

PROJECT SPECIAL PROVISIONS

PART I – PROJECT NOTICE TO BIDDERS

1. NOTICE TO BIDDERS – CONTRACT COMPLETION DATE. This Contract shall be completed on or before October 15, 2023.
2. NOTICE TO BIDDERS – PROHIBITION OF RUSSIAN GOODS. The Contractor is hereby notified that, pursuant to Vermont Executive Order No. 02-22, dated March 3rd, 2022, the purchase of Russian-sourced goods and goods produced by Russian entities (defined as institutions or companies that are headquartered in Russia or have their principal place of business in Russia) is prohibited. The awarded Contractor must fill out and sign the Executive Order 02-22 Vendor Certification as part of Contract awarding process.
3. NOTICE TO BIDDERS – MEASURES TO MITIGATE POTENTIAL IMPACTS DUE TO THE COVID-19 PANDEMIC. The Contractor is hereby notified that they should anticipate the possibility of future temporary Contract shutdowns, delays, or suspensions as a result of the COVID-19 pandemic. The Contractor shall consider risks associated with the COVID-19 pandemic as the Contractor develops project schedules and advances the work. The Contractor shall schedule work in a manner that in the event of a temporary shutdown, delay, or suspension, the impacts to mobility will be minimized. The sequence and progression of the work will be solely the Contractor's responsibility. The Contractor is expected to communicate with the Agency regularly to discuss the risks to the project and proposed mitigation measures. VTrans will collaborate with the contractor to mitigate the risks to the project and adjust the sequence of work as necessary to ensure that mobility is not impaired unnecessarily.

If a shutdown, suspension, or delay occurs due to the COVID-19 pandemic, the Contractor shall ensure the site is in a stable, safe, and maintainable condition by implementing mitigation measures. Such mitigation measures may include, but are not limited to, limiting the area of milled surfaces exposed at once, or limiting the number of work operations in progress at any one time. The Contractor is solely responsible for any additional maintenance activities or delays related to the sequence and progression of operations. The Agency has established a contract duration which may be longer than expected for the specified work to account for inefficiencies related to the COVID-19 pandemic. The Contractor should anticipate mobility, labor, employee protection measures and material supply issues related to the COVID-19 pandemic. The Contractor is also expected to comply with any Executive Orders.

4. NOTICE TO BIDDERS – SITE CONDITION. Prior to any shutdown or suspension, the site condition shall be in a stable, safe, and maintainable condition for the travelling public. Stable, safe, and maintainable condition means that the Contractor shall establish necessary erosion and environmental controls; ensure that the full width of the roadway is fully paved with no milled sections; install all safety features including guardrail, traffic signs, and pavement markings as designed or restored to the existing condition to meet the existing geometry; and undertake any additional measures as needed based on site conditions. No lane reductions will be allowed through the winter months. Subsection 109.06 will not apply for work that is required to bring a project to a satisfactory shutdown condition. In the event of a project Suspension of Work Ordered by the Engineer, the Contractor will be reimbursed per Subsection 108.16.
5. NOTICE TO BIDDERS – SUBSECTION 108.16(b). Subsection 108.16(b) is hereby modified by adding the following language.
 - (4) The ownership costs for equipment with a current *Blue Book* value in excess of \$200,000.00 on site of an active project at the time of a suspension caused by the COVID-19 pandemic will be paid per Subsection 109.06(c).
6. NOTICE TO BIDDERS – SUBSECTION 631.02(a)(5). Subsection 631.02(a)(5) is hereby modified by adding the following as the second paragraph.

The heating and cooling systems shall be fitted with HEPA air filters meeting the requirements of the most current version of *DOE-STD-3020*. New HEPA filters shall be installed upon initial erection of the Field Office. All HEPA filters shall be replaced with new filters every 12 months, or when airflow through the filter becomes restricted, or as recommended by the manufacturer, whichever is more frequent.
7. NOTICE TO BIDDERS – SUBSECTION 631.02(a)(6). Subsection 631.02(a)(6) is hereby modified by being deleted in its entirety and replaced with the following.
 - (6) Sanitary Facilities and Cleaning Supplies. Sanitary facilities consisting of a flush toilet, chemical toilet, or other approved type, shall be furnished by the Contractor, with proper sewage disposal as is necessary to comply with the requirements and regulations of the State and local Boards of Health and VOSHA. Sanitary facilities shall be cleaned and disinfected regularly, per the CDC guidance at: https://www.cdc.gov/coronavirus/2019-ncov/community/disinfecting-building-facility.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fcommunity%2Freopen-guidance.html. The frequency of cleaning shall be as outlined in the CDC guidance, or as directed by the Engineer. The degree of cleanliness shall be approved by the Engineer. Sanitary facilities shall be provided with either hot, running, potable water and soap, or an alcohol-based hand sanitizer containing at least 70% alcohol by volume, for use in washing hands.

A potable water system consisting of a sink with a faucet within the office, with a continuous supply of pressurized clean potable water, shall be supplied for the duration of the project. When clean potable water is not available, a commercial bottled drinking water system shall be installed in the Field Office complete with necessary disposable drinking cups (8 oz. size or larger), cup dispenser, and continuous water supply furnished for the duration of the project. The system shall supply both hot and cold water. The system and the bottled water shall be furnished by a commercial water service on a regular basis agreeable to the Engineer.

The Contractor shall supply the Field Office with hand sanitizer to be used for washing hands, and with a disinfectant for use in disinfecting surfaces. The hand sanitizer shall be alcohol based and shall contain at least 70% alcohol by volume. The disinfectant shall be one of the products identified on *EPA List N: Disinfectants for Use Against SARS-CoV-2 (COVID-19)*, and shall have a contact time of 5 minutes or less, as specified on *List N*. If the disinfectant supplied is of the liquid or spray-on type, the Contractor shall also supply the Field Office with disposable paper towels for use in applying the disinfectant.

8. NOTICE TO BIDDERS – SUBSECTION 635.03(a). Subsection 635.03(a) is hereby modified by being deleted in its entirety and replaced with the following:

The first payment of 50% of the lump sum price for Mobilization/Demobilization, or 10% of the adjusted Contract price, whichever is less, will be made within 30 days after execution of the Contract.

9. NOTICE TO BIDDERS – NIGHT WORK. The Contractor is hereby notified that night work will be allowed. The engineer may abbreviate this time period as necessary. All work performed at night shall be completed in accordance with subsection 105.14.

For the purposes of this Contract, “night” shall mean the period from sunset until sunrise of the following day for the location of the Project. The time of sunrise and sunset for any day of the year and any location can be determined using the following link: <https://www.esrl.noaa.gov/gmd/grad/solcalc/>.

10. NOTICE TO BIDDERS – NIGHT WORK NOISE RESTRICTIONS. The Contractor shall take measures to control the noise caused by its night work (as defined above) construction operations, including but not limited to noise generated by equipment used for drilling, concrete cutting, pneumatic tools, generating power for lights, compaction, vibration, demolition, excavation, and hauling. The cost for meeting the specified noise level criteria will not be paid for separately, but will be considered incidental to all other Contract items.

- (a) Overview of Noise Measurement. The decibel (dB) is the universal unit of sound measurement and is measured with ammeter that registers sound pressure and displays these readings on a sound level scale. Decibels are a logarithmic unit, which means that a noise measuring 110 decibels is actually 10 times as intense as a noise registering at 100 decibels. Because in certain areas and at certain times of the day, the existing ambient noise level can be significant, the goals for limiting construction noise are relative to the existing ambient conditions.
- (b) Recommended Mitigation Measures. Noise reduction mitigation measures as outlined in the FHWA Construction Noise Handbook (http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook07.cfm) may be utilized by the Contractor and include the following:
- (1) Sequence work such that noisy activities occur concurrently, when possible.
 - (2) Shield or insulate stationary equipment such as air compressors and light towers.
 - (3) Properly maintain equipment with attention to lubrication, air intake, exhaust, and other aspects that impact noise.
 - (4) Employ systems to prevent slamming tailgates on dump trucks.
 - (5) Minimize idling of equipment.
- (c) Required Mitigation Measures. The Contractor shall utilize broadband sound (i.e. “white-noise, whooshing sound”) types of backup alarms, or adjustable backup alarms that can be adjusted down for the ambient noise level. Broadband sound is defined as sound where the acoustic energy is distributed over a very wide frequency range. The spectrum is largely smooth and continuous, except at the extremes.
11. 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 application for collection and management of electronic documents. Doc Express is a web based document management application 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 2018 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.

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 application 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>

12. NOTICE TO BIDDERS – 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 Time on September 14, 2022. No exceptions will be made to this requirement.

13. NOTICE TO BIDDERS – OTHER SPECIFICATIONS AND CONTRACT REQUIREMENTS.

General Permit 3-9050 (Operational Stormwater Permit)
 Construction General Permit 3-9020 (Construction Stormwater Permit)
 Impact Plans
 Required Contract Provisions for Federal-Aid Construction
 Certification for Federal-Aid Contracts
 U.S. Department of Labor Davis-Bacon Wage Rates
 Disadvantaged Business Enterprise (DBE) Policy Contract Requirements
 Bulletin 3.5 Attachment C: Standard State Provisions for Contracts and Grants
 USDOT Standard Title VI/Non-Discrimination Assurances, Appendices A and E
 Standard Federal EEO Specifications
 Contractor's EEO Certification Form
 Vermont Certificate of Compliance
 Vermont Minimum Labor and Truck Rates
 Commodity Index Prices
 Schedule of Pay Items

14. NOTICE TO BIDDERS – DAVIS-BACON. 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.

15. NOTICE TO BIDDERS – GENERAL SPECIAL PROVISIONS. The Contractor is hereby notified that the most recent General Special Provisions in effect on the date of advertisement shall apply to this Contract. The General Special Provisions may be found at the following address:

<https://vtrans.vermont.gov/highway/construct-material/construct-services/pre-contractspecifications/active>

16. NOTICE TO BIDDERS – STANDARD DRAWINGS. The Vermont Agency of Transportation Standard Drawings listed on the Index of Sheets are not included in the plan set, but may be found at the following address:
https://outside.vermont.gov/agency/vtrans/external/CADD/WebFiles/Downloads/Standards/VA_OTconSTD_Owner.xml
17. NOTICE TO BIDDERS – INFORMATIONAL DOCUMENTS. The Contractor is hereby notified that the following informational documents for this Contract are available on iCXWeb and the VTrans Bid Opportunities website. These documents are being provided during the bid solicitation period for informational purposes only.
- (a) Traffic Management Plan (TMP) Checklist
 - (b) Geotechnical Report
18. NOTICE TO BIDDERS – STAGING AND WASTE SITES. The Contractor is hereby notified that the Vermont Natural Resources Board has requested that VTrans contractors planning to use staging and waste sites governed by preexisting Act 250 permits 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.
19. NOTICE TO BIDDERS – ENVIRONMENTAL COMMITMENTS.
- (a) Threatened, Endangered, and Rare Species.
 - (1) The Contractor shall ensure all personnel working on the project site are made aware of the potential presence and protected status of the northern long-eared bat. No suitable bat habitat is present within the project limits and no Time-of-Year (TOY) restrictions are required.

The Contractor is hereby made aware of the potential for TOY restrictions related to proposed Waste, Borrow and Staging areas. Cutting trees ≥ 3 inches in diameter outside of the contract project limits shall require review under Section 105.26 Opening Off-Site Activity Areas.
 - (b) Emerald Ash Borer.
 - (1) As of 2018, emerald ash borer (EAB), *Agrilus planipennis*, has been confirmed within Vermont's borders. To provide an assurance of compliance with state and federal EAB laws the contractor shall adhere to the following:

Known EAB infestation areas are changing rapidly. Therefore the Contractor shall consult the online version of the EAB Infested Area Map (Located here: www.vtinvasives.org/land/emerald-ash-borer-vermont) on the same day cutting is to occur. If the project is located with an EAB infested area, ALL tree material, regardless of species, within the project area shall be handled in accordance with a document developed by the Vermont Department of Forests, Parks and Recreation and the Vermont Agency of Agriculture titled "Recommendations to SLOW THE SPREAD of Emerald Ash Borer When Moving Ash from the Infested Area", <https://vtinvasives.org/sites/default/files/images/SLS/SlowSpreadWoodVT%20FINAL.pdf>. Tree material shall not be moved out of state.

Alternatively, the Contractor may choose to hire a qualified professional (Arborist certified by the International Society of Arboriculture or Licensed Forester), at their own expense, to identify the presence of ash trees. Those identified ash trees would be subject to the above referenced recommendations, however other tree species would not.

The Contractor is also hereby made aware of the same potential restrictions as they relate to proposed Waste, Borrow and Staging areas under Section 105.25 Control of Waste, Borrow, and Staging Areas.

(c) Contaminated/ Urban Soils Background Area

- (1) This project is located within an Urban Soils Background Area, as shown on the Vermont ANR Natural Resources Atlas. These areas have high background levels of certain constituents and the Agency has therefore determined that material generated from these areas should be disposed within an Urban Soil Background Area. These soils shall be reused on-site to the maximum extent possible; however, excess Urban Area soils shall be disposed off-site by the Contractor within a designated Urban Soils Background Area. The process for submittal and review of proposed disposal locations shall be in accordance with Standard Specifications 105.25-105.28.

If the Contractor elects to use an alternate location outside of an Urban Soil Background Area, then soils must be disposed in accordance with the Investigation and Remediation of Contaminated Properties Rule (IRule), FINAL ADOPTED RULE, July 8, 2019 at no additional expense to the project. The alternate location must be reviewed and approved by VTrans in accordance with Sections 105.25-105.28 of the Specifications, and the Contractor must secure all necessary permits and approvals from the Vermont Agency of Natural Resources for the alternate disposal site.

- 20. NOTICE TO BIDDERS – UTILITIES. Existing aerial facilities owned by Green Mountain Power Corporation, Charter Communications, FirstLight Fiber, and Consolidated Communications will be adjusted, as necessary, by employees or agents of the above companies in accordance with the aerial relocation route shown on the project plans. The Contractor is cautioned to protect these facilities from damage.

Existing underground water and sewer facilities owned by the City of Barre will be adjusted by The Contractor in accordance with the details and pay items included in the project plans, and all pertinent project specifications. The Contractor must coordinate inspection and testing, as needed, with the City of Barre.

Contacts for the above listed companies are as follows:

Green Mountain Power	Ryan Kreis	(802) 229-7933
Charter Communications	Craig Benjamin	(802) 249-4935
FirstLight Fiber	Bill Gray	(802) 922-9506
Consolidated Communications	Jeff Richer	(802) 229-7711
City of Barre	Bill Ahearn	(802) 476-0250

There are areas of underground utilities that may require additional locating beyond normal dig safe measures. 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 (N.A.B.I.).

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.

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 Traffic Signal Superintendent, Dan Ertel, to obtain/verify the location of Agency’s underground utility facilities or to confirm the absence of such facilities. Dan can be reached at (802) 343-2188.

The Contractor is advised that many towns are not members of Dig Safe. It is the Contractor's responsibility to check with towns prior to excavation and shall protect and restore utilities damaged within the project and as set forth in the Standard Specifications for Construction 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.

21. NOTICE TO BIDDERS – POST-CONSTRUCTION SOIL DEPTH AND QUALITY STANDARD. The Operational Stormwater Permit authorization requires areas identified in the plans to meet the Post-Construction Soil Depth and Quality Standard, as defined in the 2017 Vermont Stormwater Management Manual. In accordance with this standard, the Contractor shall follow Section 651 with the following additions and modifications:

- (a) Equipment shall be restricted from driving outside of established project demarcation fence or barrier fence.
- (b) Native topsoil, if present, shall be stockpiled and then reused within the project limits.
- (c) Both native and imported topsoil shall be tested in accordance with Subsection 755.02. If results show that the topsoil has less than 4% organic matter, then the topsoil shall be amended with compost at a rate of 1:3 compost to topsoil. The compost shall be a humus-rich material having 40% to 65% organic matter, a carbon to nitrogen ration below 25:1, and meet the definition of compost in the Vermont DEC Solid Waste Management Rules.
- (d) Subsoils shall be scarified or loosened to a depth of 4 inches.
- (e) Topsoil shall be placed in accordance with Subsection 651.05(a) with a minimum depth of 4 inches.

Required depth verification testing will be conducted by the Engineer and will include shovel tests to a minimum depth of 8 inches, driven solely by the individual's weight. A total of nine tests per acre of area subject to the Post-Construction Soil Depth and Quality Standard, spaced a minimum of 50 feet apart, shall be performed. Test locations will be as selected by the Engineer.

Costs for complying with the Post-Construction Soil Depth and Quality Standard will be incidental to all other Contract items.

- 22. NOTICE TO BIDDERS – CONCURRENT CONSTRUCTION. The Contractor is made aware of the following VTrans construction project(s) which are expected to be in progress within the area of this project during its construction.

TABLE 1 – CONCURRENT CONSTRUCTION PROJECTS

Project	Contractor	Anticipated Contract Completion Date
N/A	N/A	N/A

This list is not all-inclusive and it is possible there may be other VTrans, municipal, or private construction projects within the area of this project during its construction.

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

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

- 23. NOTICE TO BIDDERS – SPECIAL CONSTRUCTION REQUIREMENTS.
 - (a) The Contractor shall position Portable Changeable Message Signs at locations determined by the Engineer properly warning motorists of the roadway conditions ahead. As directed by the Engineer, these locations may change during construction as needs arise based on daily work activities. The message to be displayed shall be submitted to the Engineer in advance for approval. The displayed message should accurately reflect what motorists can expect to encounter through the project area. The cost of providing the Portable Changeable Message Signs shall be paid for under Contract item 641.15 or 641.17. The Contractor shall also install and maintain appropriate construction signing warning the traveling public of the expected roadway surface conditions.
 - (b) 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, will be necessary on the Contractor’s part to minimize impacts to the event. Special events that may conflict with Contractor operations are not limited to those which may be listed in this Notice to Bidders. There will be no extra compensation paid to the Contractor for any inconvenience caused by working around any listed or unlisted special events.

For more information about area special events, contact the following:

Barre City: William E. Ahearn, P.E.
Director of Public Works and Engineering
6 N Main St Suite 1
Barre, VT 05641
PWDirector@barrecity.org
802-476-0250

24. NOTICE TO BIDDERS – AFAD. The Contractor is hereby notified that Automated Flagger Assistance Devices (AFADs) are remotely operated devices that enable a certified flagger to be positioned out of the lane of traffic and are used to control motorists through work zones.

AFADs shall only be used in situations where there is no more than one lane of approaching traffic that needs to be controlled. Additionally, since AFADs are not traffic control signals, they shall not be used to replace traffic signals or other continuously operating traffic control devices.

These devices 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 always be controlled by a flagger who has been trained in the operation of the AFAD and who meets the requirements of Section 630. The flagger shall not flag traffic and operate an AFAD at the same time.
- (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 will 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 641.11 Traffic Control, All-Inclusive, as applicable.
- (g) The use of AFADs may be suspended at the discretion of the Engineer.

25. NOTICE TO BIDDERS – PERFORMANCE GRADED ASPHALT BINDER. All permanent pavement on both main line and side streets is required to use the PG binder grade specified elsewhere in the Plans and Specifications. All pavement used for driveways or surface preparation, regardless of the method of placement, will be allowed to use either the binder grade specified elsewhere, or PG 58-28 binder. There will be no additional compensation allowed for using either binder grade.

PART II - SECTION 900 - SPECIAL PROVISIONS ITEMS

JUNCTION BOX, HEAVY DUTY

- 1. DESCRIPTION. This work shall consist of furnishing and installing heavy duty junction boxes at the location(s) shown in the Plans and as directed by the Engineer.
- 2. MATERIALS. Materials shall meet the requirements specified in the Plans.

A Type A Certification shall be furnished.
- 3. CONSTRUCTION REQUIREMENTS. Junction boxes shall be constructed in accordance with the requirements of Section 678, in the locations shown in the plans or as directed by the Engineer.
- 4. METHOD OF MEASUREMENT. The quantity of Special Provision (Junction Box, Heavy Duty) to be measured for payment will be the number of Junction Boxes installed in the complete and accepted work.
- 5. BASIS OF PAYMENT. The accepted quantity of Special Provision (Junction Box, Heavy Duty) will be paid for at the Contract unit price for each. Payment will be full compensation for furnishing, transporting, handling, and installing the materials specified, and for furnishing all labor, tools, equipment and incidentals necessary to complete the work.

<u>Pay Item</u>	<u>Pay Unit</u>
900.620 Special Provision (Junction Box, Heavy Duty)	Each

PRECAST CONCRETE GRAVITY RETAINING WALL

1. DESCRIPTION. This work shall consist of designing, fabricating, furnishing, and erecting a precast concrete gravity retaining wall at the location specified and in conformance with the lines and grades shown on the Plans or as directed by the Engineer.
2. DESIGN REQUIREMENTS. The design shall be performed in accordance with the AASHTO *LRFD Bridge Design Specifications*, and the design criteria specified in the Plans.

Acceptable prefabricated earth retaining systems are those included in the “VAOT Approved Retaining Wall Systems”, available on the Agency’s website at the following address:

<https://outside.vermont.gov/agency/VTRANS/external/docs/construction/03GeotechEng/Engineering/Approved%20Wall%20System%20List.pdf>

Prefabricated earth retaining systems shall employ concrete facing. All wall components shall have a minimum design life of 75 years.

No additional right-of-way, beyond that which has already been acquired for the construction of this project, will be available for the construction of an alternate wall system.

3. MATERIALS. Materials shall meet the following requirements:
 - (a) Precast Concrete. Precast concrete shall meet the requirements of Section 540. The texture of the exposed wall face shall be similar to that of the Redi-Rock LedgeStone blocks. The color of the exposed face shall be similar to that of Solachrome Cool Taupe. The color shall be integrated into the concrete.
 - (b) Reinforcing Steel. Reinforcing steel shall meet the requirements of Sections 507. Corrosion resistance shall be Level I unless otherwise specified in the plans.
 - (c) Geotextile. Geotextile for wall construction shall be a non-woven fabric meeting the requirements of Section 720 for Geotextile for Roadbed Separator, unless otherwise specified by the wall supplier.
 - (d) Backfill. Select granular backfill material used in walls shall be per the manufacturers’ recommendations on the approved fabrication drawings, or at a minimum conform to the requirements of Section 704.18
 - (e) Drainage Aggregate. Drainage aggregate material used in walls shall be per the manufacturer’s recommendations on the approved fabrication drawings, or at a minimum conform to the requirements of Table 704.16A.

4. SUBMITTALS. Working Drawings shall be submitted in accordance with Section 105. The submittal shall include, but not be limited to, all of the following that apply to the particular wall system being constructed:
- (a) Complete design calculations substantiating that the proposed design satisfies the design parameters in the Contract. The wall design calculations shall be signed, stamped, and dated by a Professional Engineer.
 - (b) A plan view of the wall showing the details within the limit of the retaining wall system and the centerline of any drainage pipe which is behind or passes under or through the wall.
 - (c) An elevation view of the wall which shall include the elevations at the top of the wall, at all horizontal and vertical break points and at least every 50 feet along the face of the wall, and at all steps in the leveling pads. The elevation view shall also include the designation as to the type of panel or block, the length of soil reinforcing elements, the distance along the face of the wall to where changes in length of the soil reinforcing elements occur, and an indication of the final ground line and maximum calculated bearing pressures.
 - (d) A typical cross section or cross sections showing the existing ground conditions and proposed grades.
 - (e) All details for foundations and leveling pads, including details for steps in the footings or leveling pads, as well as design maximum and minimum bearing pressures.
 - (f) All details for the wall system including all dimensions necessary to construct the wall.
 - (g) Details of the drainage systems or other facilities required to accommodate the system.
 - (h) The details for connection between the wall and the soil reinforcements as needed.
 - (i) The details for diverting soil reinforcements around obstructions such as guard rail posts, piles, catch basins, and other utilities.
 - (j) All reinforcing details, including type, strength, locations, and lengths of reinforcement used.
 - (k) Any general notes required for the construction of the wall.
 - (l) A listing of the summary of quantities for each wall.
 - (m) Fabrication drawings shall demonstrate compatibility in how the retaining wall will adjoin adjacent structures designed by others.

- (n) Fabrication drawings shall include callouts indicating the applicable AASHTO/ASTM material grades.

Submittals for precast concrete shall meet the requirements of Subsection 540.04.

Approval of the Contractor's Working Drawings shall not relieve the Contractor of any responsibility under the Contract for the successful completion of the work.

5. INSPECTION. Precast concrete inspection will be in accordance with Subsection 540.06.

The Fabricator shall provide a tentative casting schedule in accordance with Subsection 105.03 to the Engineer and Structural Concrete Engineer for the following casting week a minimum of 3 calendar days prior (a casting week will be Sunday to Saturday). The Fabricator shall maintain a Quality Control file that shall contain at a minimum the piece identification, date and time cast, concrete test results, quantity of concrete used per element, batch quantity printout, cylinder results, and aggregate gradation and moisture.

Advance notification of at least 14 calendar days shall be provided by the Fabricator to the Agency's Engineer and Structural Concrete Engineer concerning the proposed intention to commence work. A minimum of 5 working days notification must be provided to the Structural Concrete Engineer by the Fabricator to confirm the fabrication start date.

The Inspector shall have the authority to reject any material or work that does not meet the requirements of these specifications.

Prior to shipment of any members, the Materials Acceptance Unit will have approved all applicable material certifications.

6. ACCEPTANCE REQUIREMENTS.

- (a) Backfill. Foundation soil, leveling pad, and backfill material shall be compacted in accordance with the manufacturer's recommendations and at a minimum to not less than 95% of the material's maximum dry density as determined by AASHTO T 99, Method
- (b) Field density determination will be made in accordance with AASHTO T 310, Nuclear Method. Moisture and density shall be sampled following the Materials Sampling Manual or at the direction of the Engineer.
- (c) Concrete. Concrete will be sampled in accordance with AASHTO T 141; tested for slump in accordance with AASHTO T119, for air content in accordance with AASHTO T 152, and for compressive strength in accordance with AASHTO T 23. The concrete will be tested once for every 25 cubic yards placed.

(d) Geotextile. The Geotextile shall meet the design requirements and be on the Approved Products List.

7. METHOD OF MEASUREMENT. The quantity of Special Provision (Precast Concrete Gravity Retaining Wall) to be measured for payment will be the actual number of square feet of wall surface area in the complete and accepted work above the finished grade.

8. BASIS OF PAYMENT. The accepted quantity of Special Provision (Precast Concrete Gravity Retaining Wall) will be paid for at the Contract unit price per square foot. Payment will be full compensation for designing, fabricating, and installing the materials specified, including but not limited to geotextile fabric, concrete, integrated color, backfill material, and expansion material; excavation; drainage system connection; miscellaneous materials including drain pipe, backfill for drain pipe, and railing and associated hardware; 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>
900.670 Special Provision (Precast Concrete Gravity Retaining Wall)	Square Foot

BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY

1. 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 of the Standard Specifications, except as modified below.

2. REQUIREMENTS FOR SUPERPAVE BITUMINOUS MIXTURES.
 - (a) Acceptance Testing. For evaluating mixtures and pavement produced under this special provision, the following acceptance practices replace the acceptance testing listed in Subsection 406.03C and Subsection 406.14(a) with the procedures listed below and the criteria specified in Table 1.
 - (1) Sampling. The material will be sampled at the frequency specified by the Engineer, but in no case shall the frequency be less than that specified in Table 1. Each sample or lot will be considered representative of a particular quantity of material outlined in Table 1, or as determined by the Engineer.
 - (2) Acceptance Quality Characteristics. For items listed as Acceptance Quality Characteristics (AQC), if the material meets or exceeds the Acceptable Quality Level (AQL), it will be deemed compliant, and paid full price. If any AQC fails to meet the Rejectable Quality Level (RQL), the material will be deemed unacceptable, and shall be rejected unless otherwise directed by the engineer. Test results that fall between the AQL and RQL will be deemed acceptable and subject to negative pay adjustment.
 - (3) Pay Factors. When they are included in the Contract, the following pay factors will apply to all accepted material, except as noted below:
 - a. Mixture Properties Pay Factor (PF_{MP}). This pay factor will be calculated based on air voids. Box samples will be subject to full Pay Factor determination.

- b. Mat Density Pay Factor (PF_{MD}). This pay factor does not apply to material used for leveling courses, side roads, independent shoulders paved separately, or handwork. The Engineer may elect to waive the pay factor for other material at their discretion. Cores will not be taken within 6 inches of a longitudinal joint or within 50 feet of a transverse joint, except on bridges. Bridge decks or approaches will not be cored within 10 feet of a bridge joint or transverse joint, and bridges less than or equal to 20 feet in length will not be cored.
- (4) Rounding and Reporting of Values. Results from all calculations shall be rounded and reported as specified below:
- a. Report all pay factors to 0.0001 and all pay adjustments to 0.01. For intermediate calculations used to obtain pay factors and pay adjustments, Quality Indices shall be rounded to 0.01, and all other values should retain the maximum available precision.
 - b. For rounding, the use of AASHTO Rounding Rule D shall not be permitted. Instead, when rounding, if the first digit to the right of the number to be rounded is greater than or equal to 5, then the number shall be rounded away from zero to the next number with larger magnitude. If the digit to the right of the number to be rounded is less than 5, then the number shall remain the same.

For example, for rounding to the nearest one decimal (0.1):

5.35 rounds to 5.4 -5.35 rounds to -5.4

5.34 rounds to 5.3 -5.34 rounds to -5.3

TABLE 1 – Acceptance Quality Characteristics

Quality Characteristic	Min. Sampling Frequency	Evaluation Method	Type of Criteria	Lower Specification Limit (LSL)	Upper Specification Limit (USL)	AQL	RQL
Air Voids	1 per 500 tons	Single Test Deviation	Acceptance	JMF-1.0%	JMF+1.0%	D = 0	D = -1
Mat Density – All Courses	Minimum 4 per paving course, 1 per 500 tons	PWL	Acceptance	91%	-	PWL = 80	PWL = 50

(5) Evaluation Method.

- a. Single Test Deviation. The value obtained from the tested sample will be compared to the JMF, USL and LSL using the following formulas.

$$D = 1 - \frac{|TR - JMF|}{0.5(USL - LSL)}$$

where:

D = Deviation of the sample from the specification limits. If the calculated value of $D > 0.0$, then D will be set equal to 0.

TR = Sample test result

JMF = Job mix formula

USL = Upper specification limit

LSL = Lower specification limit

- b. Percent Within Limits. Determination performed in accordance with Subsection 406.03C(d).

(6) Pay Factor Determination.

- a. Mixture Properties Pay Factor. Once the Deviation for Air Voids has been determined, the Mixture Properties Pay Factor for acceptable material will be calculated using the formula below.

$$PF_{MP} = 0.1D_{AV}$$

where:

PF_{MP} = Mixture Properties Pay Factor

D_{AV} = Deviation for Air Voids

- b. Mat Density Pay Factor. Once the PWL for Mat density has been determined, the Mat Density Pay Factor for acceptable material will be calculated using the formula below.

For $80\% \leq PWL_{MD} \leq 100\%$

$$PF_{MD} = 0.00150 PWL_{MD} - 0.1200$$

For $80\% \leq PWL_{MD} < 50\%$

$$PF_{MD} = 0.0050 PWL_{MD} - 0.4000$$

where:

PWL_{MD} = Total percent within specification limits for mat density

PF_{MD} = Mat Density Pay Factor

3. 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, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) placed (Q) will be multiplied by the Mixture Properties Pay Factor, (PF_{MP}), and the Contract Bid Price (B), to determine a Mixture Pay Adjustment, (PA_{MP}) as follows:

$$PA_M = PF_{MP} \times Q \times B$$

When applicable, the measured quantity of Special Provision (Bituminous Concrete Pavement, Small Quantity) placed (Q) will be multiplied by the Mat Density Factor, (PF_{MD}), and the Contract Bid Price (B), to determine a Mat Density Pay Adjustment, (PA_{MD}) as follows:

$$PA_D = PF_{MD} \times Q \times B$$

4. 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 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 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 correcting deficiencies in the existing pavement, 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 aggregate subbase or 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