings from the crack monitoring devices should be taken at the time of installation (at least one week prior to construction activities), again, just prior to construction start-up and at intervals during construction established by the Engineering Consultant. The consultant shall take and record readings of all instrumentation during the performance of the work and a report shall be provided to the Engineer within 24 hours of completing the readings.

(j) The Contractor shall also be required to install additional crack monitoring devices as necessary and directed by the Engineer as a result of cracks that are identified or develop during construction.

xx. Pre-Construction Condition Survey. The Contractor shall conduct a pre-construction condition survey of any buildings, structures, or utilities within a 150 foot radius of the construction operations creating vibrations. The survey method used shall be acceptable to the Contractor's insurance company, the Agency, and local authorities. The

Contractor shall be responsible for any damage resulting from construction activities. The pre-construction condition survey records shall be made available to the Engineer for review. Occupants of local buildings shall be notified by the Contractor prior to the commencement of activities which may generate excessive vibrations.

xx. SUBMITTALS. The Contractor shall submit their proposed construction vibration monitoring plan for the structural health of nearby buildings and structures to the Engineer for review and approval a minimum of 14 days prior to the start of construction. The submittals shall include the following:

(a) The qualifications of the Engineering Consultant. Include a list of three projects (with references) in the past five years where the Consultant has successfully developed vibration criteria and monitored construction activities on projects similar to the scope of the current project.

(b) A description of the monitoring equipment and current calibration documentation.

(c) Plan view showing number and locations of seismographs and crack gages being monitored.

(d) Proposed vibration limits for the particular construction activities under consideration.

(e) A list of structures, utilities and all other facilities which in the judgment of the Engineering Consultant require a pre and post construction condition survey. Particular attention shall be given to historic structures, structures in poor condition, structures supported by vibration sensitive materials which could cause settlement or loss of support, and structures which contain sensitive equipment or processes.

(f) Procedures to be implemented if it is determined that the proposed construction activity cannot be reasonably implemented without exceeding vibration limits that are necessary to protect adjacent facilities.

xx. PUBLIC RELATIONS. The Contractor is required to contact residents and owners or operators of the buildings along within 150 feet of active construction work zones. This contact will be made prior to the beginning of any vibration producing activity. The Contractor shall furnish to the Engineer a list of those contacted.

The Contractor shall maintain a log of all vibration related complaints, contacts, and actions, and shall furnish copy(ies) to the Engineer upon request.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Construction Vibration and Crack Monitoring) to be measured for payment will be on a lump sum basis in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Construction Vibration and Crack Monitoring) will be paid for at the Contract lump sum price. Payment will be full compensation for developing safe vibration limits, installing the monitors, recording the vibrations and crack movement, making all necessary submittals, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
900.645 Special Provision (Construction Vibration and Crack Monitoring)	Lump Sum

TRAFFIC CONTROL

XX. 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.

XX. SUBMITTALS. The Contractor shall submit to the Project Manager for acceptance 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.

XX. TRAFFIC CONTROL DEVICES. Temporary traffic barrier shall meet the requirements of Section 621. Traffic control devices shall meet the requirements of Section 641.

XX. 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.

The quantities for Uniformed Traffic Officers, Flaggers, Portable Changeable Message Signs will be measured separately in accordance with Section 630 and 641.

XX. 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 temporary traffic barrier, temporary pavement markings, and signing; and for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

Uniformed Traffic Officers, Flaggers, and Portable Changeable Message Signs will be paid for separately under Contract items 630.10, 630.15, and 641.15 respectively.

Payment will be made under:

Pay Item	Pay Unit

900.645 Special Provision (Traffic Control, All-Inclusive) Lump Sum

BITUMINOUS CONCRETE PAVEMENT, TYPE IVB

xx. DESCRIPTION. This work shall consist of constructing one or more courses of bituminous mixture on a prepared foundation in accordance with these specifications and the specific requirements of the type of surface being placed, and in reasonably close conformity with the lines, grades, thicknesses, and typical cross sections shown on the Plans or established by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans, and the appropriate provisions of Section 490 of the Standard Specifications.

xx. MATERIALS. Materials shall meet the requirements of Section 490 of the Standard Specifications.

xx. COMPOSITION OF MIXTURE.

(a) Design Criteria. Design criteria shall meet the requirements of Subsection 490.03 of the Standard Specifications and additional requirements as specified herein.

(1) Type IVB Material shall have an air void target of 3.0% (with a 1.0% production tolerance).

(2) Type IVB bituminous material shall be designed and produced with a 0.0% RAP content.

(3) Type IVB material shall meet the gradation requirements of Superpave Bituminous Concrete Pavement Type IVS as contained in Table 490.03A of Section 490.

xx. COMPACTION. Compaction shall meet the requirements of Subsection 490.14 of the Standard Specifications as modified herein.

The density of the compacted pavement shall be at least 92.0%, but not more than 97.0%, of the corresponding average maximum specific gravity for each mix type (each mix design) of bituminous mix placed upon any individual bridge deck and a pay factor adjustment applied as per the table below. For material that falls outside of this range, payment will be made by adjusting the production totals in accordance with the table below.

TABLE 490.14A – DENSITY PAY FACTORS (BRIDGE MIX)

Average Density, %	Density Pay Factor, PF(d)
89.0 - 90.4	- 0.250
90.5 - 91.9	- 0.150
92.0 - 93.4	0.000
93.5 - 95.4	0.150
95.5 - 97.0	0.000
97.1 - 98.5	-0.150

For material with an average density that is less than 89.0% or in excess of 98.5%, the material will be removed and replaced by the Contractor at no expense to the Agency.

It shall be the responsibility of the Contractor to conduct proper process control the Contractor deems necessary. Acceptance testing will be conducted by Agency personnel using cores extracted and provided by the Contractor. The cores taken for acceptance testing will be the final cores taken for determination of density.

When the Contract provides for a mat density pay adjustment and the Agency elects not to take cores of any pavement course, the Density Pay Factor (PF(d)) will be considered to be equal to 0.000.

Bridge decks with a length equal to or greater than 6m (20 feet) will be cored for the purpose of analyzing density of the bridge deck pavement per this Subsection. The minimum number of cores samples, or "sublots", to be analyzed per bridge deck shall not be less than 4. Core sublots will be restricted to travel and passing lanes only and will be taken at the rate of 2 sublots per bridge deck lane for those bridges less than or equal to 400 feet in length. For those bridges greater than 400 but less than or equal to 650 feet in length, core samples will be taken at the rate of 3 sublots per bridge deck lane. For those bridges greater than 650 feet in length, core samples will be taken at the rate of 4 sublots per bridge deck lane. Core samples will not be taken within 150 mm (6 inches) of a longitudinal construction joint nor within 5 m (15 feet) of a mechanical bridge joint. Random and independent mat and / or shoulder core sampling locations may be selected by the Engineer to afford verification of this Subsection.

Additionally, for those Contracts having single, or multiple, bridge decks within the project limits, each individual bridge deck shall be considered a "lot" for the purpose of analyzing for density with any associated density pay factor adjustment applied to that lot. Bridge decks of a length less than 6m (20 feet) will not be analyzed for density.

All compaction equipment used to achieve bridge deck compaction shall be "static" in nature. Vibratory equipment may be used provided that equipment is operated in "static" mode. All requirements of this provision and Subsection 490.14 shall apply regardless of the type of compaction equipment used.

When the Contract does not provide for a mat density pay adjustment, the Contractor shall, prior to performing any construction operations, submit to the Engineer for approval the proposed rolling pattern and compaction equipment intended to be used on the project. Random investigative cores shall be taken by Contractor personnel and submitted to the Engineer for the purpose of verifying the effectiveness of the compaction equipment and rolling pattern used. Pending results of any investigative cores, the Contractor shall make any necessary adjustments to achieve acceptable densities as defined herein.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Bituminous Concrete Pavement, Type IVB) to be measured for payment will be the number of metric tons (tons) for a lot of mixture (each type) complete in place in the accepted work (Q) as determined from the weigh tickets.

The quantities of all applicable Pay Adjustments calculated for the project will be determined as specified below.

When applicable, and when the density pay factor, PF(d), for a lot of Special Provision (Bituminous Concrete Pavement, Type IVB) is less than or greater than 0.000, the measured quantity of Special Provision (Bituminous Concrete Pavement, Type IVB) placed that day, or placed per bridge for any bridge project, will be multiplied by such pay factor to determine a Mat Density Pay Adjustment, (PA(d)), to the accepted tonnage placed (Q) for that lot based on the Contract bid price (B), as follows:

$$PA(d) = PF(d) \times Q \times B$$

xx. BASIS OF PAYMENT. The measured quantity of Special Provision (Bituminous Concrete Pavement, Type IVB) will be paid for at the Contract unit price per metric ton (ton). Payment shall be full compensation for furnishing, mixing, hauling, and placing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment for Pay Adjustments shall be debited against the Contract prices (Lump Units) bid for the Pay Adjustment items.

The cost of repairing bridge deck core areas will not be paid for separately, but will be considered incidental to Special Provision (Bituminous Concrete Pavement, Type IVB).

The costs of furnishing testing facilities and supplies at the plant will be considered included in the Contract unit price of Special Provision (Bituminous Concrete Pavement, Type IVB).

The costs of obtaining, furnishing, transporting, and providing the straightedges required by Subsection 406.16 or Subsection 490.16, as appropriate, will be paid for under the appropriate Section 631 pay item included in the Contract.

The costs associated with obtaining samples for acceptance testing will be incidental to the cost of Special Provision (Bituminous Concrete Pavement, Type IVB).

When not specified as items in the Contract, the costs of cleaning and filling joints and cracks, sweeping and cleaning existing paved surfaces, the emulsified asphalt applied to tack these surfaces, and tacking of manholes, curbing, gutters, and other contact surfaces will not be paid for directly, but will be incidental to Special Provision (Bituminous Concrete Pavement, Type IVB).

Special Provision (Bituminous Concrete Pavement, Type IVB) mixture approved by the Engineer for use in correcting deficiencies in the base course constructed as part of the Contract will not be paid for as Special Provision (Bituminous Concrete Pavement, Type IVB), but will be incidental to the Contract item for the specified type of base course.

Special Provision (Bituminous Concrete Pavement, Type IVB) mixture used to correct deficiencies in an existing pavement or to adjust the grade of a bituminous concrete surface completed under the Contract will be paid

for at the Contract unit price for Special Provision (Bituminous Concrete Pavement, Type IVB).

Payment will be made under:

Pay Item		Pay Unit
900.650	Special Provision (Mat Density Pay Adjustment, Type IVB)(N.A.B.I.)	Lump Unit
900.680	Special Provision (Bituminous Concrete Pavement, Type IVB)	Ton

REMOVE AND RESET BRICK PAVERS

**From Statewide STP SDWK(11)

xx. DESCRIPTION. This work shall consist of removing and resetting brick pavers at the locations indicated in the Plans and as directed by the Engineer.

xx. QUALIFICATIONS.

(a) The installer shall provide their installation history, including installation of brick pavers, to the Engineer.

(b) The installer's foreman shall have a minimum of 5 years of experience in the installation of unit paver systems of similar size and complexity.

xx. CONSTRUCTION REQUIREMENTS. The bricks shall be removed and stacked on pallets prior to resetting.

The setting bed aggregate (ASTM No. 8) shall be spread evenly over the base course and screed to a minimum nominal 1–1/2 inch thickness.

ASTM No. 8 Gradation for Bedding Layer

Sieve Size	Percent Passing
1/2″ (12.5 mm)	100
3/8″ (9.5 mm)	85-100
No. 4 (4.75 mm)	10-30
No. 8 (2.36 mm)	0-10
No. 16 (1.16 mm)	

For installation on setting bed aggregate and soil subgrade, the installer should be aware that the top surface of the pavers shall be flush with the surrounding bricks after compaction.

The bedding material shall not be disturbed or pre-compacted after it has been screed.

Brick pavers shall be free of foreign material prior to resetting installation.

Brick pavers shall be set in accordance with the existing pattern.

Typical joints between the pavers shall be no less than 1/16 inch and no more than 3/16 inch in width.

Brick pavers shall be cut as necessary to accommodate field conditions and to achieve an accurate and consistent fit to the existing pattern. Pavers shall be free from stain, dirt, or dust after cutting. Paver units shall not be cut to a size smaller than one-third of a whole paver.

xx. METHOD OF MEASUREMENT. The quantity of Special Provision (Remove and Reset Brick Pavers) to be measured for payment will be the number of square meters (square feet) brick pavers removed and reset in the complete and accepted work.

xx. BASIS OF PAYMENT. The accepted quantity of Special Provision (Remove and Reset Brick Pavers) will be paid for at the Contract unit price per square meter (square foot). Payment will be full compensation for removing, storing, and resetting brick pavers and for furnishing all materials, labor, tools, equipment, and incidental necessary to complete the work.

Removal of excess pavers not required to be reset will be paid for under Contract item 203.16.

Commented [LG1]: 529.20 Partial Removal of Structure

Payment will be made under:

Pay Item	Pay Unit
900.670 Special Provision (Remove and Reset Brick Pavers)	Square Foot
900.675 Special Provision (Remove and Reset Brick Pavers)	Square Meter