

Contract Number: C03189
Contract Name: FAIRLEE IM 091-2(95)

VERMONT
AGENCY OF TRANSPORTATION

PROPOSAL

STANDARD SPECIFICATIONS FOR CONSTRUCTION
DATED 2018 SHALL APPLY TO THIS CONTRACT

SPECIAL PROVISIONS

SCHEDULE OF ITEMS

ELECTRONIC BID BOND to be submitted in the amount of 5% of the Contractor's bid.

BIDDING PROCEDURE

Bid Proposals will not be read unless accompanied by an electronic bid bond, and they may be rejected as irregular if they are not in compliance with Agency specifications.

NOTE: All bid proposals shall be properly filled out and submitted electronically utilizing iCX Web System services.

VTrans Mission and Vision

Through excellent customer service, provide for the safe and efficient movement of people and goods.
A safe, reliable, and multimodal transportation system that grows the economy, is affordable to use and operate, and serves vulnerable populations.

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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 17, 2025.
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 – 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.
4. 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).
5. 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.

6. 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/hygiene/cleaning/facility.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.

7. NOTICE TO BIDDERS – SUBSECTION 651.05. Subsection 651.05 is hereby modified by deleting subparts (a) and (b) in their entirety and replacing them with the following:

- (a) Topsoil. The Contractor shall have a soil analysis performed in accordance with Subsection 755.02 at a frequency of one analysis per 500 cubic yards for the first 1,000 cubic yards installed and one analysis per 1,000 cubic yards for all material installed thereafter, with a minimum of one analysis per project per source of composite material. The analysis shall be completed by a laboratory accredited by a nationally recognized accrediting body such as AASHTO. The analysis shall identify recommendations for soil additives to correct soil deficiencies and additives to accomplish the planting objectives specified. The Contractor shall incorporate all recommendations into the topsoil. The soil analysis and incorporation of all recommendations shall be completed prior to the material being delivered to the site. Topsoil shall be placed within one year of the soil analysis.

Topsoil shall be spread to a minimum depth of 4 inches, unless otherwise shown on the Plans. Topsoil shall be lightly compacted as heavy compaction will reduce the potential for seed-soil contact and germination success.

- (b) Manufactured Topsoil. Manufactured topsoil shall be in accordance with Subsection 651.05(a). In addition, the Contractor shall submit the following information:

- (1) Material Composition. Material description including all components with percentage by weight.

- (c) Grubbing Material. Grubbing material shall be spread to the depth shown on the Plans.

8. NOTICE TO BIDDERS – SUBSECTION 755.02. Subsection 755.02 is hereby modified by being deleted in its entirety and replaced with the following:

755.02 TOPSOIL. Topsoil shall be a screened, workable soil free of refuse, roots, stones (larger than 1 inch), brush, noxious weeds, and other debris detrimental to plant growth.

- (a) Natural Topsoil. Natural topsoil shall conform to the requirements of *ASTM D5268*.
- (b) Manufactured Topsoil. Manufactured topsoil shall conform to the requirements of *ASTM D5268*, except as modified below:
- (1) pH. The pH shall be 5.5 to 8.5.
- (2) Organic Matter. Organic matter content (including, but not limited to, short paper fiber and biosolids) shall be in accordance with *ASTM D5268*. Short paper fiber and biosolids shall meet the following requirements:
- a. Short Paper Fiber. Short paper fiber shall be in accordance with the Vermont Agency of Natural Resources *Comprehensive Short Paper Fiber Management Procedure*.

- b. Biosolids. Biosolids shall be Exceptional Quality biosolids in accordance with the Vermont Agency of Natural Resources *Solid Waste Management Rules, Subchapter 13*.
- (3) Per- and Polyfluoroalkyl Substances (PFAS). The composite manufactured topsoil shall have maximum PFAS screening values in accordance with Table 755.02A as determined in accordance with *EPA Method 1633*.

TABLE 755.02A – PFAS SOIL-TO-GROUNDWATER SCREENING VALUES

PFAS Analyte	Chemical Abstract Service (CAS) Number	Soil to Groundwater Screening Value (µg/kg)
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.84
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.38
Perfluorononanoic acid (PFNA)	375-95-1	0.44
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	3.40
Perfluorooctanic acid (PFOA)	335-67-1	1.60

9. 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 upon successful execution of the contract.
10. NOTICE TO BIDDERS – NIGHT WORK. The Contractor is hereby notified that no night work will be allowed on this Project. 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/>.
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 May 29, 2024. No exceptions will be made to this requirement.

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

Impact Plans

Required Contract Provisions for Federal-Aid Construction

U.S. Department of Labor Davis-Bacon Wage Rates

Disadvantaged Business Enterprise (DBE) Policy Contract Requirements (Form CR-110)

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 and 14026 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) Record Plans
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 – SURFACE WATER WITHDRAWAL. The Contractor is hereby notified that the Vermont state law, Act 135 of 2022, requires any person withdrawing surface water (as defined in 10 V.S.A. § 1002 (20)) to register with and report the water withdrawal and usage to the Vermont Department of Environmental Conservation beginning January 1, 2023. Guidance can be found here: <https://dec.vermont.gov/watershed/rivers/streamflow-protection/act-135-surface-water-withdrawal-registration-and-reporting>
20. NOTICE TO BIDDERS – ENVIRONMENTAL COMMITMENTS.
 - (a) Threatened, Endangered, and Rare Species.
 - (1) NOTICE TO BIDDERS – ENDANGERED WILDLIFE MITIGATION. Bridge 56S needs to be assessed for the presence of federally and state listed endangered bats. Bridge inspections for bat habitat can only occur during the active bat season May 15th through August 15th. The bridge will be evaluated by VTrans or a VTrans consultant to determine if bat species are using the bridge for roosting habitat after May 15, 2024. If species are not detected, no time of year restrictions or exclusionary measures will be needed.

If bats are determined to be present, the Contractor, at the direction of VTrans shall install wildlife exclusionary measures between October 1st, 2024, and April 15th, 2025, inclusive. Exclusionary measures are put in place to prevent bats from roosting on bridges prior to demolition. Measures could include spray foaming cracks and crevices, placing exclusionary netting, or other similar features on the underside of the bridge where habitat was identified. The Contractor shall notify the VTrans Biologist at least 14 calendar days prior to the installation of exclusionary measures. The VTrans Biologist must be present during the installation of exclusionary measures. Exclusionary measures required to be installed by the Contractor will be considered extra work and shall be paid for per Subsection 109.06. Discovery of bats will not be a justification for an extension of time.

(b) Invasive Material.

- (1) If invasive species are delineated on the plans or found in the project area and confirmed by the Engineer, the invasive species and any soil excavated from areas that contained the invasive species, will be termed invasive material. The Contractor shall handle the invasive material in accordance with the [*VTrans State Highway System Roadside Terrestrial Invasive Plants Best Management Practices \(BMPs\)*](#). The Contractor shall stockpile the invasive material separately from other soil stockpile areas. A ground barrier and perimeter containment system shall be in place around the area intended for stockpiling the invasive material. The Contractor shall clean equipment of observable soil or vegetation prior to arriving on site. The equipment used for excavation and transport of invasive material shall be cleaned of all soil and plant matter before arriving on site and before being moved within the project limits, per the BMPs.

To the extent possible, invasive material shall be reused on site. Invasive material shall only be reused on site in areas where the invasive species were clearly evident. If there is an excess of invasive material, it shall be wasted in accordance with the BMPs.

The cost of excavating invasive material will be paid for under the appropriate Contract excavation items. When invasive species are delineated on the Plans, the additional cost for handling invasive material, following the BMPs, cleaning equipment, and wasting excess invasive material will be incidental to all other Contract items, unless noted otherwise. When invasive species are not delineated on the Plans, and compensation is not otherwise provided for in the Contract, the work of handling invasive material, following the BMPs, cleaning equipment, and wasting excess invasive material will be considered extra work in accordance with [Subsection 104.03](#) and will be paid for in accordance with [Subsection 109.06](#).

(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 may have high background levels of certain constituents, therefore the Agency has 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 within the urban soils background area portion of the project. 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 Section 105.25-105.27.

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) at no additional expense to the project. The alternate location must be reviewed and approved by VTrans, and the Contractor must secure all necessary permits and approvals from the Vermont Agency of Natural Resources for the alternate disposal site.

21. NOTICE TO BIDDERS – UTILITIES. Existing aerial facilities owned by Consolidated Communications will not require adjustment. The Contractor is cautioned to protect these facilities from damage.

Contacts for the above listed companies are as follows:

Consolidated Communications Eric Seward (802) 249-7485

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. 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.

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.).

The Contractor shall notify aerial utility pole owner if excavation will be within 10 feet of an existing pole. That pole owner may choose to be onsite for this activity. There will be no excavation allowed within 5 feet of existing poles and anchoring.

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 Subsection 107.13.

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 – 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
FAIRLEE-ST. JOHNSBURY BRIDGE BR#55N	Winterset, Inc.	September 2024

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 maintain a safe access to all ramps and U-turns at all times during the construction of this project.
- (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) 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.
- (d) 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.
- (e) 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:

Fairlee: Ryan Lockwood
Town Administrator
Town of Fairlee
75 Town Common Road
P.O. Box 95
townadministrator@fairleevt.gov
802-333-4363 ext. 2

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-BASED STRUCTURAL CONCRETE CURING. The Contractor is hereby notified that in the Performance-Based Concrete Special Provision, the effective cure time required for superstructures has been reduced to 7 days.
26. NOTICE TO BIDDERS – PERFORMANCE GRADED ASPHALT BINDER. All permanent pavement on mainline including shoulders, side roads and ramps is required to use the PG binder grade specified in the Plans and Specifications. All other adjacent pavement used on the project, regardless of the method of placement, will be allowed to use either the binder grade as specified in the Plans and Specifications or PG 58-28 binder. There will be no additional compensation allowed for using either binder grade.
27. NOTICE TO BIDDERS – SALVAGED MATERIALS. Aluminum Bridge and Approach Railing removed and not re-used on the project shall remain the property of the State.

All costs for loading and delivering these salvaged materials will be incidental to Contract item 529.20, Partial Removal of Structure.

The Contractor shall load the salvaged materials onto suitable transport and deliver them to the VTrans Middlesex garage at 1170 US Route 2, Middlesex, VT. Components of the bridge railing, including posts and rails shall be mounted securely on pallets in their smallest form and secured for transport. Bolts, nuts, and fasteners shall be separated into buckets for transport.

The Contractor shall contact Jeremy Salvatori [Tel.: (802) 522-9249] a minimum of 2 weeks prior to beginning delivery to the designated location.

28. NOTICE TO BIDDERS – COMMODITY PRICE ADJUSTMENTS. Asphalt Price Adjustment. When Item 406.50 is included in the Contract, asphalt price adjustment will be performed according to the requirements of Section 406 for all asphalt cement and emulsified asphalt incorporated into the work, including that incorporated under Project Special Provision Pay Items. The Index Price for asphalt cement for this Contract is \$630.00 per ton.
29. NOTICE TO BIDDERS – WINTER WORK. The Contractor is hereby notified that work will be allowed during the Seasonal Closure period, only as listed below:
- (a) Installation of exclusionary measures for endangered bat habitat on the existing bridge.

PART II – SECTION 900 SPECIAL PROVISION ITEMSPERFORMANCE-BASED STRUCTURAL CONCRETE

1. DESCRIPTION. This work shall consist of designing, furnishing and placing high performance Portland cement concrete for structures and incidental construction.

The Portland cement concrete may consist of a homogeneous mixture of cement, fine aggregate, coarse aggregate, water, admixtures, and pozzolans, proportioned and mixed according to these specifications.

2. MATERIALS. Materials shall meet the requirements of the following subsections:

Portland Cement.....	701.02
Portland-Pozzolan Cement.....	701.05
Portland-Limestone Cement	701.06
Portland Blast-Furnace Slag Cement.....	701.07
Ternary Blended Cement	701.08
Fine Aggregate for Concrete.....	704.01
Coarse Aggregate for Concrete.....	704.02
Lightweight Coarse Aggregate for Structural Concrete	704.14
Lightweight Fine Aggregate for Structural Concrete	704.19
Preformed Joint Filler, Cork, and Asphalt-Treated Felt	707.08
Polyvinyl Chloride (PVC) Waterstop.....	707.10
Concrete Bonding Systems.....	707.16
Stay-in-Place Corrugated Metal Forms for Superstructure Slabs.....	715.05
Epoxy Bonding Systems.....	719.02
Concrete Curing Materials.....	725.01
Air-Entraining Admixtures	725.02(b)
Retarding Admixtures.....	725.02(c)
Water-Reducing Admixtures	725.02(e)
Water-Reducing and Retarding Admixtures.....	725.02(f)
Water-Reducing, High Range Admixtures.....	725.02(g)
Water-Reducing, High Range, and Retarding Admixtures	725.02(h)
Accelerating Admixtures	725.02(i)
Water-Reducing and Accelerating Admixtures.....	725.02(j)
Specific Performance Admixtures	725.02(k)
Mineral Admixtures	725.03
Silica Fume	725.03(b)
Slag Cement.....	725.03(c)
Polystyrene Insulation Board.....	735.01
Blanket Insulation Material.....	735.02
Pipe Insulation	740.08

Water.....745.01

The coarse aggregate for superstructure shall be conditioned so that the total moisture percentage shall be the absorption percentage plus, at a minimum, 0.25% free moisture for the aggregate.

3. **CLASSIFICATION AND PROPORTIONING.** The following classes of concrete, shown in Table 1, are included in these specifications and shall be used as shown on the Plans.

TABLE 1 – PERFORMANCE-BASED CONCRETE CLASSES AND PROPERTIES

Concrete Class ¹	Min. 56-Day Compressive Strength (psi) ²	Max. W/CM Ratio ³	VSI ⁴	Slump/Spread Limit	Freeze/Thaw Durability ⁵		Air Content Limits ⁶	Max. Free Shrinkage	Max. 56-Day Surface Resistivity ⁷
					Min. Durability Factor	Max. Air Void Spacing Factor (in.)			
PCD	4,000	TBD	--	N/A ⁸	80	0.008	TBD	0.032%	Low
PCS	3,500	TBD	--	N/A ⁸	80	0.008	TBD	0.042%	Low
SCC	4,000	TBD	≤ 1	TBD ⁹	80	0.008	TBD	TBD ¹⁰	Low

¹ PCD = Performance Concrete, Deck

PCS = Performance Concrete, Substructure

SCC = Self Consolidating Concrete

² The concrete may be accepted if the design compressive strength from standard cured cylinders has been obtained at 28 calendar days. Any 56 calendar day acceptance cylinders shall be tested regardless of the results of earlier tests.

³ The maximum W/CM ratio shall be determined by the Contractor as established by mix qualification testing. During production, the W/CM ratio shall be less than or equal to the W/CM ratio from the approved qualification mix. See Subsection 3(b)(1).

⁴ Visual Stability Index (VSI) as determined in accordance with *ASTM C 1611*.

⁵ The freeze/thaw durability of the proposed mix design may be established by providing mix qualification testing demonstrating conformance with either of the two requirements. Testing shall meet the requirements of either *AASHTO T 161*, Procedure A, or *ASTM C 457*, as applicable. See Subsection 3(b)(2).

⁶ The minimum air content shall be determined by the Contractor as established by mix qualification testing. During production, the air content shall be greater than or equal to the air content from the approved qualification mix, see note 10. See Subsection 3(b)(2).

⁷ The Contractor shall determine the surface resistivity in accordance with Subsection 3(b)(4).

⁸ The mix shall not exhibit segregation. If the mix does exhibit segregation, the load shall be rejected. If the spread is equal to or exceeds 18 inches, the mix shall be classified as SCC.

⁹ The Contractor shall determine the spread target and limits in accordance with Subsection 3(b)(5). The spread shall be maintained within the determined spread limits for the placement. The mix shall not exhibit segregation. If the mix does exhibit segregation or exceeds the upper spread limit, the load shall be rejected. and subsequent loads shall be tested by the Contractor until the mix meets the allowable limits. The Engineer may perform a J-ring test at the time of placement if blocking is a concern.

- ¹⁰ The Contractor shall determine the free shrinkage in accordance with Subsection 3(b)(1). SCC will be allowed for use in superstructure elements if the free shrinkage meets the requirements for Class PCD. SCC will be allowed for use in substructure elements if the free shrinkage meets the requirements for Class PCS.

If a nominal maximum aggregate size is not specified, the Contractor shall determine the nominal maximum aggregate size using guidance from *ACI 211.1*. In no case shall the maximum aggregate size exceed 1/5 of the narrowest dimension between sides of the forms, 1/3 the depth of slabs, or 3/4 of the minimum clear spacing between individual reinforcing bars, bundles of bars, or pre-tensioning strands unless approved by the Engineer.

The Contractor may use industry methods to develop gradations not specified in Section 704 that are better optimized to satisfy the required concrete performance characteristics. If the Contractor is using a combined gradation, they shall provide the method or methods of how they will monitor gradation, the limits of the gradation ranges, and the frequency of monitoring.

Lightweight fine aggregate may be used to replace up to 30% of the volume of normal weight sand. The gradation of the lightweight fine aggregate shall conform to the requirements of *AASHTO M 195*. The lightweight fine aggregate shall be conditioned for enough time to fully saturate the material.

The stockpile shall be constructed so that the moisture content is uniform throughout the pile. The stockpile will be allowed to drain 12 to 15 hours immediately prior to use, unless an alternate procedure is approved by the Structural Concrete Engineer. The Contractor shall state the method, duration and procedure used to confirm that the material is at or above its saturated surface dry (SSD) value, by weight, throughout the pile.

The use of chlorides or admixtures containing chlorides is prohibited. All admixtures will be considered incidental to the work and included in the Contract unit price of the concrete.

The concrete materials may be proportioned using the absolute volumes method in accordance with the specified requirements. The volumetric proportioning method such as that outlined in *ACI 211.1* or other approved volumetric proportioning methods, shall be employed in the mix design.

Prior to placing concrete on the project (or prior to the trial pour or prior to the pre-placement meeting, whichever occurs first), the Contractor shall submit for approval the single mix design formulation that satisfies all mix design qualification requirements and testing for the class of concrete specified. The mix designs shall be submitted to the Structural Concrete Engineer at the Agency's Materials Section Central Laboratory. The Structural Concrete Engineer may require a minimum of 8 weeks for testing, review, and approval of new mix designs. No class of concrete shall be placed on a Project, including the trial pour, until the mix design is approved.

If the proposed Performance Concrete mix design fails to meet the qualification requirements, the Contractor shall submit a revised mix design formula in writing to address the mix qualification deficiencies of the original failed mix design.

Review of the revised mix design formula by the Structural Concrete Engineer will be completed within 14 calendar days. Upon approval of the revised mix design formula by the Structural Concrete Engineer, testing of the revised mix design may commence. Testing of the revised mix design formula shall be completed within 6 months of the revised mix design formula approval.

Until the testing of the revised mix design is completed and approved, the Structural Concrete Engineer will specify the use of an alternative, prescriptive mix design formula for the application in question, including appropriate acceptance requirements for the prescriptive alternative mix.

- (a) The mix design must contain the following information:
- (1) Class of concrete.
 - (2) Type of mix, conventional or self-consolidating concrete (SCC).
 - (3) Saturated surface dry or dry weights (specify which).
 - (4) Aggregate types, sources, specific gravities, and absorption values.
 - (5) 56 calendar day design compressive strength, psi.
 - (6) Cementitious content and the amount of each, pounds per cubic yard.
 - (7) Air content lower limit, percent.
 - (8) 56 calendar day surface resistivity value.
 - (9) Determined spread lower limit and upper limit for SCC.
 - (10) Maximum water/cementitious materials (W/CM) ratio.
 - (11) Volumetric quantities of each material in the mix design.
 - (12) Design unit weight of the mix.
 - (13) Chemical admixture types, brand names, and dosages.

Concrete test mix or mixes shall be used to obtain the test results where applicable. All wet testing shall be done by personnel with current ACI Concrete Field Testing Technician Grade I certifications. All other tests shall be performed by a laboratory that is accredited by AASHTO re:source or the Concrete and Cement Reference Laboratory (CCRL) in the particular test method, or as allowed by the Engineer.

- (b) The following mix qualification tests shall be performed. The minimum air content value and the maximum water/cementitious materials ratio of the material used to pass the mix qualification tests shall become the minimum air content value and the maximum water/cementitious materials ratio allowed during production.
- (1) The Contractor shall provide test results that establish the shrinkage tendency of the concrete. The free shrinkage rate of the concrete shall be tested per the requirements of *AASHTO T 160*. The test specimen shall be a prism of 4 inch square cross section. Procedure 11.1.2 of *AASHTO T 160* shall be followed for storage and measurements, and all specified test age results shall be submitted. Specimen testing may be terminated after 28 calendar days of drying. Testing shall be performed by a laboratory accredited in the specific test method.
- (2) The Contractor shall provide test results that establish the freeze-thaw durability of the concrete. At the contractor's choice, either *AASHTO T 161* or *ASTM C 457* may be used to demonstrate freeze/thaw durability meeting the specification requirements.

Sampling shall be performed in accordance with *AASHTO R 60* on a qualification batch of concrete that is a minimum of 3 cubic yards. This freeze/thaw durability test batch shall also be tested for air content (*AASHTO T 152*), concrete temperature (*ASTM C 1064/C 1064 M*), and unit weight (*AASHTO T 121*). SCC concrete shall also be tested for spread (*ASTM C 1611/C 1611 M*, Procedure B).

For those electing to test for air void spacing factor in accordance with *ASTM C 457*, the Contractor shall make a minimum of two concrete cylinders per *AASHTO T 23* and report the average air-void spacing factor obtained from testing these two specimen. The cylinders shall be cured for a minimum of 5 calendar days prior to being tested according to the requirements of *ASTM C 457*.

The air content of the qualification batch that passes freeze-thaw durability testing shall become the minimum air content allowed in production. This shall also become the minimum air content allowed for all subsequent mix qualification testing.

- (3) The compressive strength of the concrete shall be measured based on the requirements of *AASHTO T 22* for 7, 14, 28, and 56 calendar day standard cured cylinders.
 - (4) The surface resistivity of the test mix shall be measured at 56 calendar days based on the requirements of *AASHTO T 358*. Results shall be categorized as Low, Very Low, or Negligible in accordance with *AASHTO T 358*, Table 1. The surface resistivity may be accepted prior to 56 calendar days if the results meet these requirements. 56 calendar day test results shall be completed and submitted regardless of the results of earlier tests.
 - (5) The Contractor shall determine the lower and upper spread limit for SCC concrete. The J-Ring Test and the Spread Test will be conducted at both the lower and upper spread limits. The J-Ring Test will be conducted per the requirements of *ASTM C 1621/C 1621 M*, and the Spread Test will be conducted per the requirements of *ASTM C 1611/C 1611 M*.

The J-Ring test results shall be compared to the Spread Test results at both the upper and lower limits. The difference between the two tests at both the upper and lower limit shall not be greater than 2 inches. At both the upper and lower limits, the Visual Stability Index (VSI) shall not be greater than 1.
- (c) The Alkali-Silica Reactivity (ASR) of each type of aggregate shall be measured separately based on the requirements of *AASHTO T 303*. If one or more of the aggregates exceeds 0.10% expansion, then the aggregate shall be tested again according to the requirements of *ASTM C 1567*.
- The Contractor may elect to go directly to *ASTM C 1567* testing if they suspect that the aggregate may exceed the 0.10% expansion if tested by *AASHTO T 303*. Testing shall be performed by a laboratory accredited in the specific test method.
- (d) After the mix design furnished by the Contractor has been reviewed and approved by the Structural Concrete Engineer, no changes to the mix design shall be allowed except as defined in Table 2. Following an approved change in accordance with Table 2, a contractor may still revert back to original approved mix design formulation. If a source change is requested due to a change in product or material name that does not include any significant change in product formulation or material characteristic, and this is substantiated by the product or material supplier in writing, re-testing is not required.

TABLE 2 – ALLOWABLE MIX DESIGN CHANGES FOR ALL MIX TYPES

Previously Approved Component or Property Being Changed	Mix Design Resubmittal Requirements ¹	No. of Changes Allowed
Cement source	If the alkali content (Na and K) of the new source is greater than that of the original source, and the original result from <u>Subsection 3(c)</u> was greater than 0.08% expansion, then updated ASR testing is required. Otherwise, no qualification testing is required.	Unlimited
Cement proportioning (+/- 5% by volume)	No qualification testing required	One
Aggregate proportioning (+/- 10% by volume)	No qualification testing required	One
Aggregate source	ASR testing and gradation check by original Contractor method	One
Slag source	If same grade is used, no qualification testing required	Unlimited
Silica fume source	No qualification testing required	Unlimited
Fly ash source	If either the calcium (CaO) or the alkali (Na and K) content of the new source is greater than that of the original source, and the original result from <u>Subsection 3(c)</u> was greater than 0.08% expansion, then updated ASR testing is required. Otherwise, no qualification testing is required.	Unlimited
Air-entraining admixture source – 725.02(b)	Resubmittal of freeze/thaw durability qualification testing	Unlimited
Shrinkage reducing admixture source – 725.02(k)	Resubmittal of shrinkage qualification testing	Unlimited
Corrosion inhibiting admixture source – 725.02(k)	Resubmittal of shrinkage qualification testing. If shrinkage qualification testing of the original mix design is greater than 70% of shrinkage limit, then updated shrinkage testing is required.	Unlimited
Latex admixture source – 725.02(d)	Resubmittal of surface resistivity testing	Unlimited
Accelerating admixture dosage increase – 725.02(i), 725.02(j)	Resubmittal of shrinkage qualification testing	Unlimited
Accelerating admixture source – 725.02(i), 725.02(j)	No qualification testing required	Unlimited
ASR mitigating admixture dosage decrease – 725.02(k)	Resubmittal of ASR qualification testing	Unlimited
ASR mitigating admixture source – 725.02(k)	Resubmittal of ASR qualification testing	Unlimited
All other admixture source and dosage changes – 725.02	No qualification testing required	Unlimited

- ¹ All changes will require administrative submittal to establish proposed changes. Where required, resubmittal testing shall be completed using the same material sources and proportions from the original approved mix design.

No new materials shall be incorporated without prior written approval of the Engineer. In no case shall concrete from more than one mix design be permitted to be used during the same pour without prior written approval of the Engineer.

The approved mix design will be allowed consecutive re-approval if no material proportioning or material sources have changed from the previous year's approved mix design and the mix design is submitted with updated aggregate properties and volumes adjusted accordingly. The aggregate properties shall be tested within 60 calendar days of the mix design submission. The properties to be tested include, but are not limited to, specific gravity and absorption.

The mix design shall be accompanied by the previously completed and accepted mix qualification test data and any applicable updated test information. The submittal shall also include all applicable quality control test results and all requests for variance from the material requirements of these specifications.

4. BATCHING. Measuring and batching of materials shall be done at an approved batch plant. Batch plants shall have an inspection completed prior to the first concrete placement on an Agency project if it has been longer than 12 calendar months from the last inspection. Request for inspection and required documentation must be received by the Materials Testing and Certification Section a minimum of 21 calendar days prior to the date of the requested inspection.

All deficiencies shall be corrected and verified a minimum of 5 calendar days prior to the first concrete placement for any Agency project. The batch plant shall meet the requirements of *AASHTO M 157*, except as modified in these specifications, and shall always be maintained in good repair. The batch plant shall be subject to periodic inspections by authorized representatives of the Agency. The batch plant shall have approved methods of storing, measuring, and dispensing approved admixtures.

All concrete batch plants offered for Agency approval shall be equipped for semi-automatic batching and proportioning of all cementitious material, aggregates, water, and for the automatic insertion of admixtures. The plants shall be equipped to automatically and accurately record and report batch weights.

Proper facilities shall be provided for the Engineer to inspect ingredients and processes used in the batching and delivery of the concrete. The Contractor shall, without charge, afford the Engineer all reasonable facilities for securing samples to determine whether the concrete is being furnished in accordance with these specifications. In the batch room area, the producer shall provide the Inspector with a 24 inch × 18 inch horizontal working surface, at a sufficient working height, with a seat and an adequate view of the batching controls, display, and power supply.

The Contractor shall give the Engineer 24-hour's notice of intent to place concrete. Failure to give notice which causes postponement of placing operations shall not be reason for determining extension of Contract time per the requirements of Subsection 108.11.

(a) Batch Weight Tickets. Batch weight tickets shall include the following information;

- (1) Approved State of Vermont mix identification number
- (2) Weight of all aggregates
- (3) Weight of cementitious material
- (4) Quantity of admixtures by type
- (5) Quantity of water batched
- (6) Aggregate moistures
- (7) Total water to cementitious ratio

Materials on the batch weight ticket shall be identified by type. All batch weight ticket information shall be provided in English units. All materials added to the concrete batch shall be added to the batch weight ticket prior to delivery.

(b) Semiautomatic Batch Plants. When actuated by a starting mechanism, the semiautomatic batch controller shall start the weighing operation of the materials and stop the flow automatically when the designated weight has been reached. It shall be interlocked to ensure that the discharge mechanism cannot be opened until the weight is within the tolerance specified in Subsection 4(e).

Water and admixtures may be batched in a weigh batcher or by volume in a volumetric device. When actuated, volumetric controls shall start the measuring operation and stop the flow automatically when the designated volume has been reached.

(c) Testing Laboratory. The Contractor shall provide a weatherproof building or room at the plant site for the use of Agency personnel as a testing laboratory. The Contractor shall attain and maintain a qualified laboratory status in accordance with the current edition of the Agency's Qualified Laboratory Program. Failure to comply with this program may result in suspension of material production for Agency projects.

The testing laboratory shall have a minimum gross internal area of 150 square feet with a layout providing a minimum internal width of 7 feet, in which to house and use the equipment specified. Should the Contractor elect to provide additional equipment relevant to testing of Portland cement concrete and materials, the gross inside floor area of the laboratory shall be increased in proportion to the area required to house and operate the additional equipment. If the additional equipment is to be operated on a bench, the length of bench sections shall also be proportionally increased.

Adequate ventilation, lighting, heating, and any necessary electrical or gas connections shall be provided. Proper sanitary toilet facilities with a lavatory shall be available for use by Agency personnel at the plant site. Dedicated private telephone and internet services shall be provided to the laboratory. The internet connection shall have a minimum download capacity of 3 Mbps (megabits per second) without utilizing compression algorithms and the bandwidth speed shall be verified using an online speed test.

The laboratory shall be equipped with the following items and equipment:

- 1 Standard office desk, with lockable drawers or a separate lockable two-drawer file cabinet and chair
- 1 VTrans Qualified Laboratory Binder with producer equipment calibration data
- 1 Set of bench sections at least 2 feet wide providing a minimum of 28 square feet of working area with under-counter shelving
- 1 Standard laboratory stool
- 1 Fully automatic electronic calculator with eight digit capacity
- 1 Standard laboratory sink and faucet provided with an adequate supply of water meeting the requirements of Subsection 745.01. The sink shall drain to the outside of the laboratory
- 1 Bench brush
- 1 Floor brush
- 1 Motorized 8-inch sieve shaker with an adjustable timer. The shaker's operation shall be conducted by means of lateral and vertical motion of the sieve accompanied by jarring action with the following 8-inch diameter sieves: 3/8 inch (9.50 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 16 (1.18 mm), No. 30 (0.600 mm), No. 50 (0.300 mm), No. 100 (0.150 mm), plus pan and cover.

- 1 Mechanical aggregate shaker with an adjustable timer, a 1 cubic foot capacity, together with the following screens: 1-3/4 inch (43.0 mm), 1-1/2 inch (37.5 mm), 1 inch (25.0 mm), 3/4 inch (19.0 mm), 1/2 inch (12.5 mm), 3/8 inch (9.50 mm), 1/4 inch (6.30 mm), No. 4 (4.75 mm), No. 8 (2.36 mm), No. 16 (1.18 mm), and pan. The aggregate shaker may be placed in a separate enclosed area, or be shielded for dust and sound control. When the aggregate shaker is placed in a separate enclosed area, there shall be a minimum of 5 feet of clear space measured from the front frame of the aggregate shaker outward, as well as a bench section measuring approximately 36 inches high, 24 inches deep, and 50 inches long located adjacent to the aggregate shaker. The area shall be well lit and ventilated.
- 1 Square pointed shovel
- 5 Five gallon plastic buckets, with handles
- 1 Electronic balance with a minimum capacity of 50 pounds and accurate to 0.0002 pounds. If separate fine and coarse aggregate scales are to be used, the fine aggregate scale shall meet the requirements of *AASHTO M 231* Table 2, Class G2 with a minimum capacity of 1.75 pounds and readable to 0.0002 pounds. The coarse aggregate scale shall meet the requirements of *AASHTO M 231* Table 2, Class G5 with a minimum capacity of 50 pounds and readable to 0.002 pounds.
- 1 Set of standard masses (weights) to use for verifying the accuracy of the electronic balance
- 2 Double-burner hot plates with variable temperature controls
- 3 Metal pans with a nominal size of 9 inches × 9 inches × 2 inches
- 5 Metal pans with a nominal size of 9 inches × 13 inches × 2 inches
- 1 Sample splitter with a 2-1/2-inch chute
- 1 10-inch blunted trowel
- 1 4 foot × 4 foot minimum heavy canvas for quartering samples
- 1 Brass wire-bristle brush
- 1 Pair of heat-resistant gloves (500°F, short-contact)
- 2 1-1/2 inch soft bristle paint brushes

Acceptable substitutes for these items and equipment may be made with the approval of the Structural Concrete Engineer.

Batching operations shall not begin until the testing laboratory has been approved as being in compliance with these specifications and all equipment and equipment calibration requirements of the current VTrans Quality Assurance Program and Qualified Laboratory Program documents. Removal of any equipment, except with written request and written approval of the Structural Concrete Engineer, will revoke any prior approvals and/or qualifications and require the termination of batching operations.

The building or room designated as a testing laboratory shall be maintained in a clean condition by the producer and kept free of all articles not necessary for the testing of materials. Cleaning supplies shall be furnished by the Contractor.

- (d) Bins and Scales. The batch plant shall include bins, weighing hoppers, and scales with adequate separate compartments for fine aggregate and for each required separate size of coarse aggregate. If cement is used in bulk, a bin, hopper, and scale for cement shall be included. Each compartment shall be designed to discharge efficiently and freely into the weighing hopper or hoppers. Means of control shall be provided so that when required, the material may be added slowly in minute quantities and shut off with precision.

Hoppers shall be constructed to eliminate accumulations of tare materials and to discharge fully without jarring the scales. Partitions between compartments shall be configured to prevent spilling under any working condition. All batch plant structures shall be properly leveled and maintained in that condition within the tolerance required by the design of the weighing mechanism.

The scales for determining the mass (weight) of aggregate, water and cementitious material shall be comprised of a suitable system of levers or load cells. The levers or load cells will determine the mass (weight) consistently within 0.5% under operating conditions, with loads indicated either by means of a beam with balance indicator, a full-reading dial, or a digital read-out or display.

Adequate means for checking the accuracy of the scales shall be provided by the Contractor either using 50 pound weights or by other methods approved by the Structural Concrete Engineer. Weights shall be certified annually by the Division of Weights and Measures of the Vermont Agency of Agriculture, Food, and Markets. All exposed fulcrums, clevises, and similar working parts of scales shall be kept clean.

When beam-type scales are used, provision shall be made for indicating to the operator that the required load in the weighing hopper is being approached. Poises shall be designed to be locked in any position to prevent unauthorized change of position. All measuring and weighing indicating devices shall be in full view of the operator while charging the hopper and the operator shall have convenient access to all controls.

The scales shall be serviced and their accuracy verified annually by a hopper-scale service person licensed by the Division of Weights and Measures. For Vermont plants, an Inspector representing the Division of Weights and Measures shall witness all testing conducted by the service person and will attach a seal to each hopper scale, provided it meets the current specifications, tolerances, and regulations adopted by the Division of Weights and Measures. Standard test weights used to determine the accuracy of hopper scales shall be certified yearly by the Division of Weights and Measures in accordance with their established standards.

The ready-mixed concrete producer shall hire a licensed hopper scale service person for annual checking and service of scales. In addition, Vermont producers shall schedule an inspection with the Division of Weights and Measures between February 15th and April 30th of each year. After April 30th, Vermont plants without current seals affixed to the hopper scales will not be permitted to supply concrete to Agency projects, unless otherwise directed by the Engineer or until the seals are affixed.

Out-of-state concrete producers shall observe all annual hopper scale weighing and seal requirements of their respective states.

- (e) Production Tolerances for Batching. For weighed ingredients, the accuracy of batching is determined by a comparison between the desired weight and the actual scale reading. For volumetric measurement of water and admixtures, accuracy is determined by checking the quantity either by weight on a scale or by volume in a calibrated container.

Admixture-dispensing systems shall, at a minimum, be annually calibrated by an admixture distributor representative. The admixture distributor representative shall check at least two volumes, with a check done at approximately 15% of the minimum and at 15% of the maximum manufacturer's recommended dosage range, or other targets as approved by the Structural Concrete Engineer.

Batching shall be conducted to accurately measure the desired quantities of materials within the tolerances specified in Table 3.

TABLE 3 – CONCRETE PRODUCTION TOLERANCES FOR BATCHING

Material	Tolerance (%)
Cement	± 1
Water	± 1
Aggregates	± 2
Chemical admixtures	± 3
Mineral admixtures	+ 10, - 1

(f) Storage and Proportioning of Materials.

- (1) Portland Cement. Either sacked or bulk cement may be used. No fraction of a sack of cement shall be used in a batch of concrete unless the cement is weighed.

All bulk cement shall be weighed on an approved weighing device. The bulk cement weighing hopper shall be properly sealed and vented to preclude dusting during operation. Facilities shall be provided for the sampling of cement at the batch plant, either from the storage silo or from the weighing hopper. The sampling device shall provide a sample that represents the true nature of the material being used. This device shall be a permanent installation located to allow for safe and easy access.

- (2) Water. Water may be measured either by volume or by weight. When measurement is by meter, the water meter shall be so located that the measurements will not be affected by variable pressures and temperatures in the water supply line.

Measuring tanks shall be equipped with an outside tap and valve to provide for checking the setting, unless other means are provided for readily and accurately determining the amount of water in the tanks.

All water metering methods shall be verified and calibrated on an annual basis or at any time there is a question of accuracy. All water added to the concrete at any point shall be through an approved metering method.

- (3) Aggregates. Aggregate stockpiles shall be formed on hard, well-drained areas that prevent contamination from underlying material and accumulation of excessive moisture.

Aggregates from different sources or of different gradations shall not be stockpiled together. Only rubber-tired equipment shall be permitted to operate on aggregate stockpiles.

Stockpiles shall be constructed as follows:

- a. If the stockpile is to be made using mechanical equipment (front end loader, clam bucket, rock ladder, radial stacker, or other approved equipment), the stockpile shall be made in such a manner that segregation is kept to a minimum.
- b. If the stockpile is to be made by dumping from trucks in multiple layers, each layer shall be approximately 4 feet in depth. Each layer shall be completely in place before commencing the next layer. Care shall be taken that successive layers do not “cone” down over the previous layer.
- c. No equipment shall be used to haul aggregate over the stockpiled material except to deposit the material for the layer being placed. It shall be the responsibility of the Contractor to ensure that the aggregate is kept free from deleterious material or degradation.

Stockpiles shall be maintained in such a manner that twice the anticipated aggregate requirement for any Agency project placements will be on hand and available for sampling and testing at least 48 hours before mixing operations for the placements are scheduled to begin. The Engineer may modify this requirement when special aggregates are required.

Aggregates shall be handled from stockpiles or other sources to the batch plant in such a manner as to secure a uniform grading of the material. Aggregates that have become segregated or mixed with earth or foreign material shall not be used. All aggregates, except lightweight coarse aggregate, produced or handled by hydraulic methods, and washed aggregates, shall be stockpiled or binned for draining at least 12 hours before being batched. In case the aggregates have a high or non-uniform moisture content, a storage or stockpile period longer than 12 hours may be required by the Engineer.

Stockpiles being watered per the specifications or allowed through producer QC procedures shall be watered for a sufficient time to ensure consistent moisture throughout the stockpile. Aggregate stockpiles being watered shall be loaded in the bin within 1 hour of being batched.

The Contractor shall conduct moisture content tests within 1.5 hours of the anticipated concrete batching time. If there is a visual difference in aggregate moisture appearance, aggregate moisture content will be tested again and new moisture test results shall be obtained and used as soon as possible. Material that has been stored in a storage bin for more than 10 hours shall be retested for moisture content. A minimum of one cubic yard of aggregate will be removed from the bottom of the storage bin. A minimum of one cubic yard of aggregate will then be removed and a moisture content sample taken.

Plants that employ moisture probes shall have them calibrated and verified a minimum of 24 hours prior to batching or as directed by the Structural Concrete Engineer. The procedure for checking the meter will be to run aggregate over the probe and then collecting a portion of the aggregate on which to perform a moisture content test. If the difference between the meter and the tested moisture content is greater than 0.5%, then the meter must be calibrated.

- d. Lightweight coarse aggregate stockpiles shall be presoaked for a minimum period of time to ensure that the aggregate is completely saturated surface dry or greater immediately prior to use as indicated by moisture testing. Soaking shall be accomplished by continuous sprinkling or other suitable means that will provide a uniform moisture content throughout the stockpile. The stockpile shall be allowed to drain for 12 to 15 hours immediately prior to use.

- (4) Admixtures. The Contractor shall follow an approved procedure for adding the necessary amounts of admixtures to each batch. Admixtures shall be dispensed in such a manner that will ensure uniform distribution of the material throughout the batch within the required mixing period. Except as specified herein, all admixtures shall be added to the batch at the plant, unless otherwise authorized by the Structural Concrete Engineer.

Chemical admixture containers, metering equipment, and scales shall be calibrated annually by a qualified admixture distributor representative. Admixture calibration and verification shall be done at 15% of the high, at approximately the middle, and at 15% of the low recommended ranges for the admixture being dispensed by the system. The calibration and verification shall be done in the presence of an Agency representative when requested by the Agency.

All dispensers shall include visual inspection aids such as graduated transparent cylinders. A separate dispenser shall be provided for each liquid admixture. If the dispensing system does not provide visual inspection aids, then periodic verification tests shall be done at a frequency satisfactory to the Structural Concrete Engineer. Calibration and verification records shall be kept at the production facility for a minimum of one year. The producer shall do the calibration and verification of the metering systems when requested.

Storage and dispensing systems for liquid admixtures shall be equipped to allow thorough circulation and/or agitation of all liquid in the system. This shall be required prior to the first batching of concrete for Agency projects in any calendar year and periodically thereafter at intervals not to exceed 60 calendar days for the duration of the period the plant is supplying concrete for Agency projects.

If the plant has received a delivery of at least 25% of the volume of the storage container, this will be considered as a method of circulation or agitation. If the circulation method is used, the admixture shall be circulated until a complete exchange of admixture is achieved. If an agitation method is used, the method shall be subject to approval by the Structural Concrete Engineer. If an admixture does not need agitation, then the admixture manufacturer shall submit in writing stating this annually.

Storage and dispensing systems for liquid admixtures shall be maintained within the manufacturer's stated temperature and environmental conditions.

It shall be the responsibility of the Contractor to use the quantity of Agency-approved admixtures needed to obtain concrete meeting the requirements of the Contract. All admixtures will be approved by the Structural Concrete Engineer prior to incorporation into the mix.

- a. Air-Entraining Admixture. Air-entraining admixture shall be used as required to obtain the specified air content.
 - b. Water-Reducing, Retarding, and Water-Reducing and Retarding Admixtures, Accelerators and Specialty Admixtures. Dosages shall be in the recommended range as stated by the Manufacturer, unless otherwise approved by the Manufacturer.
- (5) Fly Ash or Slag. Fly Ash or Slag shall be stored at the batch plant in separate storage or holding bins or other approved holding containers and shall be protected from rain and moisture.

5. MIXING AND DELIVERY.

- (a) General. Concrete may be mixed at the site of construction, at a central point, or wholly or in part in transit mixers. The production of concrete shall meet the requirements of *AASHTO M 157* with the following additional requirements:

- (1) All concrete shall reach its final position in the forms no more than 1.5 hours after the cement has been added to the water. When an approved admixture to slow or temporarily halt the hydration process of the cement is used, this time limit will be extended to 2 hours, provided the mix has adequate workability. Prior to discharge, the Contractor shall perform concrete temperature testing on every load of concrete which will be deposited after the 1.5 hour time limit, as defined above, to verify the concrete temperature is within the limits defined by Subsection 7.

A time limit greater than 2 hours may be approved if the request is made a minimum of 3 working days prior to the placement and all quality control test results are within specification immediately prior to placement. The request to extend the time limit beyond 2 hours shall include the requested time limit and required admixture dosages. Acceptance testing will be performed by the Engineer, concrete will not be accepted on the basis of quality control tests performed by the Contractor.

Concrete shall not have water added once discharging has begun. Admixtures may be adjusted as required by the producer before discharge has begun. Admixtures to slow or temporarily halt the hydration process of the cement shall only be added at the production facility.

If, in the opinion of the Engineer, any concrete appears to have visually changed from previously placed concrete, the Contractor shall perform quality control tests to confirm the concrete conforms to the specifications.

- (2) Addition of water or admixtures at the project site must be communicated to field inspection personnel. If additional mixing water, admixtures, or other additions are required, a minimum of 30 revolutions of the mixer drum at mixing speed shall be required before discharge of any concrete. If water is added in excess of the specified maximum W/CM ratio, the concrete shall not be used.
- (3) The Engineer may require the Contractor to perform uniformity tests on a transit mixer or agitator, in accordance with *AASHTO M 157* and reported except as modified. Two samples shall be taken. The first sample shall be taken after 15% of the load volume has been discharged, and the second prior to 85% of the load volume being discharged.

Slump and air content tests shall be performed on each sample. The maximum difference in air content between the two samples shall be 1%. For concretes with a specified slump of 4 inches or less, the maximum difference between the two samples shall be 1 inch. For concretes with a specified slump greater than 4 inches, the maximum difference shall be 1-1/2 inches. If both conditions are not met, then the Contractor will be required to either modify the mixing procedure and/or batching sequence, or that transit mixer or agitator will not be allowed to deliver concrete to the project. The Contractor will be required to perform uniformity tests to confirm the changes have satisfactory results.

- (4) Each load of concrete delivered at the job site shall be accompanied by a batch weight ticket meeting the requirements of Subsection 4.
- (5) The Contractor shall provide direct communication service from the site of the work to the batch plant that shall always be available to the Engineer during concrete operations. The cost of this service will be considered incidental to the work.
- (6) When use of a Water-Reducing, High Range Admixture or Water-Reducing, High Range, and Retarding Admixture is specified for deck concrete, the Contractor shall submit, for the Engineer's approval, information about the admixture manufacturer, the admixture addition rate, and when the admixture is to be added to the mixture (i.e., at the plant, on project, or a combination thereof).

To obtain the required concrete characteristics, a representative from the concrete producer is required on the project to determine the final admixture dosage and water addition for each load of concrete. The dosage shall be applied by means of a dispenser, or by other means of accurately measuring volume as approved by the Engineer. The Contractor shall provide QC concrete testing personnel, with current ACI Concrete Field Testing Technician Grade I Certification, to confirm the concrete is within specifications for the required work.

- (7) All concrete shall be discharged into the forms before 300 revolutions of the drum or blades, not including initial mixing revolutions. The total allowed number of revolutions may be increased as directed by the Engineer.

Mortar shall be mixed in an approved mixer at the site of placement or in transit mixers when approved by the Engineer. The Engineer will withdraw approval for use of transit mixers, if necessary, to ensure a quality product or if the rate of delivery cannot be coordinated with finishing requirements.

- (b) Stationary Mixers. When a stationary mixer is used for the complete mixing of the concrete, the mixing time for mixers that have a capacity of 10 cubic yards or less shall be not less than 90 seconds. For mixers that have a capacity of more than 10 cubic yards, the mixing time shall be determined by the concrete producer.

The time is valid provided that mixer efficiency tests prove the concrete is satisfactory for uniformity and strength. The plant shall be equipped with a timing device that will not permit the batch to be discharged before the predetermined mixing time has elapsed. Vehicles used in hauling shall comply with the requirements of Subsection 5(c).

- (c) Transit Mixers. Transit mixers and agitators shall be subject to periodic inspections by an authorized representative of the Agency. Such equipment shall bear a currently dated inspection sticker supplied by the Agency indicating that the transit mixer or agitator conforms to the Agency's requirements.

For the purpose of this specification, the term agitator shall be interpreted to mean a vehicle with a drum that is not used to do the initial mixing of the concrete but is used to transport the concrete and mix the concrete prior to discharge.

Transit mixers shall be equipped with a water-measuring tank with a visible sight gauge for use when the water for the batch is supplied from the transit mixer tank. The gauge shall be clean and legibly graduated. Measuring tanks shall be provided with outside drain valves or other means to check their calibration. These should be easily opened for checking at any time.

Electrically-actuated revolution counters shall be required on all transit mixers except on mixers charged at central mix plants and utilized as agitator trucks only.

All mechanical details of the mixer or agitator such as water measuring and discharge apparatus, condition of the blades, speed of rotation of the drum, general mechanical condition of the unit and clearance of the drum shall be checked before a further attempt to use the unit will be permitted.

Mixers and agitators shall be kept free from accumulation of hardened concrete or mortar. The mixing blades shall be rebuilt or replaced when any part or section is worn 3/4 inch or more below the original height of the manufacturer's design. A copy of the manufacturer's design, showing the dimensions and arrangements of blades shall be available to the Engineer at the plant at all times.

The mixing of concrete containing silica fume is very important and shall be mixed in accordance with the appropriate situation:

- (1) When silica fume is added to the batch by bags or in bulk from a silo, each batch of concrete shall be mixed for not less than 125 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of the equipment as the mixing speed. The mixing and agitating speeds shall be found on the metal plate on the mixer.
- (2) When silica fume is blended with cement or a combination of cement and mineral admixture at the cement plant prior to being delivered to the concrete plant, each batch of concrete shall be mixed for not less than 70 nor more than 100 revolutions of the drum or blades at the rate of rotation designated by the manufacturer of the equipment as the mixing speed. The mixing and agitating speeds shall be found on the metal plate on the mixer. If inconsistent test results are obtained, or the batch of concrete appears not to be completely mixed, the mixing revolutions shall be extended as necessary.

When a transit mixer or agitator is used for transporting concrete, mixing during transport shall be continuous and at two to six rotations per minute or as designated by the manufacturer of the equipment as agitating speed. Failure to do so is cause for rejection of the concrete.

Transit mixers and agitators assigned to a project shall not be used for other purposes until the desired work is completed at the site, and shall arrive at the project within the cycle that anticipated placement conditions dictate. The interval between loads shall be controlled in order that concrete in place shall not become partially hardened prior to placing succeeding batches. The plant capacity and transportation facilities shall be sufficient to ensure continuous delivery at the rate required.

Before discharging transit mix from a transit mixer that has been operating at agitating speed, the drum or blades shall be rotated approximately one minute at mixing speed. The same procedure shall apply to agitators.

Upon discharge of the concrete from the drum, a sufficient amount of water shall be charged into the drum to properly cleanse the drum. This water shall not be used as a part of the next succeeding batch but shall be discharged from the drum prior to the charging of the drum with the concrete ingredients. The drum shall be completely emptied before receiving materials for the succeeding batch. Re-tempering of concrete or mortar that has partially hardened, by remixing with or without additional materials, shall not be permitted.

6. QUALITY CONTROL. The Contractor shall provide assistance, equipment, materials, and curing for field sampling and testing as required by the Engineer. All costs shall be included in the Contract Unit Prices under Section 631. The Engineer shall perform all acceptance sampling and testing in accordance with the Agency's Quality Assurance Program. The Contractor shall perform all on-site Quality Control (QC) sampling and testing. The person performing the QC sampling and testing shall have, as a minimum, current ACI Concrete Field Testing Technician Grade I Certification.

- (a) Trial Pour. When concrete will be used for a deck or overlay, or when deemed necessary by the Engineer, the Contractor shall construct a slab to be used for the trial pour. The purpose of the trial pour is to ensure that the mix can be placed and finished in accordance with these specifications. The slab shall be a minimum of 10 feet × 10 feet × 9 inches thick.

If the concrete is intended to be placed by pump, the trial pour concrete shall be placed by pump. The pump will be setup in the configuration that best represents the most difficult pumping condition. The wet concrete properties will be checked at the point of placement. The Contractor will demonstrate that they can provide an acceptable finish to the concrete for the element to be completed. The Contractor will need to bull float a minimum of 50% of the surface area of the slab and hand finish the curb areas in the same manner as anticipated during the production pour.

The Contractor may elect to construct the slab so that the same screed equipment and same finishing method can be used as anticipated for the production pour. In this case the Contractor will not be required to bull float a minimum percentage of surface area unless that will be included in their process for finishing the concrete deck surface during the deck pour. The test slab will become the property of the Contractor and removed from the project after completion of the trial pour.

Concrete production activities shall be closely monitored to ensure that no deviations are made from the approved mix design. If test results indicate a failure to obtain the characteristics as specified in Table 1, the Engineer may reject the material. The Contractor will be responsible for proposing solutions which could include changes to the mix design and will require testing be done with no extra payment. The modified mix design shall not be used until successful test results are obtained during a trial pour that is representative of the anticipated pour conditions.

- (a) Sampling. Sampling for tests shall be taken in accordance with the requirements of *AASHTO R 60* or other procedures approved by the Agency. Sampling will be done at point of placement or as close to it as practical.

- (1) Changes. Any time that there is a change in admixture dosage outside of the allowable tolerances, whether modified at the batch plant or at the site, additional QC sampling and testing shall be performed on the modified load prior to incorporating the concrete into the work.
 - (2) Beginning of Load Sampling. Beginning of Load Sampling is sampling for QC testing purposes that is taken before 15% of the load has been discharged. Beginning of Load Sampling shall be performed as required by the Engineer, or as needed to ensure that the Concrete meets the Contract requirements at the point of placement. The QC personnel shall monitor the placement operation and adjust the mix accordingly to ensure that the material being incorporated into the work meets Contract requirements.
- (c) Slump Tests. Slump tests shall be made in accordance with *AASHTO T 119 M/T 119*.
 - (d) Spread Tests. Spread tests for SCC shall be made in accordance with the requirements of *ASTM C 1611/C 1611 M*, Procedure B. The concrete inside the cone shall not be tamped.
 - (e) Visual Stability Index (VSI) Tests. VSI tests for SCC shall be made in accordance with the requirements of *ASTM C 1611/C 1611 M*, Appendix X.1 and shall be performed on each completed spread test.
 - (f) Air Content Tests. Air content tests shall be made in accordance with the pressure method specified in *AASHTO T 152*.

For Class SCC, the specimens shall be fabricated in accordance with *ASTM C 1758/C 1758 M*.

- (g) Compressive Strength Tests.
 - (1) General. The number of compressive strength tests performed for acceptance should be in accordance with the guidance given in the current edition of the *VTrans Materials Sampling Manual*. The Engineer may order additional tests as deemed necessary.

Compressive test cylinders shall be made in accordance with the requirements of *AASHTO T 23*, and tested for compressive strength in accordance with the requirements of *AASHTO T 22*.

For Class SCC, the specimens shall be fabricated per *ASTM C 1758/C 1758 M*.

(2) Categories of Testing.

- a. Acceptance Testing. Acceptance testing utilizes specimens to determine the compliance with requirements for the project. All test cylinders used for quality acceptance testing shall be stored in an approved curing box until they are shipped to the Agency's Materials Section Central Laboratory.
- b. Job Control Testing. Job control testing utilizes specimens to determine whether adequate curing procedures are being followed and for early form removal or early loading of structure.
 1. All job control specimens shall be stored on the structure and shall receive the same curing and protection from the elements as the concrete that they represent up until 24 hours before anticipated testing of specimens.
 2. The maturity method may be used as an alternative for estimating the concrete strength. The procedures of *ASTM C 1074* shall be followed except as noted below:
 - i. For Section 8.1 there shall be a minimum of 17 cylinders cast. Two of the 17 shall have temperature sensors embedded in them to be used for monitoring.
 - ii. For Section 8.4 there shall be 3 cylinders tested for each test age.
 - iii. For Section 8.4 for rapid set concrete mixes the test ages shall be 12 hours, 1 day, 2 days, 7 days, and 28 days.

The contractor may adjust or add test ages if approved by the Engineer.

All temperature measuring devices shall be verified/calibrated on a 12 month basis or sooner if there are questions about the accuracy. The device shall have an accuracy of +/- 2° F.

At least two temperature sensors shall be embedded each day in each pour. One sensor shall be placed where maturity is expected to develop the slowest at, or near, an exposed outer edge, and a second sensor shall be placed in the concrete poured from the last load of the day. Sensors shall be placed at least 2 inches to 4 inches from any existing concrete or an exposed outer edge. The temperature sensing end of the monitor shall not be placed in direct contact with reinforcing materials or other elements that will protrude through the surface of the concrete. The contractor shall submit the proposed locations to the Engineer for review and approval.

- c. Specimen Curing Requirements. Specimen curing requirements shall be as stated in the specifications or as directed by the Engineer. If not specifically stated, the curing shall be as specified in Table 4.

TABLE 4 – CONCRETE SPECIMEN CURING REQUIREMENTS

Testing Category	Number of Specimens	Curing Location
Acceptance	See MSM	Curing box
Job control – applicable curing period	2	On structure

- (h) Concrete Temperature. Concrete temperature tests shall be made in accordance with the requirements of *ASTM C 1064/C 1064 M*.

7. WEATHER AND TEMPERATURE LIMITATIONS – PROTECTION OF CONCRETE. The temperature of the concrete just prior to placement in the forms shall not be less than 50°F nor more than 85°F. Aggregates and water shall be heated or cooled as necessary to produce concrete within these temperature limits.

Placement and curing procedures shall be approved by the Engineer prior to actual placement.

- (a) Hot Weather Concrete. Placement of concrete during hot weather may be limited by the Engineer based on an assessment of temperature, humidity, wind velocity, and sun radiation conditions. No concrete shall be placed when the ambient air temperature is, or is expected to be, above 90°F.
- (b) Cold Weather Concrete.

- (1) General. Cold weather concrete will be any concrete placed or cured when the ambient air temperature is expected to be below freezing at any point or below 40°F for a continuous 8-hour period. No concrete shall be placed when the ambient air temperature is lower than 10°F except by written permission of the Engineer. A cold weather concrete plan shall be submitted to the Engineer for their review and acceptance before any cold weather concrete is placed.

When placing cold weather concrete, the Contractor shall have adequate equipment for heating and protecting the materials and freshly-placed concrete meeting the approval of the Engineer. This equipment shall be on the job and ready to deploy prior to the commencement of concrete placing operations.

No concrete shall be placed in any superstructure or thin section under cold weather conditions.

- (2) Heating of Materials. The heating equipment deployed for cold weather concrete placement shall be capable of heating the materials uniformly. Aggregates shall not be heated to a temperature exceeding 150°F. If water is heated to a temperature exceeding 140°F, the water shall be mixed with the aggregate before the cementitious material is added.

The materials shall be heated in such a manner, for such a period of time, and in such quantity, as to produce concrete having a uniform temperature within the specified temperature range at the time of placement. Materials containing frost or frozen lumps shall not be used.

Stockpiled aggregates may be heated using dry heat or steam. Aggregates shall not be heated directly by gas or oil flame or on sheet metal over fire. When aggregates are heated in bins, steam-coil or water-coil heating, or other methods that will not be detrimental to the aggregates, may be used.

- (3) Antifreeze Compounds. Salts, chemicals, or other foreign materials shall not be used in the mix to lower the freezing point of the concrete.
- (4) Preparation of Forms. Before placing concrete; any ice, snow, or frost shall be completely removed from the forms.

Concrete shall not be placed on any surface or in any forms that are frozen, have surface temperatures below 32°F, or that contain frozen materials. The frozen surface or forms shall be completely thawed the day before the placement of the concrete and shall be kept continuously thawed until the concrete is poured. The temperature difference between forms or substrate and the plastic concrete shall not exceed 40°F.

- (5) Housing. The Contractor shall furnish sufficient canvas with a supporting framework or other suitable type of housing to fully enclose and protect the structure when placing and curing cold weather concrete. The sidewalls and roofing of the protective housing shall be completely built before the placing of any concrete.

The protective housing shall be constructed independently of the forms and bracing and with adequate space to allow for form removal and the initial finishing of the concrete as required during the heating period. Joists shall be located to suitably support the housing roof with no sagging. The protective enclosure shall be heated to the proper temperature before placing any concrete.

When the temperature readings taken on or in the concrete indicate the temperature of the concrete may fall below 50°F, the Contractor shall, without exposing the concrete, immediately build the necessary enclosures around the area involved and supply heat to ensure curing conditions as specified in Subsection 15. The enclosure shall be removed when directed by the Engineer.

- (6) Heating the Enclosure. The enclosure shall be heated in such a manner that the temperature of the concrete and the enclosed air shall be kept above 50°F, and not more than 20°F above the concrete temperature, for the designated curing period. During this time, the concrete shall be kept continuously wet to provide proper curing. After the curing period, the temperature shall be gradually lowered to that of the surrounding atmosphere, taking at least 48 hours for the transition but at no time exceeding a 1°F change per hour.

When dry heat is used, a means of maintaining atmospheric moisture shall be supplied. The Contractor shall also maintain adequate fire protection and shall provide personnel to keep the heating units in continuous operation. When concrete placement operations are in locations where water levels may fluctuate, the supports for heating equipment shall be built so that the heating equipment can be raised and steam lines shall be placed above the probable high water level.

The enclosure shall be well-ventilated to avoid accumulation of carbon dioxide and carbon monoxide.

When using a hydronic heating system with heat-transfer fluid that circulates through a series of hoses, the heat-transfer hoses shall be laid on top of the vapor barrier, usually plastic sheeting, then covered with approved insulating materials or by other approved methods for retaining heat.

- (7) Temperature Records. The Contractor shall provide an automatic temperature recorder to continuously record concrete curing temperatures and ambient air temperatures for the entire curing period. Recording thermometers shall be capable of measuring and recording temperatures within the range of 0°F to 200°F with maximum graduations of 5°F.

Temperature sensors shall be carefully placed within the curing enclosure or in the concrete to ensure that temperatures are measured at typical locations. The recorder's accuracy shall be certified once every 12 months, with the certificate displayed with each recorder. The Engineer may make random checks of each recorder.

On each recorder chart, the Engineer shall indicate the location of the representative concrete, the placement date, and start and finish times of the temperature record. At the completion of the curing period, the recorder charts shall be submitted to the Engineer.

A thermometer shall be provided that is capable of displaying the current ambient temperature with a maximum gradation of 1°F. The Inspector will use the thermometer to take periodic temperature measurements of the enclosure at varying locations.

The Contractor shall provide a hand-held infrared thermometer capable of taking no-contact measurements that is accurate within plus or minus 2% of the reading. The thermometer's accuracy shall be certified once every 12 months, with the certificate provided with each thermometer.

When the Contractor places concrete at more than one location within the specified curing period or if the Engineer determines that monitoring of a single pour is necessary in multiple locations, additional monitoring and recording equipment shall be furnished to provide temperature records at each location.

8. FORMS. The Contractor shall be responsible for, and shall make good, any injury arising from inadequate forms. The Engineer shall be provided the opportunity to inspect all forms prior to concrete placement.

Unless the plans specifically allow for the use of stay-in-place forms, such forms shall not be used in the construction of any superstructure or bridge deck. Stay-in-place forms will only be allowed as approved by the Engineer.

- (a) Falsework. In general, falsework that cannot be founded upon a solid footing shall be supported by falsework piling. The Engineer may require the Contractor to employ screw jacks or hardwood wedges to correct any deflections or settlement, however slight, occurring in the falsework.
- (b) Construction. Forms shall be mortar-tight and sufficiently rigid to prevent distortion due to the pressure of the concrete and other loads incidental to the construction operations, including vibration. Forms shall be constructed and maintained to prevent the opening of joints due to shrinkage of the lumber. Sealers and caulking as approved by the Engineer shall be used where forms abut structural steel members, such as top flanges of beams and girders, etc.

To ensure their easy removal, forms shall be filleted and chamfered at all sharp corners, unless otherwise shown on the Plans or directed by the Engineer, and shall be given a bevel or draft in the case of all projections, such as girders and copings.

Falsework and forms for slabs, beams, and girders shall be constructed to provide the camber shown on the Plans or ordered by the Engineer.

Falsework and forms for Class SCC construction shall be designed with consideration given to concrete placement rates, mix temperature, additives, and placement procedures that effect hydrostatic pressure of the concrete. Forms shall be water-tight and sufficiently rigid to prevent distortion due to the pressure of the concrete and other loads incident to the construction operations, including vibration, which should not be needed.

- (c) Form Lumber. All face form lumber for exposed surfaces shall be concrete form exterior grade plywood, not less than five ply and with a minimum thickness of 3/4 inch. In computing stud spacing, plywood shall be considered 1 inch lumber, provided that the grain of three of the plies runs perpendicular to the studs.

Form lumber for unexposed surfaces may be dressed tongue-and-groove, dressed shiplap, or square-edge surfaced four sides of uniform width and thickness, with a minimum thickness, after finishing, of 3/4 inch.

All form lumber shall be sound and free from loose or rotten knots, knotholes, checks, splits, or waness showing on the surface that will be in contact with the concrete. Used face form lumber, having defects or patches which may produce work inferior to that resulting from new material, shall not be used.

Other form materials may be used with the permission of the Engineer.

- (d) Form Ties. Metal ties or anchorages within the forms shall be constructed to permit their removal to a depth of at least 1 inch from the face without injury to the concrete. Wire ties shall be used only in locations where they will not extend through surfaces exposed in the finished work and then only when authorized.

The cavities on vertical and overhead surfaces shall be filled with a product that meets the requirements of Subsection 780.02. The manufacturer's directions shall be followed for surface preparation, mix, and application. Cavities on horizontal surfaces shall be filled in with a mortar mix using the same proportion of cementitious material and sand. The surfaces shall be saturated with water for a minimum of an hour, dried to SSD just prior to being filled, and cured by a method in Subsection 15 approved by the Engineer for a duration of 3 calendar days

- (e) Surface Treatment. All forms shall be treated with commercial form oil prior to placing reinforcement, and wood forms shall be saturated with water immediately before placing the concrete. Any material that will adhere to or discolor the concrete shall not be used.
- (f) Metal Forms. The specifications for wood forms regarding design, mortar-tightness, filleted and chamfered corners, beveled projections, bracing, alignment, removal, reuse, and oiling also apply to metal forms. The metal used for forms shall be of such thickness that the forms will remain true to shape throughout the concrete placement operations.

All bolt and rivet heads shall be countersunk. Clamps, pins, or other connecting devices shall be designed to hold the forms rigidly together and to allow removal without injury to the concrete. Metal forms that do not present a smooth surface or do not line up properly shall not be used. Care shall be exercised to keep metal forms free from rust, grease, or other foreign matter.

- (g) Removal of Forms.
- (1) Deck Superstructure. The forms, or their supports, for any portion of a structure shall not be removed before the end of the 10-day cure period for the deck. Forms under beams or floor slabs may be removed upon approval of the Engineer after the concrete attains 85% of the minimum compressive strength as specified in Table 1, but not prior to the end of the 10-day cure period.

- (2) Substructure. The forms, or their supports, for any portion of a substructure shall not be removed without the approval of the Engineer. Forms under arches, pier caps, or other special design conditions may be removed upon approval of the Engineer after the concrete attains 85% of the minimum compressive strength as specified in Table 1.

The removal of forms and supports may begin when the concrete is found to have the required strength. In no case shall the number of curing days be less than specified in Table 5.

Methods of form removal likely to cause overstressing of the concrete shall not be used. Forms and their supports shall not be removed without approval. Supports shall be removed in such a manner as to permit the concrete to uniformly and gradually take up the stresses due to its own dead load.

(h) Stay-in-Place Corrugated Metal Forms (SIPCMF) for Superstructure Deck Slabs.

- (1) General. Use of SIPCMF for superstructure deck slab construction shall be subject to the following requirements:

- a. Fascia overhangs shall be formed with removable forms that leave the resulting concrete with a flat-surfaced finish.
- b. Bays that are constructed in stages such that a longitudinal joint is required shall be made with removable forms.

- (2) Design Requirements. The following requirements shall govern the design of SIPCMF:

- a. The design span shall be the clear span of the form plus 2 inches, measured parallel to the form flute (also referred to as the form valley).
- b. The design load shall be the sum of the weight of forms, bar reinforcement, plastic concrete, and 55 pounds per square foot for construction loads.
- c. The unit working stress shall not exceed 75% of the specified minimum yield strength of the material.
- d. The dead load deflection shall not exceed 1/180 times the form span length or 1/2 inch, whichever is less.

- e. Physical design properties shall be computed with the requirements of the latest edition of the *American Iron and Steel Institute Specifications for the Design of Cold-Formed Steel Structural Members*.
- (3) Construction Requirements. The following construction requirements shall apply to the use of SIPCMF:
- a. Construction Drawings. The Contractor shall submit construction drawings for SIPCMF in accordance with the requirements of Subsection 105.03. These drawings shall contain the following information as a minimum:
 - 1. The name of the SIPCMF supplier.
 - 2. A layout showing the compression and tension region of each beam/girder.
 - 3. The method of SIPCMF attachment for the compression and tension regions.
 - 4. The geometric properties of each type of panel being used.
 - 5. The number, location, and type of panels being used within each girder bay.
 - 6. Panel laps, considering the direction of concrete pours.
 - 7. The specifications for the material used to fill the flutes.
 - 8. Any other material data, erection information, or miscellaneous notes that may be required.
 - b. Handling and Installation. Care and protection shall be given the metal form sheets, supports, and accessory items during handling, shipping, and storage. During loading, hoisting, and unloading operations, extra precaution and care shall be taken to prevent damage to ends, corners, and edges of form sheets, supports, and accessory items.

If the form units and accessories are to be stored prior to installation, they shall not be placed in contact with the ground and shall be adequately covered or protected to keep them dry.

Form supports shall be placed in direct contact with the flange of beam/girder/stringer or floor beam. All attachments shall be made by permissible welds, bolts, clips, or other approved means. The welding of form supports to steel not considered weldable or to portions of flanges subject to tensile stresses shall not be permitted. Welds and welding shall be in accordance with the requirements of Subsection 506.10, with the exception that a 1/8-inch fillet weld will be permitted.

Form sheets shall not be permitted to rest directly on the flanges. They shall be securely fastened to form supports by self-tapping screws and shall have a minimum bearing length of 1 inch at each end. Transverse construction joints shall be located at the bottom of a valley. A 1/4 inch diameter weep hole shall be drilled at the lower end of each flute or valley.

Screed and pouring runway supports shall not be located directly on the form sheets, form supports, or reinforcing steel. No loose sheets or miscellaneous hardware shall be left on the structural slab at the end of the working day.

The corrugated metal sheets shall be fabricated for the placement sequence used, with the joints between sections of sheets overlapped or securely fastened to eliminate differential deflections. Any exposed form metal where galvanizing has been damaged shall be cleaned and repaired to the satisfaction of the Engineer.

(4) Inspection Procedures. The following three-step inspection procedure will be used to check the soundness of the concrete deck against the SIPCMF.

- a. Step 1. Not less than two days after completion of a concrete structural slab pour, but prior to the next slab pour, one panel of the SIPCMF shall be removed from the most recently completed pour of each span, at a location selected by the Engineer, to provide visual evidence that the concrete mix or the construction procedures are obtaining the desired results.

If the concrete mix or the construction procedures are varied significantly within a pour, such as a change in the extent of vibration or change in the workability of the mix, another section of forming shall be removed to verify that the new procedures are yielding desirable results.

- b. Step 2. After the concrete has attained 85% of the specified design strength, the Engineer will spot-check the underside areas of the steel forms by sounding with a suitable weight hammer. If honeycomb or voided areas are detected, the SIPCMF at that location shall be removed for a visual inspection.
- c. Step 3. A minimum of 2% of the total SIPCMF area shall be removed for visual inspection of the concrete surface. The amount of sounding and form removal may be moderated, at the Engineer's discretion, after a substantial amount of the slab has been constructed and inspected, if the Contractor's methods of construction and results of the inspections as outlined above indicate that sound concrete is being obtained throughout the slab.

If, after removing a section of form, the concrete is found to be defective, additional panels shall be removed as directed by the Engineer. All defective concrete shall be repaired to match the adjacent concrete in section and color to the satisfaction of the Engineer.

The Contractor shall provide all facilities required for the safe, suitable, and convenient means of access to the forms for the Engineer's inspection procedures.

The form sections shall be removed by a metal saw or air-carbon-arc gouging with minimum damage to the concrete. Cuts shall only be sufficiently deep to sever the form. Any other method of removal shall be submitted to the Structures Engineer for approval. Cuts parallel to the corrugations in the forms shall be located on the sloping surface midway between a crest and valley. Cuts parallel to the supporting beams/girders shall be made through the supporting angles taking care not to damage the structural steel beams/girders.

The Contractor will not be required to replace the forms which have been removed.

9. PLACING CONCRETE.

- (a) Workforce. The Contractor shall always have sufficient skilled personnel during the concreting operations to properly place, consolidate, and finish the concrete. If, in the opinion of the Engineer, the Contractor does not have sufficient skilled personnel to handle the concrete properly, the Engineer may postpone the start of the concreting operations until the Contractor has remedied this situation.

- (b) Pre-Placement Meeting. For deck pours, or as required by the Engineer, a pre-placement meeting shall be scheduled by the Contractor to take place at least 7 calendar days before concrete placement, and prior to the Trial Pour, if required. Attendees at the pre-placement meeting shall include, but not be limited to, the Contractor's Project Superintendent, the Engineer, the Agency's Structural Concrete Engineer, and the concrete producer.

The Contractor shall provide a placement plan that addresses, but is not limited to, the following topics:

- (1) Time of concrete placement and amount
- (2) Batch plant testing
- (3) Delivery of concrete
- (4) Method of concrete placement on the deck
- (5) Consolidation and finishing of concrete
- (6) QC testing of the plastic concrete
- (7) Protection of the concrete from evaporation
- (8) Curing of the concrete
- (9) How to avoid long delays for balance loads
- (10) Screenshot, work bridge, and rail set-up
- (11) Dry run schedule
- (12) Contingency plans for long delays, break downs, weather events and other potential problems
- (13) Crew size and responsibilities
- (14) Available equipment
- (15) Project layout including locations for all pumps, cranes, testing, cleanouts, staging, etc.

- (c) Placement Limitations. All concrete shall be placed in daylight, unless otherwise authorized in writing by the Engineer. Authorization to place concrete at any other time shall not be given unless an adequate lighting system is provided prior to beginning the concrete placement operations.

Concrete shall not be placed under adverse environmental conditions that the Engineer determines will interfere with acceptable placement and/or finishing operations.

Concrete shall not be placed until the depth and character of the foundation, the apparent adequacy of the forms and falsework, and the placing of the reinforcing steel have been approved by the Engineer. The interior of the forms shall be clean of all debris before concrete is placed.

The Contractor shall submit to the Engineer a schedule of batching, delivery, and placement prior to the beginning of the concreting operations. The Contractor shall comply with the requirements of Subsection 5.

Equipment and tools necessary for handling materials and performing all parts of the work shall meet the approval of the Engineer as to design, capacity, and mechanical condition and must be on the site before the work is started. Any equipment, in the judgment of the Engineer, that proves inadequate to obtain results prescribed shall be improved or new equipment substituted or added.

The Engineer may suspend the pour or reject the pour if the Contractor deviates from the accepted pour plan which will also include unacceptable delivery rates. The Contractor will not be allowed compensation due to the pour being suspended or rejected due to the Contractor deviating from the accepted pour plan or uncontrolled delivery rates.

For simple spans, concrete should be deposited by beginning at the lower end of the span and working toward the upper end. For continuous spans, where required by design considerations, the concrete placing sequence shall be as shown on the Plans.

Concrete shall not be deposited in the forms more than 4 feet from its final position.

The dropping of unconfined concrete more than 5 feet will not be permitted.

Concrete shall not be deposited in running water.

The rate of placing the concrete shall be so regulated that no excessive stresses are placed on the forms. Concrete in all decks shall be placed in one continuous operation, unless otherwise specified.

Concrete shall be placed in continuous horizontal layers, the thickness of which shall not exceed 18 inches, unless otherwise directed by the Engineer. Each succeeding layer shall be placed before the underlying layer has taken initial set and shall be consolidated in a manner that will eliminate any line of separation between the layers. When it is necessary, due to any emergency, to place less than a complete horizontal layer at one operation, such layer shall terminate in a vertical bulkhead.

After the concrete has taken its initial set, care shall be exercised to avoid jarring the forms or straining the ends of projecting reinforcing bars.

- (d) Placement of Overlays. For a period of at least 24 hours before the placement of overlay material, the prepared surface shall be flooded with water. After removal of all free water, the overlay material shall be deposited on the damp surface and manipulated to coat the horizontal and vertical surfaces to be covered. The rate of progress shall be controlled to prevent the drying of previously deposited materials.
- (e) Use of Chutes. Chutes, troughs, and pipes used in placing concrete shall be arranged to avoid segregation of the materials and the displacement of the reinforcement and shall be approved by the Engineer. Aluminum chutes, troughs, or pipes will not be permitted.

All chutes, troughs, and pipes shall be kept clean and free of hardened concrete by thoroughly flushing with water after each run. Open troughs or chutes shall be either of metal or metal-lined and shall extend as nearly as possible to the point of deposit. When the discharge must be intermittent, a hopper or other device for regulating the discharge shall be provided.

Dropping of unconfined concrete more than 5 feet or depositing a large quantity at any point and running or working it along the forms will not be permitted.

- (f) Use of Vibrators. Unless otherwise specified, the concrete shall be consolidated with mechanical vibrators, of an approved type and design, operating within the concrete. When required, vibrating may be supplemented by hand-spading with suitable tools to ensure proper and adequate consolidation.

Vibrators shall be manipulated to work the concrete thoroughly around the reinforcement and imbedded fixtures and into corners and angles of the forms to produce surfaces free of imperfections. Vibrators shall not be used to cause concrete to flow or run into position in lieu of placing. The vibration at any point shall be of sufficient duration to accomplish consolidation but shall not be prolonged to the point where segregation occurs.

Vibrators shall have non-metallic or rubber-coated heads. Vibrating machines shall at no time be left running unattended in the concrete.

When it is necessary due to an emergency to discontinue the placing of a monolithic section, the use of vibrators shall cease. Vibrators shall not again be used until a sufficient depth of fresh concrete is placed to prevent any possibility of the effect of vibration on the concrete already in place and in no case shall this depth be less than 2 feet.

The number of vibrators used shall be ample to consolidate the incoming concrete immediately after it is deposited in the form. The Contractor shall have at least one spare vibrator in serviceable condition at the site of the structure in which more than 25 cubic yards of concrete are to be placed.

The vibrators shall be capable of transmitting vibration to the concrete at frequencies of not less than 4,500 impulses per minute under load. The vibration shall be of sufficient intensity and duration to cause plasticity, settlement, and complete consolidation of the concrete without causing segregation. The vibrator shall visibly affect a mass of concrete of 2-inch slump over a radius of at least 18 inches.

- (g) Blasting Operations. All blasting operations within 200 feet of any concrete work shall be completed prior to the placement of the concrete. Regardless of the above limitation on blasting operations, the Contractor shall be responsible for any damage resulting from blasting operations.

10. DEPOSITING CONCRETE UNDER WATER.

- (a) General. Concrete shall not be deposited under water except as specified by the Contract or upon approval of the Engineer and shall be subject to the following specifications.
- (b) Placement. When placing concrete underwater, the Contractor shall use a tremie or an alternate method of conveyance, approved by the Engineer, which minimizes the mixing of fresh concrete and water. A tremie shall have a hopper at the top that empties into a watertight tube at least 10 inches in diameter.

The discharge end of the tube on the tremie shall include a device to seal out water while the tube is first filled with concrete. An inflatable ball will not be permitted. The device shall keep its shape and float without danger of deflation.

The placement shall be continuous to the elevations shown on the Plans and the resulting concrete shall be monolithic and homogeneous.

Concrete shall not be deposited in water that has a temperature of 35°F or below. When the water temperature is between 35°F and 40°F, the mixing water, the aggregates, or both shall be heated as specified in Subsection 7(b).

A tremie shall be constructed of heavy-gauge steel pipe and consist of watertight joints between the tremie sections with a diameter of not less than 10 inches. The tremie hopper shall have a capacity of at least 1/2 cubic yard. When a batch is dumped into the hopper, the flow of the concrete shall be induced by slightly raising the discharge tube, always keeping it in the concrete.

Tubes shall be kept continuously submerged in concrete during discharge. The depth that the tube is submerged in concrete and the height of the concrete in the tube shall be sufficient to prevent water from entering the tube. The Contractor shall continuously monitor the difference in elevation between the top of the concrete and the end of the discharge tube.

Horizontal movement of discharge tubes through the concrete will not be allowed.

For minor quantities, at the sole discretion of the Engineer, a direct pumping method may be approved. If a direct pumping method is to be implemented, the pipe discharging the concrete shall consist of heavy-gauge steel sections. The Contractor shall demonstrate the ability to pump the concrete without the pump line surging or otherwise moving in the water as concrete is being pumped.

Cylinders cured as field cure shall be cured at the same temperature as the water covering the concrete.

11. PUMPING. Where concrete is conveyed and placed by mechanically-applied pressure, the equipment shall be suitable in kind and adequate in capacity for the work. The pump shall be capable of pumping concrete within the specified slump limits. The use of aluminum pipe as a conveyance for the concrete will not be permitted.

The operation of the pump shall be such that a continuous stream of concrete without air pockets is produced. When pumping is completed, the concrete remaining in the pipeline, if it is to be used, shall be ejected in such a manner that there will be no contamination of the concrete or separation of the ingredients. The equipment shall be arranged so that no resulting vibrations may damage freshly placed concrete.

12. CONSTRUCTION JOINTS.

- (a) Construction Joint Locations. Joints shall be formed at the location shown on the Plans. Any variation or new location of joints shall require written permission of the Engineer. Feather edges at construction joints will not be permitted. Joints shall be formed with inset formwork so that each layer of concrete will have a thickness of not less than 6 inches.

- (b) Joining Fresh Concrete to Previously Set Concrete. When joining fresh concrete to concrete that has hardened, the surface of the set concrete shall be roughened in such a manner that will not leave loosened particles or damaged concrete at the surface and shall be thoroughly cleaned of all laitance, loose, and foreign material. Immediately prior to the placing of the new concrete, the surface shall be saturated with water.

When shown on the Plans or ordered by the Engineer, the surface shall be thoroughly coated with a very thin coating of mortar, neat cement grout, or epoxy bonding system and all forms drawn tight against the face of the concrete. This coating shall not be allowed to dry out before being covered with fresh concrete.

- (c) Filled Construction Joints. Filled construction joints shall contain a pre-formed cork joint filler or other pre-formed joint filler that may be shown in the Contract. Joint filler shall be cut to fit exactly and shall completely fill the space that is shown on the Plans. Where a pour grade or caulking grade filler is indicated to be used in the joints, that portion of the joint to be filled shall be formed with a separate material (other than the pre-formed joint filler) that can easily be removed prior to placement of the above indicated filler.
- (d) Water Stops. Approved water stops shall be placed at locations shown on the Plans. They shall form continuous watertight joints.
- (e) Bond Breakers. Bond breakers shall be asphalt-treated felt or pipe insulation, as shown on the Plans.

13. EXPANSION JOINTS. All expansion joints shall be constructed according to details shown on the Plans.

- (a) Filled Compression and Expansion Joints. Filled compression and expansion joints shall be made with a pre-formed self-expanding cork joint filler or other pre-formed joint filler that may be shown in the Contract. Joint filler shall be cut to fit exactly and shall completely fill the space that is shown on the Plans. Where a pour grade or caulking grade filler is indicated to be used in the joint, that portion of the joint to be filled shall be formed with a separate material (other than the expansion joint filler) that can easily be removed prior to placement of the above indicated filler.
- (b) Special Types of Expansion Joints. Special types of expansion joints may be used when shown on the Plans or ordered by the Engineer.

14. CONCRETE FINISHING.

- (a) Finishing Bridge Decks and Overlays.

- (1) General. The Contractor shall follow the procedures and details for placing the deck in accordance with the pre-placement meeting. The procedure shall provide for adequate labor, equipment, and material supply to complete placement of concrete on the entire deck, or specified portion thereof.

If, during the placement, unforeseen circumstances delay the progression of the pour to a point where the concrete begins to lose plasticity, the Contractor shall be prepared to place a bulkhead, as directed by the Engineer.

If at any time the screed machine does not advance in a 15-minute period due to delayed concrete delivery, mechanical breakdown or other problem, the Contractor shall immediately cover concrete that is under the screed machine past the leading edge of the concrete with wet burlap. Just before concrete placement is to begin, the burlap shall be removed, the screed machine will be moved back, fresh concrete will be added to the area that was directly under the screed to the leading edge, and the area will be vibrated again. The screed machine may then be advanced forward to continue the placement.

Approval of their methods and equipment does not relieve the Contractor of full responsibility for obtaining the required surface finish.

Prior to texturing, the finished concrete surface shall be examined by the Contractor. Surface irregularities greater than 1/8 inch in 10 feet in either the longitudinal or the transverse direction shall be corrected in a manner acceptable to the Engineer. When a bituminous concrete surface is to be placed on a bridge deck, the deviation shall not be greater than 1/4 inch. When a sheet membrane is being applied, sharp ridges shall not be allowed. Thin mortar or laitance, which may have accumulated ahead of the finishing machine screed, shall be removed from the work site. These materials shall not be used to fill depressions.

If the bridge deck concrete does not meet the above smoothness requirements, the Contractor shall remove high spots up to 1/2-inch high by means of grinding. Any other corrections shall be made only with the written approval of the Engineer. The use of bush hammers will not be allowed. No concrete shall be removed that will result in a concrete slab thickness less than that shown on the Plans.

Any deck that cannot be corrected by a method satisfactory to the Engineer shall be removed and replaced at the Contractor's expense.

Sidewalks shall receive their final finish with a fine bristled broom.

- (2) Turf Drag. When specified on the plans, the surface shall be given a suitable texture with an artificial turf drag made of molded polyethylene or other material or method that will provide an acceptable finish. The selection of turf drag or other method should be capable of producing a surface texture with a horizontal peak-to-peak distance ranging from 0.02 inch to less than or equal to 0.25 inch and having a peak-to-peak amplitude of 0.005 inch to 0.8 inch. A turf drag material or other acceptable method that will minimize tearing and rolling of coarse aggregate from the surface shall be used.

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

One pass of the turf drag over the finished area is desired. The drag shall leave a seamless strip between passes. The finish texture resulting from the drag shall stop within 15 inches of the curb face, rail anchor bolts, or edge of deck. Any buildup of concrete at the beginning or end of the pass shall be hand troweled to provide an even transition.

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

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

The turf drag or other acceptable methods should not be applied when the surface is so wet or plastic that the ridges formed flow back into the valleys when the drag has passed, nor should dragging be delayed until the concrete is so hard that sharp ridges cannot be formed by the drag. Fogging or similar methods shall be deployed to ensure that the surface does not dry prematurely.

If the 10-minute maximum, as specified in Subsection 15(c), for applying the wet cure cannot be met, then fogging of the area shall be performed in a manner that keeps the relative humidity above the evaporation rate of the concrete surface, but not so excessive that water begins to collect on the surface prior to texturing or other surface manipulating procedures.

- (3) Finishing Machine Rail Supports. Finishing machine rail supports shall be of substantial construction and accurately set so that the finished deck surface will conform to the profile and transverse sections shown in the Plans. Finishing machine rail supports shall be placed and adjusted to properly provide for the deflection of forms, falsework, and structural supporting members which will occur during the placement of the concrete.

The finishing machine rail supports shall be spaced at a maximum of 2 feet on center and of sufficient design as to secure the rail to prevent it from falling off the support. The screed rails shall be configured to allow the screed machine and work bridges to be fully functional over the entire deck area.

Sufficient screed rails shall be provided so that all rails necessary for any one continuous pour may be preset and graded before the start of concreting operations. The removal of screed rails and exposed chairs shall be accomplished without walking in the fresh concrete and while the concrete is still plastic.

The Contractor shall furnish a work bridge or bridges of an approved type, capable of spanning the entire width of the deck without deflection to the concrete slab surface.

- (4) Finishing. After the concrete has been placed, it shall be struck off by a finishing machine and the operation shall be repeated as necessary to produce a uniformly consolidated, dense, smooth surface. The final passage of the finishing machine shall result in a uniform surface at the required grade and slope over its entire area.

Finishing machines shall be kept in true adjustment. Machines shall not be used until the proper adjustments have been made and the adjustments have been checked and approved by the Engineer.

Sufficient time shall be provided prior to beginning concreting operations for the finishing machine to be operated over the full length of the bridge deck segment to be placed. This test run shall be made with the screed adjusted to its finishing position. While operating the finishing machine in this test, the screed rails shall be checked for deflection and proper adjustment, the cover on slab reinforcement shall be measured, and the controlling dimensions of slab reinforcement and forms shall be checked.

After the concrete is placed, it shall be struck off by one of the following methods:

- a. A self-propelled concrete finishing machine may be deployed, supported on suitable rails, and equipped with adjustable strike-off and finishing roller screeds capable of producing the required finish surface for the full width of the bridge from face-to-face of curbs.
- b. An approved mechanical vibrating screed may be deployed, capable of exerting a force of at least 12 pounds per linear foot, and generating at least 6,500 vibrations per minute when checked by a vibration reed-type tester. The vibrating screed shall provide a uniform finish throughout its entire length and shall be properly adjusted so as not to drive the aggregate more than 1/4 inch below the surface.

In areas that are inaccessible to finishing machines, an approved manual vibratory-equipped power screed with an approved grade-control method may be used with approval from the Engineer. Smoothness shall be checked as specified in Subsection 14(a)(1) to ensure a smooth ride and seamless transition to the finishing machine's finished area.

If manual vibratory-equipped power screeds are used, then initial vibration of the concrete for consolidation in those areas shall be of the minimal duration possible to avoid over-vibration and loss of air entraining of the surface concrete in these areas.

Hand finishing shall be allowed only in areas inaccessible to finishing machines or manually driven vibratory-equipped power screeds. Hand screeds or bull floats shall be magnesium and at least 10 inches in width. Care shall be taken not to overwork the concrete surface during any finishing operation. Smoothness shall be checked as specified in Subsection 14(a)(1) to ensure a smooth ride and seamless transition to the finishing machine's finished area.

15. CURING CONCRETE.

- (a) General. Water for use in curing concrete shall conform to the requirements of Subsection 745.01. The effective cure time shall be only the time that the concrete has been maintained in a wet condition with the concrete surface temperature above 50°F. If the concrete is not maintained in a wet condition and/or the concrete surface temperature drops below 50°F, it shall not be counted as effective cure time. The cure period will be extended 4 hours for every 1 hour the concrete is below 50°F, beginning when the concrete temperature is raised to or exceeds the minimum curing temperature.

Regardless of the curing medium specified, the entire surface of the newly placed concrete shall be kept damp. This shall be achieved by applying water with a nozzle that atomizes the flow so that a mist and not a spray is formed. The moisture shall not be applied under pressure directly upon the concrete and shall not be allowed to accumulate in a quantity sufficient to cause a flow or washing of the surface.

The atomized flow shall be applied continuously until the surfaces can be covered by the specified curing mediums. For bridge barriers, curbs, and sidewalks the curing method shall be applied within 15 minutes of the completion of the finishing process.

Concrete components shall be cured for the times specified in Table 5.

TABLE 5 – CURING TIMES FOR CONCRETE COMPONENTS

Type of Construction	Curing Methods (Subsection)	Effective Cure Time (Days)
Substructure	17(b)(1), (2), (3), (5), (7), (8)	7
Superstructure	17(b)(2), (8)	10 ¹
Retaining walls	17(b)(1), (2), (5), (6), (8)	7
Headwalls	17(b)(1), (2), (5), (6), (8)	7
Sidewalks, curbs, and gutters	17(b)(2), (8)	7

¹ There shall be no activity on the superstructure during the cure period.

- (b) Curing Methods. All exposed surfaces of newly placed concrete shall be cured by one of the following specified methods:
 - (1) Water Curing. Curing with water shall be by continuously sprinkling or flooding of all exposed surfaces for the entire required curing period.

- (2) Burlap Curing. The entire exposed surface of the concrete shall be covered with two layers of approved burlap that has been pre-soaked with water. The burlap shall then be covered with a lapped layer of white polyethylene sheeting. Once the concrete superstructure has hardened sufficiently, a stream of water, applied with a soaker hose or similar device, shall be run continuously under the polyethylene sheeting until the cure period is complete.
- (3) Sand Cover. The entire exposed surface of the concrete shall be covered with at least 3 inches of approved sand that shall be kept wet for the entire curing period.
- (4) White Polyethylene Sheeting. The entire exposed surface of the concrete shall be covered with a blanket of white polyethylene sheeting, maintained and fastened to provide a nearly airtight condition in contact with the surface where possible. If, in the opinion of the Engineer, this cover is not adequately provided or maintained to ensure the proper conditions for the concrete cure, then the white polyethylene sheeting cure shall be terminated and another method substituted.
- (5) White Burlap-Polyethylene Sheeting. The entire exposed surface of the concrete shall be covered with a blanket of white burlap-polyethylene sheeting. The burlap shall be thoroughly dampened prior to placing and shall be placed next to the concrete. All joints shall be lapped a minimum of 18 inches. The burlap shall be kept damp throughout the curing period.
- (6) Membrane-Forming Curing Compounds. White-pigmented or fugitive-dye membrane-forming curing compounds may be used for curing concrete in minor drainage structures. All other uses of curing compounds shall be approved in writing by the Engineer. Only membrane-forming curing compounds approved by the Agency's Materials Section may be used.

When membrane curing is used, the exposed concrete shall be thoroughly sealed immediately after the free water has left the surface. The concrete inside the forms shall be sealed immediately after the forms are removed and necessary finishing has been done.

The solution shall be applied in one or two separate applications. If the solution is applied in two increments, the second application shall follow the first application within 30 minutes. Satisfactory equipment shall be provided, together with means to properly control and ensure the direct application of the curing solution to the concrete surface to result in a uniform coverage of the surface area at the rate of 1 gallon of solution for each 150 square feet.

If rain falls on the newly-coated concrete before the film has dried sufficiently to resist damage, or if the film is damaged in any other manner, a new coat of the solution shall be applied to the affected portions equal in curing value to that specified above.

Should the surface be subject to continuous injury or the use of curing compound results in a streaked or blotchy appearance, the method shall be stopped and water curing applied.

- (7) White Polyethylene Sheeting with Sand Cover. This method may be used only when approved by the Engineer and shall conform to the requirements of Subsection 15(b)(4). The airtight condition shall be obtained by the addition of a uniform sand cover with a minimum depth of 2 inches.
- (8) Pre-Dampened Cotton Mats. The entire exposed surface of the concrete shall be covered with a blanket of cotton mats that has been pre-dampened with water. The mats shall be maintained in a damp condition until the curing period is complete.

If, in the opinion of the Engineer, the Contractor's curing procedure is not producing an adequate cure, the Engineer may direct a change in the cure method at no additional cost to the Agency.

- (c) Bridge Decks. For bridge decks, the curing method shall promptly follow the screed machine, within a maximum lag time of 10 minutes and without interruption. If this lag time cannot be met, then fogging of the area shall be performed in a manner that keeps the relative humidity above the evaporation rate of the concrete surface, but not so excessive that water begins to collect on the surface prior to texturing or other surface manipulating procedures.
16. LOADING OF CONCRETE. After the concrete has been placed and the finishing operations concluded, it shall not be walked on or disturbed in any manner, including removal of forms, for a minimum period of 18 hours. If retarder is used as an admixture, this minimum period may be extended as directed by the Engineer.
- (a) Substructure. No backfill material shall be placed against a newly completed structure unless the concrete cure is maintained in accordance with Table 5, and until the field cured test cylinders have attained 85% of the compressive strength specified in Table 1. However, the Contractor may erect forms for subsequent concrete placement on footings after 18 hours have elapsed from the time that the footing placement was completed, provided the concrete has sufficient strength to allow it to be worked on without damage, and proper cure is maintained.

Static loads, such as forms, reinforcing steel, or other materials necessary for construction, may be placed on any concrete after it has been in place 72 hours, or a compressive strength of 1,800 pounds per square inch has been obtained, provided proper curing is maintained. Superimposed loads from subsequent concrete pours will not be allowed on any substructure unit or section in place until the field cured test cylinders have attained 85% of the compressive strength specified in Table 1, and provided curing of the supporting section is maintained in accordance with Table 5.

- (b) Superstructure. Static loads, such as forms, granite curbing, cast-in-place concrete curb, and other materials necessary for deck construction, shall not be placed on deck concrete until the effective cure time specified in Table 5 is complete and the field-cured test cylinders for this concrete have attained 85% of the compressive strength specified in Table 1.

The Contractor shall keep bridge floors free of all motor vehicles, transit mixers, and heavy construction equipment until the curing period is satisfactorily completed, the field-cured test cylinders for the bridge floor concrete have attained the compressive strength specified in Table 1, and the field-cured test cylinders for the curb concrete or bridge rail concrete, as applicable, have attained 85% of the compressive strength specified in Table 1.

- (c) Vertical Joints. Concrete shall not be placed against a vertical construction joint until the previously placed concrete has been in place a minimum of 72 hours.

17. METHOD OF MEASUREMENT. The quantity of Special Provision (Performance-Based Concrete, Class PCD), Special Provision (Performance-Based Concrete, Class PCS), and Special Provision (Performance-Based Concrete, Class SCC) to be measured for payment will be the number of cubic yards of the class of concrete specified in the complete and accepted work, as determined by the prismoidal method using dimensions shown on the Plans or as directed by the Engineer.

The quantity of concrete shall also include the volume of superstructure precast concrete stay-in-place forms, but exclude the volume of steel or other stay-in-place forms and form filling materials. No deductions will be made for the volume of concrete displaced by steel reinforcement, structural steel, expansion joint material, scuppers, weep holes, conduits, tops of piles, scoring, chamfers or corners, inset panels of 1-1/2 inches or less in depth, or any pipe less than 8 inches in diameter.

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

The cost of heating materials and protecting the concrete against cold weather, and any additional cost for cement, will not be paid for separately but will be considered incidental to the Contract unit prices for the applicable concrete pay items.

The cost of furnishing testing facilities and supplies at the batch plant and the setting of inserts, bench marks, and bridge plaques furnished by the Agency will not be paid for separately but will be considered incidental to the Contract unit prices for the applicable concrete item.

Costs for all materials, labor, and incidentals for steel or other stay-in-place forms and form filling materials will not be paid for separately but will be considered incidental to the Contract unit prices for the applicable concrete item.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.608 Special Provision (Performance-Based Concrete, Class PCD)	Cubic Yard
900.608 Special Provision (Performance-Based Concrete, Class PCS)	Cubic Yard

REMOVE AND RESET HIGHWAY SIGN

- 1. DESCRIPTION. This work shall consist of removing and resetting an existing highway sign attached to the bridge at the location indicated in the Plans and as directed by the Engineer.

The work under this section shall be performed in accordance with these provisions and the Plans.

- 2. MATERIALS.

High-Strength Bolts, Nuts, and Washers	714.05
Anchor Bolts, Bridge Railing	714.07
Galvanizing	726.08

- 3. CONSTRUCTION REQUIREMENTS. The Contractor shall carefully remove the existing fascia mounted highway sign as indicated on the plans or directed by the Engineer. Special care shall be taken to avoid damage to the sign and support bracket and materials to be reused shall be stored and protected until resetting. New high strength bolts and concrete anchor bolts matching the existing size or as shown in the Plans shall be provided and shall be galvanized in accordance with Subsection 726.08. Any materials damaged by the Contractor’s operations shall be repaired or replaced to the satisfaction of the Engineer, at no additional cost to the Owner.

- 4. METHOD OF MEASUREMENT. The quantity of Special Provision (Remove and Reset Highway Sign) to be measured for payment will be the number of each sign removed and reset in the complete and accepted work, at the location indicated on the Plans.

- 5. BASIS OF PAYMENT. The accepted quantity of Special Provision (Remove and Reset Highway Sign) will be paid for at the Contract unit price per each. Payment will be full compensation for removing, transporting, handling, storing, protecting, and resetting the sign at the location indicated on the Plans or as directed by the Engineer; any required new or replacement materials including anchor bolts and high strength bolts to complete the work; 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>
900.620 Special Provision (Remove and Reset Highway Sign)	Each

PUBLIC PROTECTION FOR BRIDGE PROJECTS

1. DESCRIPTION. This work shall consist of providing protection for vehicular and pedestrian traffic traveling below a bridge that is under construction.
2. SUBMITTALS. The Contractor shall submit Construction Drawings in accordance with the requirements of Section 105 for the methods and sequence of work, including the materials and equipment to be used for the work. The plan shall contain provisions for all stages of construction where any member of the public could be exposed to danger from falling objects or construction operations. Any calculations required to prepare the Construction Drawings shall be included in the submittal.
3. GENERAL REQUIREMENTS. The Contractor shall determine the materials and methods to use for this work based on the conditions at a particular location.
 - (a) Shielding. Should the Contractor choose to use shielding supported by the existing structure, it shall be made of material of adequate strength and size to completely protect the public from any falling object(s) related to the construction activities. The existing structure shall be evaluated to determine if it can support the additional loads from the shielding system.
 - (b) Enclosures. Should the Contractor choose to use an enclosure, it shall be made of material of adequate strength and size to completely protect the public from any falling object(s) related to the construction activities. Any roadway enclosure or containment system shall be of adequate width and height to allow passage of oversize vehicles. If required by the Engineer, vehicular enclosures which are more than 50 feet long shall have their interior illuminated during daylight hours. Pedestrian enclosures of any length shall have their interior illuminated for the full duration of their use.
 - (c) Diversions. Should the Contractor choose to divert the vehicular and pedestrian traffic from passing beneath the bridge under construction, the diversion course shall be via an acceptable State highway route; meet the requirements of the MUTCD for traffic control; and meet the requirements of this specification.
 - (d) Interruptions. Should the Contractor choose to interrupt the flow of vehicular or pedestrian traffic below a bridge under construction, flaggers shall be used. An interruption shall be defined as the stopping of traffic. The duration of time for each individual interruption shall not exceed ten minutes, and the total of the interruptions shall not exceed thirty minutes in any hour.

The method or combination of methods the Contractor chooses to use shall be fully operational before any construction work which might endanger the public begins on the bridge.

4. METHOD OF MEASUREMENT. The quantity of Special Provision (Public Protection for Bridge Projects) to be measured for payment will be on a lump sum basis in the complete and accepted work.

The quantities for Uniformed Traffic Officers and Flaggers will be measured separately in accordance with Section 630.

- 5. BASIS OF PAYMENT. The accepted quantity of Special Provision (Public Protection for Bridge Projects) will be paid for at the Contract lump sum price. Payment will be full compensation for preparing a public protection plan, and for furnishing all labor, materials, tools, equipment, and incidentals necessary to complete the work.

Partial payments will be made as follows:

- (a) The first 25% of the Contract lump sum price will be paid once the Construction Drawings are returned as Conforming or Conforming with Comments.
- (b) The remaining 75% of the Contract lump sum price will be paid on a prorated basis for the estimated duration of the Contract work remaining.

Uniformed Traffic Officers and Flaggers will be paid for separately under Contract items 630.10 and 630.15, respectively.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Public Protection for Bridge Projects)	Lump Sum

REMOVAL, CONTAINMENT, AND DISPOSAL OF LEAD PAINT

1. DESCRIPTION. This work shall consist of the washing of the existing lead paint coated surfaces, the removal of existing lead paint and grease rustproofing compounds, as well as the containment, collection, temporary storage, transportation, and disposal of the resulting waste. Waste requiring containment and control includes, but is not limited to, old paint, spent abrasives, corrosion products, mill scale, dirt, dust, grease, oil, salts, solvents, and water used for cleaning the surface of existing lead coatings. Areas of paint removal operations are indicated on the Plans.

2. GENERAL REQUIREMENTS. The existing coatings are assumed to contain lead and other toxic metals, regardless of any test results. All removal activities will be performed accordingly. This specification provides the requirements for containment and for the protection of the public and the environment from exposure to harmful levels of toxic metals that may be present in the paint being removed or repaired. The Contractor shall take reasonable and appropriate precautions to protect the public from the inhalation or ingestion of dust or debris from the operations, and is responsible for the clean-up of all spills, releases, or emissions of waste at no additional cost to the Agency.

The Contractor shall comply with the requirements of this specification and all applicable Federal, State, and Local laws, codes, and regulations. These include, but are not limited to, the regulations of the United States Environmental Protection Agency (EPA), Vermont Occupational Safety and Health Administration (VOSHA), Vermont Department of Health (VDOH), and the Vermont Agency of Natural Resources (ANR). The Contractor shall comply with all applicable regulations even if the regulation is not specifically referenced herein. If a Federal, State, or local regulation is found to be more restrictive than the requirements of this specification, the more restrictive requirements shall prevail as determined by the Engineer.

3. PROJECT CLASSIFICATION. The removal, containment and disposal of lead paint will be classified as either a Type I or a Type II project as follows:
 - (a) Type I. Type I projects shall consist of work to remove all paint from a substantial portion of the existing structure, or to remove the paint from large, contiguous areas of a portion of a structure. Examples of such work would be projects where all or some of the main girders were completely stripped of paint. Often, paint removal and repainting the structure will be a primary goal of a Type I project. Type I projects can usually be expected to require a full external containment system.

- (b) Type II. Type II projects shall consist of work to selectively remove paint from multiple small, localized areas, or to remove paint from a few discrete, discontinuous and moderately sized areas. Examples of such work would be the removal of paint associated with gusset plate replacement, bolt or rivet replacement, installation of new cover plates, or installation of new shear studs on existing beams. Typically, paint removal is either a secondary goal or merely a prerequisite for other work on a Type II project. Type II projects can often, but not always, be completed primarily with vacuum blast cleaning and vacuum-shrouded power tools and may not require a full containment system.

Unless identified as being specific to either a Type I or Type II project, all requirements of this specification shall apply to both Type I and Type II projects.

4. REQUIRED REFERENCES. For the duration of the project, the Contractor shall maintain printed copies of the following standards and regulations on the project site:

SSPC Guide 6: Guide for Containing Debris Generated During Paint Removal Operations;

SSPC Guide 7: Guide for Disposal of Lead Containing Surface Preparation Debris;

29 CFR 1926.62 - Lead in Construction;

40 CFR Part 50, Appendix B - Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method);

40 CFR Part 50, Appendix G - Reference Method for the Determination of Lead in Suspended Particulate Matter Collected from Ambient Air;

SSPC Guide 16: Guide to Specifying and Selecting Dust Collectors;

SSPC TU-7 - Conducting Ambient Air, Soil, and Water Sampling Activities During Surface Preparation and Paint Disturbance Activities, and;

Vermont Lead Exposure Control Regulations.

5. SUBMITTALS. The Contractor shall submit to the Engineer, in accordance with Subsection 105.03, the following information. Complete submittals shall be provided a minimum of 28 calendar days prior to the anticipated start of the work.

- (a) Contractor and Contractor's Personnel Qualifications. The Contractor shall submit documentation verifying that they and their personnel meet the requirements below for the applicable project type.

- (1) Type I Projects.

- a. Contractor. The paint removal Contractor shall possess a current Lead Abatement Contractor Entity license from the Vermont Department of Health permitting them to perform lead abatement work.

The paint removal Contractor shall also possess current SSPC-QP2 certification and shall maintain certified status throughout the duration of the paint removal work under the Contract.

- b. Personnel. The names and qualifications, experience, and training of the personnel managing and implementing the quality control inspections shall be provided.

The quality control personnel shall possess a current Inspector Technician I license from the Vermont Department of Health allowing them to perform lead abatement QC inspections. All laborers performing lead abatement work shall be licensed by the VDOH as Lead Workers, and a VDOH licensed Lead Supervisor shall be on site whenever lead abatement work is being performed.

The quality control personnel shall also possess current SSPC-C3 certification or equal, including the annual training necessary to maintain that certification (SSPC-C5 or equal), and shall provide evidence of successful completion of two projects of similar or greater complexity and scope that have been completed in the last 2 years. References shall include the name, address, and telephone number of a contact person employed by the project owner. Proof of initial certification and the current annual training shall also be provided.

(2) Type II Projects.

- a. Contractor. The paint removal Contractor shall possess a current Lead Abatement Contractor Entity license from the Vermont Department of Health permitting them to perform lead abatement work.
- b. Personnel. The names and qualifications, experience, and training of the personnel managing and implementing the quality control inspections shall be provided.

The quality control personnel shall possess a current Inspector Technician I license from the Vermont Department of Health allowing them to perform lead abatement QC inspections. All laborers performing lead abatement work shall be licensed by the VDOH as Lead Workers, and a VDOH licensed Lead Supervisor shall be on site whenever lead abatement work is being performed.

- (b) Coating Removal Plan. The Coating Removal Plan shall include the specified methods of coating removal and types of equipment to be utilized for water washing; hand and power tool cleaning; removal of rust, mill scale, grease (including grease rustproofing compounds), or foreign matter; and abrasive blast cleaning. If detergents or additives are incorporated into the water used for any water washing operations, the plan shall include the names of the materials and Safety Data Sheets (SDS).

The plan shall identify the solvents proposed for solvent cleaning, together with the SDS.

- (c) Abrasives. If the Contractor intends to use abrasive blast cleaning, they shall submit the type of abrasives to be used and the SDS. For expendable abrasives, the Contractor shall provide certification from the abrasive supplier that the abrasive meets the requirements of SSPC-AB1. For steel grit abrasives, the certification shall indicate that the abrasive meets the requirements of SSPC-AB3.
- (d) Containment Plan. The Containment Plan shall include drawings, equipment specifications, and calculations (including wind load and airflow) applicable to the removal method and containment system selected by the Contractor (see Subsection 12).

When the use of negative pressure and airflow inside containment is specified, the Contractor shall provide all ventilation calculations and details on the equipment that will be used for achieving the specified airflow and dust collection.

The plan shall include copies of the manufacturer's specifications for the containment materials and equipment that will be used to accomplish containment and ventilation. If abrasives are used, the plan shall note the type of abrasive and account for the weight of spent abrasive on the containment system.

The submittal shall provide drawings showing the containment system and indicating the methods of supporting the working platforms and containment materials to each other and to the existing structure and calculations that assure the structural integrity of the existing structure under all loading conditions.

Loading conditions shall include, but not be limited to, all equipment, materials, and containment system loads. The calculations and drawings shall be prepared, signed, and sealed by a qualified Professional Engineer licensed in Vermont. Additionally, the Professional Engineer shall inspect the completed containment system, review the materials used for its construction, and certify that the as-erected containment is in conformance with the drawings.

The design shall indicate the maximum wind speed allowed for the containment system. In all cases, the containment shall be dropped in the event of sustained winds of 40 mph or greater and all materials and equipment secured.

When working over a railroad or navigable waterways, unless otherwise directed by the Engineer, the Contractor shall provide evidence that the Railroad, Coast Guard, U.S. Army Corps of Engineers, and other applicable agencies are satisfied with the clearance provided and other proposed safety measures.

- (e) Environmental Monitoring Plan. The Contractor shall submit an Environmental Monitoring Plan. The plan shall address the visual inspections, monitoring and clean-up of the air, soil, and water that the Contractor will perform, including final project inspection and cleanup.
 - (1) Type I Projects. The plan shall address the daily visible emission observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur. The plan shall also establish a “Regulated Area and Ambient Air Monitoring Program” in accordance with SSPC TU 7. The results of all area and ambient monitoring will be provided to the Engineer and the Agency Hazardous Materials Coordinator within 72 hours of receipt by the Contractor.
 - (2) Type II Projects. The plan shall address the daily visible emissions observations that will be performed and the corrective action that will be implemented in the event emissions or releases occur.
- (f) Site Specific Health and Safety Plan. The Health and Safety Plan shall identify the Contractor’s Health and Safety Officer. The plan shall discuss the Contractor’s lead testing program for workers and what course of action will be followed if the reported levels exceed accepted limits.

The plan shall also identify the VOSHA Competent Person for the VOSHA regulated activities. The Competent Person shall be on site during the progress of the regulated activities. In addition to the lead removal activities the plan should emphasize best practice fall protection and prevention and include plans for rescuing individuals hanging from fall arrest devices.

- (g) Contingency Plan. The Contractor shall prepare a Contingency Plan for emergencies, including fire, accident, failure of power, failure of dust collection system, failure of supplied air system, or any other event that may require modification of standard operating procedures during lead removal. The plan shall include specific procedures to ensure safe egress and proper medical attention in the event of an emergency.
- (h) Waste Management Plan. The Waste Management Plan shall address all aspects of waste handling, storage, testing, hauling, and disposal. The plan shall include the names, addresses, and a contact person for the proposed licensed waste haulers and disposal facilities and the name and qualifications of the laboratory proposed for any testing or analysis.

On behalf of the Agency, the Contractor, in consultation with the Agency Hazardous Waste Coordinator, shall request the EPA ID number for hazardous waste disposal issued by ANR.

- (i) Permits. The Contractor shall submit a copy of the site-specific Lead Abatement Permit issued by the Vermont Department of Health (VDOH) for the project. Regardless of project type, the Contractor shall consult with and obtain any permits from the appropriate regulatory authority prior to the commencement of removal operations.

When the Engineer accepts the submittals, the Contractor will receive written notification. The Contractor shall not begin any work until the Engineer has accepted the submittals and the pre-work meeting has been held, as defined under Subsection 8. The Contractor shall not construe Engineer acceptance of the submittals to imply approval of any particular method or sequence for conducting the work, or for addressing health and safety concerns. Acceptance of the plans does not relieve the Contractor from the responsibility to conduct the work according to the requirements of Federal, State, or Local regulations, this specification, or to adequately protect the health and safety of all workers involved in the project and any members of the public who may be affected by the project. The Contractor remains solely responsible for the adequacy and completeness of the programs and work practices, and adherence to them.

6. QUALITY CONTROL (QC) INSPECTIONS.

- (a) Type I Projects. The Contractor shall perform first line, in process QC inspections of all environmental control and waste handling aspects of the project to verify compliance with these specification requirements and the accepted drawings and Plans. The Contractor shall use an environmental daily report form approved by the Engineer to record the results of the inspections. The completed reports shall be provided to the Engineer before work resumes the following day.

Contractor QC inspections shall include, but not be limited to, the following:

- (1) Proper installation and continued performance of the containment systems in accordance with the Containment Plan.
 - (2) Visual inspections of emissions into the air and verification that the causes of any emissions are corrected.
 - (3) Visual inspections of spills or deposits of contaminated materials into the water or onto the ground, pavement, soil, or slope protection. Included is verification that proper cleanup is undertaken and that the causes of releases are corrected.
 - (4) Proper implementation of the Waste Management Plan.
 - (5) Proper implementation of the Contingency Plan for emergencies.
- (b) Type II Projects. The Contractor shall monitor the paint removal work on a daily basis for compliance with these specification requirements and the accepted drawings and Plans, paying particular attention to the performance of the containment system. If any deviations from the specifications or Plans are found, the Contractor shall immediately submit a report to the Engineer and appropriate corrective action shall be taken. The Engineer may also direct the Contractor to submit a report at any time.

7. QUALITY ASSURANCE (QA) OBSERVATIONS. The Engineer will conduct QA observations of any or all of the QC monitoring inspections that are undertaken. The presence or activity of Engineer observations in no way relieves the Contractor of the responsibility to provide all necessary daily QC inspections and to comply with all requirements of this specification. The Engineer and/or the Engineer's designee shall be allowed access to all work areas, including the containment.

8. PRE-WORK MEETING. A meeting shall be held after the acceptance of all submittals related to the paint removal and before any work covered under this specification may begin. The purpose of the meeting shall be to review all aspects of the removal, containment and disposal of lead paint cleaning residues. The Engineer will notify the Contractor a minimum of 7 calendar days in advance of the meeting.

Individuals attending the meeting representing the Contractor shall be the Project Superintendent and the Quality Control Inspector.

If field painting of the steel is included in the Contract, the pre-paint meeting required by that specification may be combined with the pre-work meeting of this specification. If combined into one meeting, the meeting shall occur prior to any paint removal or painting activities.

9. REGULATED AREAS. Physically demarcated regulated areas shall be established around exposure producing operations wherever concentrations exceed, or can reasonably be expected to exceed, the OSHA Action Level for the toxic metals present in the coating. The Contractor shall provide all required protective clothing and equipment for all personnel, including Agency personnel, entering into a regulated area. Unprotected street clothing is not permitted within the regulated areas.
10. GENERAL CONTAINMENT REQUIREMENTS. The Contractor shall install and maintain containment systems surrounding the work according to the requirements of Subsection 12. The containment systems chosen shall maintain the work area free of visible emissions of dust and debris according to all provisions of this specification, with no debris permitted outside of the regulated area at any time.

The containment materials shall be cleaned of loose material prior to relocation or dismantling. If paint chips or dust are observed escaping from the containment materials during moving, all associated operations shall be halted and the materials and components shall be re-cleaned by HEPA vacuuming.

Working platforms and containment materials that are used shall be firm and stable. Platforms shall be designed to support the workers, inspectors, spent surface preparation media (e.g. abrasives), and equipment during all phases of lead paint removal. Platforms, cables, and other supporting structures shall be designed according to VOSHA regulations.

If the containment needs to be attached to the structure, the containment shall be attached by bolting, clamping, or similar means, as detailed in the approved Containment Plan. The Contractor shall obtain approval from the Structures Engineer prior to drilling into the structure. Welding onto the structure is prohibited. The Contractor shall take appropriate action to avoid damage to the structure from the installation and use of the containment system. If the Engineer determines that there is the potential for structural damage caused by the installed containment system, the Contractor shall take appropriate action to correct the situation.

In addition to complying with the specific containment requirements specified in Subsection 12, the Contractor shall also provide and maintain coverage over the ground in the areas to be cleaned. These ground covers shall be capable of catching and containing surface preparation media, paint chips, and paint dust in the event of an accidental escape from the primary containment. If the area to be cleaned is above an active roadway or railroad, ground covers are only required on areas outside of the traveled way. If the area to be cleaned is over a body of water, ground covers are required on the banks, and, when feasible, water booms, boats with skimmers, or other means as necessary shall be used to capture and remove paint chips or project debris that fall or escape into the water.

11. SURFACE CLEANING PRIOR TO PAINT REMOVAL.

- (a) Type I Projects. No more than two weeks prior to starting coating removal operations, the Contractor shall conduct low pressure water washing on the designated surfaces to remove any existing debris. The Contractor shall notify the Engineer 24 hours in advance of beginning low pressure water cleaning.

- (1) Low Pressure Water Washing. Washing shall involve the use of chlorine free potable water at a minimum of 1,000 psi and less than 5,000 psi pressure. Paint spray equipment shall not be used to perform the water cleaning. The cleaning shall be performed in such a manner as to remove dust, dirt, chalk, insect and animal nests, bird droppings, and other foreign matter prior to solvent cleaning. All water and debris shall be collected for proper disposal.

If detergents or additives are added to the water, the detergents/additives shall be included in the submittals and not used until accepted by the Engineer. When detergents or additives are used, the surface shall be rinsed with chlorine free potable water before the detergent water dries.

The tops of pier caps and abutments shall be cleaned free of dirt, insect and animal nests, bird droppings, and other foreign matter and the debris collected for proper disposal.

- (2) Solvent Cleaning. After washing and debris removal has been accepted by the Engineer, all traces of asphaltic cement, oil, grease (including grease rustproofing compounds), diesel fuel deposits, and other soluble contaminants which remain on the steel surfaces shall be removed by solvent cleaning in accordance with SSPC-SP1, supplemented with scraping (e.g. to remove large deposits of asphaltic cement or grease coatings) as required.

- (3) Containment. Low pressure water cleaning shall be performed inside a containment structure meeting the requirements of SSPC-Class 2W or SSPC-Class 3W. The containment shall be designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified herein are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.

The collected water shall be filtered to separate the particulates from the water. Recycling of the water is preferred in order to reduce the volume of waste that is generated. The water after filtration shall be collected and disposed of according to the waste handling portions of this specification.

- (b) Type II Projects. No more than two weeks prior to starting coating removal operations, the Contractor shall clean all designated surfaces so that they are free of dirt, insect and animal nests, bird droppings, and other foreign matter. All debris shall be collected for proper disposal. Cleaning may be performed using physical methods (e.g. scraping), or other methods as approved by the Engineer, provided debris are properly contained and disposed of.

Following debris removal, the Contractor shall remove all traces of asphaltic cement, oil, grease (including grease rustproofing compounds), diesel fuel deposits, and other soluble contaminants on the steel surfaces using solvent cleaning in accordance with SSPC-SP1, supplemented with scraping (e.g. to remove large deposits of asphaltic cement or grease coatings) as required.

12. PAINT REMOVAL AND CONTAINMENT METHODS. Existing coatings shall be removed from the designated surfaces using one or more of the methods described in this section. The Contractor shall notify the Engineer 24 hours prior to beginning paint removal operations.

The Contractor shall note that the methods of removal specified below only apply to the work covered under this specification. Additional surface preparation work under other specifications (e.g. "Field Painting Steel, Three Coat System") may require the Contractor to use other methods.

- (a) Allowable Removal Methods. The existing surface shall be cleaned using one or more of the following methods to meet the requirements of Subsection 12(c):
- (1) Dry Abrasive Blast Cleaning Without Vacuum
 - (2) Dry Abrasive Vacuum Blast Cleaning
 - (3) Wet Abrasive Blast Cleaning
 - (4) Power Tool Cleaning Without Vacuum
 - (5) Vacuum-Shrouded Power Tool Cleaning

If dry abrasive blast cleaning is used, it shall be performed using either expendable abrasives (other than silica sand) or recyclable steel grit abrasives. Expendable abrasives shall be used one time and disposed of.

On a daily basis, the Contractor shall verify that recycled abrasives are free of oil contamination by conducting oil content tests in accordance with SSPC-AB2.

All surfaces prepared with abrasives not meeting the SSPC-AB1, SSPC-AB2, or SSPC-AB3 requirements, as applicable, shall be solvent cleaned or low pressure water cleaned as directed by the Engineer, and re-blast cleaned at the Contractor's expense.

When metallic abrasives are used, extra care shall be given to recovering all of the abrasive from joints, horizontal surfaces, and hard to access areas to prevent rust bleed caused by fugitive abrasives.

(b) Containment Systems. The containment systems used for each method shall comply with the applicable SSPC Guide 6 classifications described below.

(1) Dry Abrasive Blast Cleaning Without Vacuum. Dry abrasive blast cleaning shall be performed inside full containment with negative pressure meeting the requirements of SSPC-Class 1A. The enclosure shall be designed, installed, and maintained to sustain maximum anticipated wind forces, including negative pressure. Flapping edges of containment materials are prohibited and the integrity of all containment materials, seams, and seals shall be maintained for the duration of the project. Airflow inside containment shall be designed to provide visibility and reduce worker exposures to toxic metals according to VOSHA regulations and as specified in the submitted Containment Plan. The minimum airflow shall be 60 cfm for down draft systems and 100 cfm for cross draft systems.

When the location of the work on the structure permits, the blast enclosure shall extend a minimum of 3 feet beyond the limits of surface preparation to allow the workers to blast away from, rather than into, the seam between the containment and the structure. The blast enclosure shall have an entrance chamber to allow entrance and exit from the enclosure without allowing the escape of blasting residue.

If recyclable metallic abrasives are used, the Contractor shall operate the equipment in a manner that minimizes waste generation. Steps shall also be taken to minimize dust generation during the transfer of all abrasive/paint debris (expendable or recyclable abrasives) for recycling or disposal. Acceptable methods include, but are not limited to vacuuming, screw or belt conveyance systems, or manual conveyance. Manual conveyance is only permitted if the work is performed inside a containment that is equipped with an operating ventilation system capable of controlling the dust that is generated.

Appropriate filtration shall be used on the exhaust air of dust collection and abrasive recycling equipment as required to comply with VDOH Lead Abatement Permit and State and Federal regulations. The equipment shall be enclosed if visible dust and debris are being emitted and/or the regulated area or high-volume monitor lead levels are not in compliance.

Areas beneath containment connection points that were shielded from abrasive blast cleaning shall be prepared by vacuum blast cleaning or vacuum-shrouded power tool cleaning after the containment is removed.

- (2) Dry Abrasive Vacuum Blast Cleaning. Dry abrasive vacuum blast cleaning shall meet the containment requirements of SSPC-Class 4A. Vacuum blasting equipment shall be fully automatic and capable of cleaning and recycling the abrasive. The system shall be designed to deliver cleaned, recycled blasting abrasives and provide closed system containment during blasting. The removed coating, mill scale, and corrosion shall be separated from the abrasive and stored for disposal.

The Contractor shall ensure that the vacuum shrouds are fully engaged while the tool is in use to prevent the escape of abrasive and lead paint chips. The Contractor shall attach containment materials around and under the work area to catch and contain abrasive and waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified in Subsection 10.

It is possible that the close proximity of some structural steel members, such as the end diaphragms or end cross-frames underneath transverse deck expansion joints, preclude the use of the vacuum blasting equipment for the removal of the old paint. For surfaces that are inaccessible for the nozzles of the vacuum blasting equipment, the Contractor shall remove the paint by means of dry abrasive blast cleaning inside a fully enclosed containment structure as directed by the Engineer.

- (3) Wet Abrasive Blast Cleaning. Wet abrasive blast cleaning shall be performed inside a containment structure meeting the requirements of SSPC-Class 2W or SSPC-Class 3W. The containment shall be designed, installed, and maintained in order to capture and contain all water and waste materials. The containment shall consist of impermeable floors and lower walls to prevent the water and debris from escaping. Permeable upper walls and ceilings are acceptable provided the paint chips, debris, and water, other than mists, are collected. A fine mist passing through the permeable upper walls is acceptable, provided the environmental controls specified herein are met. If paint chips, debris, or water, other than mists, escape the containment system, impermeable walls and ceilings shall be installed.
- (4) Power Tool Cleaning Without Vacuum. Power tool cleaning without vacuum shall be performed inside a containment meeting the requirements of SSPC-Class 2P. The Contractor shall securely install containment walls and flooring around the work area to capture and collect all debris that is generated. The containment material requirements for this Class 2P are similar to Class 3P used for vacuum-shrouded tools, but the supporting structure will be more substantial in Class 2P to better secure the containment materials from excessive movement that could lead to the loss of waste paint chips and debris. Containment beneath the work shall be within 10 feet of the areas being cleaned, and is in addition to the ground covers specified earlier.

- (5) Vacuum-Shrouded Power Tool Cleaning. Vacuum-shrouded power tool cleaning shall meet the containment requirements of SSPC-Class 3P. The Contractor shall ensure that the vacuum shrouds are fully engaged while the tool is in use to prevent the escape of abrasive and lead paint chips. The Contractor shall utilize power tools equipped with vacuums and High Efficiency Particulate Air (HEPA) filters. The Contractor shall attach containment materials such as tarps adjacent to and under the work area to catch and contain waste materials in the event of an accidental escape from the vacuum shroud. This containment is in addition to the ground covers specified earlier and shall be installed within 10 feet of the areas being cleaned.
- (c) Cleaned Surface Condition. Work under this specification shall be considered complete when the surface meets the requirements of either SSPC-SP6 (for all wet or dry abrasive blast cleaning, with or without vacuum), or SSPC-SP15 (for all power tool cleaning, with or without vacuum), except that a specific surface profile is not required. However, work under other specifications (e.g. "Field Painting Steel, Three Coat System") may require that a specific surface profile be achieved.

When viewed without magnification, the surface shall be free of all visible oil, grease, dust, dirt, mill scale, rust, coatings, oxides, corrosion products, and other foreign matter. Random staining and discoloration shall be limited to no more than 33 percent of each 9 square inches.

If no further surface preparation is required by the Contract, paint removal will be considered complete when the Engineer has determined that the requirements above have been satisfied. If other Contract items require more extensive surface preparation that exceeds the requirements of this section, the Contractor may choose to have the Engineer inspect and pay for the paint removal after meeting the requirements above, or they may choose to wait until after the additional surface preparation has been completed.

13. ENVIRONMENTAL CONTROLS AND MONITORING. The Contractor shall follow the submitted and approved Environmental Monitoring Plan. The purpose of the monitoring is to confirm that project dust and debris are not escaping the containment into the surrounding air, soil, and water.
- (a) Soil and Water. The Contractor's containment systems shall be maintained to prevent the escape of paint chips, abrasives, and other debris into the water, and onto the ground, soil, slope protection, and pavements. Releases or spills of paint chips, abrasives, dust and debris on to surrounding property, structures, equipment or vehicles, and bodies of water are unacceptable. If there are inadvertent spills or releases, the Contractor shall immediately shut down the emissions-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

At the end of each workday, at a minimum, the work area inside and outside of containment, including ground covers, shall be inspected to verify that paint debris are not present. If debris are observed, they shall be removed by HEPA-vacuuming.

Upon project completion, the ground and water in and around the project site are considered to have been properly cleaned if paint chips, paint removal media (e.g. spent abrasives), fuel, materials of construction, litter, or other project debris have been removed, even if the material being cleaned was a pre-existing condition.

- (b) Visible Emissions. The Contractor shall conduct observations of visible emissions and releases on an ongoing daily basis when dust-producing activities are underway, such as paint removal, clean-up, waste handling, and containment dismantling or relocation.

If visible emissions or releases are observed, the Contractor shall immediately shut down the emission-producing operations, clean up the debris, and change work practices, modify the containment, or take other appropriate corrective action as needed to prevent similar releases from occurring in the future.

- (c) Emissions Monitoring.

(1) Type I Projects. The Contractor shall conduct monitoring of both the regulated area and the ambient air in accordance with SSPC TU 7. The Contractor shall be prepared to conduct baseline and start-up monitoring and shall be prepared to conduct full time and/or complaint related monitoring as warranted. The Contractor shall verify that all calibration, sampling and laboratory analysis are conducted in a manner compliant with SSPC TU 7.

(2) Type II Projects. No monitoring of emissions is required, except as described in part (b) above, or as specified elsewhere in the Contract Documents based on site conditions.

14. HYGIENE FACILITIES. The Contractor shall provide clean lavatory and hand washing facilities according to VOSHA regulations and confirm that all employees wash hands, forearms, and face before breaks. The facilities shall be located at the perimeter of the regulated area in close proximity to the paint removal operation. Shower facilities shall be provided when workers' exposure exceed the Permissible Exposure Limit. Showers shall be located at each work site. The shower and wash facilities shall be cleaned at least daily during use.

All wash and shower water shall be filtered and containerized. The Contractor is responsible for filtration, testing, and disposal of the water.

The Contractor shall make the decontamination facilities on the project available for use by Agency personnel and other Agency representatives assigned to the project.

15. SITE EMERGENCIES.

(a) Stop Work. The Contractor shall stop work at any time the conditions are not within specifications and take the appropriate corrective action. The stoppage will continue until conditions have been corrected to the satisfaction of the Engineer. Standby time and cost required for corrective action is at the Contractor's expense. The occurrence of any of the following events shall be reported in writing to the Agency and shall require the Contractor to automatically stop lead paint removal and initiate clean-up activities:

- (1) Break in containment barriers.
- (2) Emissions in excess of specification or permit tolerances.
- (3) Loss of negative air pressure when negative air pressure is specified (e.g. for dry abrasive blast cleaning).
- (4) Serious injury within the containment area.
- (5) Fire or safety emergency.
- (6) Respiratory system failure.
- (7) Power failure.

(b) Contingency Plans and Arrangements. The Engineer will refer to the Contingency Plan for site specific instructions in the case of emergencies. The Contractor shall post the telephone numbers and locations of emergency services including fire, ambulance, doctor, hospital, police, power company, and telephone company on the clean side of the personnel decontamination area.

A copy of the Contingency Plan shall be maintained at each work site during cleaning operations and during the time the Contractor's personnel are at the work site under this Contract. The Contractor shall designate the emergency coordinators required who shall be responsible for the activities described.

16. COLLECTION, TEMPORARY STORAGE, TRANSPORTATION, AND DISPOSAL OF WASTE.

(a) General. The Agency will not require solid waste generated by the project to be tested. However, permitting agencies, waste haulers and disposal facilities may require testing of the waste, and the Contractor shall adhere to all such requirements. All paint removal wastes shall be considered hazardous waste regardless of any test results. The Contractor and the Agency are considered to be co-generators of the waste.

The Contractor is responsible for all aspects of waste collection, testing and identification, handling, storage, transportation, and disposal according to these specifications and all applicable Federal, State, and Local regulations. Contractor personnel shall be trained in the proper handling of hazardous waste and the necessary notification and clean up requirements in the event of a spill. The Contractor shall maintain a copy of the personnel training records at each work site. The Agency will not perform any functions relating to the waste.

The Contractor is responsible for paying all taxes, fees, and permit costs associated with the removal, transportation, and disposal of waste. The Contractor is also responsible for paying any fines and undertaking any clean-up activities mandated by State or Federal environmental agencies for improper waste handling, storage, transportation, or disposal.

- (b) Collection and Temporary Storage of Surface Preparation Waste. All surface preparation/paint residues within the regulated area and the containment, including spent abrasives, shall be collected at the end of the last shift each day, or every 24 hours for continuous operations. The collected waste shall be deposited in all-weather containers supplied by the Contractor as temporary storage. No residues shall remain on surfaces overnight, either inside or outside of containment. Waste materials shall not be removed through floor drains or by throwing them over the side of the bridge.

The all-weather containers shall meet requirements for the transportation of hazardous materials. The Contractor shall ensure that no breaks and no deterioration of these containers occurs and shall maintain a written log of weekly inspections of the condition of the containers. A copy of the log shall be furnished to the Engineer upon request. The containers shall be kept closed and sealed from moisture except during the addition of waste. Each container shall be permanently identified with the date that waste was placed into the container, Contract number, hazardous waste name and ID number, and other information required by the Agency of Natural Resources.

The temporary waste storage area shall be located outside of any flood plain and secure to prevent unauthorized entry or tampering with the containers. Acceptable measures include storage within a fully enclosed (e.g. fenced-in) and locked area, within a temporary building, or implementing other reasonable means to reduce the possibility of vandalism or exposure of the waste to the public or the environment (e.g. securing the lids or covers of waste containers and roll-off boxes). Waste shall not be stored outside of the containers. Flammable materials shall not be stored around or under any bridge structures.

Waste shall be collected and transferred to bulk containers, taking extra precautions as necessary to prevent the suspension of residues in air or contamination of surrounding surfaces. Precautions may include the transfer of the material within a tarpaulin enclosure. All waste storage containers shall be placed on tarpaulins. Transfer into roll-off boxes shall be planned to minimize the need for workers to enter the roll-off box.

- (c) Transportation and Disposal of Surface Preparation Waste. All paint removed from the structure, together with the surface preparation media (e.g. abrasive) shall be handled as a hazardous waste, regardless of any test results. The waste shall be transported by a licensed hazardous waste transporter, treated by a permitted treatment facility to a non-hazardous special waste, and disposed of at a permitted disposal facility.

The treatment/disposal facilities shall be approved by the Engineer, and shall hold an ANR permit for waste disposal and waste stream authorization for the cleaning residue. The ANR permit and waste stream authorization must be obtained prior to beginning cleaning, except that if necessary, limited paint removal will be permitted in order to obtain samples of the waste for the disposal facilities. The waste shall be shipped to the facility within 90 calendar days of the waste generation. Arrangements for the final waste pickup shall be made with the waste hauler by the time paint removal operations are completed, or as required to meet the 90 day limit.

The Contractor shall prepare a manifest approved by ANR for off-site treatment and disposal before transporting the hazardous waste off-site. The Contractor shall prepare a land ban notification for the waste to be furnished to the disposal facility. The Contractor shall obtain the handwritten signature of the initial transporter and date of the acceptance of the manifest. The Contractor shall send one copy of the manifest to ANR within two working days of transporting the waste off-site. The Contractor shall furnish the generator copy of the manifest and a copy of the land ban notification to the Engineer. The Contractor shall give the transporter the remaining copies of the manifest.

- (d) Waste Water. Waste water generated from washing the structure, hygiene purposes, and cleaning of equipment shall be filtered on site to remove particulates and disposed of at a Publicly Owned Treatment Works (POTW) according to State regulations. The Contractor shall provide the Engineer with a letter from the POTW indicating that they will accept the waste water. If the POTW allows the filtered water to be placed into the sanitary sewer system, the Contractor shall provide a letter from the POTW indicating that based on the water test results, disposal in the sanitary sewer is acceptable to them. Water shall not be disposed of until the above letters are provided to, and accepted by, the Engineer.

- (e) Other Project Waste. All other project waste shall be removed from the site according to Federal, State, and Local regulations, with all waste removed from the site prior to final Contractor demobilization.

The Contractor shall make arrangements to have other hazardous waste generated by the Contractor, such as used paint solvent, transported to the Contractor's facility at the end of each day that the waste is generated. These hazardous wastes shall be manifested using the Contractor's own generator number to a treatment or disposal facility from the Contractor's facility. The Contractor shall not combine solvents or other wastes with cleaning residue wastes. All waste streams shall be stored in separate containers.

- 17. METHOD OF MEASUREMENT. The quantity of Special Provision (Removal, Containment, and Disposal of Lead Paint) of the type specified to be measured for payment will be on a lump sum basis in the complete and accepted work.

- 18. BASIS OF PAYMENT. The accepted quantity of Special Provision (Removal, Containment, and Disposal of Lead Paint) of the type specified will be paid for at the Contract lump sum price. Payment will be full compensation for performing the work specified, including construction of a work platform, construction of a containment structure, and removal of the existing paint; soil, water, and air monitoring; collection, temporary storage, transportation, testing, and disposal of all project waste; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

Payment will be made as follows:

- (a) The first payment of 30% of the Contract unit price will be paid when all submittal requirements have been met and accepted by the Agency, and the Contractor is fully mobilized to begin work.

- (b) An additional 30% of the Contract unit price will be paid when 50% of the paint has been removed.

- (c) An additional 30% of the Contract unit price will be paid when 100% of the paint has been removed.

- (d) The final 10% of the Contract unit price will be paid when the Contractor has fully demobilized the containment equipment and properly disposed of the waste to the satisfaction of the Engineer. The Engineer may elect to withhold the final 2% of the Contract unit price until the hazardous waste tax has been paid.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Removal, Containment, and Disposal of Lead Paint) (Type II)	Lump Sum

TEMPORARY ROADWAY

1. DESCRIPTION. This work shall consist of the construction, maintenance, and removal of a temporary roadway used to maintain traffic within the project limits as shown in the Plans and as directed by the Engineer.
2. MATERIALS. The Contractor may use any material or combination of materials that meet with the approval of the Engineer. The Engineer reserves the right to reject materials that will not meet structural requirements.
3. SUBMITTALS. Construction Drawings shall be submitted in accordance with Section 105 for any retaining structures or bracing required or proposed for completing the work under this Section.
4. CONSTRUCTION REQUIREMENTS. Where roadways are not being constructed on in-situ materials, embankments shall be constructed of acceptable fill material, compacted to adequately support the loading requirements of the connected highway(s). Unless otherwise specified in the Plans, a minimum of 12 inches of approved gravel or other acceptable subbase material shall be provided for the full width of the typical section, and the roadway surface shall be paved with a minimum 2 inch wearing course of Type IIIs or Type IVs bituminous concrete pavement and have temporary pavement markings applied as per Section 646. Bituminous concrete pavement shall conform to the requirements of Section 406, except the mix design submittal and plant inspection requirements set forth in Section 406 will not be required. The Engineer may also waive weather limitations. The subbase and temporary pavement shall extend for the full length of the temporary roadway. The temporary pavement markings shall extend for the full length of the temporary roadway or as necessary to match into existing pavement markings. Where a temporary bridge is required, all requirements of Subsection 528 shall be met.
5. METHOD OF MEASUREMENT. The quantity of Special Provision (Temporary Roadway) measured for payment will be on a lump sum basis for each temporary roadway specified on the Plans or in the Contract. Where temporary roadway phases are specified, the quantity of Special Provision (Temporary Roadway) measured for payment will be on a lump sum basis for each temporary roadway phase specified.
6. BASIS OF PAYMENT. The accepted quantity of Special Provision (Temporary Roadway) will be paid for at the Contract lump sum price for each temporary roadway. Where temporary roadway phases are specified, the accepted quantity of Special Provision (Temporary Roadway) will be paid for at the Contract lump sum price for each temporary roadway phase specified.

Payment will be full compensation for constructing and maintaining the temporary roadway including required excavation, fill materials, subbase materials, temporary retaining structures or bracing, drilling and blasting of solid rock subgrade, temporary bridge/piping, glare screen, temporary pavement markings, and bituminous concrete pavement; for submitting Construction Drawings where required; for removing those portions of the temporary roadway not being incorporated in the permanent work or as directed by the Engineer; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the work.

A payment of 75% of the Contract lump sum price shall be paid when the temporary roadway is completed and accepted by the Engineer. The remaining 25% of the Contract lump sum price will be paid when the designated portions of the temporary roadway have been removed to the satisfaction of the Engineer.

Payment will be made under:

<u>Pay Item</u>	<u>Pay Unit</u>
900.645 Special Provision (Temporary Roadway, Southbound Crossover)	Lump Sum

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).

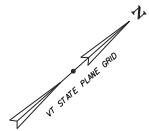
When not specified as items in the Contract, the costs of correcting deficiencies in the existing pavement, cleaning and filling joints and cracks, sweeping and cleaning existing paved surfaces, the emulsified asphalt applied to tack these surfaces, and tacking of manholes, curbing, gutters, and other 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.

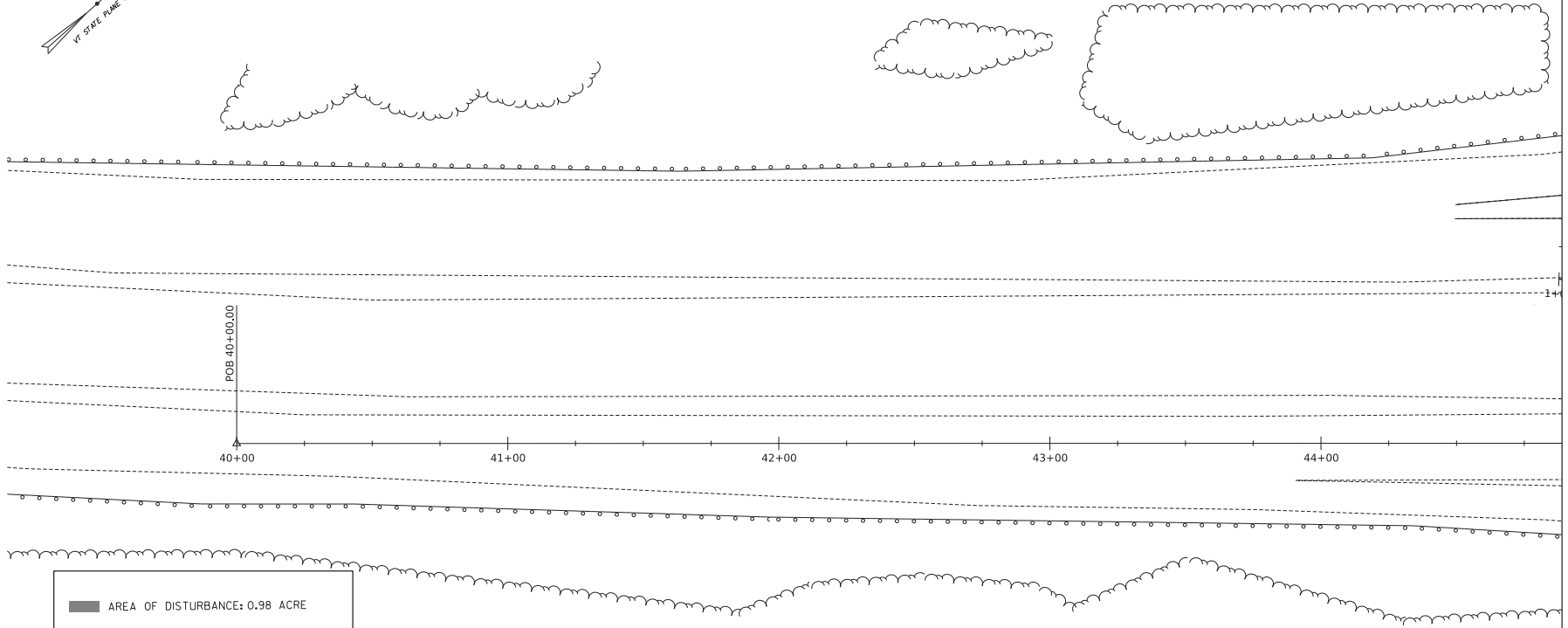
Special Provision (Bituminous Concrete Pavement, Small Quantity) mixture used to correct deficiencies in an existing pavement or to adjust the grade of a bituminous concrete surface completed under the Contract will be paid for at the Contract unit price for Special Provision (Bituminous Concrete Pavement,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



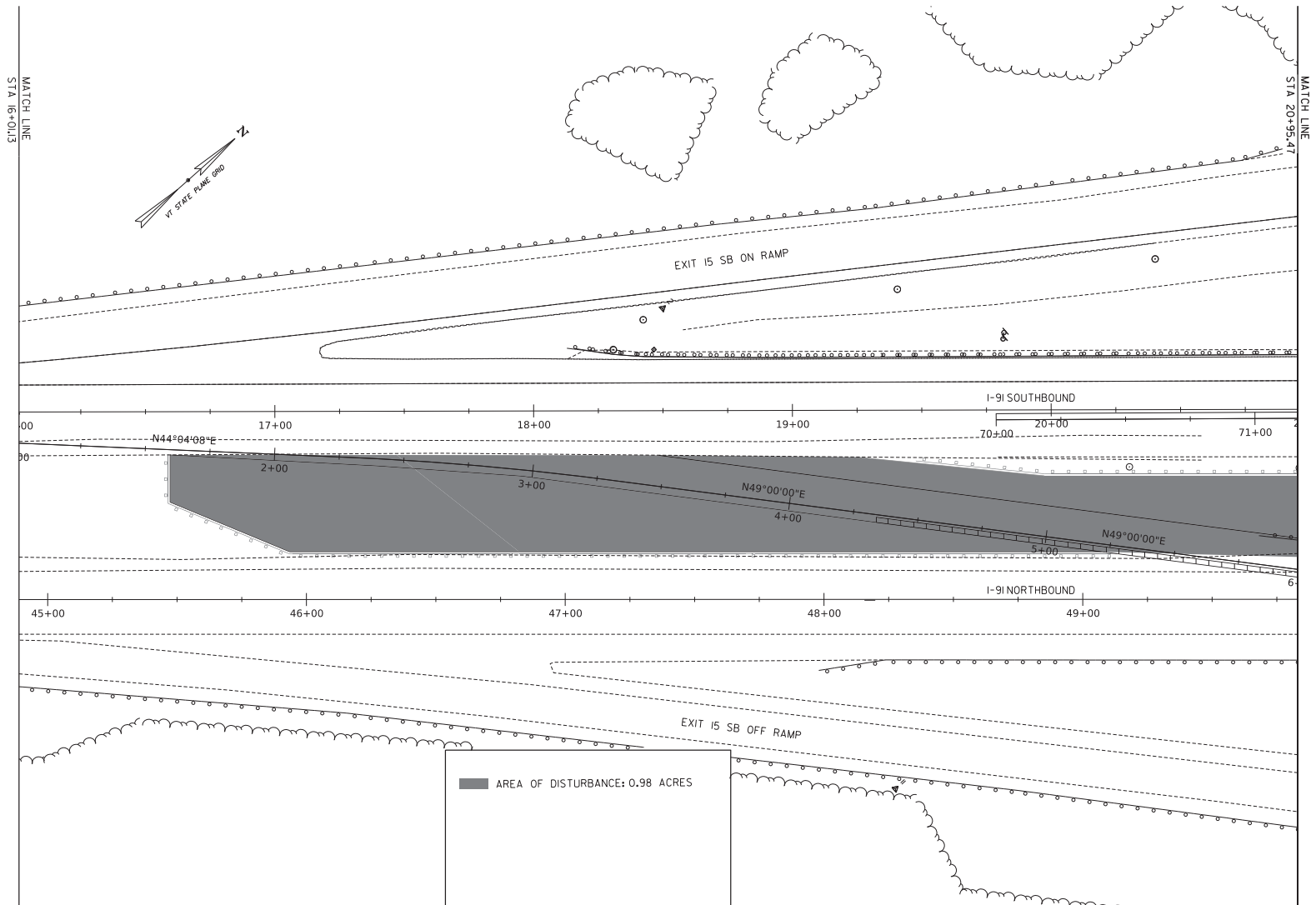
MATCH LINE
STA 18+00.13



■ AREA OF DISTURBANCE: 0.98 ACRE

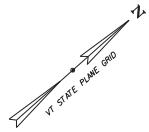
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PROJECT NAME: FAIRLEE	PLOT DATE: 4-APR-2024
PROJECT NUMBER: IM 091-2(95)	DRAWN BY: J. PAQUETTE
FILE NAME: s19a221epsc.dgn	CHECKED BY: D. PETERSON
PROJECT LEADER: G. SWEENEY	SHEET 33 OF 38
DESIGNED BY: J. PAQUETTE	
DISTURBANCE AREA SHEET 1	



MATCH LINE
STA 16+00.15

MATCH LINE
STA 20+95.47

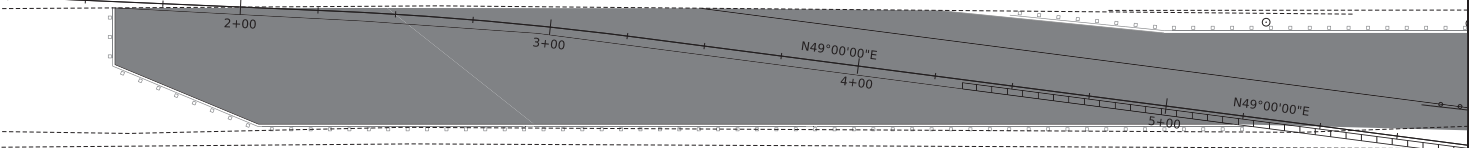


EXIT 15 SB ON RAMP

I-91 SOUTHBOUND

17+00 18+00 19+00 20+00 71+00

N44°04'08"E



N49°00'00"E

N49°00'00"E

I-91 NORTHBOUND

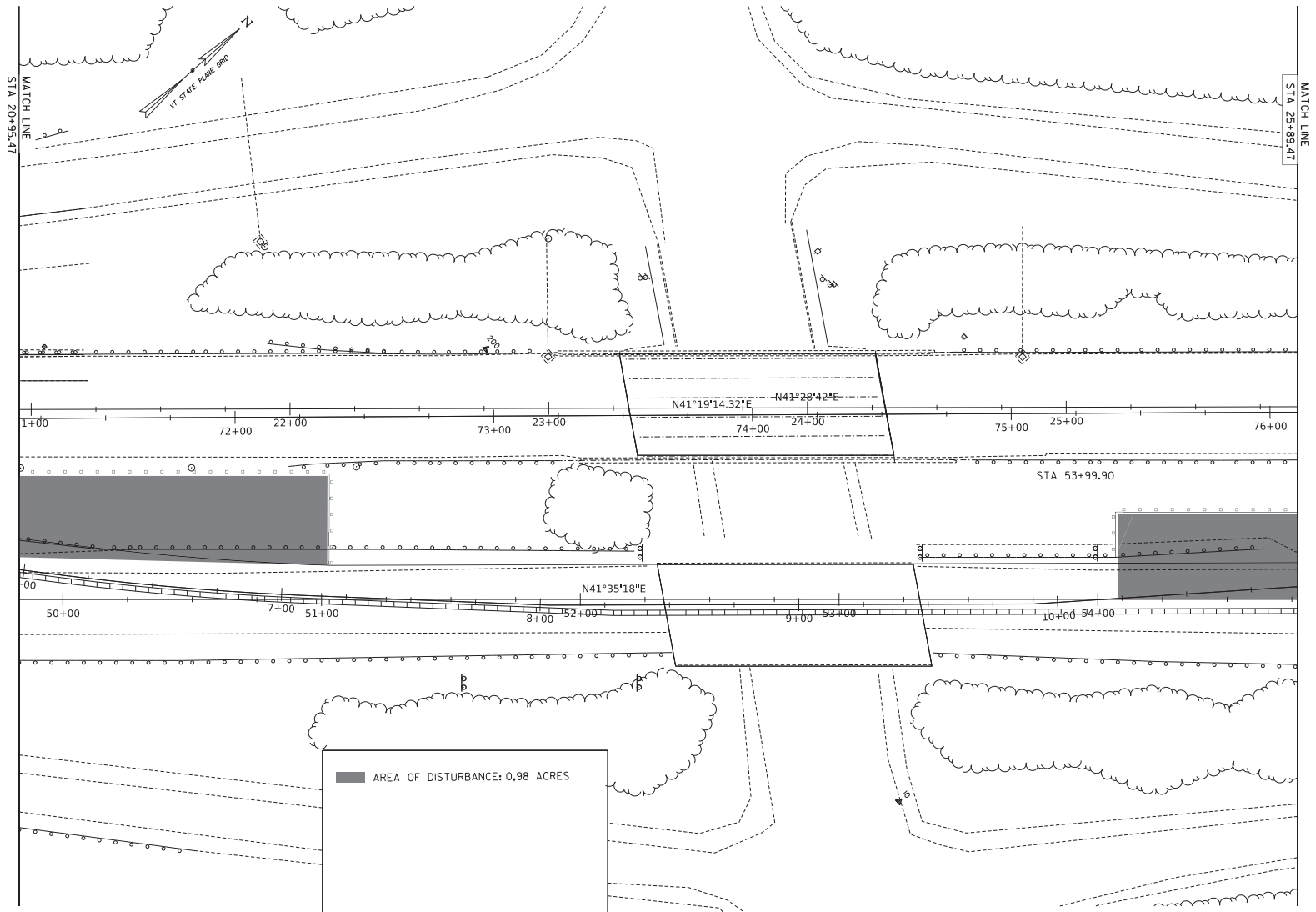
45+00 46+00 47+00 48+00 49+00

EXIT 15 SB OFF RAMP

AREA OF DISTURBANCE: 0.98 ACRES

SCALE 1" = 20'-0"
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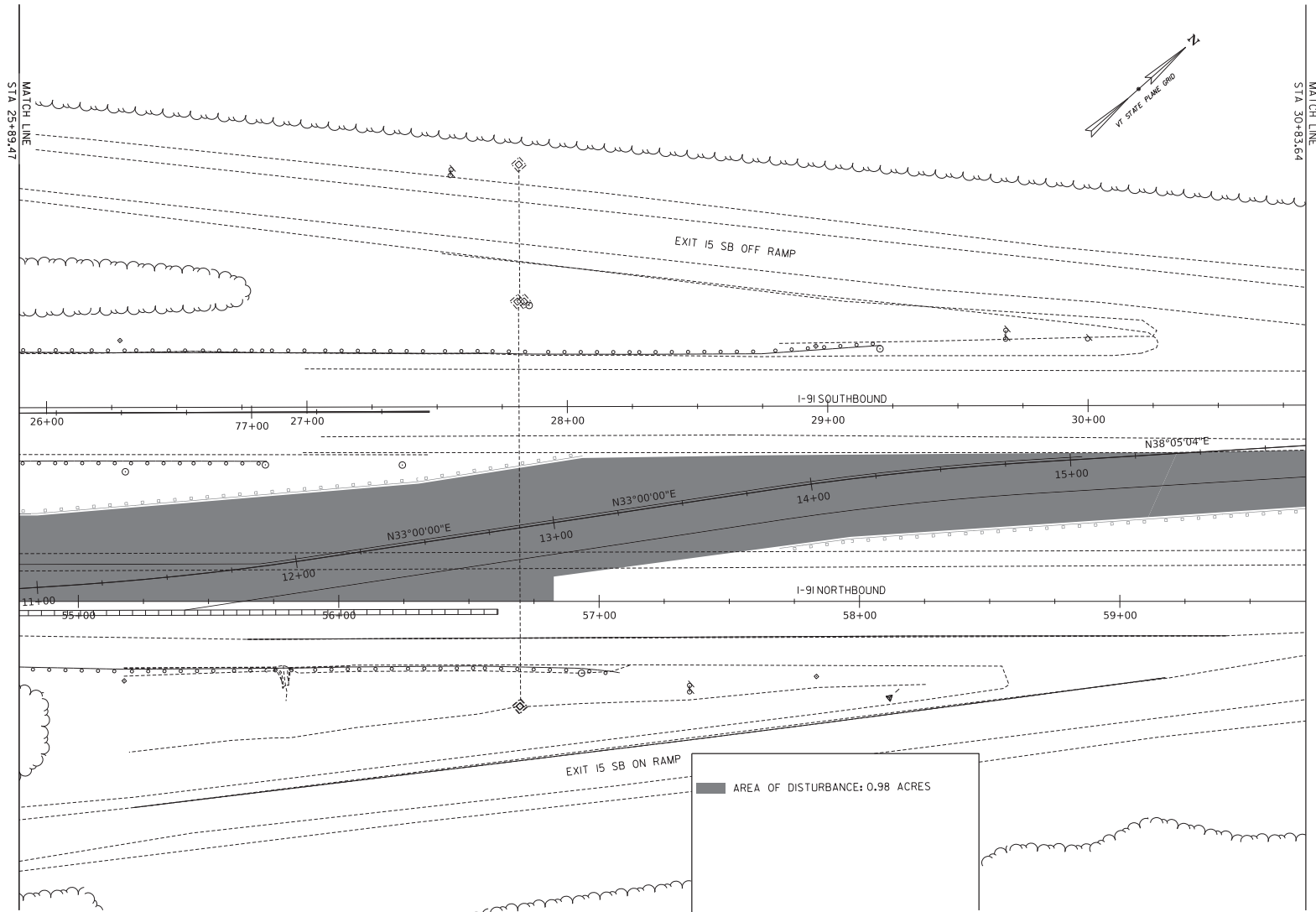
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PROJECT NUMBER: IM 091-2(95)		DRAWN BY: J. PAQUETTE	
FILE NAME: si9a22lepsc.dgn	PROJECT LEADER: G. SWEENEY	DESIGNED BY: J. PAQUETTE	CHECKED BY: D. PETERSON
DISTURBANCE AREA SHEET 2		SHEET 34 OF 38	



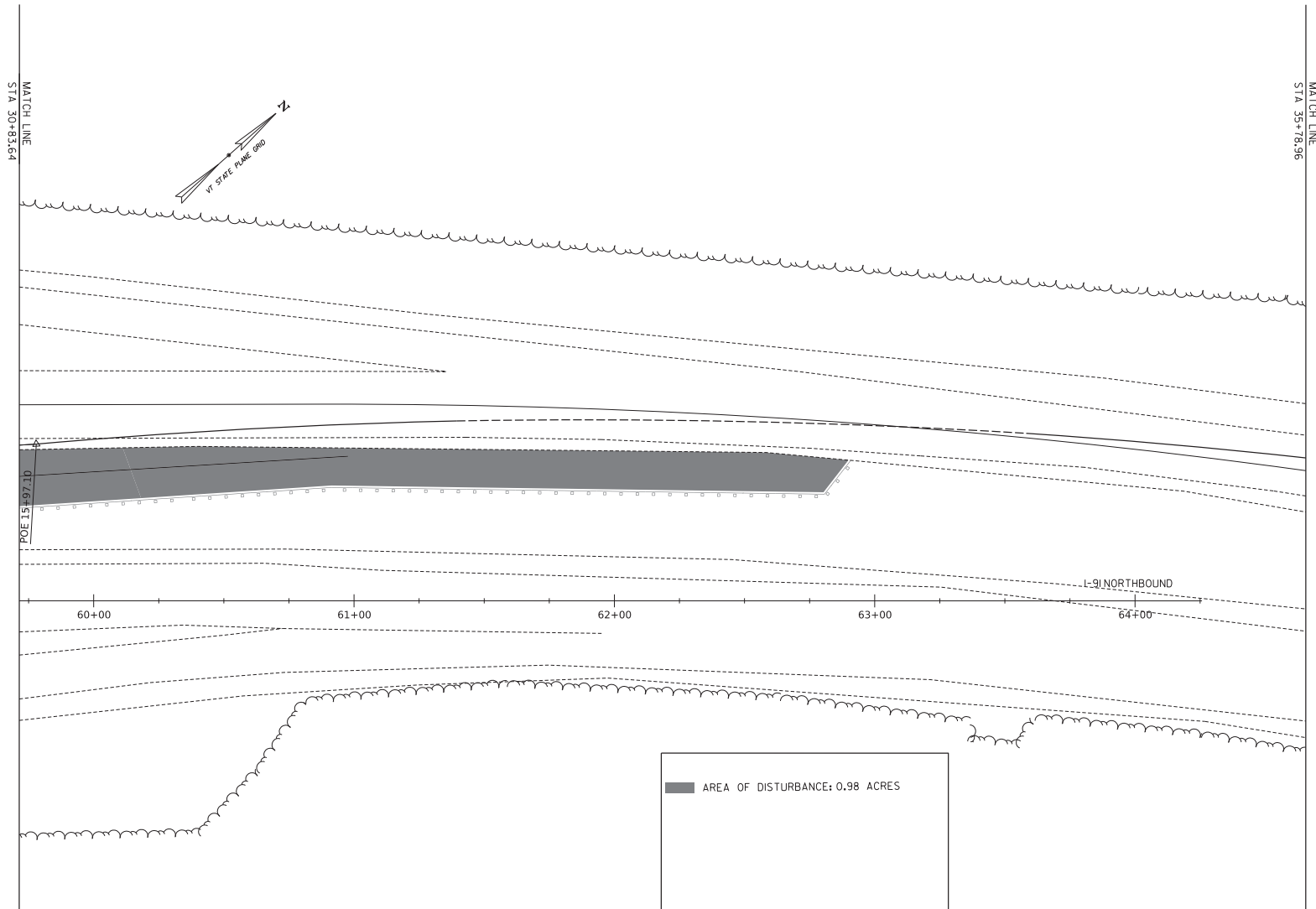
AREA OF DISTURBANCE: 0.98 ACRES

SCALE 1" = 20'-0"
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PROJECT NAME: FAIRLEE		PLOT DATE: 4-APR-2024	
PROJECT NUMBER: IM 091-2(95)		DRAWN BY: J. PAQUETTE	
FILE NAME: s19a22lepsc.dgn	PROJECT LEADER: G. SWEENEY	CHECKED BY: D. PETERSON	SHEET 35 OF 38
DESIGNED BY: J. PAQUETTE	DISTURBANCE AREA 3		

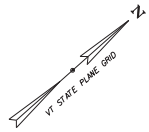


PROJECT NAME: FAIRLEE		PLOT DATE: 4-APR-2024	
PROJECT NUMBER: IM 091-2(95)		DRAWN BY: J. PAQUETTE	
FILE NAME: s19a22lepsc.dgn	PROJECT LEADER: G. SWEENEY	CHECKED BY: D. PETERSON	SHEET 36 OF 38
DESIGNED BY: J. PAQUETTE	DISTURBANCE AREA SHEET 4		

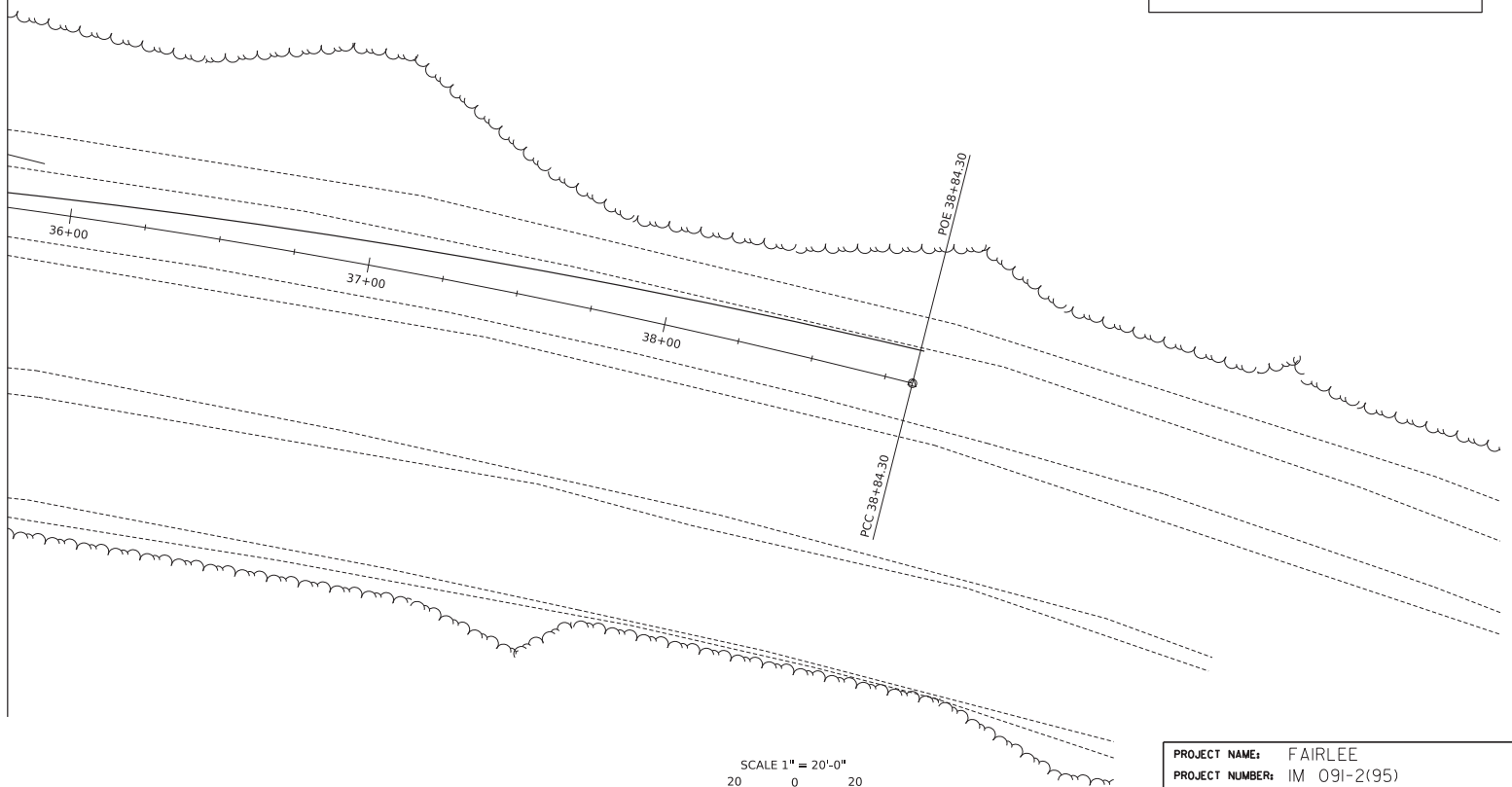


PROJECT NAME: FAIRLEE		PLOT DATE: 4-APR-2024	
PROJECT NUMBER: IM 091-2(95)		DRAWN BY: J. PAQUETTE	
FILE NAME: s19a22lepsc.dgn	PROJECT LEADER: G. SWEENEY	DESIGNED BY: J. PAQUETTE	CHECKED BY: D. PETERSON
DISTURBANCE AREA SHEET 5		SHEET 37 OF 38	

MATCH LINE
STA 35+78.96



■ AREA OF DISTURBANCE: 0.98 ACRES



SCALE 1" = 20'-0"
20 0 20

PROJECT NAME:	FAIRLEE	PLOT DATE:	4-APR-2024
PROJECT NUMBER:	IM 091-2(95)	DRAWN BY:	J. PAQUETTE
FILE NAME:	sl9a22lepsc.dgn	CHECKED BY:	D. PETERSON
PROJECT LEADER:	G. SWEENEY	DISTURBANCE AREA SHEET:	6
DESIGNED BY:	J. PAQUETTE	SHEET:	38 OF 38

**REQUIRED CONTRACT PROVISIONS
FEDERAL-AID CONSTRUCTION CONTRACTS**

- I. General
- II. Nondiscrimination
- III. Non-segregated Facilities
- IV. Davis-Bacon and Related Act Provisions
- V. Contract Work Hours and Safety Standards Act Provisions
- VI. Subletting or Assigning the Contract
- VII. Safety: Accident Prevention
- VIII. False Statements Concerning Highway Projects
- IX. Implementation of Clean Air Act and Federal Water Pollution Control Act
- X. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion
- XI. Certification Regarding Use of Contract Funds for Lobbying
- XII. Use of United States-Flag Vessels:

ATTACHMENTS

A. Employment and Materials Preference for Appalachian Development Highway System or Appalachian Local Access Road Contracts (included in Appalachian contracts only)

I. GENERAL

1. Form FHWA-1273 must be physically incorporated in each construction contract funded under title 23, United States Code, as required in 23 CFR 633.102(b) (excluding emergency contracts solely intended for debris removal). The contractor (or subcontractor) must insert this form in each subcontract and further require its inclusion in all lower tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services). 23 CFR 633.102(e).

The applicable requirements of Form FHWA-1273 are incorporated by reference for work done under any purchase order, rental agreement or agreement for other services. The prime contractor shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider. 23 CFR 633.102(e).

Form FHWA-1273 must be included in all Federal-aid design-build contracts, in all subcontracts and in lower tier subcontracts (excluding subcontracts for design services, purchase orders, rental agreements and other agreements for supplies or services) in accordance with 23 CFR 633.102. The design-builder shall be responsible for compliance by any subcontractor, lower-tier subcontractor or service provider.

Contracting agencies may reference Form FHWA-1273 in solicitation-for-bids or request-for-proposals documents, however, the Form FHWA-1273 must be physically incorporated (not referenced) in all contracts, subcontracts and lower-tier subcontracts (excluding purchase orders, rental agreements and other agreements for supplies or services related to a construction contract). 23 CFR 633.102(b).

2. Subject to the applicability criteria noted in the following sections, these contract provisions shall apply to all work

performed on the contract by the contractor's own organization and with the assistance of workers under the contractor's immediate superintendence and to all work performed on the contract by piecework, station work, or by subcontract. 23 CFR 633.102(d).

3. A breach of any of the stipulations contained in these Required Contract Provisions may be sufficient grounds for withholding of progress payments, withholding of final payment, termination of the contract, suspension / debarment or any other action determined to be appropriate by the contracting agency and FHWA.

4. Selection of Labor: During the performance of this contract, the contractor shall not use convict labor for any purpose within the limits of a construction project on a Federal-aid highway unless it is labor performed by convicts who are on parole, supervised release, or probation. 23 U.S.C. 114(b). The term Federal-aid highway does not include roadways functionally classified as local roads or rural minor collectors. 23 U.S.C. 101(a).

II. NONDISCRIMINATION (23 CFR 230.107(a); 23 CFR Part 230, Subpart A, Appendix A; EO 11246)

The provisions of this section related to 23 CFR Part 230, Subpart A, Appendix A are applicable to all Federal-aid construction contracts and to all related construction subcontracts of \$10,000 or more. The provisions of 23 CFR Part 230 are not applicable to material supply, engineering, or architectural service contracts.

In addition, the contractor and all subcontractors must comply with the following policies: Executive Order 11246, 41 CFR Part 60, 29 CFR Parts 1625-1627, 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The contractor and all subcontractors must comply with: the requirements of the Equal Opportunity Clause in 41 CFR 60-1.4(b) and, for all construction contracts exceeding \$10,000, the Standard Federal Equal Employment Opportunity Construction Contract Specifications in 41 CFR 60-4.3.

Note: The U.S. Department of Labor has exclusive authority to determine compliance with Executive Order 11246 and the policies of the Secretary of Labor including 41 CFR Part 60, and 29 CFR Parts 1625-1627. The contracting agency and the FHWA have the authority and the responsibility to ensure compliance with 23 U.S.C. 140, Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. 794), and Title VI of the Civil Rights Act of 1964, as amended (42 U.S.C. 2000d et seq.), and related regulations including 49 CFR Parts 21, 26, and 27; and 23 CFR Parts 200, 230, and 633.

The following provision is adopted from 23 CFR Part 230, Subpart A, Appendix A, with appropriate revisions to conform to the U.S. Department of Labor (US DOL) and FHWA requirements.

1. Equal Employment Opportunity: Equal Employment Opportunity (EEO) requirements not to discriminate and to take affirmative action to assure equal opportunity as set forth under laws, executive orders, rules, regulations (see 28 CFR Part 35, 29 CFR Part 1630, 29 CFR Parts 1625-1627, 41 CFR Part 60 and 49 CFR Part 27) and orders of the Secretary of Labor as modified by the provisions prescribed herein, and imposed pursuant to 23 U.S.C. 140, shall constitute the EEO and specific affirmative action standards for the contractor's project activities under this contract. The provisions of the Americans with Disabilities Act of 1990 (42 U.S.C. 12101 et seq.) set forth under 28 CFR Part 35 and 29 CFR Part 1630 are incorporated by reference in this contract. In the execution of this contract, the contractor agrees to comply with the following minimum specific requirement activities of EEO:

a. The contractor will work with the contracting agency and the Federal Government to ensure that it has made every good faith effort to provide equal opportunity with respect to all of its terms and conditions of employment and in their review of activities under the contract. 23 CFR 230.409 (g)(4) & (5).

b. The contractor will accept as its operating policy the following statement:

"It is the policy of this Company to assure that applicants are employed, and that employees are treated during employment, without regard to their race, religion, sex, sexual orientation, gender identity, color, national origin, age or disability. Such action shall include: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training."

2. EEO Officer: The contractor will designate and make known to the contracting officers an EEO Officer who will have the responsibility for and must be capable of effectively administering and promoting an active EEO program and who must be assigned adequate authority and responsibility to do so.

3. Dissemination of Policy: All members of the contractor's staff who are authorized to hire, supervise, promote, and discharge employees, or who recommend such action or are substantially involved in such action, will be made fully cognizant of and will implement the contractor's EEO policy and contractual responsibilities to provide EEO in each grade and classification of employment. To ensure that the above agreement will be met, the following actions will be taken as a minimum:

a. Periodic meetings of supervisory and personnel office employees will be conducted before the start of work and then not less often than once every six months, at which time the contractor's EEO policy and its implementation will be reviewed and explained. The meetings will be conducted by the EEO Officer or other knowledgeable company official.

b. All new supervisory or personnel office employees will be given a thorough indoctrination by the EEO Officer, covering all major aspects of the contractor's EEO obligations within thirty days following their reporting for duty with the contractor.

c. All personnel who are engaged in direct recruitment for the project will be instructed by the EEO Officer in the contractor's procedures for locating and hiring minorities and women.

d. Notices and posters setting forth the contractor's EEO policy will be placed in areas readily accessible to employees, applicants for employment and potential employees.

e. The contractor's EEO policy and the procedures to implement such policy will be brought to the attention of employees by means of meetings, employee handbooks, or other appropriate means.

4. Recruitment: When advertising for employees, the contractor will include in all advertisements for employees the notation: "An Equal Opportunity Employer." All such advertisements will be placed in publications having a large circulation among minorities and women in the area from which the project work force would normally be derived.

a. The contractor will, unless precluded by a valid bargaining agreement, conduct systematic and direct recruitment through public and private employee referral sources likely to yield qualified minorities and women. To meet this requirement, the contractor will identify sources of potential minority group employees and establish with such identified sources procedures whereby minority and women applicants may be referred to the contractor for employment consideration.

b. In the event the contractor has a valid bargaining agreement providing for exclusive hiring hall referrals, the contractor is expected to observe the provisions of that agreement to the extent that the system meets the contractor's compliance with EEO contract provisions. Where implementation of such an agreement has the effect of discriminating against minorities or women, or obligates the contractor to do the same, such implementation violates Federal nondiscrimination provisions.

c. The contractor will encourage its present employees to refer minorities and women as applicants for employment. Information and procedures with regard to referring such applicants will be discussed with employees.

5. Personnel Actions: Wages, working conditions, and employee benefits shall be established and administered, and personnel actions of every type, including hiring, upgrading, promotion, transfer, demotion, layoff, and termination, shall be taken without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age or disability. The following procedures shall be followed:

a. The contractor will conduct periodic inspections of project sites to ensure that working conditions and employee facilities do not indicate discriminatory treatment of project site personnel.

b. The contractor will periodically evaluate the spread of wages paid within each classification to determine any evidence of discriminatory wage practices.

c. The contractor will periodically review selected personnel actions in depth to determine whether there is evidence of discrimination. Where evidence is found, the contractor will promptly take corrective action. If the review indicates that the discrimination may extend beyond the actions reviewed, such corrective action shall include all affected persons.

d. The contractor will promptly investigate all complaints of alleged discrimination made to the contractor in connection with its obligations under this contract, will attempt to resolve such complaints, and will take appropriate corrective action

within a reasonable time. If the investigation indicates that the discrimination may affect persons other than the complainant, such corrective action shall include such other persons. Upon completion of each investigation, the contractor will inform every complainant of all of their avenues of appeal.

6. Training and Promotion:

a. The contractor will assist in locating, qualifying, and increasing the skills of minorities and women who are applicants for employment or current employees. Such efforts should be aimed at developing full journey level status employees in the type of trade or job classification involved.

b. Consistent with the contractor's work force requirements and as permissible under Federal and State regulations, the contractor shall make full use of training programs (i.e., apprenticeship and on-the-job training programs for the geographical area of contract performance). In the event a special provision for training is provided under this contract, this subparagraph will be superseded as indicated in the special provision. The contracting agency may reserve training positions for persons who receive welfare assistance in accordance with 23 U.S.C. 140(a).

c. The contractor will advise employees and applicants for employment of available training programs and entrance requirements for each.

d. The contractor will periodically review the training and promotion potential of employees who are minorities and women and will encourage eligible employees to apply for such training and promotion.

7. Unions: If the contractor relies in whole or in part upon unions as a source of employees, the contractor will use good faith efforts to obtain the cooperation of such unions to increase opportunities for minorities and women. 23 CFR 230.409. Actions by the contractor, either directly or through a contractor's association acting as agent, will include the procedures set forth below:

a. The contractor will use good faith efforts to develop, in cooperation with the unions, joint training programs aimed toward qualifying more minorities and women for membership in the unions and increasing the skills of minorities and women so that they may qualify for higher paying employment.

b. The contractor will use good faith efforts to incorporate an EEO clause into each union agreement to the end that such union will be contractually bound to refer applicants without regard to their race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability.

c. The contractor is to obtain information as to the referral practices and policies of the labor union except that to the extent such information is within the exclusive possession of the labor union and such labor union refuses to furnish such information to the contractor, the contractor shall so certify to the contracting agency and shall set forth what efforts have been made to obtain such information.

d. In the event the union is unable to provide the contractor with a reasonable flow of referrals within the time limit set forth in the collective bargaining agreement, the contractor will, through independent recruitment efforts, fill the employment vacancies without regard to race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability; making full efforts to obtain qualified and/or qualifiable minorities and women. The failure of a union to provide

sufficient referrals (even though it is obligated to provide exclusive referrals under the terms of a collective bargaining agreement) does not relieve the contractor from the requirements of this paragraph. In the event the union referral practice prevents the contractor from meeting the obligations pursuant to Executive Order 11246, as amended, and these special provisions, such contractor shall immediately notify the contracting agency.

8. Reasonable Accommodation for Applicants / Employees with Disabilities: The contractor must be familiar with the requirements for and comply with the Americans with Disabilities Act and all rules and regulations established thereunder. Employers must provide reasonable accommodation in all employment activities unless to do so would cause an undue hardship.

9. Selection of Subcontractors, Procurement of Materials and Leasing of Equipment: The contractor shall not discriminate on the grounds of race, color, religion, sex, sexual orientation, gender identity, national origin, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall take all necessary and reasonable steps to ensure nondiscrimination in the administration of this contract.

a. The contractor shall notify all potential subcontractors, suppliers, and lessors of their EEO obligations under this contract.

b. The contractor will use good faith efforts to ensure subcontractor compliance with their EEO obligations.

10. Assurances Required:

a. The requirements of 49 CFR Part 26 and the State DOT's FHWA-approved Disadvantaged Business Enterprise (DBE) program are incorporated by reference.

b. The contractor, subrecipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR part 26 in the award and administration of DOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as the recipient deems appropriate, which may include, but is not limited to:

- (1) Withholding monthly progress payments;
- (2) Assessing sanctions;
- (3) Liquidated damages; and/or
- (4) Disqualifying the contractor from future bidding as non-responsible.

c. The Title VI and nondiscrimination provisions of U.S. DOT Order 1050.2A at Appendixes A and E are incorporated by reference. 49 CFR Part 21.

11. Records and Reports: The contractor shall keep such records as necessary to document compliance with the EEO requirements. Such records shall be retained for a period of three years following the date of the final payment to the contractor for all contract work and shall be available at reasonable times and places for inspection by authorized representatives of the contracting agency and the FHWA.

a. The records kept by the contractor shall document the following:

(1) The number and work hours of minority and non-minority group members and women employed in each work classification on the project;

(2) The progress and efforts being made in cooperation with unions, when applicable, to increase employment opportunities for minorities and women; and

(3) The progress and efforts being made in locating, hiring, training, qualifying, and upgrading minorities and women.

b. The contractors and subcontractors will submit an annual report to the contracting agency each July for the duration of the project indicating the number of minority, women, and non-minority group employees currently engaged in each work classification required by the contract work. This information is to be reported on [Form FHWA-1391](#). The staffing data should represent the project work force on board in all or any part of the last payroll period preceding the end of July. If on-the-job training is being required by special provision, the contractor will be required to collect and report training data. The employment data should reflect the work force on board during all or any part of the last payroll period preceding the end of July.

III. NONSEGREGATED FACILITIES

This provision is applicable to all Federal-aid construction contracts and to all related construction subcontracts of more than \$10,000. 41 CFR 60-1.5.

As prescribed by 41 CFR 60-1.8, the contractor must ensure that facilities provided for employees are provided in such a manner that segregation on the basis of race, color, religion, sex, sexual orientation, gender identity, or national origin cannot result. The contractor may neither require such segregated use by written or oral policies nor tolerate such use by employee custom. The contractor's obligation extends further to ensure that its employees are not assigned to perform their services at any location under the contractor's control where the facilities are segregated. The term "facilities" includes waiting rooms, work areas, restaurants and other eating areas, time clocks, restrooms, washrooms, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing provided for employees. The contractor shall provide separate or single-user restrooms and necessary dressing or sleeping areas to assure privacy between sexes.

IV. DAVIS-BACON AND RELATED ACT PROVISIONS

This section is applicable to all Federal-aid construction projects exceeding \$2,000 and to all related subcontracts and lower-tier subcontracts (regardless of subcontract size), in accordance with 29 CFR 5.5. The requirements apply to all projects located within the right-of-way of a roadway that is functionally classified as Federal-aid highway. 23 U.S.C. 113. This excludes roadways functionally classified as local roads or rural minor collectors, which are exempt. 23 U.S.C. 101. Where applicable law requires that projects be treated as a project on a Federal-aid highway, the provisions of this subpart will apply regardless of the location of the project. Examples include: Surface Transportation Block Grant Program projects funded under 23 U.S.C. 133 [excluding recreational trails projects], the Nationally Significant Freight and Highway

Projects funded under 23 U.S.C. 117, and National Highway Freight Program projects funded under 23 U.S.C. 167.

The following provisions are from the U.S. Department of Labor regulations in 29 CFR 5.5 "Contract provisions and related matters" with minor revisions to conform to the FHWA-1273 format and FHWA program requirements.

1. Minimum wages (29 CFR 5.5)

a. *Wage rates and fringe benefits.* All laborers and mechanics employed or working upon the site of the work (or otherwise working in construction or development of the project under a development statute), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act ([29 CFR part 3](#))), the full amount of basic hourly wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. As provided in paragraphs (d) and (e) of 29 CFR 5.5, the appropriate wage determinations are effective by operation of law even if they have not been attached to the contract. Contributions made or costs reasonably anticipated for bona fide fringe benefits under the Davis-Bacon Act ([40 U.S.C. 3141\(2\)\(B\)](#)) on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph 1.e. of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics must be paid the appropriate wage rate and fringe benefits on the wage determination for the classification(s) of work actually performed, without regard to skill, except as provided in paragraph 4. of this section. Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classifications and wage rates conformed under paragraph 1.c. of this section) and the Davis-Bacon poster (WH-1321) must be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

b. *Frequently recurring classifications.* (1) In addition to wage and fringe benefit rates that have been determined to be prevailing under the procedures set forth in [29 CFR part 1](#), a wage determination may contain, pursuant to § 1.3(f), wage and fringe benefit rates for classifications of laborers and mechanics for which conformance requests are regularly submitted pursuant to paragraph 1.c. of this section, provided that:

(i) The work performed by the classification is not performed by a classification in the wage determination for which a prevailing wage rate has been determined;

(ii) The classification is used in the area by the construction industry; and

(iii) The wage rate for the classification bears a reasonable relationship to the prevailing wage rates contained in the wage determination.

(2) The Administrator will establish wage rates for such classifications in accordance with paragraph 1.c.(1)(iii) of this section. Work performed in such a classification must be paid at no less than the wage and fringe benefit rate listed on the wage determination for such classification.

c. *Conformance.* (1) The contracting officer must require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract be classified in conformance with the wage determination. Conformance of an additional classification and wage rate and fringe benefits is appropriate only when the following criteria have been met:

(i) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

(ii) The classification is used in the area by the construction industry; and

(iii) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.

(2) The conformance process may not be used to split, subdivide, or otherwise avoid application of classifications listed in the wage determination.

(3) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken will be sent by the contracting officer by email to DBAconformance@dol.gov. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(4) In the event the contractor, the laborers or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer will, by email to DBAconformance@dol.gov, refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.

(5) The contracting officer must promptly notify the contractor of the action taken by the Wage and Hour Division

under paragraphs 1.c.(3) and (4) of this section. The contractor must furnish a written copy of such determination to each affected worker or it must be posted as a part of the wage determination. The wage rate (including fringe benefits where appropriate) determined pursuant to paragraph 1.c.(3) or (4) of this section must be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.

d. *Fringe benefits not expressed as an hourly rate.* Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor may either pay the benefit as stated in the wage determination or may pay another bona fide fringe benefit or an hourly cash equivalent thereof.

e. *Unfunded plans.* If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, *Provided*, That the Secretary of Labor has found, upon the written request of the contractor, in accordance with the criteria set forth in § 5.28, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

f. *Interest.* In the event of a failure to pay all or part of the wages required by the contract, the contractor will be required to pay interest on any underpayment of wages.

2. Withholding (29 CFR 5.5)

a. *Withholding requirements.* The contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for the full amount of wages and monetary relief, including interest, required by the clauses set forth in this section for violations of this contract, or to satisfy any such liabilities required by any other Federal contract, or federally assisted contract subject to Davis-Bacon labor standards, that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to Davis-Bacon labor standards requirements and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld. In the event of a contractor's failure to pay any laborer or mechanic, including any apprentice or helper working on the site of the work all or part of the wages required by the contract, or upon the contractor's failure to submit the required records as discussed in paragraph 3.d. of this section, the contracting agency may on its own initiative and after written notice to the contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with paragraph

2.a. of this section or Section V, paragraph 3.a., or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901–3907](#).

3. Records and certified payrolls (29 CFR 5.5)

a. *Basic record requirements (1) Length of record retention.* All regular payrolls and other basic records must be maintained by the contractor and any subcontractor during the course of the work and preserved for all laborers and mechanics working at the site of the work (or otherwise working in construction or development of the project under a development statute) for a period of at least 3 years after all the work on the prime contract is completed.

(2) *Information required.* Such records must contain the name; Social Security number; last known address, telephone number, and email address of each such worker; each worker's correct classification(s) of work actually performed; hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act); daily and weekly number of hours actually worked in total and on each covered contract; deductions made; and actual wages paid.

(3) *Additional records relating to fringe benefits.* Whenever the Secretary of Labor has found under paragraph 1.e. of this section that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in [40 U.S.C. 3141\(2\)\(B\)](#) of the Davis-Bacon Act, the contractor must maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits.

(4) *Additional records relating to apprenticeship.* Contractors with apprentices working under approved programs must maintain written evidence of the registration of apprenticeship programs, the registration of the apprentices, and the ratios and wage rates prescribed in the applicable programs.

b. *Certified payroll requirements (1) Frequency and method of submission.* The contractor or subcontractor must submit weekly, for each week in which any DBA- or Related Acts-covered work is performed, certified payrolls to the contracting

agency. The prime contractor is responsible for the submission of all certified payrolls by all subcontractors. A contracting agency or prime contractor may permit or require contractors to submit certified payrolls through an electronic system, as long as the electronic system requires a legally valid electronic signature; the system allows the contractor, the contracting agency, and the Department of Labor to access the certified payrolls upon request for at least 3 years after the work on the prime contract has been completed; and the contracting agency or prime contractor permits other methods of submission in situations where the contractor is unable or limited in its ability to use or access the electronic system.

(2) *Information required.* The certified payrolls submitted must set out accurately and completely all of the information required to be maintained under paragraph 3.a.(2) of this section, except that full Social Security numbers and last known addresses, telephone numbers, and email addresses must not be included on weekly transmittals. Instead, the certified payrolls need only include an individually identifying number for each worker (e.g., the last four digits of the worker's Social Security number). The required weekly certified payroll information may be submitted using Optional Form WH-347 or in any other format desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division website at <https://www.dol.gov/sites/dolgov/files/WHD/legacy/files/wh347.pdf> or its successor website. It is not a violation of this section for a prime contractor to require a subcontractor to provide full Social Security numbers and last known addresses, telephone numbers, and email addresses to the prime contractor for its own records, without weekly submission by the subcontractor to the contracting agency.

(3) *Statement of Compliance.* Each certified payroll submitted must be accompanied by a "Statement of Compliance," signed by the contractor or subcontractor, or the contractor's or subcontractor's agent who pays or supervises the payment of the persons working on the contract, and must certify the following:

(i) That the certified payroll for the payroll period contains the information required to be provided under paragraph 3.b. of this section, the appropriate information and basic records are being maintained under paragraph 3.a. of this section, and such information and records are correct and complete;

(ii) That each laborer or mechanic (including each helper and apprentice) working on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in [29 CFR part 3](#); and

(iii) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification(s) of work actually performed, as specified in the applicable wage determination incorporated into the contract.

(4) *Use of Optional Form WH-347.* The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 will satisfy the requirement for submission of the "Statement of Compliance" required by paragraph 3.b.(3) of this section.

(5) *Signature*. The signature by the contractor, subcontractor, or the contractor's or subcontractor's agent must be an original handwritten signature or a legally valid electronic signature.

(6) *Falsification*. The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under [18 U.S.C. 1001](#) and [31 U.S.C. 3729](#).

(7) *Length of certified payroll retention*. The contractor or subcontractor must preserve all certified payrolls during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

c. *Contracts, subcontracts, and related documents*. The contractor or subcontractor must maintain this contract or subcontract and related documents including, without limitation, bids, proposals, amendments, modifications, and extensions. The contractor or subcontractor must preserve these contracts, subcontracts, and related documents during the course of the work and for a period of 3 years after all the work on the prime contract is completed.

d. *Required disclosures and access* (1) *Required record disclosures and access to workers*. The contractor or subcontractor must make the records required under paragraphs 3.a. through 3.c. of this section, and any other documents that the contracting agency, the State DOT, the FHWA, or the Department of Labor deems necessary to determine compliance with the labor standards provisions of any of the applicable statutes referenced by § 5.1, available for inspection, copying, or transcription by authorized representatives of the contracting agency, the State DOT, the FHWA, or the Department of Labor, and must permit such representatives to interview workers during working hours on the job.

(2) *Sanctions for non-compliance with records and worker access requirements*. If the contractor or subcontractor fails to submit the required records or to make them available, or refuses to permit worker interviews during working hours on the job, the Federal agency may, after written notice to the contractor, sponsor, applicant, owner, or other entity, as the case may be, that maintains such records or that employs such workers, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available, or to permit worker interviews during working hours on the job, may be grounds for debarment action pursuant to § 5.12. In addition, any contractor or other person that fails to submit the required records or make those records available to WHD within the time WHD requests that the records be produced will be precluded from introducing as evidence in an administrative proceeding under [29 CFR part 6](#) any of the required records that were not provided or made available to WHD. WHD will take into consideration a reasonable request from the contractor or person for an extension of the time for submission of records. WHD will determine the reasonableness of the request and may consider, among other things, the location of the records and the volume of production.

(3) *Required information disclosures*. Contractors and subcontractors must maintain the full Social Security number and last known address, telephone number, and email address

of each covered worker, and must provide them upon request to the contracting agency, the State DOT, the FHWA, the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or other compliance action.

4. Apprentices and equal employment opportunity (29 CFR 5.5)

a. *Apprentices* (1) *Rate of pay*. Apprentices will be permitted to work at less than the predetermined rate for the work they perform when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship (OA), or with a State Apprenticeship Agency recognized by the OA. A person who is not individually registered in the program, but who has been certified by the OA or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice, will be permitted to work at less than the predetermined rate for the work they perform in the first 90 days of probationary employment as an apprentice in such a program. In the event the OA or a State Apprenticeship Agency recognized by the OA withdraws approval of an apprenticeship program, the contractor will no longer be permitted to use apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

(2) *Fringe benefits*. Apprentices must be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringe benefits must be paid in accordance with that determination.

(3) *Apprenticeship ratio*. The allowable ratio of apprentices to journeyworkers on the job site in any craft classification must not be greater than the ratio permitted to the contractor as to the entire work force under the registered program or the ratio applicable to the locality of the project pursuant to paragraph 4.a.(4) of this section. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in paragraph 4.a.(1) of this section, must be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under this section must be paid not less than the applicable wage rate on the wage determination for the work actually performed.

(4) *Reciprocity of ratios and wage rates*. Where a contractor is performing construction on a project in a locality other than the locality in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyworker's hourly rate) applicable within the locality in which the construction is being performed must be observed. If there is no applicable ratio or wage rate for the locality of the project, the ratio and wage rate specified in the contractor's registered program must be observed.

b. *Equal employment opportunity*. The use of apprentices and journeyworkers under this part must be in conformity with

the equal employment opportunity requirements of Executive Order 11246, as amended, and [29 CFR part 30](#).

c. Apprentices and Trainees (programs of the U.S. DOT).

Apprentices and trainees working under apprenticeship and skill training programs which have been certified by the Secretary of Transportation as promoting EEO in connection with Federal-aid highway construction programs are not subject to the requirements of paragraph 4 of this Section IV. 23 CFR 230.111(e)(2). The straight time hourly wage rates for apprentices and trainees under such programs will be established by the particular programs. The ratio of apprentices and trainees to journeyworkers shall not be greater than permitted by the terms of the particular program.

5. Compliance with Copeland Act requirements. The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract as provided in 29 CFR 5.5.

6. Subcontracts. The contractor or subcontractor must insert FHWA-1273 in any subcontracts, along with the applicable wage determination(s) and such other clauses or contract modifications as the contracting agency may by appropriate instructions require, and a clause requiring the subcontractors to include these clauses and wage determination(s) in any lower tier subcontracts. The prime contractor is responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in this section. In the event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and may be subject to debarment, as appropriate. 29 CFR 5.5.

7. Contract termination: debarment. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.

8. Compliance with Davis-Bacon and Related Act requirements. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract as provided in 29 CFR 5.5.

9. Disputes concerning labor standards. As provided in 29 CFR 5.5, disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.

10. Certification of eligibility. a. By entering into this contract, the contractor certifies that neither it nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

b. No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of [40 U.S.C. 3144\(b\)](#) or § 5.12(a).

c. The penalty for making false statements is prescribed in the U.S. Code, Title 18 Crimes and Criminal Procedure, [18 U.S.C. 1001](#).

11. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#);

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#); or

d. Informing any other person about their rights under the DBA, Related Acts, this part, or [29 CFR part 1](#) or [3](#).

V. CONTRACT WORK HOURS AND SAFETY STANDARDS ACT

Pursuant to 29 CFR 5.5(b), the following clauses apply to any Federal-aid construction contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by 29 CFR 5.5(a) or 29 CFR 4.6. As used in this paragraph, the terms laborers and mechanics include watchpersons and guards.

1. Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek. 29 CFR 5.5.

2. Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the clause set forth in paragraph 1. of this section the contractor and any subcontractor responsible therefor shall be liable for the unpaid wages and interest from the date of the underpayment. In addition, such contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or

mechanic, including watchpersons and guards, employed in violation of the clause set forth in paragraph 1. of this section, in the sum currently provided in 29 CFR 5.5(b)(2)* for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph 1. of this section.

* \$31 as of January 15, 2023 (See 88 FR 88 FR 2210) as may be adjusted annually by the Department of Labor, pursuant to the Federal Civil Penalties Inflation Adjustment Act of 1990.

3. Withholding for unpaid wages and liquidated damages

a. *Withholding process.* The FHWA or the contracting agency may, upon its own action, or must, upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the contractor so much of the accrued payments or advances as may be considered necessary to satisfy the liabilities of the prime contractor or any subcontractor for any unpaid wages; monetary relief, including interest; and liquidated damages required by the clauses set forth in this section on this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract subject to the Contract Work Hours and Safety Standards Act that is held by the same prime contractor (as defined in § 5.2). The necessary funds may be withheld from the contractor under this contract, any other Federal contract with the same prime contractor, or any other federally assisted contract that is subject to the Contract Work Hours and Safety Standards Act and is held by the same prime contractor, regardless of whether the other contract was awarded or assisted by the same agency, and such funds may be used to satisfy the contractor liability for which the funds were withheld.

b. *Priority to withheld funds.* The Department has priority to funds withheld or to be withheld in accordance with Section IV paragraph 2.a. or paragraph 3.a. of this section, or both, over claims to those funds by:

- (1) A contractor's surety(ies), including without limitation performance bond sureties and payment bond sureties;
- (2) A contracting agency for its procurement costs;
- (3) A trustee(s) (either a court-appointed trustee or a U.S. trustee, or both) in bankruptcy of a contractor, or a contractor's bankruptcy estate;
- (4) A contractor's assignee(s);
- (5) A contractor's successor(s); or
- (6) A claim asserted under the Prompt Payment Act, [31 U.S.C. 3901](#)–3907.

4. Subcontracts. The contractor or subcontractor must insert in any subcontracts the clauses set forth in paragraphs 1. through 5. of this section and a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor is responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs 1. through 5. In the

event of any violations of these clauses, the prime contractor and any subcontractor(s) responsible will be liable for any unpaid wages and monetary relief, including interest from the date of the underpayment or loss, due to any workers of lower-tier subcontractors, and associated liquidated damages and may be subject to debarment, as appropriate.

5. Anti-retaliation. It is unlawful for any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, or to cause any person to discharge, demote, intimidate, threaten, restrain, coerce, blacklist, harass, or in any other manner discriminate against, any worker or job applicant for:

a. Notifying any contractor of any conduct which the worker reasonably believes constitutes a violation of the Contract Work Hours and Safety Standards Act (CWHSSA) or its implementing regulations in this part;

b. Filing any complaint, initiating or causing to be initiated any proceeding, or otherwise asserting or seeking to assert on behalf of themselves or others any right or protection under CWHSSA or this part;

c. Cooperating in any investigation or other compliance action, or testifying in any proceeding under CWHSSA or this part; or

d. Informing any other person about their rights under CWHSSA or this part.

VI. SUBLETTING OR ASSIGNING THE CONTRACT

This provision is applicable to all Federal-aid construction contracts on the National Highway System pursuant to 23 CFR 635.116.

1. The contractor shall perform with its own organization contract work amounting to not less than 30 percent (or a greater percentage if specified elsewhere in the contract) of the total original contract price, excluding any specialty items designated by the contracting agency. Specialty items may be performed by subcontract and the amount of any such specialty items performed may be deducted from the total original contract price before computing the amount of work required to be performed by the contractor's own organization (23 CFR 635.116).

a. The term "perform work with its own organization" in paragraph 1 of Section VI refers to workers employed or leased by the prime contractor, and equipment owned or rented by the prime contractor, with or without operators. Such term does not include employees or equipment of a subcontractor or lower tier subcontractor, agents of the prime contractor, or any other assignees. The term may include payments for the costs of hiring leased employees from an employee leasing firm meeting all relevant Federal and State regulatory requirements. Leased employees may only be included in this term if the prime contractor meets all of the following conditions: (based on longstanding interpretation)

- (1) the prime contractor maintains control over the supervision of the day-to-day activities of the leased employees;
- (2) the prime contractor remains responsible for the quality of the work of the leased employees;

- (3) the prime contractor retains all power to accept or exclude individual employees from work on the project; and
- (4) the prime contractor remains ultimately responsible for the payment of predetermined minimum wages, the submission of payrolls, statements of compliance and all other Federal regulatory requirements.

b. "Specialty Items" shall be construed to be limited to work that requires highly specialized knowledge, abilities, or equipment not ordinarily available in the type of contracting organizations qualified and expected to bid or propose on the contract as a whole and in general are to be limited to minor components of the overall contract. 23 CFR 635.102.

2. Pursuant to 23 CFR 635.116(a), the contract amount upon which the requirements set forth in paragraph (1) of Section VI is computed includes the cost of material and manufactured products which are to be purchased or produced by the contractor under the contract provisions.

3. Pursuant to 23 CFR 635.116(c), the contractor shall furnish (a) a competent superintendent or supervisor who is employed by the firm, has full authority to direct performance of the work in accordance with the contract requirements, and is in charge of all construction operations (regardless of who performs the work) and (b) such other of its own organizational resources (supervision, management, and engineering services) as the contracting officer determines is necessary to assure the performance of the contract.

4. No portion of the contract shall be sublet, assigned or otherwise disposed of except with the written consent of the contracting officer, or authorized representative, and such consent when given shall not be construed to relieve the contractor of any responsibility for the fulfillment of the contract. Written consent will be given only after the contracting agency has assured that each subcontract is evidenced in writing and that it contains all pertinent provisions and requirements of the prime contract. (based on long-standing interpretation of 23 CFR 635.116).

5. The 30-percent self-performance requirement of paragraph (1) is not applicable to design-build contracts; however, contracting agencies may establish their own self-performance requirements. 23 CFR 635.116(d).

VII. SAFETY: ACCIDENT PREVENTION

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

1. In the performance of this contract the contractor shall comply with all applicable Federal, State, and local laws governing safety, health, and sanitation (23 CFR Part 635). The contractor shall provide all safeguards, safety devices and protective equipment and take any other needed actions as it determines, or as the contracting officer may determine, to be reasonably necessary to protect the life and health of employees on the job and the safety of the public and to protect property in connection with the performance of the work covered by the contract. 23 CFR 635.108.

2. It is a condition of this contract, and shall be made a condition of each subcontract, which the contractor enters into pursuant to this contract, that the contractor and any subcontractor shall not permit any employee, in performance of the contract, to work in surroundings or under conditions which are unsanitary, hazardous or dangerous to his/her health or safety, as determined under construction safety and

health standards (29 CFR Part 1926) promulgated by the Secretary of Labor, in accordance with Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704). 29 CFR 1926.10.

3. Pursuant to 29 CFR 1926.3, it is a condition of this contract that the Secretary of Labor or authorized representative thereof, shall have right of entry to any site of contract performance to inspect or investigate the matter of compliance with the construction safety and health standards and to carry out the duties of the Secretary under Section 107 of the Contract Work Hours and Safety Standards Act (40 U.S.C. 3704).

VIII. FALSE STATEMENTS CONCERNING HIGHWAY PROJECTS

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts.

In order to assure high quality and durable construction in conformity with approved plans and specifications and a high degree of reliability on statements and representations made by engineers, contractors, suppliers, and workers on Federal-aid highway projects, it is essential that all persons concerned with the project perform their functions as carefully, thoroughly, and honestly as possible. Willful falsification, distortion, or misrepresentation with respect to any facts related to the project is a violation of Federal law. To prevent any misunderstanding regarding the seriousness of these and similar acts, Form FHWA-1022 shall be posted on each Federal-aid highway project (23 CFR Part 635) in one or more places where it is readily available to all persons concerned with the project:

18 U.S.C. 1020 reads as follows:

"Whoever, being an officer, agent, or employee of the United States, or of any State or Territory, or whoever, whether a person, association, firm, or corporation, knowingly makes any false statement, false representation, or false report as to the character, quality, quantity, or cost of the material used or to be used, or the quantity or quality of the work performed or to be performed, or the cost thereof in connection with the submission of plans, maps, specifications, contracts, or costs of construction on any highway or related project submitted for approval to the Secretary of Transportation; or

Whoever knowingly makes any false statement, false representation, false report or false claim with respect to the character, quality, quantity, or cost of any work performed or to be performed, or materials furnished or to be furnished, in connection with the construction of any highway or related project approved by the Secretary of Transportation; or

Whoever knowingly makes any false statement or false representation as to material fact in any statement, certificate, or report submitted pursuant to provisions of the Federal-aid Roads Act approved July 11, 1916, (39 Stat. 355), as amended and supplemented;

Shall be fined under this title or imprisoned not more than 5 years or both."

IX. IMPLEMENTATION OF CLEAN AIR ACT AND FEDERAL WATER POLLUTION CONTROL ACT (42 U.S.C. 7606; 2 CFR 200.88; EO 11738)

This provision is applicable to all Federal-aid construction contracts in excess of \$150,000 and to all related subcontracts. 48 CFR 2.101; 2 CFR 200.327.

By submission of this bid/proposal or the execution of this contract or subcontract, as appropriate, the bidder, proposer, Federal-aid construction contractor, subcontractor, supplier, or vendor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act (42 U.S.C. 7401-7671q) and the Federal Water Pollution Control Act, as amended (33 U.S.C. 1251-1387). Violations must be reported to the Federal Highway Administration and the Regional Office of the Environmental Protection Agency. 2 CFR Part 200, Appendix II.

The contractor agrees to include or cause to be included the requirements of this Section in every subcontract, and further agrees to take such action as the contracting agency may direct as a means of enforcing such requirements. 2 CFR 200.327.

X. CERTIFICATION REGARDING DEBARMENT, SUSPENSION, INELIGIBILITY AND VOLUNTARY EXCLUSION

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, consultant contracts or any other covered transaction requiring FHWA approval or that is estimated to cost \$25,000 or more – as defined in 2 CFR Parts 180 and 1200. 2 CFR 180.220 and 1200.220.

1. Instructions for Certification – First Tier Participants:

- a. By signing and submitting this proposal, the prospective first tier participant is providing the certification set out below.
- b. The inability of a person to provide the certification set out below will not necessarily result in denial of participation in this covered transaction. The prospective first tier participant shall submit an explanation of why it cannot provide the certification set out below. The certification or explanation will be considered in connection with the department or agency's determination whether to enter into this transaction. However, failure of the prospective first tier participant to furnish a certification or an explanation shall disqualify such a person from participation in this transaction. 2 CFR 180.320.
- c. The certification in this clause is a material representation of fact upon which reliance was placed when the contracting agency determined to enter into this transaction. If it is later determined that the prospective participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the contracting agency may terminate this transaction for cause of default. 2 CFR 180.325.
- d. The prospective first tier participant shall provide immediate written notice to the contracting agency to whom this proposal is submitted if any time the prospective first tier participant learns that its certification was erroneous when submitted or has become erroneous by reason of changed circumstances. 2 CFR 180.345 and 180.350.

e. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900-180.1020, and 1200. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

f. The prospective first tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency entering into this transaction. 2 CFR 180.330.

g. The prospective first tier participant further agrees by submitting this proposal that it will include the clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transactions," provided by the department or contracting agency, entering into this covered transaction, without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 180.300.

h. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. 2 CFR 180.300; 180.320, and 180.325. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. 2 CFR 180.335. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>). 2 CFR 180.300, 180.320, and 180.325.

i. Nothing contained in the foregoing shall be construed to require the establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of the prospective participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

j. Except for transactions authorized under paragraph (f) of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency may terminate this transaction for cause or default. 2 CFR 180.325.

2. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion – First Tier Participants:

a. The prospective first tier participant certifies to the best of its knowledge and belief, that it and its principals:

(1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.335;

(2) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property, 2 CFR 180.800;

(3) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (a)(2) of this certification, 2 CFR 180.700 and 180.800; and

(4) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default. 2 CFR 180.335(d).

(5) Are not a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(6) Are not a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability (USDOT Order 4200.6 implementing appropriations act requirements).

b. Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal. 2 CFR 180.335 and 180.340.

3. Instructions for Certification - Lower Tier Participants:

(Applicable to all subcontracts, purchase orders, and other lower tier transactions requiring prior FHWA approval or estimated to cost \$25,000 or more - 2 CFR Parts 180 and 1200). 2 CFR 180.220 and 1200.220.

a. By signing and submitting this proposal, the prospective lower tier participant is providing the certification set out below.

b. The certification in this clause is a material representation of fact upon which reliance was placed when this transaction was entered into. If it is later determined that the prospective lower tier participant knowingly rendered an erroneous certification, in addition to other remedies available to the Federal Government, the department, or agency with which

this transaction originated may pursue available remedies, including suspension and/or debarment.

c. The prospective lower tier participant shall provide immediate written notice to the person to which this proposal is submitted if at any time the prospective lower tier participant learns that its certification was erroneous by reason of changed circumstances. 2 CFR 180.365.

d. The terms "covered transaction," "debarred," "suspended," "ineligible," "participant," "person," "principal," and "voluntarily excluded," as used in this clause, are defined in 2 CFR Parts 180, Subpart I, 180.900 – 180.1020, and 1200. You may contact the person to which this proposal is submitted for assistance in obtaining a copy of those regulations. "First Tier Covered Transactions" refers to any covered transaction between a recipient or subrecipient of Federal funds and a participant (such as the prime or general contract). "Lower Tier Covered Transactions" refers to any covered transaction under a First Tier Covered Transaction (such as subcontracts). "First Tier Participant" refers to the participant who has entered into a covered transaction with a recipient or subrecipient of Federal funds (such as the prime or general contractor). "Lower Tier Participant" refers any participant who has entered into a covered transaction with a First Tier Participant or other Lower Tier Participants (such as subcontractors and suppliers).

e. The prospective lower tier participant agrees by submitting this proposal that, should the proposed covered transaction be entered into, it shall not knowingly enter into any lower tier covered transaction with a person who is debarred, suspended, declared ineligible, or voluntarily excluded from participation in this covered transaction, unless authorized by the department or agency with which this transaction originated. 2 CFR 1200.220 and 1200.332.

f. The prospective lower tier participant further agrees by submitting this proposal that it will include this clause titled "Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion-Lower Tier Covered Transaction," without modification, in all lower tier covered transactions and in all solicitations for lower tier covered transactions exceeding the \$25,000 threshold. 2 CFR 180.220 and 1200.220.

g. A participant in a covered transaction may rely upon a certification of a prospective participant in a lower tier covered transaction that is not debarred, suspended, ineligible, or voluntarily excluded from the covered transaction, unless it knows that the certification is erroneous. A participant is responsible for ensuring that its principals are not suspended, debarred, or otherwise ineligible to participate in covered transactions. To verify the eligibility of its principals, as well as the eligibility of any lower tier prospective participants, each participant may, but is not required to, check the System for Award Management website (<https://www.sam.gov/>), which is compiled by the General Services Administration. 2 CFR 180.300, 180.320, 180.330, and 180.335.

h. Nothing contained in the foregoing shall be construed to require establishment of a system of records in order to render in good faith the certification required by this clause. The knowledge and information of participant is not required to exceed that which is normally possessed by a prudent person in the ordinary course of business dealings.

i. Except for transactions authorized under paragraph e of these instructions, if a participant in a covered transaction knowingly enters into a lower tier covered transaction with a person who is suspended, debarred, ineligible, or voluntarily

excluded from participation in this transaction, in addition to other remedies available to the Federal Government, the department or agency with which this transaction originated may pursue available remedies, including suspension and/or debarment. 2 CFR 180.325.

* * * * *

4. Certification Regarding Debarment, Suspension, Ineligibility and Voluntary Exclusion--Lower Tier Participants:

a. The prospective lower tier participant certifies, by submission of this proposal, that neither it nor its principals:

(1) is presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency, 2 CFR 180.355;

(2) is a corporation that has been convicted of a felony violation under any Federal law within the two-year period preceding this proposal (USDOT Order 4200.6 implementing appropriations act requirements); and

(3) is a corporation with any unpaid Federal tax liability that has been assessed, for which all judicial and administrative remedies have been exhausted, or have lapsed, and that is not being paid in a timely manner pursuant to an agreement with the authority responsible for collecting the tax liability. (USDOT Order 4200.6 implementing appropriations act requirements)

b. Where the prospective lower tier participant is unable to certify to any of the statements in this certification, such prospective participant should attach an explanation to this proposal.

* * * * *

XI. CERTIFICATION REGARDING USE OF CONTRACT FUNDS FOR LOBBYING

This provision is applicable to all Federal-aid construction contracts and to all related subcontracts which exceed \$100,000. 49 CFR Part 20, App. A.

1. The prospective participant certifies, by signing and submitting this bid or proposal, to the best of his or her knowledge and belief, that:

a. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

b. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or

cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

2. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

3. The prospective participant also agrees by submitting its bid or proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

XII. USE OF UNITED STATES-FLAG VESSELS:

This provision is applicable to all Federal-aid construction contracts, design-build contracts, subcontracts, lower-tier subcontracts, purchase orders, lease agreements, or any other covered transaction. 46 CFR Part 381.

This requirement applies to material or equipment that is acquired for a specific Federal-aid highway project. 46 CFR 381.7. It is not applicable to goods or materials that come into inventories independent of an FHWA funded-contract.

When oceanic shipments (or shipments across the Great Lakes) are necessary for materials or equipment acquired for a specific Federal-aid construction project, the bidder, proposer, contractor, subcontractor, or vendor agrees:

1. To utilize privately owned United States-flag commercial vessels to ship at least 50 percent of the gross tonnage (computed separately for dry bulk carriers, dry cargo liners, and tankers) involved, whenever shipping any equipment, material, or commodities pursuant to this contract, to the extent such vessels are available at fair and reasonable rates for United States-flag commercial vessels. 46 CFR 381.7.

2. To furnish within 20 days following the date of loading for shipments originating within the United States or within 30 working days following the date of loading for shipments originating outside the United States, a legible copy of a rated, 'on-board' commercial ocean bill-of-lading in English for each shipment of cargo described in paragraph (b)(1) of this section to both the Contracting Officer (through the prime contractor in the case of subcontractor bills-of-lading) and to the Office of Cargo and Commercial Sealift (MAR-620), Maritime Administration, Washington, DC 20590. (MARAD requires copies of the ocean carrier's (master) bills of lading, certified onboard, dated, with rates and charges. These bills of lading may contain business sensitive information and therefore may be submitted directly to MARAD by the Ocean Transportation Intermediary on behalf of the contractor). 46 CFR 381.7.

**ATTACHMENT A - EMPLOYMENT AND MATERIALS
PREFERENCE FOR APPALACHIAN DEVELOPMENT
HIGHWAY SYSTEM OR APPALACHIAN LOCAL ACCESS
ROAD CONTRACTS (23 CFR 633, Subpart B, Appendix B)**

This provision is applicable to all Federal-aid projects funded under the Appalachian Regional Development Act of 1965.

1. During the performance of this contract, the contractor undertaking to do work which is, or reasonably may be, done as on-site work, shall give preference to qualified persons who regularly reside in the labor area as designated by the DOL wherein the contract work is situated, or the subregion, or the Appalachian counties of the State wherein the contract work is situated, except:

a. To the extent that qualified persons regularly residing in the area are not available.

b. For the reasonable needs of the contractor to employ supervisory or specially experienced personnel necessary to assure an efficient execution of the contract work.

c. For the obligation of the contractor to offer employment to present or former employees as the result of a lawful collective bargaining contract, provided that the number of nonresident persons employed under this subparagraph (1c) shall not exceed 20 percent of the total number of employees employed by the contractor on the contract work, except as provided in subparagraph (4) below.

2. The contractor shall place a job order with the State Employment Service indicating (a) the classifications of the laborers, mechanics and other employees required to perform the contract work, (b) the number of employees required in each classification, (c) the date on which the participant estimates such employees will be required, and (d) any other pertinent information required by the State Employment Service to complete the job order form. The job order may be placed with the State Employment Service in writing or by telephone. If during the course of the contract work, the information submitted by the contractor in the original job order is substantially modified, the participant shall promptly notify the State Employment Service.

3. The contractor shall give full consideration to all qualified job applicants referred to him by the State Employment Service. The contractor is not required to grant employment to any job applicants who, in his opinion, are not qualified to perform the classification of work required.

4. If, within one week following the placing of a job order by the contractor with the State Employment Service, the State Employment Service is unable to refer any qualified job applicants to the contractor, or less than the number requested, the State Employment Service will forward a certificate to the contractor indicating the unavailability of applicants. Such certificate shall be made a part of the contractor's permanent project records. Upon receipt of this certificate, the contractor may employ persons who do not normally reside in the labor area to fill positions covered by the certificate, notwithstanding the provisions of subparagraph (1c) above.

5. The provisions of 23 CFR 633.207(e) allow the contracting agency to provide a contractual preference for the use of mineral resource materials native to the Appalachian region.

6. The contractor shall include the provisions of Sections 1 through 4 of this Attachment A in every subcontract for work which is, or reasonably may be, done as on-site work.

"General Decision Number: VT20240053 01/05/2024

Superseded General Decision Number: VT20230053

State: Vermont

Construction Type: Highway

County: Orange County in Vermont.

HIGHWAY CONSTRUCTION PROJECTS (excluding tunnels, building structures in rest area projects & railroad construction; bascule, suspension & spandrel arch bridges designed for commercial navigation, bridges involving marine construction; and other major bridges).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.20 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2024.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$12.90 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2024.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number Publication Date
 0 01/05/2024

SUVT2017-014 08/06/2019

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 20.00	1.64
CEMENT MASON/CONCRETE FINISHER...	\$ 25.34	0.00
ELECTRICIAN.....	\$ 28.15	2.03
HIGHWAY/PARKING LOT STRIPING:		
Painter.....	\$ 23.83	0.00
INSTALLER - SIGN.....	\$ 16.25 **	3.20
IRONWORKER, REINFORCING.....	\$ 21.70	1.60
IRONWORKER, STRUCTURAL.....	\$ 28.77	7.91
LABORER: Concrete Worker.....	\$ 20.19	1.31
LABORER: Landscape.....	\$ 14.70 **	1.03
LABORER: Common or General, Includes Asphalt Raker, Shoveler, Spreader and Distributor.....	\$ 16.32 **	3.15
OPERATOR:		
Backhoe/Excavator/Trackhoe.....	\$ 22.52	4.22
OPERATOR: Bobcat/Skid Steer/Skid Loader.....	\$ 19.79	4.28
OPERATOR: Broom/Sweeper.....	\$ 16.88 **	6.14
OPERATOR: Bulldozer.....	\$ 21.35	3.84
OPERATOR: Crane.....	\$ 23.42	2.38
OPERATOR: Drill.....	\$ 19.83	3.94
OPERATOR: Grader/Blade.....	\$ 21.13	5.53
OPERATOR: Loader.....	\$ 21.95	4.63
OPERATOR: Mechanic.....	\$ 23.14	6.08
OPERATOR: Milling Machine.....	\$ 22.50	10.24
OPERATOR: Paver (Asphalt, Aggregate, and Concrete).....	\$ 20.89	5.08
OPERATOR: Pounder.....	\$ 22.31	0.00
OPERATOR: Roller.....	\$ 18.48	7.16
OPERATOR: Screed.....	\$ 20.87	7.24
TRAFFIC CONTROL: Flagger.....	\$ 10.04 **	3.54
TRAFFIC CONTROL:		

Laborer-Cones/ Barricades/Barrels - Setter/Mover/Sweeper.....	\$ 17.20	6.71
TRUCK DRIVER, Includes all axles including Dump Trucks.....	\$ 18.44	1.75
TRUCK DRIVER: Distributor Truck.....	\$ 22.55	11.87

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.20) or 13658 (\$12.90). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed

in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination

- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
 Wage and Hour Division
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
 U.S. Department of Labor
 200 Constitution Avenue, N.W.
 Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION"

DISADVANTAGED BUSINESS ENTERPRISE (DBE) POLICY CONTRACT REQUIREMENTS

Disadvantaged Business Enterprise (DBE) Policy. It shall be the policy of the Vermont Agency of Transportation (VTrans) to ensure nondiscriminatory opportunity for Disadvantaged Business Enterprises (DBEs) to participate in the performance of all contracts and subcontracts financed with Federal funds as specified by the regulations of the United States Department of Transportation (USDOT), Federal Highway Administration and as set forth below.

1. **Policy.** It is the policy of USDOT that DBEs as defined in 49 Code of Federal Regulation (CFR) Part 26 shall have the maximum opportunity to participate in the performance of contracts financed in whole or in part with Federal funds. Consequently, the DBE requirements of 49 CFR Part 26 and 23 CFR, Chapter 1, Part 230, Subpart b apply to this contract.
2. **DBE Obligation.** The State and its Contractors agree to ensure that DBEs as defined in 49 CFR Part 26, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds. **Each subcontract the prime contractor signs with a subcontractor must include this assurance:** *The contractor, sub recipient or subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the award and performance of this contract. The contractor shall carry out applicable requirements of 49 CFR Part 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy, as VTrans deems appropriate.*
3. **Sanctions for Noncompliance.** The Contractor is hereby advised that failure of the Contractor, or any Subcontractor performing work under this contract, to carry out the requirements set forth in paragraphs 1 and 2 above shall constitute a breach of contract and after the notification of the Vermont Agency of Transportation, Secretary of Transportation, may result in termination of this contract by the State or such remedy as the State deems necessary.
4. **Inclusion in Subcontracts.** The Contractor shall insert in each of its subcontracts this Disadvantaged Business Enterprise (DBE) Policy and also a clause requiring its subcontractors to include this same Policy in any lower tier subcontracts which they may enter into, together with a clause requiring the inclusion of the Policy in any further subcontract that may in turn be made. This Policy shall not be incorporated by reference.

Disadvantaged Business Enterprise (DBE) Program Goals. The Vermont Agency of Transportation (VTrans) is required to set an overall DBE goal for participation in all transportation related Federal-aid projects. The goal is determined following guidelines set forth in 49 CFR 26.45, and based on the availability of ready, willing and able DBEs who submitted bids and quotes for transportation related projects, compared as a percentage of all available contractors who submitted bids and quotes for transportation related projects during the same time period. The DBE goal may be adjusted to take into account other factors impacting DBE utilization, in an effort to narrowly tailor the overall DBE goal. The detailed goal setting methodology and current overall DBE goal may be viewed on the VTrans website at:

<http://vtrans.vermont.gov/civil-rights/doing-business/dbe-center/program-goals>

The VTrans overall DBE goal is currently achieved by a combination of contract specific goals and a race/gender neutral policy. Contractors should be proactive and solicit bids and quotes from certified DBEs for use when submitting their own bids and employ certified DBEs when participating on transportation related projects.

Disadvantaged Business Enterprise (DBE) Definition. A DBE is defined as a business that is owned and controlled by one or more socially and economically disadvantaged person(s). For the purposes of this definition:

- (1) "Socially and economically disadvantaged person" means an individual who is a citizen or lawful permanent resident of the United States and who is a Woman, Black, Hispanic, Portuguese, Native American, Asian American, or a member of another group, or an individual found to be disadvantaged by the Small Business Administration pursuant to Section 3 of the Small Business Act.
- (2) "Owned and controlled" means a business which is:
 - a. A sole proprietorship legitimately owned and controlled by an individual who is a disadvantaged person.
 - b. A partnership, joint venture or limited liability company in which at least 51% of the beneficial ownership interests legitimately is held by a disadvantaged person(s).
 - c. A corporation or other entity in which at least 51% of the voting interest and 51% of the beneficial ownership interests legitimately are held by a disadvantaged person(s).

The disadvantaged group owner(s) or stockholder(s) must possess control over management, interest in capital, and interest in earnings commensurate with percentage of ownership. Disadvantaged participation in a joint venture must also be based on the sharing of real earnings, as above. If the disadvantaged group ownership interests are real, substantial and continuing and not created solely to meet the requirements of the program, a firm is considered a bona fide DBE.

Certified DBE Directory. The current Vermont Unified Disadvantaged Business Enterprise (DBE) Directory is available online at: <http://vtrans.vermont.gov/civil-rights/doing-business/dbe-center/directory>. This directory contains all currently certified DBEs available for work in Vermont and is updated continuously. Only firms listed in this directory are eligible for DBE credit on Vermont Federal-aid projects. If you have questions about DBE certification, or do not have access to the Internet, please call the [AOT DBE Program Manager](#) for assistance.

Counting DBE Participation Towards Project Goals. For payments made to DBE contractors to be counted toward DBE goals, the DBE contractors must perform a commercially useful function (CUF). The DBE must be responsible for execution of the work of the contract and must carry out its responsibilities by performing, managing, and supervising the work involved, consistent with standard industry practices.

This means that:

- The DBE must also be responsible for ordering its own materials and supplies, determining quantity and quality, negotiating price, installing (where applicable) and paying for the material itself;
- The DBE must perform work commensurate with the amount of its contract;
- The DBE's contribution cannot be that of an extra participant or a conduit through which funds are passed in order to obtain the appearance of DBE participation;
- The DBE must exercise responsibility for at least fifty percent of the total cost of its contract with its own workforce;
- None of the DBE's work can be subcontracted back to the prime contractor, nor can the DBE employ the prime's or other subcontractor's supervisors currently working on the project;
- The DBE's labor force must be separate and apart from that of the prime contractor or other subcontractors on the project. Transferring crews between primes, subcontractors, and DBE contractors is not acceptable;
- The DBE owner must hold necessary professional or craft license(s) or certification(s) for the type of work he/she performs on the project;
- The DBE may rent or lease, at competitive rates, equipment needed on the project from customary leasing sources or from other subcontractors on the project.

Allowable credit for payments made to DBEs for work performed. A contractor may take credit for payments made to a certified DBE that satisfies CUF requirements at the following rate:

- A DBE Prime Contractor: Count 100% of the value of the work performed by own forces, equipment and materials towards the DBE goals.
- An approved DBE subcontractor: Count 100% of the value of work performed by the DBE's own forces, equipment and materials, excluding the following:
 - The cost of materials/supplies purchased from a non-DBE Prime Contractor.
 - The value of work provided by non-DBE lower tier subcontractors, including non-DBE trucking to deliver asphalt to a DBE contractor.
- A DBE owner-operator of construction equipment: Count 100% of expenditures committed.
- A DBE manufacturer: Count 100% of expenditures committed. The manufacturer must be a firm that operates or maintains a factory or establishment that produces on the premises the materials or supplies obtained by the Contractor.

- A regular DBE dealer/supplier: Count 60% of expenditures committed. A regular dealer/supplier is defined as a firm that owns, operates, or maintains a store, warehouse or other establishment, in which the materials or supplies required for the performance of the contract are bought, kept in stock, and regularly sold or leased to the public in the usual course of business. A person may be a dealer in such bulk items as petroleum products, steel, cement, gravel, stone or asphalt without owning, operating or maintaining a place of business, if the person both owns and operates distribution equipment for the products, by the means of a long term agreement, and not by a contract by contract basis.
- A DBE broker: Count for DBE credit only the fees or commissions charged for assistance in the procurement, and, fees and transportation charges for the delivery of materials or supplies required at the job site, but not the cost of materials procured. A broker is defined as any person(s) or firm who arranges or expedites transactions for materials or supplies, and does not take physical possession of the materials or supplies at their place of business for resale.
- A DBE renter of construction equipment to a contractor: Count 20% of expenditures committed, with or without operator.
- A bona fide DBE service provider: Count 100% of reasonable fees or commissions. Eligible services include professional, technical, consultant, or managerial, services and assistance in the procurement of essential personnel, facilities, equipment, materials or supplies required for the performance of the contract. Eligible services also include agencies providing bonding and insurance specifically required for the performance of the contract.
- A trucking, hauling or delivery operation: Count 100% of expenditures committed when trucks are owned, operated, licensed and insured by the DBE and used on the contract and, if applicable, includes the cost of the materials and supplies. 100% of expenditures committed when the DBE leases trucks from another DBE firm including an owner-operator. 100% of reasonable fees, or commissions, the DBE receives as a result of a lease arrangement for trucks from a non-DBE, including an owner-operator.
- Any combination of the above.

Removal of Approved DBE From Transportation Related Project. Contractors may not terminate for convenience, any approved DBE subcontractor and perform the work with their own forces, without prior written consent from the [AOT DBE Program Manager or the AOT Civil Rights Director](#)

Federal-aid projects which specify a DBE contract goal. The provisions of the Vermont Agency of Transportation Supplemental Specification – Disadvantaged Business Enterprise (DBE) Utilization (CR 160) shall apply to all VTrans Federal-aid projects which specify a DBE contract goal.

Compliance With Prompt Payment Statute. In accordance with Vermont's Prompt Payment Act and VTrans Standard Specifications for Construction, Section 107.01(g), the Contractor

shall fully comply with the provisions of 9 V.S.A. Chapter 102, also referred to as Act No. 74 of 1991 or the Prompt Payment Act, as amended.

Subcontractor Payments. In accordance with VTrans Standard Specifications for Construction, Section 107.01(h), on all federal-aid and state funded contracts, the Contractor, during the life of the Contract and on a monthly basis, shall submit electronically, a listing of payments to subcontractors on the form specified by the State and made available at: <http://apps.vtrans.vermont.gov/promptpay/>. Electronic reports shall be filed with the Agency Office of Civil Rights by an authorized representative and received in the Agency Office of Civil Rights on or before the tenth working day after month end. Contractors without access to the internet shall obtain and submit manual reports to the Agency Office of Civil Rights. Manual reports shall be signed by an authorized representative, sent to the Agency Office of Civil Rights, and postmarked on or before the tenth working day after month end. There shall be no direct compensation allowed the Contractor for this work, but the cost thereof shall be included in the general cost of the work. In accordance with 9 V.S.A. Section 4003, notwithstanding any contrary agreement, payments made to subcontractors after seven days from receipt of a corresponding progress payment by the State to the Contractor, or seven days after receipt of a subcontractor's invoice, whichever is later, violate this agreement. Violations shall be reported to the Agency Office of Civil Rights for review. Failure to resolve disputes in a timely manner may result in a complaint made to the Agency Pre-qualification Committee. In this Committee's judgment, appropriate penalties may be involved for failure to comply with this specification. Penalties may include suspension, reduction or revocation of the Contractor's pre-qualification rating. This clause shall be included in the prime Contractor's Contract made with all if its subcontractors.

ATTACHMENT C: STANDARD STATE PROVISIONS FOR CONTRACTS AND GRANTS**REVISED DECEMBER 7, 2023**

1. Definitions: For purposes of this Attachment, “Party” shall mean the Contractor, Grantee, or Subrecipient, with whom the State of Vermont is executing this Agreement and consistent with the form of the Agreement. “Agreement” shall mean the specific contract or grant to which this form is attached.

2. Entire Agreement: This Agreement, whether in the form of a contract, State-funded grant, or Federally-funded grant, represents the entire agreement between the parties on the subject matter. All prior agreements, representations, statements, negotiations, and understandings shall have no effect. Where an authorized individual is either required to click-through or otherwise accept, or made subject to, any electronic terms and conditions to use or access any product or service provided hereunder, such terms and conditions are not binding and shall have no force or effect. Further, any terms and conditions of Party’s invoice, acknowledgment, confirmation, or similar document, shall not apply, and any such terms and conditions on any such document are objected to without need of further notice or objection.

3. Governing Law, Jurisdiction and Venue; No Waiver of Jury Trial: This Agreement will be governed by the laws of the State of Vermont without resort to conflict of laws principles. Any action or proceeding brought by either the State or the Party in connection with this Agreement shall be brought and enforced in the Superior Court of the State of Vermont, Civil Division, Washington Unit. The Party irrevocably submits to the jurisdiction of this court for any action or proceeding regarding this Agreement. The Party agrees that it must first exhaust any applicable administrative remedies with respect to any cause of action that it may have against the State regarding its performance under this Agreement. Party agrees that the State shall not be required to submit to binding arbitration or waive its right to a jury trial.

4. Sovereign Immunity: The State reserves all immunities, defenses, rights, or actions arising out of the State’s sovereign status or under the Eleventh Amendment to the United States Constitution. No waiver of the State’s immunities, defenses, rights, or actions shall be implied or otherwise deemed to exist by reason of the State’s entry into this Agreement.

5. No Employee Benefits For Party: The Party understands that the State will not provide any individual retirement benefits, group life insurance, group health and dental insurance, vacation or sick leave, workers compensation or other benefits or services available to State employees, nor will the State withhold any state or Federal taxes except as required under applicable tax laws, which shall be determined in advance of execution of the Agreement. The Party understands that all tax returns required by the Internal Revenue Code and the State of Vermont, including but not limited to income, withholding, sales and use, and rooms and meals, must be filed by the Party, and information as to Agreement income will be provided by the State of Vermont to the Internal Revenue Service and the Vermont Department of Taxes.

6. Independence: The Party will act in an independent capacity and not as officers or employees of the State.

7. Defense and Indemnity:

- A.** The Party shall defend the State and its officers and employees against all third-party claims or suits arising in whole or in part from any act or omission of the Party or of any agent of the Party in connection with the performance of this Agreement. The State shall notify the Party in the event of any such claim or suit, and the Party shall immediately retain counsel and otherwise provide a complete defense against the entire claim or suit. The State retains the right to participate at its own expense in the defense of any claim. The State shall have the right to approve all proposed settlements of such claims or suits.
- B.** After a final judgment or settlement, the Party may request recoupment of specific defense costs and may file suit in Washington Superior Court requesting recoupment. The Party shall be entitled to recoup costs only upon a showing that such costs were entirely unrelated to the defense of any claim arising from an act or omission of the Party in connection with the performance of this Agreement.
- C.** The Party shall indemnify the State and its officers and employees if the State, its officers, or employees become legally obligated to pay any damages or losses arising from any act or omission of the Party or an agent of the Party in connection with the performance of this Agreement.
- D.** Notwithstanding any contrary language anywhere, in no event shall the terms of this Agreement or any document furnished by the Party in connection with its performance under this Agreement obligate the State to (1) defend or indemnify the Party or any third party, or (2) otherwise be liable for the expenses or reimbursement, including attorneys’ fees, collection

costs or other costs of the Party or any third party.

8. Insurance: During the term of this Agreement, Party, at its expense, shall maintain in full force and effect the insurance coverages set forth in the Vermont State Insurance Specification in effect at the time of incorporation of this Attachment C into this Agreement. The terms of the Vermont State Insurance Specification are hereby incorporated by reference into this Attachment C as if fully set forth herein. A copy of the Vermont State Insurance Specification is available at: <https://aoa.vermont.gov/Risk-Claims-COI>.

9. Reliance by the State on Representations: All payments by the State under this Agreement will be made in reliance upon the accuracy of all representations made by the Party in accordance with this Agreement, including but not limited to bills, invoices, progress reports, and other proofs of work.

10. False Claims Act: Any liability to the State under the Vermont False Claims Act (32 V.S.A. § 630 et seq.) shall not be limited notwithstanding any agreement of the State to otherwise limit Party's liability.

11. Whistleblower Protections: The Party shall not discriminate or retaliate against one of its employees or agents for disclosing information concerning a violation of law, fraud, waste, abuse of authority, or acts threatening health or safety, including but not limited to allegations concerning the False Claims Act. Further, the Party shall not require such employees or agents to forego monetary awards as a result of such disclosures, nor should they be required to report misconduct to the Party or its agents prior to reporting to any governmental entity and/or the public.

12. Use and Protection of State Information:

- A. As between the State and Party, "State Data" includes all data received, obtained, or generated by the Party in connection with performance under this Agreement. Party acknowledges that certain State Data to which the Party may have access may contain information that is deemed confidential by the State, or which is otherwise confidential by law, rule, or practice, or otherwise exempt from disclosure under the State of Vermont Access to Public Records Act, 1 V.S.A. § 315 et seq. ("Confidential State Data").
- B. With respect to State Data, Party shall:
 - i. take reasonable precautions for its protection;
 - ii. not rent, sell, publish, share, or otherwise appropriate it; and
 - iii. upon termination of this Agreement for any reason, Party shall dispose of or retain State Data if and to the extent required by this Agreement, law, or regulation, or otherwise requested in writing by the State.
- C. With respect to Confidential State Data, Party shall:
 - i. strictly maintain its confidentiality;
 - ii. not collect, access, use, or disclose it except as necessary to provide services to the State under this Agreement;
 - iii. provide at a minimum the same care to avoid disclosure or unauthorized use as it provides to protect its own similar confidential and proprietary information;
 - iv. implement and maintain administrative, technical, and physical safeguards and controls to protect against any anticipated threats or hazards or unauthorized access or use;
 - v. promptly notify the State of any request or demand by any court, governmental agency or other person asserting a demand or request for Confidential State Data so that the State may seek an appropriate protective order; and
 - vi. upon termination of this Agreement for any reason, and except as necessary to comply with subsection B.iii above in this section, return or destroy all Confidential State Data remaining in its possession or control.
- D. If Party is provided or accesses, creates, collects, processes, receives, stores, or transmits Confidential State Data in any electronic form or media, Party shall utilize:
 - i. industry-standard firewall protection;
 - ii. multi-factor authentication controls;
 - iii. encryption of electronic Confidential State Data while in transit and at rest;
 - iv. measures to ensure that the State Data shall not be altered without the prior written consent of the State;
 - v. measures to protect against destruction, loss, or damage of State Data due to potential environmental hazards, such as fire and water damage;

- vi. training to implement the information security measures; and
 - vii. monitoring of the security of any portions of the Party's systems that are used in the provision of the services against intrusion.
- E. No Confidential State Data received, obtained, or generated by the Party in connection with performance under this Agreement shall be processed, transmitted, stored, or transferred by any means outside the United States, except with the express written permission of the State.
- F. Party shall notify the State within twenty-four hours after becoming aware of any unauthorized destruction, loss, alteration, disclosure of, or access to, any State Data.
- G. State of Vermont Cybersecurity Standard Update: Party confirms that all products and services provided to or for the use of the State under this Agreement shall be in compliance with State of Vermont Cybersecurity Standard Update in effect at the time of incorporation of this Attachment C into this Agreement. The State of Vermont Cybersecurity Standard Update prohibits the use of certain branded products in State information systems or any vendor system, and a copy is available at: <https://digitalservices.vermont.gov/cybersecurity/cybersecurity-standards-and-directives>
- H. In addition to the requirements of this Section 12, Party shall comply with any additional requirements regarding the protection of data that may be included in this Agreement or required by law or regulation.

13. Records Available for Audit: The Party shall maintain all records pertaining to performance under this Agreement. "Records" means any written or recorded information, regardless of physical form or characteristics, which is produced or acquired by the Party in the performance of this Agreement. Records produced or acquired in a machine-readable electronic format shall be maintained in that format. The records described shall be made available at reasonable times during the period of this Agreement and for three years thereafter or for any period required by law for inspection by any authorized representatives of the State or Federal Government. If any litigation, claim, or audit is started before the expiration of the three-year period, the records shall be retained until all litigation, claims, or audit findings involving the records have been resolved.

14. Fair Employment Practices and Americans with Disabilities Act: Party agrees to comply with the requirement of 21 V.S.A. Chapter 5, Subchapter 6, relating to fair employment practices, to the full extent applicable, and shall include this provision in all subcontracts for work performed in Vermont. Party shall also ensure, to the full extent required by the Americans with Disabilities Act of 1990, as amended, that qualified individuals with disabilities receive equitable access to the services, programs, and activities provided by the Party under this Agreement.

15. Offset: The State may offset any sums which the Party owes the State against any sums due the Party under this Agreement; provided, however, that any offset of amounts due the State of Vermont as taxes shall be in accordance with the procedures more specifically provided in 32 V.S.A. § 3113.

16. Taxes Due to the State: Party certifies under the pains and penalties of perjury that, as of the date this Agreement is signed, the Party is in good standing with respect to, or in full compliance with, a plan to pay any and all taxes due the State of Vermont.

17. Taxation of Purchases: All State purchases must be invoiced tax free. An exemption certificate will be furnished upon request with respect to otherwise taxable items.

18. Child Support: (Only applicable if the Party is a natural person, not a corporation or partnership.) Party states that, as of the date this Agreement is signed, Party is not under an obligation to pay child support or is in good standing with respect to or in full compliance with a plan to pay any and all child support payable under a support order. Party makes this statement with regard to support owed to any and all children residing in Vermont. In addition, if the Party is a resident of Vermont, Party makes this statement with regard to support owed to any and all children residing in any other state or territory of the United States.

19. Sub-Agreements: Party shall not assign, subcontract, or subgrant the performance of this Agreement or any portion thereof to any other Party without the prior written approval of the State. Party shall be responsible and liable to the State for all acts or omissions of subcontractors and any other person performing work under this Agreement pursuant to an agreement with Party or any subcontractor.

In the case this Agreement is a contract with a total cost in excess of \$250,000, the Party shall provide to the State a list of all proposed subcontractors and subcontractors' subcontractors, together with the identity of those subcontractors' workers compensation insurance providers, and additional required or requested information, as applicable, in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), as amended by Section 17 of Act No. 142 (2010) and by

Section 6 of Act No. 50 (2011).

Party shall include the following provisions of this Attachment C in all subcontracts for work performed solely for the State of Vermont and subcontracts for work performed in the State of Vermont: Section 10 (“False Claims Act”); Section 11 (“Whistleblower Protections”); Section 12 (“Confidentiality and Protection of State Information”); Section 14 (“Fair Employment Practices and Americans with Disabilities Act”); Section 16 (“Taxes Due the State”); Section 18 (“Child Support”); Section 20 (“No Gifts or Gratuities”); Section 22 (“Certification Regarding Debarment”); Section 30 (“State Facilities”); and Section 32.A (“Certification Regarding Use of State Funds”).

20. No Gifts or Gratuities: Party shall not give title or possession of anything of substantial value (including property, currency, travel, and/or education programs) to any officer or employee of the State during the term of this Agreement.

21. Regulation of Hydrofluorocarbons: Party confirms that all products provided to or for the use of the State under this Agreement shall not contain hydrofluorocarbons, as prohibited under 10 V.S.A. § 586.

22. Certification Regarding Debarment: Party certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, neither Party nor Party’s principals (officers, directors, owners, or partners) are presently debarred, suspended, proposed for debarment, declared ineligible, or excluded from participation in Federal programs, or programs supported in whole or in part by Federal funds. Party further certifies under pains and penalties of perjury that, as of the date that this Agreement is signed, Party is not presently debarred, suspended, nor named on the State’s debarment list at: <https://bgs.vermont.gov/purchasing-contracting/debarment>.

23. Conflict of Interest: Party shall fully disclose, in writing, any conflicts of interest or potential conflicts of interest.

24. Vermont Public Records Act: Party acknowledges and agrees that this Agreement, any and all information obtained by the State from the Party in connection with this Agreement, and any obligations of the State to maintain the confidentiality of information are subject to the State of Vermont Access to Public Records Act, 1 V.S.A. § 315 *et seq.*

25. Force Majeure: Neither the State nor the Party shall be liable to the other for any failure or delay of performance of any obligations under this Agreement to the extent such failure or delay shall have been wholly or principally caused by acts or events beyond its reasonable control rendering performance illegal or impossible (excluding strikes or lockouts) (“Force Majeure”). Where Force Majeure is asserted, the nonperforming party must prove that it made all reasonable efforts to remove, eliminate or minimize such cause of delay or damages, diligently pursued performance of its obligations under this Agreement, substantially fulfilled all non-excused obligations, and timely notified the other party of the likelihood or actual occurrence of an event described in this paragraph.

26. Marketing: Party shall not use the State’s logo or otherwise refer to the State in any publicity materials, information pamphlets, press releases, research reports, advertising, sales promotions, trade shows, or marketing materials or similar communications to third parties except with the prior written consent of the State.

27. Termination:

- A. Non-Appropriation:** If this Agreement extends into more than one fiscal year of the State (July 1 to June 30), and if appropriations are insufficient to support this Agreement, the State may cancel this Agreement at the end of the fiscal year, or otherwise upon the expiration of existing appropriation authority. In the case that this Agreement is funded in whole or in part by Federal funds, and in the event Federal funds become unavailable or reduced, the State may suspend or cancel this Agreement immediately, and the State shall have no obligation to pay Party from State revenues.
- B. Termination for Cause:** Either party may terminate this Agreement if a party materially breaches its obligations under this Agreement, and such breach is not cured within thirty (30) days after delivery of the non-breaching party’s notice or such longer time as the non-breaching party may specify in the notice.
- C. Termination Assistance:** Upon nearing the end of the final term or termination of this Agreement, without respect to cause, the Party shall take all reasonable and prudent measures to facilitate any transition required by the State. All State property, tangible and intangible, shall be returned to the State upon demand at no additional cost to the State in a format acceptable to the State.

28. Continuity of Performance: In the event of a dispute between the Party and the State, each party will continue to perform its obligations under this Agreement during the resolution of the dispute until this Agreement is terminated in accordance with its terms.

29. No Implied Waiver of Remedies: Either party's delay or failure to exercise any right, power, or remedy under this Agreement shall not impair any such right, power, or remedy, or be construed as a waiver of any such right, power, or remedy. All waivers must be in writing.

30. State Facilities: If the State makes space available to the Party in any State facility during the term of this Agreement for purposes of the Party's performance under this Agreement, the Party shall only use the space in accordance with all policies and procedures governing access to, and use of, State facilities, which shall be made available upon request. State facilities will be made available to Party on an "AS IS, WHERE IS" basis, with no warranties whatsoever.

31. Requirements Pertaining Only to Federal Grants and Subrecipient Agreements: If this Agreement is a grant that is funded in whole or in part by Federal funds:

- A. Requirement to Have a Single Audit:** The Subrecipient will complete the Subrecipient Annual Report annually within 45 days after its fiscal year end, informing the State of Vermont whether or not a Single Audit is required for the prior fiscal year. If a Single Audit is required, the Subrecipient will submit a copy of the audit report to the Federal Audit Clearinghouse within nine months. If a single audit is not required, only the Subrecipient Annual Report is required. A Single Audit is required if the subrecipient expends \$750,000 or more in Federal assistance during its fiscal year and must be conducted in accordance with 2 CFR Chapter I, Chapter II, Part 200, Subpart F. The Subrecipient Annual Report is required to be submitted within 45 days, whether or not a Single Audit is required.
- B. Internal Controls:** In accordance with 2 CFR Part II, §200.303, the Party must establish and maintain effective internal control over the Federal award to provide reasonable assurance that the Party is managing the Federal award in compliance with Federal statutes, regulations, and the terms and conditions of the award. These internal controls should be in compliance with guidance in "Standards for Internal Control in the Federal Government" issued by the Comptroller General of the United States and the "Internal Control Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission.
- C. Mandatory Disclosures:** In accordance with 2 CFR Part II, §200.113, Party must disclose, in a timely manner, in writing to the State, all violations of Federal criminal law involving fraud, bribery, or gratuity violations potentially affecting the Federal award. Failure to make required disclosures may result in the imposition of sanctions which may include disallowance of costs incurred, withholding of payments, termination of the Agreement, suspension/debarment, etc.

32. Requirements Pertaining Only to State-Funded Grants:

- A. Certification Regarding Use of State Funds:** If Party is an employer and this Agreement is a State-funded grant in excess of \$1,000, Party certifies that none of these State funds will be used to interfere with or restrain the exercise of Party's employee's rights with respect to unionization.
- B. Good Standing Certification (Act 154 of 2016):** If this Agreement is a State-funded grant, Party hereby represents: (i) that it has signed and provided to the State the form prescribed by the Secretary of Administration for purposes of certifying that it is in good standing (as provided in Section 13(a)(2) of Act 154) with the Agency of Natural Resources and the Agency of Agriculture, Food and Markets, or otherwise explaining the circumstances surrounding the inability to so certify; and (ii) that it will comply with the requirements stated therein.

(End of Standard Provisions)

USDOT Standard Title VI Nondiscrimination Assurances Appendix A, E

Assurance Appendix A

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees as follows:

1. **Compliance with Regulations:** The contractor (hereinafter includes consultants) will comply with the Acts and the Regulations relative to Nondiscrimination in Federally-assisted programs of the U.S. Department of Transportation, Federal Highway Administration (FHWA), as they may be amended from time to time, which are herein incorporated by reference and made a part of this contract.
2. **Nondiscrimination:** The contractor, with regard to the work performed by it during the contract, will not discriminate on the grounds of race, color, national origin, sex, age, disability, income-level, or LEP in the selection and retention of subcontractors, including procurements of materials and leases of equipment. The contractor will not participate directly or indirectly in the discrimination prohibited by the Acts and the Regulations as set forth in Appendix E, including employment practices when the contract covers any activity, project, or program set forth in Appendix B of 49 CFR Part 21.
3. **Solicitations for Subcontracts, Including Procurements of Materials and Equipment:** In all solicitations, either by competitive bidding, or negotiation made by the contractor for work to be performed under a subcontract, including procurements of materials, or leases of equipment, each potential subcontractor or supplier will be notified by the contractor of the contractor’s obligations under this contract and the Acts and the Regulations relative to Non-discrimination on the grounds of race, color, national origin, sex, age, disability, income-level, or LEP.
4. **Information and Reports:** The contractor will provide all information and reports required by the Acts, the Regulations and directives issued pursuant thereto and will permit access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Recipient or the FHWA to be pertinent to ascertain compliance with such Acts, Regulations, and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish the information, the contractor will so certify to the Recipient or the FHWA, as appropriate, and will set forth what efforts it has made to obtain the information.
5. **Sanctions for Noncompliance:** In the event of a contractor’s noncompliance with the Non-discrimination provisions of this contract, the Recipient will impose such contract sanctions as it or the FHWA may determine to be appropriate, including, but not limited to:
 - a. withholding payments to the contractor under the contract until the contractor complies; and/or
 - b. cancelling, terminating, or suspending a contract, in whole or in part.
6. **Incorporation of Provisions:** The contractor will include the provisions of paragraphs one through six in every subcontract, including procurements of materials and leases of equipment, unless exempt by the Acts, the Regulations and directives issued pursuant thereto. The contractor will take action with respect to any subcontract or procurement

as the Recipient or the FHWA may direct as a means of enforcing such provisions including sanctions for noncompliance. Provided, that if the contractor becomes involved in, or is threatened with litigation by a subcontractor, or supplier because of such direction, the contractor may request the Recipient to enter into any litigation to protect the interests of the Recipient. In addition, the contractor may request the United States to enter into the litigation to protect the interests of the United States.

Assurance Appendix E

During the performance of this contract, the contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the “contractor”) agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d *et seq.*, 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin), as implemented by 49 C.F.R. § 21.1 *et seq.* and 49 C.F.R. § 303;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, (42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 *et seq.*), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 *et seq.*), as amended, (prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 *et seq.*), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (102 Stat. 28.), (“...*which restore[d] the broad scope of coverage and to clarify the application of title IX of the Education Amendments of 1972, section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, and title VI of the Civil Rights Act of 1964.*”);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 – 12189) as implemented by Department of Justice regulations at 28 C.F.R. parts 35 and 36, and Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 *et seq.*), as implemented by 49 C.F.R. § 25.1 *et seq.*

STANDARD FEDERAL EQUAL EMPLOYMENT OPPORTUNITY
CONSTRUCTION CONTRACT SPECIFICATIONS
(EXECUTIVE ORDER 11246)

1. As used in these specifications:

- a. "Covered Area" means the geographical area described in the solicitation from which this contract resulted.
- b. "Director" means Director, Office of Federal Contract Compliance Programs, United States Department of Labor, or any person to whom the Director delegates authority.
- c. "Employer Identification Number" means the Federal Social Security Number used on the Employer's Quarterly Federal Tax Return, U.S. Treasury Department Form 941.

A Minority Group Member is:

...American Indian or Alaskan Native

consisting of all persons having origins in any of the original people of North American and who maintain cultural identification through tribal affiliations or community recognition.

...Black

consisting of all persons having origins in any of the Black racial groups of Africa.

...Asian or Pacific Islander

consisting of all persons having origins in any of the original people of the Far East, Southeast Asia, the Indian Sub-Continent or the Pacific Islands. This area includes China, India, Japan, Korea, the Philippines and Samoa.

...Hispanic

consisting of all persons of Mexican, Puerto Rican, Cuban, Central or South American or other Spanish culture or origin.

...Cape Verde an

consisting of all persons having origins in the Cape Verde Islands.

...Portuguese

consisting of all persons of Portuguese, Brazilian or other Portuguese culture or origin.

2. Whenever the Contractor, or any Subcontractor at any tier, subcontracts a portion of the work involving any construction trade, it shall physically include in each subcontract in excess of \$10,000.00 the provisions of these specifications and the notice which contains the applicable goals for minority and female participation and which is set forth in the solicitations from which this contract resulted.

3. If the Contractor is participating (pursuant to 41 CFR 60-4.5) in the Hometown Plan approved by the U.S. Department of Labor in the covered area either individually or through an association, its affirmative action obligations on all work in the Plan area (including goals and timetables) shall be in accordance with that Plan for those trades which have unions participating in the Plan. Contractors must be able to demonstrate their participation in and compliance with the provisions of any such Hometown Plan. Each Contractor or subcontract participating in an approved Plan is individually required to comply with its obligations under the EEO clause, and to make a good faith effort to achieve each goal under the Plan in each trade in which it has employees. the overall good faith performance by other Contractors or subcontractors toward a goal in an approved Plan does not excuse any covered Contractor's or subcontractor's failure to make good faith efforts to achieve the Plan goals and timetables.
4. The Contractor shall implement the specific affirmative action standards provided in Paragraphs 7a through p of these specifications. The goals set for the Contractor in the solicitation from which this contract resulted are expressed as percentages in the total hours of employment and training of minority and female utilization the Contractor should reasonably be able to achieve in each construction trade in which it has employees in the covered area. The Contractor is expected to make substantially uniform progress toward its goals in each craft during the period specified.
5. Neither the provisions of any collective bargaining agreement nor the failure by a union with whom the Contractor has a collective bargaining agreement to refer either minority or women shall excuse the Contractor's obligations under these specifications, Executive Order 11246, or the regulations promulgated pursuant thereto.
6. In order for the non-working training hours of apprentices and trainees to be counted in meeting the goals, such apprentices and trainees must be employed by the Contractor during the training period, and the Contractor must have made a commitment to employ the apprentices and trainees at the completion of their training, subject to the availability of employment opportunities. Trainees must be trained pursuant to training programs approved by the U.S. Department of Labor.
7. The Contractor shall take specific affirmative actions to ensure equal employment opportunity . The evaluation of the Contractor's compliance with these specifications shall be based upon its effort to achieve maximum results from its actions. The Contractor shall document these efforts fully and shall implement affirmative action steps at least as extensive as the following:
 - a. Ensure and maintain a working environment free of harassment, intimidation and coercion at all sites, and in all facilities at which the Contractor's employees are assigned to work. The Contractor, where possible, will assign two or more women to each construction project. The Contractor shall specifically ensure that all foremen, superintendents, and other on-site supervisory personnel are aware of and carry out the Contractor's obligation to maintain such a working environment with specific attention to minority or female individuals working at such sites or in such facilities.
 - b. Establish and maintain a current list of minority and female recruitment sources, provide written notification to minority and female recruitment sources and to community organizations when the Contractor or its unions have employment opportunities available and maintain a record of the organizations' responses.

- c. Maintain a current file of the names, addresses and telephone numbers of each minority and female off-the-street applicant and minority or female referral from a union, a recruitment source or community organization and of what action was taken with respect to each such individual. If such individual was sent to the union hiring hall for referral and was not referred back to the Contractor by the union or, if referred, not employed by the Contractor, this shall be documented in the file with the reason therefor, along with whatever additional actions the Contractor may have taken.
- d. Provide immediate written notifications to the Regional Director when the union or unions, with which the Contractor has a collective bargaining agreement, have not referred to the Contractor a minority person or woman sent by the Contractor or when the Contractor has other information that the union referral process has impeded the Contractor's efforts to meet its obligations.
- e. Develop on-the-job training opportunities and/or participate in training programs for the area which expressly include minorities and women, including upgrading programs and apprenticeship and trainee programs relevant to the Contractor's employment needs, especially those programs funded or approved by the Department of Labor. The Contractor shall provide notice of these programs to the sources compiled under Paragraph 7b above.
- f. Disseminate the Contractor's EEO policy by providing notice of the policy to unions and training programs and requesting their cooperation in assisting the Contractor in meeting its EEO obligations; by including it in any policy manual and collective bargaining agreement; by publicizing it in the company newspaper, annual report, etc.; by specific review of the policy with all management personnel and with all minority and female employees at least once a year; and by posting the company EEO policy on bulletin boards accessible to all employees at each location where construction is performed.
- g. Review, at least annually, the company's EEO policy and affirmative action obligations under these specifications with all employees having any responsibility for hiring, assignment, layoff, termination or other employment decisions including specific review of these items with on-site supervisory personnel such as Superintendents, Supervisors etc., prior to the initiation of construction work at any job site. A written record shall be made and maintained identifying the time and place of these meetings, persons attending, subject matter discussed, and disposition of the subject matter.
- h. Disseminate the Contractor's EEO policy externally by including it in any advertising in the news media, and providing written notification to, and discussing the Contractor's EEO policy with, other Contractors and subcontractors with whom the Contractor anticipates doing business.
- i. Direct its recruitment efforts, both oral and written, to minority, female and community organizations, to schools with minority and female students and to minority and female recruitment and training organizations serving the Contractor's recruitment area and employment needs. Not later than one month prior to the date for the acceptance of applications for apprenticeship or other training by any recruitment source, the Contractor shall send written notifications to organizations such as the above, describing the openings, screening procedures, and tests to be used in the selection process.

- j. Encourage present minority and female employees to recruit other minority persons and women and, where reasonable, provide after school, summer and vacation employment to minority and female youth both on the site and in other areas of a Contractor's workforce.
 - k. Validate all tests and other selection requirements where there is an obligation to do so under 41 CFR Part 60-3.
 - l. Conduct, at least annually, an inventory and evaluation of all minority and female personnel for promotional opportunities and encourage these employees to seek or to prepare for, through appropriate training, etc., such opportunities.
 - m. Ensure that seniority practices, job classifications, work assignments and other personnel practices, do not have a discriminatory effect by continually monitoring all personnel and employment-related activities to ensure that the EEO policy and Contractor's obligations under these specifications are being carried out.
 - n. Ensure that all facilities and company activities are non-segregated except that separate or single-user toilet and necessary changing facilities shall be provided to assure privacy between the sexes.
 - o. Document and maintain a record of all solicitations of offers for subcontracts from minority and female construction contractors and suppliers, including circulation of solicitations to minority and female contractor associations and other business associations.
 - p. Conduct a review, at least annually, of all supervisors' adherence to and performance under the Contractor's EEO policies and affirmative action obligations.
8. Contractors are encouraged to participate in voluntary associations which assist in fulfilling one or more of their affirmative action obligations (Paragraph 7a through p). The efforts of a contractor association, joint contractor-union, contractor-community, or other similar group of which the Contractor is a member and participant, may be asserted as fulfilling any one or more of its obligations under Paragraph 7a through p of these Specifications provided that the Contractor actively participates in the group, makes every effort to assure that the group has a positive impact on the employment of minorities and women in the industry, reflected in the Contractor's minority and female workforce participation, makes a good faith effort to meet its individual goals and timetables, and can provide access to documentation which demonstrates the effectiveness of actions taken on behalf of the Contractor. The obligation to comply, however, is the Contractor's, and failure of such a group to fulfill an obligation shall not be a defense for the Contractor's non-compliance.
9. A single goal for minorities and a separate single goal for women have been established. The Contractor, however, is required to provide equal employment opportunity and to take affirmative action for all minority groups, both male and female, and all women, both minority and non-minority. Consequently, the Contractor may be in violation of the Executive Order if a particular group is employed in a substantially disparate manner (for example, even though the Contractor has achieved its goals for women generally, the Contractor may be in violation of the Executive Order if a specific minority group of women is under-utilized).

10. The Contractor shall not use the goals and timetables or affirmative action standards to discriminate against any person because of race, color, religion, sex or national origin.
11. The Contractor shall not enter into any subcontract with any person for firm debarred from Government contracts pursuant to Executive Order 11246.
12. The Contractor shall carry out such sanctions and penalties for violation of these specifications and of the Equal Opportunity Clause, including suspension, terminations and cancellation of existing subcontracts as may be imposed or ordered pursuant to Executive Order 11246, as amended, and its implementing regulations, by the Office of Federal Contract Compliance Programs. Any Contractor who fails to carry out such sanctions and penalties shall be in violation of these specifications and Executive Order 11246, as amended.
13. The Contractor, in fulfilling its obligations under these specifications, shall implement specific affirmative action steps, at least as extensive as those standards prescribed in Paragraph 7 of these specifications, so as to achieve maximum results from its efforts to ensure equal employment opportunity. If the Contractor fails to comply with the requirements of the Executive Order, the implementing regulations or these specifications, the Director shall proceed in accordance with 41 CFR 60-4.8.
14. The Contractor shall designate a responsible official to monitor all employment-related activity to ensure that the company EEO policy is being carried out, to submit reports relating to the provisions hereof as may be required by the Government and to keep records. Records shall at least include for each employee the name, address, telephone numbers, construction trade union affiliation if any, employee identification number when assigned, social security number, race, sex, status (e.g., mechanic, apprentice, trainee, helper or laborer), dates of changes in status, hours worked per week in the indicated trade, rate of pay, and locations at which the work was performed. Records shall be maintained in an easily understandable and retrievable form; however, to the degree that existing records satisfy this requirement, contractors shall not be required to maintain separate records.
15. Nothing herein provided shall be construed as a limitation upon the application of other laws which establish different standards of compliance or upon the application or requirements for the hiring of local or other area residents (e.g., those under the Public Works Employment Act of 1977 and the Community Development Block Grant Program).

**NOTICE OF REQUIREMENTS FOR AFFIRMATIVE ACTION TO ENSURE EQUAL
EMPLOYMENT OPPORTUNITY (EXECUTIVE ORDER 11246)**

1. The Offeror's or Bidder's attention is called to the "Equal Opportunity Clause" and the "Standard Federal Equal Employment Specifications" set forth herein.
2. The goals and timetables for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Economic Areas	Timetables	Goals for Minority participation for each trade (%)	Goals for Female Participation in each trade (%)
Entire State of Vermont:			
<u>Vermont</u> 003 Burlington, VT Non-SMSA Counties NH Coos; NH Grafton; NH Sullivan; VT Addison; VT Caledonia; VT Chittenden; VT Essex; VT Franklin; VT Grand Isle; VT Lamoille; VT Orange; VT Orleans; VT Rutland; VT Washington; VT Windsor	Indefinite	0.8	6.9
<u>Connecticut (Mass)</u> 006 Hartford - New Haven Springfield, CT-MA Non-SMSA Counties CT Litchfield; CT Windham; MA Franklin; NH Cheshire; VT Windham	Indefinite	5.9	
<u>New York</u> 007 Albany - Schenectady - Troy, NY Non-SMSA Counties NY Clinton; NY Columbia; NY Essex; NY Fulton; NY Greene; NY Hamilton; NY Schoharie; NY Warren; NY Washington; VT Bennington	Indefinite	2.6	

These goals are applicable to all the Contractor's construction work (whether or not it is Federal or federally assisted) performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, it shall apply the goals established for such geographical area where the work is actually performed. With regard to this second area, the Contractor also is subject to the goals for both its federally involved and non-federally involved construction.

The Contractor's compliance with the Executive Order and the regulation in CFR Part 60-4 shall be based on its implementation of the Equal Opportunity Clause, specific affirmative action obligations required by the specifications set forth in 41 CFR 60-4.3 (a), and its efforts to meet the goals. The hours of minority and female employment and training must be substantially uniform throughout the length of the contract and in each trade, and the Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor or from project to project for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, the Executive Order and the regulations in 41 CFR Part 60-4. Compliance with the goals will be measured against the total work hours performed.

3. The Contractor shall provide written notification to the Director of the Office of Federal Contract Compliance Programs within ten working days of award of any construction subcontract in excess of \$10,000.00 at any tier for construction work under the contract resulting from this solicitation. The notifications shall list the name, address and telephone number of the subcontractor; employer identification number of the subcontractor; estimated dollar amount of the subcontract; and the geographical area in which the subcontract is to be performed.
4. As used in this Notice, and in the contract resulting from this solicitation, the "covered area" is (insert description of the geographical areas where the contract is to be performed giving the state, county and city, if any)

CONTRACTOR'S EEO CERTIFICATION FORM

Certification with regard to the Performance of Previous Contracts of Subcontracts subject to the Equal Opportunity Clause and the filing of Required Reports.

The bidder _____, proposed subcontractor _____, hereby certifies that he/she has _____, has not _____, participated in a previous contract or subcontract subject to the equal opportunity clause, as required by Executive Orders 10925, 11114, or 11246 as amended, and that he/she has _____, has not _____, filed with the Joint Reporting Committee, the Director of the Office of Federal Contract Compliance, a Federal Government contracting or administering agency, or the President's Committee on Equal Employment Opportunity, all reports due under the applicable filing requirements.

Company	By	Title
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NOTE: The above certification is required by the Equal Employment Opportunity regulations of the Secretary of Labor (41 CFR 60-1.7(b) (1)), and must be submitted by bidders and proposed subcontractors only in connection with contracts and subcontracts which are subject to the equal opportunity clause. Contracts and subcontracts which are exempt from the equal opportunity clause are set forth in 41 CFR 60-1.5 (Generally only contracts or subcontracts of \$10,000 or under are exempt.) Currently, Standard Form 100 (EEO-1) is the only report required by the Executive Orders or their implementing regulations.

Proposed prime contractors and subcontractors who have participated in a previous contract or subcontract subject to the Executive Orders and have not filed the required reports should note that 41 CFR 60-1.7 (b) (1) prevents the award of contracts and subcontracts unless such contractor submits a report covering the delinquent period or such other period specified by the Federal Highway Administration, or by the Director, Office of Federal Contract Compliance, U.S. Department of Labor.

**STATE OF VERMONT
AGENCY OF TRANSPORTATION
CERTIFICATE OF COMPLIANCE**

For a bid/proposal to be considered valid, this form must be completed in its entirety, executed by a duly authorized representative of the bidder, and submitted as part of the response to the proposal.

A. NON-COLLUSION: The undersigned certifies under the penalties of perjury under the laws of the State of Vermont and the United States that it has not, either directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action, in restraint of free competitive bidding in connection with the submitted bid/proposal.

B. DEBARMENT: The undersigned certifies under the penalties of perjury under the laws of the State of Vermont and the United States that it:

1. Is not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participating in covered transactions by any Federal department or agency; and
2. Has not within a three-year period preceding this bid/proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State, or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property; and
3. Is not presently indicted for, or otherwise criminally or civilly charged by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph 2 above; and
4. Has not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.
5. **Where the prospective participant is unable to certify to any of the statements in this certification, such prospective participant shall attach an explanation to this bid/proposal, including whom it applies and dates of action. Exceptions will not necessarily result in denial of award but will be considered in determining bidder eligibility and/or responsibility. Providing false information may result in criminal prosecution or administration sanctions.**

C. BYRD ANTI-LOBBYING: The undersigned hereby certifies, by signing and submitting this bid/proposal, to the best of his or her knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or

employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any Federal agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.
3. This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction as required by 31 U.S.C. 1352. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.
4. The undersigned also agrees by submitting its bid/proposal that the participant shall require that the language of this certification be included in all lower tier subcontracts, which exceed \$100,000 and that all such recipients shall certify and disclose accordingly.

E. WORKER CLASSIFICATION COMPLIANCE REQUIREMENT: In accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), the following provisions and requirements apply to the undersigned when the total project costs exceed \$250,000.00.

Bidder is required to self-report the following information relating to past violations, convictions, suspensions, and any other information related to past performance and likely compliance with proper coding and classification of employees. The Agency of Transportation is requiring information on any incidents that occurred in the previous 12 months. Attach additional pages as necessary. **If not applicable, please enter 'Not Applicable' or 'N/A' below.**

Summary of Detailed Information	Date of Notification	Outcome

Bidder hereby certifies that the company/individual is in compliance with the requirements as detailed in Section 32 of Act 54(2009), as amended by Section 17 of Act 142 (2010) and further amended by Section 6 of Act 50 (2011).

Subcontractor Reporting.

A. **Contracts for Services.** The undersigned hereby acknowledges and agrees that if it is a successful bidder, prior to execution of any contract resulting from this solicitation, the undersigned will provide to the State a list of all proposed subcontractors and subcontractors’ subcontractors, together with the identity of those subcontractors’ workers compensation insurance providers, and additional required or requested information, as applicable, in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), the undersigned will provide any update of such list to the State as additional subcontractors are hired. The undersigned further acknowledges and agrees that the failure to submit subcontractor reporting in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54) will constitute non-compliance and may result in cancellation of contract and/or restriction from bidding on future state contracts.

B. **Construction Contracts.** The Contractor is required to provide a list of subcontractors on the job along with lists of subcontractor’s subcontractors and by whom those subcontractors are insured for workers’ compensation purposes. This is not a requirement for subcontractor’s providing supplies only and no labor to the overall contract or project.

Additionally, the Contractor shall collect and retain evidence of subcontractors’ workers’ compensation insurance, such as the ACORD insurance coverage summary sheet. Agency of Transportation will periodically verify the Contractor’s compliance.

This information must be updated as necessary and provided to the State as additional subcontractors are hired. If none, please enter ‘Not Applicable’ or ‘N/A’ below.

Sub-Contractor	Insured By	Sub-Contractor’s Sub	Insured By

The undersigned further acknowledges and agrees that the failure to submit subcontractor reporting in accordance with Section 32 of The Vermont Recovery and Reinvestment Act of 2009 (Act No. 54), and as amended will constitute non-compliance and may result in cancellation of contract and/or restriction from bidding on future state contracts.

As a duly authorized representative of the bidder, I hereby certify that the information above is true and correct.

Date: _____

Duly Authorized Signature: _____

Name and Title of Person Signing: _____
(Duly Authorized Signer)

Company Name: _____

Company Address: _____

E-Mail Address: _____

Minimum Labor and Truck Rates
Under Title 19, Vermont Statutes
Annotated Section 18, as amended

April 3, 1997
Sheet 1 of 1

**STATE OF VERMONT
AGENCY OF TRANSPORTATION
MONTPELIER**

FOR OTHER THAN FEDERAL-AID. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rate for labor shall apply to this project:

The minimum wage for common labor will not be less than the State or Federal minimum wage, whichever is higher.

ON FEDERAL-AID PROJECTS ONLY.

The minimum rates for labor for Federal-Aid Projects shall be those set in the Wage Determination Decision of the U.S. Secretary of Labor for each project in accordance with the Federal-Aid Highway Act of 1956. When such wage rates are required they shall be included in the proposal. In the event these rates are lower than the Vermont rates, the Vermont rates shall prevail.

TRUCK RATES. In accordance with the provisions of Title 19, VSA, Section 18, the following minimum rates for trucks shall apply to this project:

<u>Trucks, not Including Driver Water Level Body Capacity</u>	<u>Minimum Rates Per YD per Hr.</u>
Trucks, Equipment Loaded	\$1.65

**STATE OF VERMONT
AGENCY OF TRANSPORTATION
MONTPELIER**

COMMODITY INDEX PRICES.

- (a) Price Adjustment, Asphalt Cement. When Item 406.50 is included in the Contract, asphalt cement price adjustment will be performed according to the requirements of Section 406 for all asphalt cement and emulsified asphalt incorporated into the work, including that incorporated under Project Special Provision pay items.
- (b) Price Adjustment, Fuel. When Item 690.50 is included in the Contract, fuel price adjustment will be performed according to the requirements of Section 690 for the pay items specified therein, and for any pay items identified in the Project Special Provisions as being eligible for fuel price adjustment.
- (c) Commodity Index Prices. The Index Prices for asphalt and fuel for this Contract are specified in Table 1.

TABLE 1 – COMMODITY INDEX PRICES FOR THIS CONTRACT

	Asphalt (dollars/ton)	Fuel (dollars/gallon)
Index Price	\$623.00	\$4.28

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 06/07/2024 11:00 AM

CONTRACT ID:C03189

PROJECT(S):FAIRLEE IM 091-2(95)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
ITEMS COMMON TO ALL ALTERNATES			
201.10	CLEARING AND GRUBBING, INCLUDING INDIVIDUAL TREES AND STUMPS	1.000	LS
203.15	COMMON EXCAVATION	773.000	CY
204.22	TRENCH EXCAVATION OF EARTH, EXPLORATORY (N.A.B.I.)	1.000	CY
204.25	STRUCTURE EXCAVATION	30.000	CY
204.30	GRANULAR BACKFILL FOR STRUCTURES	35.000	CY
210.10	COARSE-MILLING, BITUMINOUS PAVEMENT	420.000	SY
213.10	MILLED RUMBLE STRIPS	324.000	LF
301.35	SUBBASE OF DENSE GRADED CRUSHED STONE	548.000	CY
401.10	AGGREGATE SURFACE COURSE	21.000	CY
404.65	EMULSIFIED ASPHALT	9.000	CWT
406.50	PRICE ADJUSTMENT, ASPHALT CEMENT (N.A.B.I.)	1.000	LU
502.10	SHORING SUPERSTRUCTURE	1.000	LS
507.11	REINFORCING STEEL, LEVEL I (EPOXY COATED)(FPQ)	9,313.000	LB
507.12	REINFORCING STEEL, LEVEL II	40,183.000	LB
508.15	SHEAR CONNECTORS (1224 - 7/8 IN X 7 IN)	1.000	LS
514.10	WATER REPELLENT, SILANE	11.000	GAL
516.10	BRIDGE EXPANSION JOINT, ASPHALTIC PLUG	88.000	LF
519.20	SHEET MEMBRANE WATERPROOFING, TORCH APPLIED	433.000	SY
524.11	JOINT SEALER, HOT POURED	88.000	LF
525.335	BRIDGE RAILING, GALVANIZED 3 RAIL BOX BEAM (FPQ)	292.500	LF
529.20	PARTIAL REMOVAL OF STRUCTURE (EST 4292 SF)	1.000	EACH
531.18	BEARING DEVICE ASSEMBLY, ELASTOMERIC PAD W/ EXT. LOAD PLATES	12.000	EACH
580.13	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS I	5.000	SY
580.14	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS II	5.000	SY
580.15	REPAIR OF CONCRETE SUBSTRUCTURE SURFACE, CLASS III	1.400	CY
601.0915	18" CPEP	102.000	LF
604.18	PRECAST REINFORCED CONCRETE DROP INLET WITH CAST IRON GRATE	2.000	EACH
609.10	DUST CONTROL WITH WATER	29.000	MGAL
616.28	CAST-IN-PLACE CONCRETE CURB, TYPE B	220.000	LF
616.35	TREATED TIMBER CURB	50.000	LF
620.75	SNOW BARRIER FENCE	190.000	LF
621.20	STEEL BEAM GUARDRAIL, GALVANIZED	728.000	LF
621.50	MANUFACTURED TERMINAL SECTION, FLARED	2.000	EACH
621.725	GUARDRAIL APPROACH SECTION, GALVANIZED 3 RAIL BOX BEAM	4.000	EACH
621.80	REMOVAL AND DISPOSAL OF GUARDRAIL	293.000	LF
621.90	TEMPORARY TRAFFIC BARRIER	843.000	LF
630.10	UNIFORMED TRAFFIC OFFICERS	100.000	HR
630.15	FLAGGERS	1,000.000	HR
631.10	FIELD OFFICE, ENGINEERS	1.000	LS
631.16	TESTING EQUIPMENT, CONCRETE	1.000	LS
631.17	TESTING EQUIPMENT, BITUMINOUS	1.000	LS
631.26	FIELD OFFICE COMMUNICATIONS (N.A.B.I.)	3,000.000	DL
633.10	CPM SCHEDULE	6.000	EACH
634.10	EMPLOYEE TRAINEESHIP	520.000	HR

VERMONT AGENCY OF TRANSPORTATION
PROPOSAL SCHEDULE OF PAY ITEMS

LETTING DATE: 06/07/2024 11:00 AM

CONTRACT ID:C03189

PROJECT(S):FAIRLEE IM 091-2(95)

ITEM NO.	DESCRIPTION	QUANTITY	UNITS
635.11	MOBILIZATION/DEMOBILIZATION	1.000	LS
641.11	TRAFFIC CONTROL, ALL-INCLUSIVE	1.000	LS
641.15	PORTABLE CHANGEABLE MESSAGE SIGN	4.000	EACH
641.16	PORTABLE ARROW BOARD	2.000	EACH
646.423	DURABLE 6 INCH WHITE LINE, EPOXY PAINT	568.000	LF
646.433	DURABLE 6 INCH YELLOW LINE, EPOXY PAINT	426.000	LF
646.6212	TEMPORARY 6 INCH WHITE LINE, TYPE C TAPE	2,215.000	LF
646.6312	TEMPORARY 6 INCH YELLOW LINE, TYPE C TAPE	3,148.000	LF
646.76	LINE STRIPING TARGETS	44.000	EACH
649.11	GEOTEXTILE FOR ROADBED SEPARATOR	858.000	SY
651.15	SEED	70.000	LB
651.18	FERTILIZER	270.000	LB
651.20	AGRICULTURAL LIMESTONE	1.500	TON
651.35	TOPSOIL	50.000	CY
653.01	EPSC PLAN	1.000	LS
653.02	MONITORING EPSC PLAN	40.000	HR
653.03	MAINTENANCE OF EPSC PLAN (N.A.B.I.)	1.000	LU
653.10	HAY MULCH	1.500	TON
676.10	DELINEATOR WITH STEEL POST	2.000	EACH
900.608	SPECIAL PROVISION ((PERFORMANCE-BASED CONCRETE, CLASS PCS))	83.000	CY
900.608	SPECIAL PROVISION (PERFORMANCE-BASED CONCRETE, CLASS PCD)	186.000	CY
900.620	SPECIAL PROVISION (REMOVE AND RESET HIGHWAY SIGN)	1.000	EACH
900.645	SPECIAL PROVISION (PUBLIC PROTECTION FOR BRIDGE PROJECTS)	1.000	LS
900.645	SPECIAL PROVISION (REMOVAL, CONTAINMENT, AND DISPOSAL OF LEAD PAINT)(TYPE II)	1.000	LS
900.645	SPECIAL PROVISION (TEMPORARY ROADWAY, SOUTHBOUND CROSSOVER)	1.000	LS
900.650	SPECIAL PROVISION (MAT DENSITY PAY ADJUSTMENT)(N.A.B.I.)	1.000	LU
900.650	SPECIAL PROVISION (MIXTURE PAY ADJUSTMENT)(N.A.B.I.)	1.000	LU
900.680	SPECIAL PROVISION (BITUMINOUS CONCRETE PAVEMENT, SMALL QUANTITY)	457.000	TON