

Revised June 11, 2018

Special Provisions for: Montpelier BO 1446(36)

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 October 14th, 2019.
3. 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.

4. 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 June 6, 2018. No exceptions will be made to this requirement.

5. NOTICE TO BIDDERS - ABSENCE OF THE ENGINEER. 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.
6. NOTICE TO BIDDERS - Electronic Document Management. The Contractor is hereby notified that the Contractor, their subcontractors, and suppliers shall create a Doc Express account and use the program 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.

To create an account and 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>

7. STANDARD SPECIFICATIONS. The provisions of the 2011 STANDARD SPECIFICATIONS FOR CONSTRUCTION, as modified herein, shall apply to this Contract.
8. 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
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
Stream Alteration Consultation HD-06-0009 dated April 11, 2016
Application for Certificate of Compliance Z-2016-0121 dated September 15, 2016
Notice of Zoning Permit Z-2016-0121 dated December 9, 2016
Army Corps of Engineers Permit #NAE-2016-01105 February 2, 2018
VTPIF Water Line Components for New Water Line on Montpelier BO 1446(36) dated May 11, 2018
Earth Disturbance Plan Sheet dated October 23, 2015
Impervious Surface Plan Sheet dated October 23, 2015
Wetland Impacts Plan Sheet dated October 23, 2015
OHW Impacts Plan Sheet dated October 23, 2015
Certification for Federal-Aid Contracts
Contractor's EEO Certification Form
Debarment & Non-Collusion Affidavit

9. 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.
10. 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.

11. NOTICE TO BIDDERS - STAGING SITES. The Contractor is hereby notified that the Vermont Natural Resources Board shall require VTrans contractors planning to use staging sites governed by preexisting Act 250 permits to notify District Coordinators prior to using these sites. Complying with preexisting Act 250 permits at these sites is the sole responsibility of the landowner and the Contractor, not the State.
12. 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/cgit/cargo.cfm>.
13. NOTICE TO BIDDERS - CONTAMINATED SHARPS (HYPODERMIC NEEDLES). The Contractor is hereby notified that there are an increasing number of hypodermic needles (also known as contaminated sharps) being found throughout Vermont, and there is the potential to find them along any project. In accordance with Section 107.05, Sanitary Provisions, the Contractor is required to provide a neat and sanitary working environment for each of its employees and workers at no additional cost to the Agency.

If sharps are encountered on site in an area where work is required, the Contractors can reach out to the nearest VTrans District garage. There may or may not be someone who can assist with the disposal. If the Contractor chooses to pick them up, the blood borne pathogens OSHA Standard 1910.1030 should be followed. OSHA has an e-tool for disposal of sharps on their website as well. The standard can be found at the following link: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=10051

If the sharps are not in an area where the Contractor or workers will come into contact with them, it is best practice to avoid them altogether. The area can be marked and workers should be notified to stay out of the area.

14. NOTICE TO BIDDERS - GEOTECHNICAL DATA REPORT. The Contractor is hereby notified of the Geotechnical Data Report for this project. This report is available from the Contract Administration FTP site and "Advertised Projects" website, and is being provided during the bid solicitation period for this project for informational purposes only.

15. 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
Materials and Research Engineer	Materials Manager
Director of Operations	Director of Maintenance and Operations Bureau

16. NOTICE TO BIDDERS - BUILDING INSPECTION. For the protection of the Contractor and all property owners, before beginning any construction activities, the Contractor's insurer shall video inspect, inside and out, potentially affected properties within the project limits. The following building(s) shall be inspected:

- (a) Brooks Property (Sta. 13+04 RT to Sta. 13+95 RT)
- (b) Bertolino Property (Sta. 12+84 LT to Sta. 13+30 LT)
- (c) Haviland Property (Sta. 13+30 LT to Sta. 13+95 LT)
- (d) Crawford Property (Sta. 14+76 LT to Sta. 17+25 LT)

The Contractor's insurer shall notify the Engineer when the video is complete and the video shall be available upon request by the agency.

Following the completion of backfill activities at abutment one, the Contractor's insurer shall again video inspect, inside and out, The Brooks Property, Bertolino Property, and Haviland Property as described above. Following the completion of pile driving at abutment two, the Contractor's insurer shall again video inspect, inside and out, The Crawford Property as described above. The Contractor's insurer shall again notify the Engineer when the video is complete and the video shall be available upon request by the Agency.

Upon completion of project construction, the Contractor's insurer shall again completely inspect, inside and out, and make a complete video CD record of all buildings as part of the inspection. A written copy of the complete inspection report shall be delivered to the Engineer by the Contractor. The video shall remain the property of the Contractor's insurer for one year after the project completion date.

All members of the insurer's inspection team shall personally identify themselves to the Engineer prior to beginning each inspection. The Engineer shall be given a minimum one (1) week notice prior to each inspection date. The Engineer will provide each property owner a minimum of two (2) days' notice prior to each inspection.

All costs involved in performing this work will be considered incidental to all Contract items.

17. NOTICE TO BIDDERS - TEMPORARY BRIDGE SEASONAL RESTRICTIONS. The Contractor has the option of installing the temporary bridge and its approaches in either the 2018 or 2019 construction season.
 - (a) If the temporary bridge and its approaches are completed in the 2018 construction season, the temporary bridge shall remain closed to traffic until April 15, 2019.
18. NOTICE TO BIDDERS - TEMPORARY CONSTRUCTION SIGNS. 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.
 - (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) 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.
 - (g) 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.
19. NOTICE TO BIDDERS - RETROREFLECTIVE SHEETING. 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.

20. 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 $\geq 3''$ and/or habitat features on bridge structures.

It is anticipated that the Contractor will be required to cut trees $\geq 3''$ in diameter and/or conduct bridge related activities within the identified project limits as part of the work. An acoustic survey of the project area resulted in no detected presence of the species. 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 $\geq 3''$ in diameter outside of the contract project limits shall require review under Section 105.25 Control of Waste, Borrow, and Staging Areas.

21. UTILITIES. Existing aerial facilities owned by Green Mountain Power Corporation, Comcast Communications, and FairPoint Communications will be adjusted, as necessary, by employees or agents of the above company in approximate accordance with the "Utility Relocation Layout" shown on the project plans.

Existing underground sewer facilities owned by the City of Montpelier will not require adjustment. The Contractor is cautioned to protect these facilities from damage. Exploratory excavation may be necessary to protect these facilities from damage.

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

Existing sewer manholes owned by the City of Montpelier may require adjustments to match the new finished grade elevation. Necessary elevation adjustments to the City owned manholes will be performed by the Contractor in accordance with Item 604.42, "Changing Elevation of Sewer Manholes."

The Contractor shall install a temporary 4" water system, attached to the temporary bridge, as defined in the project plans, specifications, and contract quantities. Coordination with the City of Montpelier Public Works Department shall be continuously maintained to allow adequate notice for field inspection by the City, or their representative, during construction.

The Contractor shall install a permanent 8" water system, attached to the permanent new bridge, as defined in the project plans, specifications and contract quantities. Coordination with the City of Montpelier Public Works Department shall be continuously maintained to allow adequate notice for field inspection by the City, or their representative, during construction.

Contacts for these utilities are:

Green Mountain Power	Lauren Kelley	(802)229-7929
Comcast Communications	Bruce Bowser	(802)225-1801 EXT14 [(802)316-9324 Cell]
FairPoint Communications:	John Pomeroy	(802) 295-8187 [(802)735-7029 Cell]
Montpelier Director Public Works	Tom McArdle	(802) 223-9508
Assistant Director/City Engineer	Kurt Motyka	(802) 223-9508

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.

22. NOTICE TO BIDDERS - SALVAGED MATERIALS. The Contractor is hereby notified that the Steel Plating spanning from the westerly approach onto the bridge shall be removed and not re-used on the project. The plate shall remain the property of the Town.

All costs for loading and delivering these salvaged materials will be incidental to Contract item 529.15, "Removal of Structure".

The Contractor shall load all of the salvaged materials onto suitable transport and deliver them to the town.

The Contractor shall contact Thomas McArdle [Tel.: (802) 223-9508] a minimum of two (2) weeks prior to beginning delivery to the designated location.

23. NOTICE TO BIDDERS - AFAD. The Contractor is hereby notified that Automated Flagger Assistance Devices (AFADs) may be used as a safety enhancement to flaggers on an hour-for-hour basis. AFADs shall meet the following requirements:

- (a) All AFAD applications shall meet the requirements of the applicable sections of the current edition of the Manual on Uniform Traffic Control Devices (MUTCD).
- (b) All AFAD applications shall be in accordance with NCHRP Report 350 or the MASH for the applicable test level and device weight. Documentation of the crashworthiness of the device shall be submitted to the Engineer for approval prior to use on the project.
- (c) AFAD applications shall be controlled by a flagger meeting the requirements of Section 630.
- (d) Should an AFAD malfunction or otherwise not function as intended they shall be replaced by another AFAD or flagger(s) or work shall cease and the roadway shall be opened to unrestricted traffic flow immediately.
- (e) Each AFAD will be considered equivalent to one flagger and shall be measured and paid for on an hourly basis under Item 630.15 Flaggers. One hour of AFAD use shall be paid for as one hour of flagging.
- (f) Flaggers will only be measured for payment when actually performing flagging duties. Flaggers controlling AFADs but not actually flagging will not be measured for payment, but will be considered incidental to the Contract lump sum price for Item 641.10 Traffic Control, or Item 900.645 Special Provision (Traffic Control, All-Inclusive), as applicable.
- (g) The use of AFADs may be suspended at the discretion of the Engineer.

24. 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. All trucks or equipment so stopped or parked shall be at least 4 feet from the edge of the through traffic lanes. Parking or stopping on the traveled portion of the roadway or ramps, or at locked gate access locations, will not be permitted unless authorized by the Engineer to meet field conditions.

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

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

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

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

25. 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) 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 12 feet. This paved width shall remain free of obstructions and obstacles at all times.
- (c) 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.

- (d) 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.
- (e) 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.
- (f) Where possible, a 2 inch space should be maintained between all final pavement markings and parallel joints in bituminous concrete pavement.
- (g) 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.
- (h) 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).
- (i) 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>.

- (j) 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.

- (k) There are special events throughout the year that may require close communication and coordination between the Contractor and the municipality to reduce conflicts. The municipality will advise the Engineer and Contractor of the specifics of each event and the Engineer will direct the Contractor as to what actions, if any, may be necessary on the Contractor's part to minimize impacts to the event.

SECTION 406 - MARSHALL BITUMINOUS CONCRETE PAVEMENT
AND
SECTION 490 - SUPERPAVE BITUMINOUS CONCRETE PAVEMENT

26. NOTICE TO BIDDERS. The Contractor is hereby notified that Subsections 406.04 and 490.04, WEATHER AND SEASONAL LIMITATIONS have been deleted in their entirety and replaced with the following:

Bituminous material shall not be placed when the ambient air temperature and existing surface temperature at the paving site in the shade and away from artificial heat is below 40°F for courses 1 ¼ inches or greater in compacted thickness or below 50°F for courses less than 1 ¼ inches in compacted thickness. The minimum delivery, placement and compaction temperatures must be reviewed to accommodate the reduced temperature of Warm Mix Asphalt (WMA). The minimum ambient air and existing surface temperature limitations may be lowered to 35°F for WMA.

Bituminous material shall not be placed on a wet or frozen surface or when weather or other conditions would prevent the proper handling, finishing, or compacting of the material, unless otherwise approved by the Engineer. Paving, including placement of temporary pavements, shall be divided into two seasons, "In-Season" and "Extended-Season". In-Season paving occurs from May 1 - November 1, and Extended Season paving occurs from November 2 - April 30. In-Season wearing course material placement is defined as between the dates of May 15 and October 15. All other wearing course placement dates shall be defined as out of season. The following requirements shall apply unless otherwise authorized or directed by the Engineer.

Should paving operations be scheduled during the Extended Season, the Contractor must submit an Extended Season Paving Plan for the project that addresses minimum delivered mix temperature considering WMA, PMA or other additives, maximum paver speed, enhanced rolling patterns and the method to balance mixture delivery and placement operations. Paving during Extended Season shall not commence until the Engineer has approved the plan.

When it is in the public interest, the Construction Engineer may adjust the ambient air temperature requirements, pavement temperature requirements, or extend the dates of the paving season.

ASPHALT PRICE ADJUSTMENT

27. 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.
28. 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 \$479.00 per ton.

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 item 900.680 "Special Provision (Bituminous Concrete Pavement, Small Quantity)" 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 501 - HPC STRUCTURAL CONCRETE

29. 501.02 MATERIALS, is hereby modified by adding the following:

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

A new concrete mix design shall be submitted indicating the product, dosage and appropriate mix volume adjustments. A shrinkage reducing 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 or a product considered to be equivalent by the Research section. The final dosage rate will be determined by the product representative and the concrete producer. The volume of water contributed to the hydration of the cementitious material will be computed into the final water/cementitious ratio.

Manufacturer: Sika Construction Product Division

Product name: - Sika Control 40

Tel.: 1-800-933-7452

Website:

<http://usa.sika.com/dms/getredirect.get/us01.webdms.sika.com/39>

Manufacturer: The Euclid Chemical Company

Product name: Eucon SRA

Tel.: 1-800-321-7628

Website:

http://www.euclidchemical.com/fileshare/ProductFiles/techdata/eucon_sra.pdf

Manufacturer: BASF (Master Builders)

Product name: MasterLife SRA 20

Tel.: 1-800-628-9900

Website: [http://assets.master-builders-](http://assets.master-builders-solutions.basf.com/Shared%20Documents/EB%20Construction%20Chemicals%20-%20US/Admixture%20Systems/Data%20Sheets/MasterLife/BASF-masterlife-sra-20-tds.pdf)

[solutions.basf.com/Shared%20Documents/EB%20Construction%20Chemicals%20-%20US/Admixture%20Systems/Data%20Sheets/MasterLife/BASF-masterlife-sra-20-tds.pdf](http://assets.master-builders-solutions.basf.com/Shared%20Documents/EB%20Construction%20Chemicals%20-%20US/Admixture%20Systems/Data%20Sheets/MasterLife/BASF-masterlife-sra-20-tds.pdf)

Manufacturer: Grace Construction Products

Product name: Eclipse 4500

Tel.: 1-877-423-6491

Website:

www.buildsite.com/pdf/wrgrace/Eclipse-4500-Product-Data-578947.pdf

SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN

30. SECTION 652 - EROSION PREVENTION & SEDIMENT CONTROL PLAN, is hereby made a new Section of the Specifications as follows:

31. 652.01 DESCRIPTION. This work shall consist of designing, furnishing, and submitting for acceptance modifications to the Contract Erosion Prevention & Sediment Control Plan (hereinto known as the EPSC Plan), becoming a co-permittee with the Agency of Transportation, State of Vermont on associated permits, monitoring the EPSC Plan using an On-Site Plan Coordinator, and maintaining the erosion prevention and sediment control measures to ensure the effectiveness of the EPSC Plan.
32. 652.02 MATERIALS. Materials required for the field work maintenance of the EPSC Plan shall meet all requirements of the appropriate Section of the VAOT Standard Specifications for Construction.

Materials including manuals, checklists, forms, and other supporting documentation necessary to meet the requirements of these provisions and maintain compliance with associated permits shall be made available to the Engineer by the Contractor and maintained on site by the Contractor. Supporting documents associated with the requirements of General Permit 3-9020 are available upon request to ANR or from the ANR Stormwater web page. The VTrans Erosion Prevention and Sediment Control Plan Contractor Checklist and Low Risk Site Inspection Form are available from the VTrans Construction Environmental Engineer.

33. 652.03 QUALIFICATIONS. Modifications to the EPSC Plan shall be prepared and signed by a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent, hereinafter called the "Preparer."
34. 652.04 EROSION PREVENTION & SEDIMENT CONTROL PLAN. The EPSC Plan, developed using a combination of structural, non-structural, and vegetative practices to adequately prevent erosion and control sedimentation, and meeting the requirements of the VTrans Erosion Prevention & Sediment Control Plan Designer Checklist (Non-Jurisdictional and Low Risk) or the Vermont Standards & Specifications for Erosion Prevention & Sediment Control based on area of disturbance and risk, has been included in the Contract Documents.

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

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

All work shown in the EPSC Plan shall be included in the Contractor's CPM Progress Schedule, as required by Subsection 900.620 "Special Provision (CPM Schedule).

35. 652.05 SUBMITTALS. Three sets of the modified EPSC Plan as well as the updated Risk Evaluation, stamped and signed by the Preparer, shall be submitted to the Construction Engineer as Construction Drawings in accordance with Section 105. Submittals shall occur after award of the Contract but not later than the Pre-Construction Conference to allow time for review by the Agency. An Acceptance Memo or comments will be provided to the Contractor within 10 working days.

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

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

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

36. 652.06 MONITORING EROSION PREVENTION & SEDIMENT CONTROL PLAN. The Contractor shall designate a person (On-Site Plan Coordinator) who is directly responsible for the on-site implementation of the EPSC Plan. This person shall generally be on-site on a daily basis during active construction and have the authority to halt construction activities if necessary. The On-Site Plan Coordinator shall have demonstrated experience in construction practices as they relate to erosion prevention and sediment control as well as a general understanding of State and Federal environmental regulations and permits pertaining to the National Pollutant Discharge Elimination System Construction Program. The On-Site Plan Coordinator shall be proficient at reading and interpreting engineering and EPSC plans. Preference will be given to a Licensed Professional Civil Engineer registered in the State of Vermont or a qualified professional in erosion prevention and sediment control, certified by CPESC, Inc. or equivalent. The qualifications of the On-Site Plan Coordinator shall be included in the EPSC Plan. The Engineer, if not satisfied with the performance of this individual, may at any time request a replacement.

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

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

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

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

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

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

All deficiencies and corrective measures taken shall be documented on the reports.

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

37. 652.07 MAINTENANCE OF EROSION PREVENTION & SEDIMENT CONTROL PLAN. This work shall consist of providing all labor and equipment necessary for field maintenance of erosion prevention and sediment control items in the Contract, and providing materials and labor necessary for installing, monitoring, maintaining and, where necessary, removing additional measures needed to correct deficiencies that develop during construction that lessen the performance of the EPSC Plan. Erosion prevention and sediment control measures shall be maintained by the Contractor and removed when authorized by the Engineer. The Contractor shall establish vegetation in all areas disturbed during removal of the erosion prevention and sediment control measures.

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

38. 652.08 METHOD OF MEASUREMENT. The quantity of EPSC Plan to be measured for payment will be on a lump sum basis in the complete and accepted work.

The quantity of Monitoring EPSC Plan will be measured to the nearest 1/4 hour for the actual number of authorized hours spent monitoring, reviewing, and reporting on the construction site(s), including waste, borrow and staging areas or other support activities, as it relates to the EPSC Plan. Travel time and other time not spent at the construction site(s) or time not authorized will not be measured for payment (i.e. travel expenses, clerical staff time, copying, miscellaneous expenses, overhead, etc.).

The quantity of Maintenance of EPSC Plan will be on a lump unit basis for all such field maintenance provided for in the Contract, excluding waste, borrow and staging areas or other support activities.

39. 652.09 BASIS OF PAYMENT. The accepted quantity of EPSC Plan will be paid for at the Contract lump sum price. Payment will be full compensation for the initial preparation of modifications, submittals, and all incidentals necessary to complete the work. Subsequent modifications to the EPSC Plan during Construction will be considered incidental to Contract item 652.10.

Partial payments will be made as follows:

- (a) The first payment of 50 percent of the lump sum price for the EPSC Plan will be paid for upon acceptance of the EPSC Plan for the entire project.
- (b) The second payment of 35 percent of the lump sum price for the EPSC Plan will be made on the first estimate following the completion of 50 percent of the project.
- (c) The third payment of 15 percent of the lump sum price for the EPSC Plan will be made when the project is substantially complete.

The accepted quantity of Monitoring EPSC Plan will be paid for at the Contract unit price per hour. Payment will be full compensation for performing the work specified. Payment will not be made unless a report for the monitoring is submitted to and accepted by the Engineer.

The accepted quantity of Maintenance of EPSC Plan will be paid for as specified for force account work in Subsection 109.06. Payments will be drawn against the Contract Lump Unit amount. To provide a common proposal for all bidders, the Agency has entered an amount in the proposal to become part of the Contractor's total bid. Maintenance related to material supply and disposal areas shall be performed in accordance with Subsection 105.29.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
652.10 EPSC Plan	Lump Sum
652.20 Monitoring EPSC Plan	Hour
652.30 Maintenance of EPSC Plan (N.A.B.I.)	Lump Unit

SECTION 675 - TRAFFIC SIGNS

40. 675.02 MATERIALS, is hereby modified by deleting the fifth paragraph in its entirety and replacing it with the following:

All new signs installed shall include a decal on the back of the sign with the following information (in 1 inch numbers and text) and as shown in the examples:

Ownership	Swanton (Town or VTrans)
Date Fabricated	06/16 (MM/YY)
Route	US 5 (US XX, VT XX, TH XX)

"Ownership" shall refer to the entity owning the sign. Generally, signs on State Highways and US Routes, as well as stop signs and legal load signs on Town Highways at the intersection with a State or US Route belong to VTrans. All other signs on Class 1, 2 and 3 Town Highways belong to the town.

"Date Fabricated" shall be the month and year of sign fabrication in MM/YY date format.

"Route" shall be the designation of the route the sign is located on. Note that in the case of stop and legal load signs at the intersection of a Town Highway and State Highways, the Owner will be VTrans and the Route will be US XX or VT XX.

SECTION 690 - FUEL PRICE ADJUSTMENT

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

42. 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.

43. 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 \$2.84 per gallon. The index price (retail) for diesel fuel is \$3.22 per gallon.

- (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 $PPD/IPD \leq 0.95$ or ≥ 1.05 and $PPG/IPG > 0.95$ and < 1.05 :
 $PA = FUFD \times \text{Pay Item Quantity} \times (PPD - IPD)$

For $PPD/IPD > 0.95$ and < 1.05 and $PPG/IPG \leq 0.95$ or ≥ 1.05 :
 $PA = FUFG \times \text{Pay Item Quantity} \times (PPG - IPG)$

For PPD/IPD and PPG/IPG ≤ 0.95 or ≥ 1.05 :

$PA = [FUFD \times (PPD - IPD) + FUGG \times (PPG - IPG)] \times \text{Pay Item Quantity}$

- (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:

<u>Pay Item</u>	<u>Pay Unit</u>
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 (FUF D)	Gasoline (FUF G)	Quantity Threshold
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
	208.30	GAL/CY	0.35	0.16	2,000
	208.35	GAL/CY	0.39	0.18	2,000
Borrow	203.30	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	204.30	GAL/CY	1	0.16	1,500
Cold Planing, Bituminous Pavement	210.10	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	310.20	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
	490.30	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 ¹	900.675	GAL/TON	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	0.10	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	613.10	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	621.20	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

¹ Note that the pay unit is square yards, but the adjustment is based on tons placed.

SECTION 900 - SPECIAL PROVISION ITEMS

CPM SCHEDULE

44. 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.

45. 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 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.
46. 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.

47. 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:
- (a) Actual start dates of each activity started;
 - (b) Actual finish dates of each activity finished, or remaining durations of activities started but not yet completed;
 - (c) 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.
 - (d) The Original schedule shall be shown as a Baseline
48. REVISIONS. Schedule revisions shall be submitted within ten (10) calendar days after any of the following:
- (a) A written request to revise the schedule from the Engineer;
 - (b) A delay (actual or projected) to scheduled milestones or project completion dates;
 - (c) 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;
 - (d) 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;
 - (e) Issuance of a Change Order/Supplemental Agreement(s) that adds time to the Contract;

(f) 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.

- 49. FLOAT. Any float in the schedule is to be credited to the project only.
- 50. 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.
- 51. 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.
- 52. 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.

(a) Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (CPM Schedule)	Each

GATE VALVE WITH VALVE BOX, ALL-INCLUSIVE

- 53. DESCRIPTION. This work shall consist of the construction of gate valves, valve boxes, and appurtenances.
- 54. MATERIALS.
 - (a) Valves
 - (1) Refer to plans for locations of valves and valve boxes.
 - (2) Valves shall be manufactured to meet all requirements of AWWA Specifications C509. Valves twelve inches (12") and smaller shall be bubble tight, zero leakage at 200 psi working pressure, 350 psi test pressure minimum.
 - (3) Valves shall have non-rising stems, open counterclockwise and be provided with a two inch (2") square operating nut with arrow cast in metal to indicate direction of opening.

- (4) Each valve shall have maker's name, pressure ratings, and year in which manufactured cast on the body. Prior to shipment from the factory, each valve shall be tested by hydrostatic pressure equal to twice the specified working pressure.

55. VALVE BOXES.

- (1) Valve boxes shall be of the cast iron slide-type with five and one-quarter inch (5 1/4") shaft and six-foot (6') trench depth.
- (2) Valve boxes shall have a cast iron cover marked "WATER" and it shall indicate direction of opening.
- (3) Boxes shall enclose fittings and dirt-tight with the top of the cover flush with the top of the box rim with a minimum overlap of 6" in the extended position (to grade).
- (4) Valve boxes shall be three-piece slide type.

56. GENERAL.

(a) Valves

- (1) Valves shall be set with the stem vertical on a firm foundation and supported by tamping selected material under and at the sides of the valve.
- (2) All exposed parts of any bolts shall be heavily coated with (2) coats of bituminous paint.

(b) Valve Boxes - Install all valve boxes, covers, and extension pieces (if required) so that:

- (1) Finished installation is plumb over the valve opening nut of each buried gate valve.
 - a. Reinstall all valve boxes, covers, and extension pieces out of plumb.
- (2) Valve box fits properly and completely over valve bonnet as it is designed to do.

Height of finished installation to be as follows:

- (1) In paved and nonpaved roadway, driveway, or other vehicular areas, top of valve box and cover to be flush with finished grade.
- (2) In nonvehicular areas leave top of valve box and cover two (2) inches above finished grade or as directed by the Engineer.

57. METHOD OF MEASUREMENT. The quantity of Special Provision (Gate Valve with Valve Box, All-Inclusive) of the size specified to be measured for payment by the number of valves with boxes installed in place in the complete and accepted work.

58. BASIS OF PAYMENT. Payment for "Special Provision (Gate Valve with Valve Box, All-Inclusive) of the size specified shall be made at the Contract unit price for each. Payment shall be full compensation for all material, labor, tools and equipment necessary for installation, including furnishing and installing the valve, any fittings, pipe nipples, centering discs, adaptors, thrust restraint extensions, and grip ring retainer glands as necessary for the installation; all clearing and grubbing, cutting and removal of pavement (including cement concrete pavement), excavation, excavation support, temporary controls, dewatering (including the use of crushed stone), bedding, jointing, sheeting and bracing, testing, backfilling, gravel sub-base, compaction, hauling and proper disposal of excess and unsuitable material off-site, and all other work necessary or incidental to the satisfactory completion of this item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Gate Valve with Valve Box, All-Inclusive) (4"Dia.)	Each
900.620 Special Provision (Gate Valve with Valve Box, All-Inclusive) (8"Dia.)	Each

WATER SERVICE CONNECTION, ALL-INCLUSIVE

59. DESCRIPTION. The quantity to be paid for under Water Service Connection, All-Inclusive will be the number of corporations with curb stops and boxes installed in place.

60. MATERIALS.

(a) Corporations

- (1) Shall be Brass and manufactured in accordance with AWWA C800. Corporations shall have threads, adopted as AWWA Figure 1, at the inlet and a compression type fitting at the outlet. Both inlet and outlet shall be of the same size.
- (2) Shall be directly tapped into ductile iron pipe.
- (3) Tapping saddles are required for all corporations on the PVC pipe in accordance with the recommendations of the PVC pipe manufacturer. Saddles to double strap saddle type with 304 stainless steel bands.

(b) Curb stops

- (1) Shall conform with AWWA-C-800-05, State of Vermont and ANSI/NSF61 latest standards.
- (2) Both inlet and outlet of the curb stop shall have compression-type fittings for copper tubing.

(c) Curb Boxes and Rods

- (1) Boxes shall be of the sliding adjustable-type capable of adjusting from five feet to six feet.
- (2) Shall have stainless steel stationary rod at 36" minimum length.
- (3) Inside diameter upper section of 1".
- (4) Lid with a brass pentagon plug.
- (5) When a curb box is installed in a paved area, a top section of a gate valve road box shall be installed over the curb box and the trench patch shall be installed such that the road box is 1/2" lower than the finish grade, with the cover accessible to workers.

61. GENERAL.

(a) Corporations

- (1) Shall be installed in the pipe at the 10 o'clock or 2 o'clock position.
- (2) Shall be tightened only sufficiently to be watertight and care must be constantly exercised not to over tighten them.
- (3) Shall be installed in PVC pipe using a service saddle in accordance with pipe manufacturer.

(b) Curb stops

- (1) Install per manufacturer's instructions.
- (2)
- (3) Install to ensure watertight connection.
- (4) Curb stop shall rest on a 4" x 8" concrete block for support.

(c) Curb Boxes and Rods

- (1) Box to be centered vertically over the operating key, with the elevation of the top adjusted to conform to the finished grade.
- (2) Adequately support the box during backfilling to maintain vertical alignment.

62. METHOD OF MEASUREMENT. The quantity of Special Provision (Water service connection, All-Inclusive) (1" Dia.) to be measured for payment by the number of corporation valves with curb stops and boxes installed in the complete and accepted work.

63. PAYMENT. Payment shall be made at the contract unit price, which price shall be full compensation for all materials, labor, tools and equipment necessary for installation of 1" corporation, curb stop and valve boxes including furnishing and installing the valve, any fittings, pipe nipples, centering discs, adaptors. Also including all, clearing and grubbing, cutting and removal of pavement (including cement concrete pavement), excavation, excavation support, temporary controls, dewatering (including the use of crushed stone), bedding, jointing, sheeting and bracing, testing, backfilling, gravel sub-base, compaction, hauling and proper disposal of excess and unsuitable material off-site, and all other work necessary or incidental to the satisfactory completion of this item. Payment excludes gate valves and valve boxes.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Water service connection, All-Inclusive) (1" Dia.)	Each

DR-14 C900 WATER MAIN WITH TRACER WIRE, ALL-INCLUSIVE

64. DESCRIPTION. This work shall consist of the construction of the permanent 8" water main with tracer wire.

65. MATERIALS.

(a) Pipe

- (1) Pipe shall be 8" PVC Pressure Pipe, AWWA C900-07 Standard, Ductile Iron Outside diameter, wall thickness of DR series 14 Pressure Class, 305 PSI working pressure or approved equal.
- (2) Gaskets to be push-on gasketed joint, elastomeric gasket, AWWA C900-07 Standard (exterior buried use).

(b) Fittings

- (1) Ductile iron fittings shall conform to AWWA C110 and ANSI Specification A21.10, 350 Pounds working pressure, and be of a compact body design.
- (2) Retainer glands shall be rated for 350 psi and shall be Grip Ring or approved equal.

(c) Rigid Board Insulation

- (1) Shall be Foamular 250 (Tongue and Groove) or approved equal.
- (2) 48" Wide x 96" Long.
- (3) Minimum Compressive Strength of 25 psi.

(d) Air Release / Chlorine Injection Taps

- (1) Utilize the same materials noted in Item 900.620 "Special Provision (Water Service Connection)" EXCEPT use $\frac{3}{4}$ " sized connections.

(e) Tracer Wire, Connectors & Access Boxes

- (1) Shall be Copperhead High Strength (1230 HS) (or approved equal).
- (2) Shall be #12 AWG high-strength copper clad steel with a minimum of 380 break load Or approved equal.
- (3) Insulated with a 30-mil, high-density, high molecular weight polyethylene rated for direct burial use at 30 volts.
- (4) Connectors shall be manufactured by the same manufacturer as the tracer wire.
- (5) Connectors shall be waterproof, corrosion proof, and specifically designed for use with tracer wire.
- (6) Access boxes shall be manufactured by the same manufacturer as the tracer wire.
- (7) Access boxes shall be magnetized and include a corrosion-resistant brass wire lug and wax pad to cover connections after installation.
- (8) Access boxes shall be furnished with a direct connection to the locator transmitter without opening the box cover.
- (9) Access boxes shall be provided with a blue cover for potable water applications and shall have the word "water" cast into the cap.
- (10) Boxes to be furnished with a pentagon locking cover and be H-20 loaded for heavy traffic.

(f) Metallic Detector Tape

- (1) Shall be 1-mil metallic foil case, encased in a protective polyethylene jacket.
- (2) Shall be blue on one side and have "CAUTION BURIED WATER LINE BELOW" printed.

(g) Concrete

- (1) Shall be Class B, unless otherwise specified, and shall conform to the requirements of Section 541.

66. General.

(a) Pipe

- (1) Lay piping on a firm bed for the entire trench length as indicated on the Contract Drawings. Blocking of pipe will not be permitted.

- (2) Except as otherwise specified, PVC pressure waterpipe shall be installed in accordance with American Water Works Association (AWWA) Manual of Practice, M23.
- (3) Pipe shall be laid with bell ends facing in the direction of laying, unless directed otherwise by the Engineer. Where pipe is laid on a grade of 5% or greater, the laying shall start at the bottom and shall proceed upward with the bell ends of the pipe upgrade.
- (4) Every precaution shall be taken to prevent foreign materials from entering the pipe while it is being placed in the line.
- (5) At times when pipelaying is not in progress, the open ends of installed pipe shall be closed by a watertight plug.
- (6) Unsuitable Conditions for Laying Pipe: No pipe shall be laid in water or when the trench conditions or the weather are unsuitable for such work. No trench water shall be permitted to enter the pipe.
- (7) Concrete thrust blocks shall be installed on all plugs, tees, reducers and bends deflecting 1 1/4 degrees or more. Care shall be taken to ensure that concrete will not come in contact with flanges, joints, or bolts. The required area of thrust blocks is indicated on the plans or shall be as approved by the design/project engineer.
- (8) All trenching safety standards shall be in conformance with all applicable State and Federal guidelines.
- (9) After the various pipelines have been installed, the trenches and other areas to be filled shall be backfilled to subgrade with, wherever possible, material excavated from the trench.
- (10) All material for backfilling shall be free of roots, stumps, and frost. Materials used for backfilling trenches shall be free of stones weighing over 30 pounds. No stones measuring over three inches in the longest dimension shall be placed within one foot (1') of the pipeline being backfilled.
- (11) Backfill for all pipelines shall be placed in six-inch (6") layers, each layer being thoroughly compacted to not less than 95 percent of maximum dry density as determined by the AASHTO-T-99 Standard Proctor. Precautions shall be taken in the placement and compaction of the backfill material in order not to damage the pipe or structure. The backfill shall be brought up evenly.
- (12) All field cut pipe ends shall be chamfered to avoid damage to the gasket and facilitate assembly. When cutting of pipe is required, the cutting shall be done with power saws. Cut ends shall be smooth and at right angles to the pipe. Cut pipe ends shall be beveled and de-burred on interior and exterior.

- (13) All pipe and fittings shall be inspected and tested in accordance with the manufacturer's specifications and the appropriate AWWA specifications. The pipe manufacturer shall certify that all tests have been performed with satisfactory results. Pipe fittings shall not be installed without approval of the OWNER. If tail piece sections are extended beyond the curb stop, the testing shall include the tail piece section.
- (14) Except as otherwise directed, all pipelines shall be tested. Pipelines laid in excavation or bedded in concrete shall be tested prior to backfilling or the placing of concrete, and any exposed piping shall be tested prior to field painting.
- (15) The contractor shall furnish all gauges, testing plugs, caps and all other necessary equipment and labor to perform leakage and pressure test in sections of an approved length. Test equipment shall have pressure relief valves so that water system components are not over-pressurized. Provide proper thrust restraint for all fittings and valves. All water required for testing shall be potable. All testing shall be conducted in the presence of the Inspector.
- (16) The Contractor shall make the necessary provisions to tap the pipe at the high point to release all air and shall plug the same tap after completing the test. Hydrants or blow offs located at high points may be used for air release in lieu of taps.
- (17) Flush all piping prior to performing the pressure test. For the pressure test, the contractor shall develop and maintain for two hours a pressure of 200 psi or 150% of the working pressure, measured in pounds per square inch, whichever is greater. If the test pressure cannot be maintained within 5 psi of the required pressure for the two-hour period, then that constitutes a failure of the section tested.
- (18) The leakage test shall be performed concurrently with the pressure test. During the test, the contractor shall measure the quantity of water required to maintain the test pressure. Leakage shall not exceed the quantity given by:

$$L = S \times D \times \sqrt{P} / 7,400$$

Where: L = Allowable leakage in gallons/hour
S = Length of pipe being tested
D = Diameter of pipe in inches
P = Average test pressure in psi

All testing shall be conducted in accordance with AWWA C600 latest revision in the presence of the inspector.

- (19) Should any section of pipe fail either the pressure or leakage tests, the contractor shall do everything necessary to locate, repair, and replace the defective pipe, fittings, or joints at their own expense.

- (20) Chlorination of the water main shall be conducted only after the main has been flushed and a clear stream is obtained as determined by the inspector. The contractor shall furnish all labor, equipment, materials, and tools necessary for disinfection.
- (21) All water piping shall be flushed at a minimum velocity of 2.5 feet per second.
- (22) Care shall be taken to protect property from erosion or other damage during flushing operations.
- (23) The pipe and appurtenances shall be disinfected in accordance with the AWWA Standard for Disinfecting Water Mains, C651, except for the tablet method.
- (24) The preferred method of disinfection shall be by the continuous feed method unless otherwise approved by the City of Montpelier or their designated representative. After filling, flushing, and addition of chlorine solution, chlorine within the pipe shall be approximately 50 mg/l. All disinfection shall be performed under the supervision of the City of Montpelier or their designated representative. No less than 24 hours after the addition of chlorine, a second sample shall be taken to test for residual chlorine. If the residual chlorine level is less than 10 mg/l after 24 hours, the line must be re-chlorinated. If the residual chlorine is 10 mg/l or greater, the line should be flushed until the chlorine concentration is less than 1.0 mg/l. After the chlorine level is reduced below this level, a sample shall be provided to the State Department of Health for bacteriological testing. A second sample shall be taken to an approved laboratory within 24 hours of the first. The disinfection process shall be deemed acceptable only after samples of water from the flushed disinfected main show no evidence of bacteriological contamination.
- (25) The contractor shall prevent the introduction of heavily chlorinated water into any active portions of the water distribution system.
- (26) The contractor shall comply with all laws relevant to the discharge of chlorinated water. Water discharged directly or indirectly to water bodies shall not have a chlorine level greater than 0.1 ppm. Water bodies shall include all rivers, streams, creeks, brooks, reservoirs, ponds, lakes, springs, wetlands, and any body of surface water, artificial or natural.
- (27) Any required permits for the discharge of chlorinated water (local or State) are the responsibility of the contractor.
- (28) All test results shall be provided to the inspector prior to approval of the line. No service connections shall be made until these results have been reviewed and approved.

- (29) The pipeline and appurtenances shall be maintained in an uncontaminated condition until final acceptance. Disinfection shall be repeated when and where required at no expense to the owner until final acceptance by the inspector.
 - (30) The City of Montpelier does allow for water lines to be tested against existing valves. If the contractor chooses not to test against the existing valve, they are to provide all materials (valves, connections, fittings etc.) as deemed necessary to complete all pressure testing at no additional cost to the Owner.
 - (31) The contractor shall be responsible for submittal of all test results to the inspector on Forms provided by the City of Montpelier public works department for that purpose in these specifications. The inspector shall provide a final letter to the City of Montpelier certifying that the water system has passed all tests and is constructed in accordance with the approved plans.
- (b) Fittings
- (1) Shall be constructed in accordance with AWWA C-900
- (c) Rigid Board Insulation
- (1) Laid in two layers of continuous insulation, full width of trench.
 - (2) Stagger joints so that no joints of the two layers are one over the other.
 - (3) Cut and fit as required.
- (d) Air Release / Chlorine Injection Taps
- (1) Construct as described in Special Provision (Water Service Connection, All-Inclusive).
- (e) Tracer Wire, Connectors & Access Boxes
- (1) Tracer wire system to be installed as a single continuous wire, except where approved connectors are used. No looping or coiling of wire is allowed.
 - (2) Any damage occurred during installation must be immediately repaired by removing the damaged wire and installing a new section of wire with the approved connectors. Taping and spray coating is not allowed.
 - (3) Tracer wire shall be taped to the pipe at 8' intervals.
 - (4) Tracer wire to be grounded as recommended by the manufacturer.
 - (5) Mainline tracer wire shall not be connected to existing conductive pipes.
 - (6) All tracer wire terminations must utilize an approved tracer wire access box.

- (7) A minimum of 2 feet of excess wire is required at all tracer wire access boxes after meeting final elevations.
- (8) All tracer wire access boxes must include a manually interruptible conductive/connective link between the terminals for the tracer wire connection and the terminal for the grounding anode wire connection.
- (9) Ground anode wires shall be connected to the identified terminal on all access boxes
- (10) There is a total of 4 access box locations, which are shown on the contract plans.

(f) Metallic Detector Tape

- (1) Shall be buried 4"-6" below grade.

67. METHOD OF MEASUREMENT. The quantity of Special Provision (DR-14 C900 Water Main with Tracer Wire, All-Inclusive) of the specified diameter to be measured by the number of linear feet as measured along the centerline of the pipe performed in the complete and accepted work. No deduction will be made for bends, elbows, valves, and tees.

68. BASIS OF PAYMENT. The accepted quantity of Special Provision (DR-14 C900 Water Main with Tracer Wire, All-Inclusive) of the specified diameter will be paid for at the Contract unit price per linear foot. Payment will be full compensation for all work and expense incidental thereto for the complete furnishing and installing of all pipe, fittings, plugs, tracer wire, tracer wire boxes, metallic tape, thrust blocks, and other materials required for building the pipelines; for dewatering, clearing and grubbing, excavating (except boulder and rock excavation as defined in subsection 204.01 of the Standard Specifications), laying, setting and joining all pipe and fittings, for making all connections to existing pipes, for all testing including hydrostatic and leakage tests, for flushing and disinfecting, backfilling and fill as shown on the contract drawings, any temporary shoring and bracing of existing structures, including holding utility poles and damage which may be done to such structures, temporary sheeting, shoring and bracing used for control of ground water; for all labor tools and construction equipment and for all other work and expense incidental thereto, except as specifically provided for under the various other items in the schedule of prices. Payment excludes gate valves and valve boxes.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.640 Special Provision (DR-14 C900 Water Main with Tracer Wire, All-Inclusive(8" Dia.)	Linear Foot

FABRIC SCREENING FENCE

69. DESCRIPTION. This work shall consist of furnishing, erecting, maintaining, and removing privacy fence during construction at the location(s) indicated in the Plans and as directed by the Engineer.

This work under this Section shall be performed in accordance with these provisions, the Plans, and Section 620 of the Standard Specifications.

70. MATERIALS. Geotextile fabric used for the privacy fence shall be woven shade cloth made from polypropylene strands. The fabric shall block out a minimum 70% light and be green in color.

71. INSTALLATION. Fencing shall be provided and erected to the configuration shown in the Contract documents.

72. METHOD OF MEASUREMENT. The quantity of Special Provision (Fabric Screening Fence) to be measured for payment will be the number of linear feet installed in the complete and accepted work. Measurement will be along the top of the fence from outside to outside of end posts for each continuous run of fence.

73. BASIS FOR PAYMENT. The accepted quantity of Special Provision (Fabric Screening Fence) will be paid for at the Contract unit price per linear foot. Payment will be full compensation for furnishing, transporting, handling, assembling, placing, maintaining, and removing the materials specified, and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.640 Special Provision (Fabric Screening Fence)	Linear Foot

SEAMLESS COPPER WATER TUBE, ALL-INCLUSIVE

74. DESCRIPTION. This work shall consist of the construction of copper water service piping and connections to existing service from the corporation stop to the curb stop and from the curb stop to the existing service pipe.

75. MATERIALS.

- (a) Copper tubing shall be type "K", soft temper, conforming to ASTM B88, 1" diameter.
- (b) All service line materials shall have the name or trademark of the manufacturer stamped at regular intervals along the pipe.
- (c) Adapter couplings may be required for fitting new services to existing services. Such fitting shall be flared connections and provide electrical continuity.

76. GENERAL.

- (a) All service connections shall be laid at a minimum depth of 6'.
- (b) Service connection taps to the main water line shall only be performed by firms qualified to perform the service connection tap.

- (c) Provide a "goose neck" in the new copper service, after connection to the main.
- (d) Extra care needs to be exercised to ensure that pipe does not have kinks or is installed near sharp stones or bedrock.
- (e) Lay piping on a firm bed for the entire trench length as indicated on the Contract.
- (f) The bedding material shall consist of sand or gravel from the trench bottom, six inches below the pipe invert to the centerline of pipe. Gravel shall mean a material reasonable free from silt, loam, clay or organic material containing no more than 8% by weight passing the #200 sieve, uniformly graded and the largest stone shall not exceed 3" in any direction.
- (g) No pipe shall be laid directly on ledge, hard shale, or a very compact glacial till.
- (h) All pipe trenches shall be dry during the laying of pipe.

77. METHOD OF MEASUREMENT. The quantities of Special Provision (Seamless Copper Water Tube, All-Inclusive) of the specified diameter to be measured for payment by the number of linear feet of tubing installed in the complete and accepted work.

78. BASIS OF PAYMENT. The accepted quantity of "Special Provision (Seamless Copper Water Tube, All-Inclusive)" of the specified diameter will be paid for at the Contract unit price per linear foot. Payment will be full compensation for the complete furnishing and installing of all pipe, fittings, plugs and other materials required for building the pipelines; for dewatering, clearing and grubbing, excavating (except boulder and rock excavation as defined in subsection 204.01 of the Standard Specifications), laying, setting and joining all pipe and fittings, for making all connections to existing pipes, reconnecting existing water services, for all testing including hydrostatic and leakage tests, for flushing and disinfecting, backfilling and fill as shown on the contract drawings, any temporary shoring and bracing of existing structures, including holding utility poles and damage which may be done to such structures, temporary sheeting, shoring and bracing used for control of ground water; for all labor tools and construction equipment and for all other work and expense incidental thereto, except as specifically provided for under the various other items in the schedule of prices.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.640 Special Provision (Seamless Copper Water Tube, All-Inclusive) (1"Dia.)	Linear Foot

EXISTING WATER MAIN REMOVAL & DISPOSAL

79. DESCRIPTION. This work shall consist of removal and disposal of the existing water main and appurtenances.

80. MATERIALS.

(a) Backfill

(1) Replacement materials shall meet the requirements of Subsection 703.04 "Granular Borrow" in specified areas.

(2) Subbase and other full road restoration material shall be VTrans 301.35 "Dense Graded Subbase Material" as specified in contract plans.

81. GENERAL.

(a) Backfill

(1) All materials to be compacted to 95% modified proctor.

(2) Backfill depths and types of materials change throughout the project. Reference pertinent plans to ensure material types and depths.

82. METHOD OF MEASUREMENT. The quantities of Special Provision (Existing Water Main Removal and Disposal) to be measured for payment will be on a lump sum basis for all existing waterline removed in the complete and accepted work.

83. BASIS OF PAYMENT. Payment shall be made at the contract lump sum price, which price shall include full compensation for all labor, materials, tools, equipment and incidental work necessary for the removal and disposal of the existing 4" water main from the existing 4" valve and cap located near the beginning of Cummings Street to the tie in location on the east side of the bridge.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Existing Water Main Removal and Disposal)	Lump Sum

TRAFFIC CONTROL

84. 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.

85. SUBMITTALS. The Contractor shall submit to the Project Manager for approval a site-specific traffic control plan in accordance with Subsection 105.03. The traffic control plan shall conform to the requirements of the MUTCD and all applicable Agency Standard Drawings. Where conflicts exist, the MUTCD will govern. Each phase of construction shall be included in the submitted traffic control plan. The Contractor shall allow the Agency 14 calendar days to review and respond to the proposed traffic control plan. Field operations will not commence until the submittal has been accepted.

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

87. 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.

If they are used on the project, the quantities for Uniformed Traffic Officers, Flaggers, and Portable Changeable Message Signs will be measured separately in accordance with Sections 630 and 641.

88. 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 and signing; and for furnishing all labor, tools, materials, equipment, and incidentals necessary to complete the work.

If used on the project, Uniformed Traffic Officers, Flaggers and Portable Changeable Message Signs will be paid for separately under Contract items 630.10, 630.15, and 641.15 or 641.17 respectively.

Payment will be made under:

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

TRANSFER TO NEW SYSTEM, WATER SYSTEM, ALL INCLUSIVE

89. DESCRIPTION. This work shall consist of the construction of the temporary water line system and appurtenances.

The work under this Section shall be performed in accordance with these provisions, the Plans, and Section 629 of the Standard Specifications.

90. MATERIALS. The materials and general notes for the materials used for this item are the same as described in the following special provision items and are not repeated in this section.

Item 900.620 Special Provision (Gate Valve with Valve Box, All-Inclusive)

Item 900.620 Special Provision (Water Service Connection, All-Inclusive)
(1" dia.)

Item 900.640 Special Provision (DR-14 C900 Water Main with Tracer Wire, All-Inclusive) (8" dia.)

Item 900.645 Special Provision (Seamless Copper Water Tube, All-Inclusive) (1" Dia.)

Item 900.645 Special Provision (Water Main on Bridge, All-Inclusive) (8" Dia.)

The following revisions pertain to the items included in this section (only differences are diameter of piping used):

(a) Pipe

- (1) 4" diameter TR Flex® Ductile Iron Pipe or approved equal (bridge crossing)
- (2) 4" diameter C900-07, DR 14 PVC Pressure Pipe or approved equal (buried)
- (3) Copper tubing shall be 3/4" diameter

(b) Corporations, Curb Stops and Boxes

- (1) 3/4" corporations and curb stops

(c) Gate Valve & Boxes

- (1) 4" Gate Valve

(d) Fittings & Gaskets

- (1) 4" ductile iron fittings and gaskets

(e) Tapping Sleeves. For existing asbestos cement or gray cast iron pipe.

- (1) Tapping sleeves shall be of the split sleeve design constructed with two solid half-sleeves bolted together.
- (2) Sleeves shall be constructed of cast iron or fabricated steel and shall have a working pressure of 200 psi.
- (3) Cast iron sleeves shall have mechanical joint ends with slide gasket seals. Fabricated steel sleeves shall have end and side gasket seals, and all exterior exposed surfaces shall be fusion-bonded epoxy coated to a minimum of 10 mil thickness.

- (4) All bolts, and nuts used with fabricated steel sleeves shall be ANSI type 304 or 302 stainless steel. All bolts used with all pipe sleeves shall upon final tightening and testing, be brush coated heavily with bitu-mastic cold applied material to thoroughly cover all exposed surfaces of the bolts and nuts.

- 91. GENERAL. All construction methods described for the above noted special provisions, apply to these items.
- 92. METHOD OF MEASUREMENT. The quantity of Special Provision (Transfer to New System, Water System, All-Inclusive) to be measured for payment will be paid for at the contract lump sum price performed in complete and accepted work.
- 93. BASIS OF PAYMENT. The accepted quantity of (Transfer to New System, Water System, All-Inclusive) will be paid for at the contract lump sum price. Payment will be full compensation for all materials, labor, tools and equipment necessary for installation of the new temporary 4" C900-07, DR14, or approved equal and TR Flex®, Class 52 Ductile Iron Pipe or approved equal, to the temporary bridge, across the temporary bridge and the removal and disposal of the temporary water main upon commissioning of the new permanent water main. All work including clearing and grubbing, cutting and removal of pavement (including cement concrete), excavation, excavation support, temporary controls, dewatering (including the use of crushed stone), bedding, jointing, sheeting and bracing, furnishing and installation of the new pre-insulated water mains, fittings to accommodate the installation, retainer glands and new attachment hardware, gate valves, temporary service connections, concrete thrust restraints, temporary trench backfill, flushing and testing of temporary main, installation of new aluminum jacket, installation of a temporary air release/chlorine injection point, testing, backfilling, compaction, restoration of growth and surface (excluding paving, curb and sidewalk within trench limits), restoration of physical features (including steps and fences) removal, hauling and proper disposal of excess and unsuitable material off-site, removal of temporary air release/chlorine injection point to corporation stop, and furnishing all labor, equipment, tools, and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Transfer to New System, Water System, All-Inclusive)	Lump Sum

WATER MAIN ON BRIDGE, ALL-INCLUSIVE

- 94. DESCRIPTION. This work shall consist of the construction of 8" water main and appurtenances on bridge

95. MATERIALS.

(a) Pipe

- (1) Pipe shall be TR Flex ® ductile iron or approved equal with 8" diameter and conforms to current ANSI Specification A21.51. Push-on joint pipe shall be minimum thickness Class 52. Push-on joint accessories shall conform to applicable requirements of ANSI Specification A21.11 or approved equal.
- (2) Pipe shall be double cement mortar lined on the inside in accordance with ANSI specification A21.4 except that the cement lining thickness shall not be less than three sixteenths inch (3/16"). A plus tolerance of one-eighths inch (1/8") will be permitted.
- (3) Pipe shall be given an interior bituminous coating in accordance with ANSI Specification A21.4 and an exterior bituminous coating of coal tar or asphalt base in accordance with ANSI Specification A21.51. (Factory Coatings).
- (4) Pipe to be bacteriologically and pressure tested as described in Item 900.640 Special Provision, DR-14 C900 Water Main with Tracer Wire (All-Inclusive) 8" Diameter.
- (5) Electrical conduit pipe for heat tape shall be 2" SCH 80.

(b) Pipe Insulation

- (1) Shall be a foamed in placed closed cell polyurethane which completely fills the annular space between the carrier pipe and the exterior casing.
- (2) Shall have a minimum density of 2.0 lb/cu. ft., K factor of 0.147 BTU/HR sq/ ft degree F/in. and 90-95% closed cell. A minimum of 2" thickness is required for 4 & 8" Pipe.
- (3) Heat Cable shall be installed on the pipe, prior to the insulation being installed. Heat cable system to be Urecon Constant Watt Thermocable® or approved equal.
- (4) The exterior jacket shall be aluminum spiral casing with joints placed at all fittings to ensure a tight fit and proper insulation.

(c) Pipe Supports/Hangers/Shields/Nuts/Washers

- (1) See sheet S1 of the contract plans for specifications.

(d) Steel Casing & Stainless-Steel Spacers

- (1) Pipe to be Welded and Seamless Pipe, ASTM A53, Grade B, ASTM A139 grade B or ASTM A 252, Grade 2 Pipe. Pipe may be welded or seamless
- (2) Casing shall have minimum wall thickness of 5/16"
- (3) Spacers to be center configuration, Model CCS as manufactured by Cascade Water works or approved equal.

(4) Install spacers and end seals per manufacturer specifications.

96. METHOD OF MEASUREMENT. The quantity of Special Provision (Water Main on Bridge, All-Inclusive) (8" Dia.) to be measured for payment will be on a lump sum basis in the complete and accepted work.

97. BASIS OF PAYMENT. The accepted quantity of Water Main on Bridge (All Inclusive) will be paid for at the contract lump sum price. Payment shall be made at the contract lump sum price, which price shall be full compensation for all materials, transporting, labor, tools and installing the materials specified; all appurtenant work and materials for a complete installation, including but not limited to excavation, bedding, backfill, pipe, fittings, joint restraints, wall sleeves, expansion joints, insulation, jacket, pipe support insulation, heat tape, heat tape conduit, casing, casing spacers, and disinfecting and testing the water main system, for making all necessary connections; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Water Main on Bridge, All-Inclusive) (8" Dia.)	Lump Sum

BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY

98. 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 406 or Section 490 of the Standard Specifications.

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

- Performance-Graded Asphalt Binder.....702.02
- Emulsified Asphalt, RS-1H or CRS-1H.....702.04
- Aggregate for Marshall Bituminous Concrete Pavement.....704.10(a)
- Aggregate for Superpave Bituminous Concrete Pavement.....704.10(b)

Aggregate shall meet requirements relating to Section 406 or 490, where so specified.

The grade of PG asphalt binder used to produce bituminous concrete pavement shall be 70-28. Substitutions will be accepted based on availability where the upper end temperature value is greater than 70°C (158°F) and/or the lower end temperature value is less than -28°C (-18°F).

100. DESIGN MIX TYPES. Design mix types may be substituted based on mix availability. Allowable mix type substitutions will be accepted on a one to one thickness relationship, except as listed in Tables 1 and 2 below.

TABLE 1 - ALLOWABLE 1-1/2" MIX TYPE IVS SUBSTITUTIONS

Design ESALs (millions)	Design	Allowable Substitution	
	490.30 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement ¹	406.27 Med. Duty Bituminous Concrete Pavement ¹
< 0.3	TYPE IVS	TYPE III	TYPE III
0.3 to < 10	TYPE IVS	TYPE III	-
¹ Per Section 406.			

TABLE 2 - ALLOWABLE 3-1/2" MIX TYPE IIS SUBSTITUTIONS

Design ESALs (millions)	Design	Allowable Substitution	
	490.30 Superpave Bituminous Concrete Pavement	406.25 Bituminous Concrete Pavement ¹	406.27 Med. Duty Bituminous Concrete Pavement ¹
< 0.3	TYPE IIS	TYPE I	TYPE I
0.3 to < 10	TYPE IIS	TYPE I	-
¹ Per Section 406.			

101. COMPOSITION OF MIXTURE.

- (a) Gradation. Gradation shall meet the requirements of Section 406 or 490, as appropriate.
- (b) Design Criteria. Design Criteria shall meet the requirements of Section 406 or 490, as appropriate.
- (c) Mix Design. Standard mix design will be in accordance with Subsection 490.03 with an n value of 65 gyrations. Allowable substitutions based on pre-existing approved mix designs and/or n values for intended Contract suppliers are listed in Table 3 below. A request for substitutions must be submitted in writing to the Engineer a minimum of 10 working days prior to production. Any substitutions from the standard mix design or mix types as detailed in the Plans shall not result in any increase in cost to the Agency.

TABLE 3 - ALLOWABLE SPECIFICATION SUBSTITUTIONS

Design ESALs (millions)	Acceptable Specification Substitution		
	Superpave Bituminous Concrete Pavement (Gyrations)	Bituminous Concrete Pavement ¹ (75 Blow)	Med. Duty Bituminous Concrete Pavement ¹ (50 Blow)
< 0.3	50	✓	✓
0.3 to < 10	65 ²	✓	-
¹ Per Section 406.			
² Standard mix design specification.			

(d) Quality Acceptance.

- (1) General. Acceptance sampling and testing will be conducted in accordance with the Agency's Quality Assurance Program as approved by FHWA. Bituminous concrete mixtures designated under these specifications will be sampled a minimum of once per day of production or 500 tons (sublot), or other sublot size deemed appropriate, and evaluated by the Agency for each mix type (each mix design) in accordance with the following acceptance guidelines.
- (2) Acceptance Guidelines. Temperature of the bituminous mixture shall be tested using the Verified Thermometer test method and PG Asphalt Binder content determined from the batch slip. Gradation shall be tested in accordance with AASHTO T 30. Mixture volumetric properties (air voids and VMA) shall be calculated in accordance with Subsections 406.03(b) or 490.03(b), as appropriate.
- (3) Non-Compliant Material.
 - a. Rejection by Contractor. The Contractor may, prior to sampling, elect to remove any defective material and replace it with new material at no expense to the Agency. Any such new material will be sampled, tested, and evaluated for acceptance.
 - b. For any non-compliant material outside the production testing tolerances contained in the applicable Table 406.03C or 490.03C, the representative material (sublot) shall be assessed a mixture pay adjustment according to Table 4 Mixture Pay Adjustment.

TABLE 4 - MIXTURE PAY ADJUSTMENT

Criteria	Deductions to be applied to materials outside production testing tolerance.		
	< 1.5X testing tolerance	= 1.5 - 2.0X testing tolerance	> 2.0X testing tolerance
AIR Voids	-5%	-25%	Remove
VMA	-5%	-25%	Remove
Aggregate passing No. 200 sieve	-5%	-25%	Remove
Aggregate larger than No. 200 sieve	-5% applied to each sieve out of toll	-10% applied to each sieve out of toll	Remove if any sieve out of toll
Filler/AC Ratio	See note 2	See note 2	See note 2
<p>1. Deductions will be applied per the table above in conjunction with the testing tolerances as contained in the applicable table 406.03C or 490.03C - PRODUCTION TESTING TOLERANCES.</p> <p>2. A 5% deduction will be applied and coupled with any other applicable deduction in any case that the filler/asphalt ratio is outside the criteria as contained in the applicable table 406.03B or 490.03B - DESIGN CRITERIA.</p> <p>3. The total deduction to be applied to any mix will be the sum total of all applicable deductions as contained in the table above.</p>			

- (e) Boxed Samples. If Agency plant inspectors are not available for daily testing and inspection functions, then box samples will be taken by the Engineer at the project site to afford verification of mixture volumetrics/properties. Boxed samples will be processed and results reported to the Engineer within ten working days of being received at the Agency Central Laboratory in Berlin, Vermont.

Gradation shall be tested in accordance with AASHTO T 30. Maximum Specific Gravity shall be tested in accordance with AASHTO T 209. Boxed samples will be assessed a mixture pay adjustment factor of 0.000.

- 102. COMPACTION. Special Provision (Bituminous Concrete Pavement, Small Quantity) will be analyzed for density according to the procedure specified below.

The density of the compacted pavement shall be at least 92.0%, but not more than 97.0%, of the corresponding daily average maximum specific gravity for each mix type (each mix design) of bituminous mix placed during each day, or placed per bridge for any bridge project. For material that falls outside of this range, payment will be made by adjusting the daily production totals in accordance with Table 5:

TABLE 5 - DENSITY PAY FACTORS

Average Density	Density Pay Factor, PF(d)
89.0% - 90.4%	- 0.150
90.5% - 91.9%	- 0.100
92.0% - 93.4%	0.000
93.5% - 95.4%	0.150
95.5% - 97.0%	0.000
97.1% - 98.5%	- 0.100

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

Bridges with a length equal to, or greater than, 20 feet will be cored for analyzing density of the bridge deck pavement. The minimum number of cores (taken from the center of the travel lane) shall be two, or as directed by the Engineer. Bridges with a length less than 20 feet will not be cored. Bridge decks or approaches will not be cored within 10 feet of a bridge or construction joint.

Bridge deck core areas shall be repaired with hot bituminous mix to the satisfaction of the Engineer at no additional cost to the Agency.

The cores taken for acceptance testing will be the final cores taken for determination of densities.

When the Contract does not allow for a pay adjustment for mat density the Contractor shall, prior to performing any construction operations, submit to the Engineer for approval the proposed rolling pattern and compaction equipment to be used on the project. Random investigative cores will be taken by Agency personnel on the first day's production of any pavement course, with the exception of the leveling course, to verify effectiveness of the proposed rolling pattern and equipment.

Pending results of the investigative cores, necessary adjustments to the proposed rolling pattern and/or equipment shall be made by the Contractor to achieve densities as directed by the Engineer.

103. METHOD OF MEASUREMENT. The quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) to be measured for payment will be the number of 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 mixture pay factor, PF(mix), for a lot of Special Provision (Bituminous Concrete Pavement, Small Quantity) is less than 0.000, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) placed will be multiplied by such pay factor to determine a Mixture Pay Adjustment, (PA(mix)), to the accepted tonnage placed (Q) for that lot based on the Contract bid price (B), as follows:

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

When applicable, and when the density pay factor, PF(d), for a lot of Special Provision (Bituminous Concrete Pavement, Small Quantity) is less than 0.000, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) 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:

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

104. BASIS OF PAYMENT. The measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) will be paid for at the Contract unit price per 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, Small Quantity).

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, Small Quantity).

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, Small Quantity).

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, Small Quantity).

Special Provision (Bituminous Concrete Pavement, Small Quantity) 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, Small Quantity), but will be incidental to the Contract item for the specified type of base course.

Special Provision (Bituminous Concrete Pavement, Small Quantity) 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, Small Quantity).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.650 Special Provision (Mat Density Pay Adjustment, Small Quantity) (N.A.B.I.)	Lump Unit
900.650 Special Provision (Mixture Pay Adjustment) (N.A.B.I.)	Lump Unit
900.680 Special Provision (Bituminous Concrete Pavement, Small Quantity)	Ton

HAND-PLACED BITUMINOUS CONCRETE MATERIAL, DRIVES

105. DESCRIPTION. This work shall consist of the placement of one or more courses of bituminous concrete material by hand (non-mechanical) methods on a prepared foundation in conformance with the Plans or as directed by the Engineer.

The work under this Section shall be performed in accordance with these provisions, the Plans and Section 406 or Section 490 of the Standard Specifications, as appropriate.

106. GENERAL. This work will include only that bituminous concrete material placed by hand methods as required at public and/or private drives and permitted drives (such as field drives for agriculture) measured from the outside edge of shoulder to outside limit of drive, within the project limits as identified on the Plans or as directed by the Engineer. Bituminous concrete material placed by mechanical methods at these locations is excluded.

All other bituminous materials placed within the project limits, whether by hand or mechanical methods, shall be paid under the appropriate Contract pay item for bituminous mix or as otherwise specified in the Contract Documents.

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

Subbase, RAP.....	301.02
Aggregate Shoulders, RAP.....	402.02
Performance-Graded Asphalt Binder.....	702.02
Emulsified Asphalt.....	702.04
Crushed Gravel for Subbase.....	704.05
Aggregate for Surface Course and Shoulders.....	704.12

Bituminous concrete material of the type specified in the Contract or as specified by the Engineer shall meet the requirements of Section 406 or Section 490, as applicable. For the purpose of this Section, bituminous concrete material to be used shall be of the type specified in the Contract or, by default, of a matching material to that adjacent material placed by mechanical methods.

108. CONSTRUCTION REQUIREMENTS. The existing surface and/or bed (subbase) upon which the bituminous concrete material is to be placed shall be compacted to the line, grade, and shape shown on the Plans or as directed by the Engineer. All vegetation and soft, yielding, or unsuitable material shall be excavated and replaced with properly compacted material meeting the requirements of Section 301 for Subbase of Crushed Gravel, Fine Graded. Crushed RAP generated from the project may be substituted for Subbase of Crushed Gravel, Fine Graded.

The existing edge of pavement shall be saw cut to provide a vertical edge for placing the hand-placed bituminous concrete material.

Emulsified asphalt shall be applied uniformly and completely to all vertical and horizontal surfaces to be paved. All surfaces shall be free of moisture, dust, and debris prior to applying emulsified asphalt.

If cross slope allows, as determined by the Engineer, existing paved drives shall be cold planed the entire drive width to the depth of the wearing course, not to exceed 50 mm (2 inches). Unless the drive is to be paved that day, all cold planed vertical edges shall have temporary fillets placed the same day cold planning takes place.

All existing paved drives shall have all temporary fillets removed; any existing joints, cracks, and holes cleaned; all vertical and horizontal surfaces to be paved coated with emulsified asphalt; all holes filled with bituminous concrete material compacted to the level of the existing surface; and be thoroughly cleaned and dried prior to any hand-placed bituminous concrete material being placed.

Hand-Placed bituminous concrete material shall be rolled with a 1 metric ton (1 ton) mechanical roller with steel drums, or approved equal, until compacted to the satisfaction of the Engineer.

109. METHOD OF MEASUREMENT. The quantity of Special Provision (Hand-Placed Bituminous Concrete Material, Drives) to be measured for payment will be the number of square meters (square yards) complete in place in the accepted work.

Hand-placed bituminous concrete material placed less than 12.5 mm ($\frac{1}{2}$ inch) thick will not be measured for payment.

When any portion or all of Special Provision (Hand-Placed Bituminous Concrete Material, Drives) is removed from the project under any provisions of the Contract or as directed by the Engineer, no payment will be made for the removal, disposal, or replacement of said material.

110. BASIS OF PAYMENT. The measured quantity of Special Provision (Hand-Placed Bituminous Concrete Material, Drives) will be paid for at the Contract unit price per square meter (square yard). Payment shall be full compensation for furnishing, mixing, hauling, placing, compacting, and finishing the material specified and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Emulsified asphalt used as specified and backfill material meeting the requirements specified in the Plans will be considered incidental to Special Provision (Hand-Placed Bituminous Concrete Material, Drives).

When not specified for payment under separate Contract item(s), the costs of placing subbase material, cleaning existing paved surfaces, including power equipment, and for filling joints, cracks, and holes will not be paid for directly, but will be considered incidental to Special Provision (Hand-Placed Bituminous Concrete Material, Drives).

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.675 Special Provision (Hand-Placed Bituminous Concrete Material, Drives)	Square Yard

SECTION 528 - TEMPORARY BRIDGE

111. **528.04 DESIGN AND CONSTRUCTION DETAILS**, part (b) **Bridge**, subpart (2) **Clearances**, is hereby modified by replacing the phrase "4.4 m (14 feet, 6 inches)" with the phrase "13 feet, 9 inches" at the beginning of the first paragraph.