

# **ATTACHMENT B**

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## **Technical Specifications**

ENTITLED

“MANASSAS PARK STATION PARKING LOT  
MILLING AND PAVING”

DATED

MAY 16, 2025

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**MAY 16, 2025**

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**SECTION 01 20 00**  
**MEASUREMENT AND PAYMENT****PART 1 - GENERAL****1.01 SUMMARY**

Section includes administrative and procedural requirements for unit prices and measurements and payment.

**1.02 DEFINITIONS**

**Pay Item:** A specifically described unit of work for which a Unit Price is provided in the Contract.

**Unit Price:** An amount proposed by bidders, stated on the Bid or Proposal Form, incorporated in the Agreement and applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

**1.03 MEASUREMENT OF AUTHORITY**

- A. Measurement: The Contractor will take all measurements and compute quantities accordingly.
- B. Assistance: VRE Project Manager shall verify all measurements and computations.

**1.04 BID MEASUREMENTS**

- A. These measurements are made faithfully by VRE. Bidding contractor should confirm all measurements and take-offs prior to construction commencement. All payments shall be governed by subsequent sections regarding Measurement and Payment.

1. Area of Asphalt Surface:	18,089 Square Yards
2. Area of Full Depth Reconstruction (Estimated):	866 Square Feet
3. Length of Curb Replacement:	127 Linear Feet
4. 4" White Line Painting-Parking Stalls	12,595 Linear Feet
5. Fire Land and Curb Lane Painting	1,759 Linear Feet
6. Traffic Arrows- White	36 Each
7. Furnish & Install Car Stops:	128 Each

**1.05 UNIT QUANTITIES SPECIFIED**

- A. Quantities: Quantities and measurements indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements supplied or placed in the Work verified by VRE Project Manager shall determine the payment.
1. Milling pavement surface shall be measured by the square yard of actual milled surface. Payment will be based on the unit bid price per square yard at the applicable depth ranges.
  2. If the PM or VRE determines during construction that there is an error in the quantities, or that conditions vary from those anticipated in the Project Overview Plan to the extent that an actual measurement of a quantity item is warranted, the PM will make such measurement and will notify the Contractor, in writing, of the rationale for adjustment. Payment will then be based on the measured quantity in lieu of the plan quantity.
- B. Actual Work: If the actual Work requires more or fewer quantities than those quantities indicated, the required quantities shall be provided at the unit prices contracted. Some items for which unit prices have been requested may not be used during the term of the Contract.
- C. Units of Work: The intention of the unit prices is to provide a complete, functioning unit which may include Work from several Specification Sections. All the Work which is required or which can reasonably be inferred to be required in a unit price item to deliver a complete, functioning unit shall be included.

**1.06 PROCEDURES**

- A. Unit prices include all necessary material, cost for delivery, installation, insurance, applicable taxes, overhead, and profit. The sum of all extended unit prices in the Bid or Proposal Form, shall be deemed to include all work described in the Contract Documents including Contract Plans and Specification.
- B. Payments to the Contractor will be made for the actual quantities of Contract items performed in accordance with the plans and the requirements of the Specifications and other Contract documents. If, upon completion of the Work, the actual quantities vary, either by an increase or decrease from the estimated quantities shown in the Contract, the Contract unit prices shall prevail and payment will be made for actual quantities performed at such unit prices, unless the unit prices have been modified by a Contract Amendment.
- C. No allowance or other adjustment will be made for any increased expense, loss of expected reimbursement, or loss of anticipated profits suffered or claimed by

the Contractor resulting directly from such variance, or from the Contractor's unbalanced allocation among the Contract items of overhead expense and subsequent loss of expected reimbursements therefore, or from any other cause.

- D. Quantities appearing on the bid sheet are estimated quantities for the basic design shown on the plans. With VRE's approval, the Contractor may furnish other design(s) that may involve changes in quantities or the use of different materials. However, payment will be made for the original quantities listed in the Contract only and in the units of measure given in the Contract for the basic design unless the dimensions for the basic design are changed by an authorized change order to conform to field conditions encountered. In this event, the original quantities listed will be modified based on the change in dimension, and the modified quantities will be used for paying quantities at Contract unit prices for the items listed on the bid sheet.
- E. In the event the actual quantity of Work performed exceeds or is below the estimated quantity by more than 10%, a Contract Amendment will be issued.
- F. When the accepted quantity of a unit price pay item increases or decreases more than 25% of the original Contract quantity, an equitable adjustment in the unit price may be negotiated if requested by the Contractor or VRE. The equitable adjustment shall be made upon any increase or decrease in cost due solely to the variation less than 75% or in excess of 125% of the estimated quantity and shall apply to the actual amount of work performed.
- G. If the quantity variation is such as to cause an increase in time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by VRE Project Manager (PM) within ten (10) calendar days from the beginning of the delay, or within such further period as may be granted by VRE before the date of final settlement of the contract. Upon the receipt of a written request for an extension, VRE shall ascertain the facts and make an adjustment for extending the completion date as, if in the judgement of VRE, is warranted.
- H. The Contractor shall accept the compensation provided for in the Contract as full payment for the following:
  - 1. Furnishing all materials, labor, tools, equipment, and incidentals necessary to complete the Work according to the Contract.
  - 2. Performing all work specified in the Contract.
  - 3. All loss or damage arising from the nature of the Work or from action of the elements or any other unforeseen difficulties that may be encountered during prosecution of the Work and until its final acceptance.
  - 4. Any license, use, or infringement of a patent, trademark, or copyright.

5. The completion of the Work in accordance with the Contract requirements.
- I. The Contractor shall notify the VRE Project Manager when items of work are ready for measurement. The Contractor and PM or Inspector shall coordinate on site to measure the work in place for payment according to the requirements of this Specification Section. The PM may question or reject the Contractor's measurement of work-in-place if the Contractor and PM have not measured the work together or come to an agreement on the measured quantities. VRE reserves the right to reject the Contractor's measurement of work-in-place that involves the use of established unit prices and to have this work measured, at VRE's expense, by a qualified independent 3rd party acceptable to the Contractor.
- J. At the discretion of VRE, payment may be reduced for any Work which is not in full compliance with the Contract Documents or which has been damaged or repaired by the Contractor. Such action may be used when the end product may have a reduced service life or less than desirable aesthetic characteristics.

#### **1.07 MEASUREMENT OF QUANTITIES**

##### **A. General**

1. Work specified in the Contract will be measured by the PM in accordance with U.S. Standard Measure. The methods of measurement and computations to be used to determine quantities of material furnished and work performed will be those generally recognized as conforming to good engineering practice.
2. Specific methods of measurement shall be as indicated in the specific Section for the Contract item.
3. Longitudinal measurements for surface area computations will be made along the surface (horizontally), and transverse measurements will be the surface measure shown on the plans or ordered in writing by the PM. Individual areas of obstructions with a surface area of 9 square feet or less will not be deducted from surface areas measured for payment.
4. Structures will be measured in accordance with the neat lines shown on the plans or as otherwise approved in writing.
5. Items that are measured by the linear foot will be measured parallel to the base or foundation upon which they are placed.
6. Allowance will not be made for surfaces placed over an area greater than that shown on the plans or for any material moved from outside the area of the cross-section and lines shown on the plans.

7. When standard manufactured items are specified, and are identified by weights or dimensions, such identification will be considered nominal. Unless more stringently controlled by tolerances in cited specifications, manufacturing tolerances established by the industries involved will be accepted.

B. Measurement by Weight

1. Materials that are measured or proportioned by weight shall be weighted on accurate scales as specified in this Section.
2. The Contractor shall have the weigh person perform the following:
  - a. Furnish a signed weigh ticket for each load that shows the date, load number, plant name, size and type of material, project number, schedule or purchase order number, and the weights specified herein.
  - b. Maintain sufficient documentation so that the accumulative tonnage and distribution of each lot of material, by Contract, can be readily identified.
  - c. Submit by the end of the next working day a summary of the number of loads and total weights for each type of material by Contract.
3. Trucks used to haul material shall be equipped with a cover suitable to protect the material and to protect the traveling public.
4. The truck tare to be used in the weighing operation shall be the weight of the empty truck determined with full tank(s) of fuel and the operator seated in the cab. The tare weight of trucks shall be recorded to the nearest 20 pounds. At the option of the Contractor, a new tare may be determined for each load. When a new tare is obtained for each load, the requirement for full tank(s) of fuel will be waived.
5. Net rail shipment weights may be used for pay quantities when evidenced by railroad bills of lading. However, such weights will not be accepted for pay quantities of materials that subsequently pass through a stationary mixing plant.
6. Scales shall conform to the requirements for accuracy and sensitivity as set forth in the National Institute of Standards and Technology Handbook No. 44 for Specification Tolerances and Requirements for Commercial and Weighing Devices. Scales used in the weighing of materials paid for on a tonnage basis shall be approved and sealed in accordance with the requirements of the policies of the Bureau of Weights and Measures of the Department of Agriculture and Consumer Services, or other approved agencies, at least once every six months and upon being moved. Hopper and

truck scales shall be serviced and tested by a scale service representative at least once every six months. Hopper scales shall be checked with a minimum 500 pounds of test weights and truck scales shall be checked with a minimum 20,000 pounds of test weights.

7. Copies of scale test reports shall be maintained on file at the scale location for at least 18 months, and copies of all scale service representative test reports shall be forwarded to VRE upon request.
8. The quantity of materials paid for on a tonnage basis shall be determined on scales equipped with an automatic printer. Truck scale printers shall print the net weight and either the gross or tare weight of each load. Hopper scale printers shall print the net weight of each load. The weigh ticket shall also show the legal gross weight for material weighed on truck scales and the legal net weight for material weighed on hopper scales.
9. If the automatic printer becomes inoperative, the weighing operation may continue for 48 hours provided satisfactory visual verification of weights can be made. The written permission of the VRE shall be required for the operation of scales after 48 hours.
10. If significant discrepancies are discovered in the printed weight, the ultimate weight for payment will be calculated on volume measurements of the materials in place and unit weights determined by the PM or by other methods deemed appropriate to protect the interests of VRE.

C. Measurement by Volume (e.g. Cubic Yard)

1. Material that is measured by the cubic yard, loose measurement or vehicular measurement, shall be hauled in approved vehicles and measured therein at the point of delivery. Material measured in vehicles, except streambed gravel, silt cleanout, or other self-consolidating material will be allowed at the rate of 2/3 the volume of the vehicle. The full volume of the vehicle will be allowed for streambed gravel. Such vehicles may be of any size or type acceptable to the Engineer provided the body is of such shape that the actual contents can be readily and accurately determined. Unless all approved vehicles are of uniform capacity, each vehicle shall bear a plainly legible identification mark indicating the specific approved capacity. Each vehicle shall be loaded to at least its water level capacity.
2. When approved by the PM in writing, material specified to be measured by the cubic yard may be weighed and such weights converted to cubic yards for payment purposes. Factors for conversion from weight to volume measurement will be determined by the PM and shall be agreed to by the Contractor before they are used.



D. Measurement by Lump Sum

1. When used as an item of payment, the term lump sum will mean full payment for completion of the corresponding item of work described in the Contract. When a complete structure or structural unit is specified as a Contract item, the unit of measurement will be lump sum, and shall include all necessary fittings and accessories. The quantities may be shown on the plans for items for which lump sum is the method of measurement. If shown, the quantities are approximate and are shown for estimating purposes only and no measurement of quantities will be made for payment. Items that are to be measured as complete units will be counted by the VRE Representative in the presence of a representative of the Contractor.

E. Measurement by Length (e.g. Linear Foot or Vertical Linear Foot)

1. When used as an item of payment, the term of length will mean full payment for completion of the corresponding item of work described in the Contract. When a pay item unit is specified as a Contract item, the unit of measurement designated as a unit of length shall include all necessary fittings and accessories. The quantities may be shown on the plans for items for which length is the method of measurement. Items that are to be measured as complete units will be counted by the Inspector in the presence of a representative of the Contractor.

F. Measurement by Area (e.g. Square Feet)

1. When used as an item of payment, the term of area will mean full payment for completion of the corresponding item of work described in the Contract. When a pay item unit is specified as a Contract item, the unit of measurement designated as a unit of area shall include all necessary fittings and accessories. The quantities may be shown on the plans for items for which are is the method of measurement. Items that are to be measured as complete units will be counted by the Inspector in the presence of a representative of the Contractor.

G. Measurement by Item or Count (e.g. Each)

1. When used as an item of payment, the term of item or count will mean full payment for completion of the corresponding item of work described in the Contract. When a pay item unit is specified as a Contract item, the unit of measurement designated as a unit of item or count shall include all necessary fittings and accessories. The quantities may be shown on the plans for items for which are is the method of measurement. Items that are to be measured as complete units will be counted by the Inspector in the presence of a representative of the Contractor.

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

Not Used

**END OF SECTION**

**SECTION 01 26 00****Change Order Procedures****PART 1 - GENERAL****1.01 SUMMARY**

Section includes procedures and requirements related to handling and processing Change Orders to include:

- A. Change Order Procedures
- B. Preparation of Proposed Change Orders
- C. Lump Sum Change Orders
- D. Unit Price Change Orders
- E. Time and Material Change Orders
- F. Contract Time Extensions
- G. Change Orders for Compensable Delay
- H. Differing Site Conditions
- I. Payment for Contract Amendment Work

**1.02 RELATED SECTIONS**

- A. 01 22 00 – Unit Prices
- B. 01 29 00 – Payment Procedures
- C. 01 32 00 – Construction Progress Documentation
- D. General Conditions for Construction

**1.03 MINOR CHANGES IN WORK**

- A. VRE shall have authority to make minor changes in the Work by supplemental instructions when such changes do not involve extra cost and are not inconsistent with the purpose of the Project. Otherwise, except in an emergency endangering life or property, no extra Work or change shall be made unless in pursuance of a written Construction Change Directive or Change Order and no claim for an addition to the Contract Amount or Contract Time shall be valid unless so ordered. If the Contractor believes a cost is associated with the supplemental instructions, the Contractor is to provide written notice to the CM within seven (7) days of receipt of instructions.

**1.04 CHANGE ORDER PROCEDURES****A. Changes to the work can be by:**

1. Change Order issued by VRE to the Contractor.
2. Contractor proposing a Potential Change Order (PCO) to VRE.
3. Time and Material

Specific requirements for a VRE ordered change or preparation and submission of a Contractor PCO are detailed in the following subsections of this specification.

**B. If any change causes an increase or decrease in the Contractor's cost of, or time required for, the performance of any part of the Work under the Contract, the Contracting Officer shall make an equitable adjustment and amend the Contract in writing. Approval may be contingent on funding agency or VRE Board authorization. VRE will issue a Contract Amendment all-inclusive of the terms of the Change Order (s) to the Contractor for signature. Once the Contract Amendment has been signed by the Contractor and VRE, it is considered executed.**

1. VRE may require additional bond protection when a Contract price is increased. Such change will require notice to sureties and require that Performance and Payment Bonds be increased by the Contractor. The increase in protection shall generally equal one hundred percent (100%) of the increase in Contract price.
2. A copy of the revised Payment and Performance Bonds shall be provided by the Contractor to the Purchasing and Contracts Office within 14 calendar days of VRE's approval of such change. The Contractor shall execute change orders with the consent of the surety or sureties on the Payment and Performance Bond unless otherwise directed by the sureties. All such work shall be executed under the conditions of the original Contract, except that modification of the Time for Completion caused thereby shall be made at the time of approving such change.
3. Upon the Contractor's request, VRE may decrease bond amounts as deliverables are received.

**C. Work may be invoiced for payment only once the Contractor possesses a fully executed Contract Amendment.****D. The Construction Manager is not authorized to approve Change Orders or authorize extra work without written concurrence of the VRE Contracting Officer.****1.05 VRE CHANGE ORDERS****A. VRE, without invalidating the Contract, may order extra Work or make changes by addition, deletion or revision in the Work, with the total Contract Amount being adjusted accordingly if applicable. Changes shall include:**

1. A detailed description of a proposed change,
2. Supplementary or revised drawings and specifications,
3. A change in Contract Time for executing the change work required,

4. The period of time during which the requested price will be considered valid.
  5. Contractor will prepare and submit an estimate in a timely manner in order to not cause delay to the project schedule. VRE may further issue a directive to proceed with additional work under Time and Material basis.
- B. The Contractor shall review any VRE requested or directed change and shall respond in writing within 14 calendar days after receipt of the proposed change stating the effect of the proposed change upon Contractor's work, including any increase or decrease in Contract time and price. The Contractor shall furnish VRE an itemized breakdown of the quantities and prices used in computing the proposed change. The Contractor shall also furnish any sketches, drawings, and/or pictures to properly explain the change or impact to VRE. It is the sole responsibility of the Contractor to provide adequate change order backup to satisfy VRE.
1. The value of any such extra work or change shall be proposed by VRE in one or more of the following ways: (a) by estimate in a lump sum; (b) by cost and fixed fee; (c) by unit price additions or deletions of quantities stated in the Contract; or (d) any other method permitted under VRE's Procurement Manual.
  2. If none of the aforementioned methods is agreed upon the Contractor shall proceed with the work without delay under Time and Materials, provided the Contractor receives a Construction Change Directive. In such case, the Contractor shall keep and present in such form as the CM may direct, a correct account of the cost, together with vouchers. The CM shall be permitted to verify such records on a daily basis and may require such additional records as are necessary to determine the cost of the change to the Work. The CM shall include a firm Not-to-Exceed ceiling price that the Contractor may not exceed except at its own risk. A complete accounting of the extra cost shall be made within 14 days after completion of the work involved in the claim. Refer to Time and Materials (Force Account) Change Orders, below for a description of allowable costs when work is performed under force account.
- C. Once the scope, cost and schedule impacts, if any, are agreed upon, the CM will prepare the Change Order, possibly combining with other approved Change Orders, and submit to VRE for Processing. Approval may be contingent on funding agency or VRE Board authorization. Once processed, a Contract Amendment will be issued for signature by the Contractor. Once the Contract Amendment has been signed by the Contractor and VRE, it is considered executed. VRE may require additional bond protection as described above.

#### **1.06 PREPARATION OF CONTRACTOR PROPOSED CHANGE ORDERS**

- A. The Contractor may propose a change by submitting a Potential Change Order (PCO) commonly known as Request for Change (RFC) to the Construction Manager, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors.
- B. Contractor shall provide written notice of intent to claim additional cost or time within 14 days of their knowledge of such. Failure to do so will result in automatic rejection of claims.

- C. Submit a description of work that is considered beyond the scope of the contract for review and approval prior to start of work. VRE must be allowed sufficient time to review and make a determination of entitlement for additional compensation or time. The Contractor's submittal shall be in sufficient detail to enable VRE to determine the basis of entitlement.
- D. PCO must be signed and dated by the Contractor in order to be accepted by VRE.
- E. Failure to furnish sufficient documentation or to qualify their reason for failure to do so may delay the project. If such delay occurs, it will in no way relieve the Contractor of their obligation to meet the time limits or other requirements established for the contract or constitute basis for a delay claim on part of the Contractor.
- F. Maintain detailed records of related work performed, including photos if they help demonstrate the work. Provide complete information required for evaluation of proposed changes and to substantiate costs of changes in the Work.
- G. Document each quotation for a change in itemized cost or time with sufficient data to allow evaluation of the quotation. Provide itemized breakdown of cost.
- H. At a minimum, provide the following data and/or documentation to support computations:
  - 1. Quantities of products, labor, and equipment
  - 2. Insurance and bonds
  - 3. Overhead and profit
  - 4. Justification for any change in Contract Time and revision to project schedule to clearly identify critical path
  - 5. Credit for deletions from Contract, similarly documented
- I. Support each claim for additional costs, and for work performed under time and material basis, with additional information:
  - 1. Origin and date of claim
  - 2. Dates and times work was performed, and by whom reviewed and approved
  - 3. Time records and wage rates paid
  - 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented
  - 5. Prior approval and signoff by VRE
- J. VRE shall review the Contractor initiated change and respond in writing as follows:
  - 1. Agree with Contractor's cost proposal;
  - 2. Request for additional information;
  - 3. Reject the Proposal.
- K. If additional information is requested by VRE, Contractor shall respond in writing within fourteen (14) days of request.

- L. If the scope, cost, and schedule impacts, if any, are agreed upon, the PCO will be incorporated into a Change Order, possibly combined with other approved PCOs. The Change Order will be prepared by the CM with all required documentation from all included PCOs and submit to VRE for processing. Approval may be contingent on funding agency or VRE Board authorization. Once processed, a Contract Amendment will be issued for signature by the Contractor. Once the Contract Amendment has been signed by the Contractor and VRE, it is considered executed. VRE may require additional bond protection as described in paragraph above.

## 1.07 TERMS OF CHANGE ORDERS

### A. Lump Sum Change Orders

1. Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by VRE.
2. A cost proposal for a change in the Work shall provide a complete breakdown itemizing the estimated quantities and costs of labor, materials, and equipment (base cost) required in addition to any markup used. The allowable percentage markups for overhead and profit for a change to the Work performed by the Contractor's own forces or performed by the Subcontractor shall not exceed the percentages for each category listed below.
  - a. Contractor's markup for overhead for work it performs in a change to the Work shall be ten percent (10%) of the Base Cost.
  - b. Subcontractor's markup for overhead for the work it performs in a change to the Work shall be a maximum of five percent (5%) of the Base Cost.
  - c. Contractor's markup for overhead for work performed by a Subcontractor in a change to the Work shall be a maximum of five percent (5%) of the Base Cost. The Contractor's 5% for overhead shall be calculated using the Base Cost only, and not calculated on top of the Subcontractor's overhead and profit.
  - d. The markup for overhead of a Sub-subcontractor at any tier on a change to the Work it performs shall be a maximum of five percent (5%).
  - e. Profit: The Contractor and sub-contractors shall be allowed up to a ten (10%) markup for profit on all properly documented and approved costs. Where profit is a negotiated element of price, a reasonable profit will be negotiated, *for each Change Order*, considering factors such as, but not limited to:
    - i. Degree of Risk
    - ii. Relative Difficulty of Work
    - iii. Size of Job
    - iv. Period of Performance
    - v. Subcontracting

Based on the circumstances of each Change Order, each of the above factors shall be weighted from 0.03 to 0.10 as indicated below. The value shall be obtained by multiplying

the rate by the weight for each applicable factor. When totaled for all factors, a fair and reasonable profit can be determined under the circumstances of the Change Order.

1. Degree of risk: Where the modified work involves no risk or the degree of risk is very small, the weighting should be 0.03. As the degree of risk increases, the weighting should be increased up to a maximum of 0.10. Lump sum items will have generally a higher weighted value than unit price items for which quantities are provided. Other things to consider: The portion of the Work to be done by Subcontractors, nature of work, where work is to be performed, reasonableness of negotiated costs, amount of labor included in costs, and whether the negotiation is before or after performance of work.
2. Relative difficulty of work: If the modified work is most difficult and complex, the weighting should be 0.10 and should be proportionately reduced to 0.03 on the simplest of jobs. This factor is tied to some extent with the degree of risk. Things to consider: The nature of the Work, by whom it is to be done, the location, and the time schedule.
3. Size of job: All modified work not in excess of \$100,000 shall be weighted at 0.10. Work estimated between \$100,000 and \$5,000,000 shall be proportionately weighted from 0.10 to 0.05. Work from \$5,000,000 to \$10,000,000 shall be weighted at 0.04, and work in excess of \$10,000,000 at 0.03.
4. Period of performance: Change Orders providing for an extension of time in excess of 30 Days shall be weighted at 0.10. Jobs of lesser duration shall be proportionately weighted to a minimum of 0.03 for jobs not to exceed 1 Day. No weight will be granted for this factor where there is no extension of the Project Schedule or interim dates due to work under the Change Order.
3. Base Cost is defined as the total of labor, material, and equipment costs; it does not include markup for overhead and profit. The labor costs include only the costs of employees directly constructing or installing the change in the Work and exclude the costs of employees coordinating or managing the work.
4. The allowable percentage markups for overhead and profit stated above shall compensate the Contractor, Subcontractor, and Sub-subcontractor(s) for all other costs associated with or relating to the change to the Work including by way of illustration and not limitation, general conditions, field supervision, field engineering, coordination, insurance, bond(s), use of small tools, incidental job costs, and all other general and administrative home and field office expenses.
5. Allowable costs for changes in the Work shall not include Home Office expenses including payroll costs for the Contractor's officers, executives, administrators, project managers, estimators, clerks, timekeepers, and other administrative personnel employed by the Contractor, whether at the Site or in the Contractor's principal or branch office for general administration of the Work. These costs are deemed overhead included in the percentage markups in Subsection 1.07.A.2.b.



**B. Unit Price Change Orders**

1. This subsection only applies to Unit Price contracts.
2. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis. VRE may elect to negotiate unit price based on revised item quantity.
3. Overrun of estimated quantities will only be allowed as approved by VRE. See Section 01 22 00, "Unit Prices," for additional details regarding payment for unit price items and overrun of quantities. Contractor shall notify VRE, prior to performing the work, in writing for work that may occur beyond the item quantity provided in the contract.
4. Confirm in-place quantities with the field representative on a daily basis as work is completed. Unless otherwise noted, work will be paid for based on in place quantities.
5. For items which do not have unit prices pre-determined by the Contract, a PCO must be submitted in accordance with the requirements in this Section. New unit price items included in the PCO shall contain all labor, materials, and equipment necessary to perform the Work in accordance with the Contract Documents. The Contractor's and Subcontractor's overhead and profit, as defined above, shall be included in these unit prices.

**C. Time and Material Change Orders**

1. Should circumstances dictate that changed work be started immediately, VRE may direct the Contractor to proceed with the work on a Time and Material (T&M) basis pending a contract modification. T&M Change Orders may be used at VRE's discretion and only when either:
  - a. Agreement on the valuation of a change cannot be made using the methods described in the preceding paragraphs; or
  - b. VRE cannot firmly establish an applicable and estimate for the cost of the work because the level of effort necessary to perform and complete the work cannot be reasonably estimated or anticipated but can only be determined by performing the work.
2. Because of the significant burden on VRE to monitor and control the work, T&M work is not a preferred method, and it shall be the responsibility of the Contractor to provide all necessary documentation and justification of costs. The rates for labor, equipment and materials to be used in cases of work performed on a T&M basis will be compensated as documented below. No costs other than those explicitly listed below shall be allowed.
3. T&M contracts are only to be used after a documented determination that no other type of contract is suitable. When issuing a T&M change order, VRE shall include a firm Not-to-Exceed (NTE) ceiling price that the Contractor may not exceed except at its own risk.
4. Upon request, VRE may require Contractor to submit an estimate of cost and time impacts on Time and Material work prior to authorizing the work.
5. Contractor shall maintain detailed records of work performed on Time and Material basis. Confirm in-place quantities with the field representative on a daily basis as work is

completed. Unless otherwise noted, work will be paid for based on in place quantities. Review Time and Material records with the field representative to obtain daily agreed upon quantities.

- a. As the Work progresses, the Contractor is to monitor its costs. If their costs will exceed the NTE prior to completing the work, the Contractor is to stop work and notify the CM. A decision will be made by VRE to stop the change at the time or to authorize an increase in the NTE amount.
6. The Contractor is not to proceed with the Work until a written T&M directive has been signed by the Contractor and VRE.
7. The Contractor shall be paid for all labor, materials, equipment, services, supplies, taxes, overhead, profit, and miscellaneous costs or expenses for extra work performed on a Time and Materials basis in the following manner:
  - a. **Labor:** Labor costs shall be composed of direct labor cost plus labor burdens. Before any T&M work begins, the Contractor shall submit for approval to the CM the proposed hourly rates and associated labor costs (benefits and payroll burden) for all laborers and forepersons that have been engaged in the work. The number of laborers and forepersons engaged in the work will be subject to approval by the CM as justified by the nature of the work. For all labor and forepersons in direct charge of the T&M work, excluding general superintendents, compensation as listed below. Direct labor cost shall not be higher than those regularly paid the employee. The Contractor shall provide certified payroll records for audit purposes.
    - i. **Certified Pay Rate:** Unless otherwise approved, the Contractor will receive the actual rate of wage or scale as set forth in their most recent payroll for each classification of laborers, and forepersons who are in direct charge of the specific operation. The time allowed for payment will be the number of hours such workers are actually engaged in the work. If overtime work is authorized by VRE, payment will be at the normal overtime rate set forth in the Contractor's most recent payroll. If workers performing the class of labor needed have not been employed on the project, mutually agreed on rates will be established. However, the rates shall be not less than those predetermined for the project, if applicable.
    - ii. **Benefits:** The Contractor will be entitled to receive the actual cost for any fringe benefits that are regularly provided to the classes of laborers and forepersons engaged in the work and that are not included in the certified pay rate.
    - iii. **Payroll Burden:** The Contractor will be entitled to receive the actual cost for all costs associated with required payroll taxes and payroll benefits not covered in the previous paragraph including:
      1. Social Security Tax
      2. Medicare Tax
      3. Unemployment Tax
      4. Worker's Compensation Insurance

5. Contractor's Public Liability Insurance
6. Contractor's Property Damage Liability Insurance

If the Contractor is unable to provide the necessary documentation for Benefits and Payroll Burden as identified above, the Contractor will be entitled to an additive of 20% of the Certified Hourly Pay Rate as full and final compensation for Benefits and Payroll Burdens.

- iv. **Overhead:** The Contractor shall be entitled to an additive of ten (10%) on all properly documented and approved costs established in paragraphs i, ii, and iii for all administrative overhead associated with labor costs.
- v. **Profit:** The Contractor shall be allowed up to a ten (10%) markup for profit on all properly documented and approved costs established in paragraphs i, ii, iii and iv above for all profit associated with labor costs. Where profit is a negotiated element of price, a reasonable profit will be negotiated taking into account factors such as, but not limited to:
  1. Degree of Risk
  2. Relative Difficulty of Work
  3. Size of Job
  4. Period of Performance
  5. Subcontracting
- b. **Materials:** The Contractor will receive the actual cost of materials accepted by VRE that are delivered and used for the work including taxes, transportation, and handling charges paid by the Contractor, not including labor and equipment rentals as herein set forth. The Contractor shall make every reasonable effort to take advantage of trade discounts offered by material suppliers. Any discount received shall pass through to the VRE. The appropriate salvage value of salvageable temporary construction materials shall be credited to VRE.
  - i. Vendor's and/or supplier's invoices accompanied by evidence of payment shall be provided to the CM to establish the Contractor's cost of materials. Payment will only be made for the material consumed during the performance of the Time & Material Work or for approved material which is incorporated as part of the finished work.
- c. **Equipment:** The Contractor shall provide VRE a list of all equipment to be used in the work. For each piece of equipment, the list shall include the serial number; date of manufacture; location from which equipment will be transported; and, for rental equipment, the rental rate, and name of the company from which it is rented. The number and types of equipment engaged in the work will be subject to approval by the CM as justified by the nature of the Work. Compensation for equipment shall be as follows:

- i. **Hourly Base Equipment Rental Rates (Owned Equipment):** For machinery, equipment, and attachments, necessary for prosecution of the work that are owned by the Contractor and approved for use by VRE, the Contractor will be paid an Hourly Base Rental Rate as detailed in the following paragraphs.
  1. **Equipment referenced in “Rental Rate Blue Book for Construction Equipment”:** Equipment rental will be measured by time in hours of actual time engaged in the performance of the work and necessary traveling time of the equipment within the limits of the project or source of supply and the project. Hourly rates will not exceed 1/176 of the monthly rates of the schedule shown in the “Rental Rate Blue Book” modified in accordance with the “Rental Rate Blue Book” rate adjustment tables that are current at the time the Time and Materials work is authorized. Equipment rental rates not modified by the adjustment factors or rate modifications indicated in the “Rental Rate Blue Book” will not be considered unless submitted by the Contractor and approved by VRE.
  2. **Equipment not referenced in “Rental Rate Blue Book for Construction Equipment”:** The rates for equipment not listed in the *Rental Rate Blue Book* schedule, a monthly rental rate may be computed on the basis of an amount that is equivalent of 6 percent of the manufacturer’s list price of the sale (new) of such equipment. The hourly rate in such cases may be determined by dividing the monthly rate by 176 when actually operating.
- ii. **Hourly Base Equipment Rental Rates (Rented Equipment):** If the Contractor does not possess or have readily available equipment necessary for performing the T&M work and such equipment is rented from a source other than a company that is an affiliate of the Contractor, payment will be based on actual invoice rates when the rates are reasonably in line with established rental rates for the equipment in question and are approved by the CM.
- iii. **Hourly Operating Rates:** – Hourly Operating Rates shall be as established in the Blue Book estimated operating cost per hour. This operating cost will be full compensation for fuel, lubricants, repairs, servicing (greasing, fueling, and oiling), small tools, and any and all incidentals. If rental rates for the equipment being used in the work are not listed in the Blue Book or otherwise readily available, the Hourly Operating Cost will be 15% of the established Hourly Base Rental Rate. If invoices for Rental Equipment include the furnishing of fuel, lubricants, repair, and servicing, then the Contractor will not be entitled to any Hourly Operating costs for that equipment.
- iv. **Equipment Usage:** An amount, as described above, will be paid for all hours the equipment is engaged in performing the work. The Contractor shall be entitled to the applicable Hourly Base Equipment Rental Rate and Hourly Operating Rate for all approved equipment usage. No compensation will be paid for the use of machinery or equipment not authorized by VRE.

- v. **Equipment Standby:** For the purposes herein “standby time” is defined as the period of time equipment ordered to the jobsite by VRE is available on-site for the work but is idle for reasons not the fault of the Contractor or normally associated with the efficient and necessary use of that equipment in the overall operation of the work at hand. Hourly rates for equipment on standby will be at 50 percent (50%) of the rate paid for equipment performing work. Operating costs shall not be included in the standby rate.
- vi. Payment will be made for the total hours the equipment is performing work. When equipment is performing work less than 40 hours for any given week and is on standby, payment for standby time will be allowed for up to 40 hours, minus hours performing work. Payment for Standby will be allowed only for working days. Payment will not be made for the time that equipment is on the project in excess of 24 hours prior to its actual performance in the Time and Materials work.
- d. **Transportation Costs:** When it is necessary to obtain equipment exclusively for T&M work from sources beyond the Project limits and the CM authorizes the transporting of such equipment to the Project site, the cost of transporting the equipment will be allowed as an expense. The Contractor will be paid freight cost covering the moving of equipment to and from the specific Time and Materials operation provided such cost is supported by an invoice showing the actual cost to the Contractor.
  - i. Where the transport requires the use for a hauling unit, the allowable expense will consist only of the actual cost incurred for the use of the hauling equipment, or the applicable Blue Book cost, whichever is less.
  - ii. When equipment is transferred under its own power, the allowable Transporting cost shall be 50% of the Hourly Base Equipment Rental Rate.However, such payment will be limited to transportation from the nearest source of available equipment. If equipment is not returned to the nearest equipment storage lot but is moved to another location, the freight cost paid will not exceed the cost of return to the nearest storage lot.
- e. **Compensation:** The compensation as set forth in this Section shall be accepted by the Contractor as payment in full for work performed on a Time and Materials basis. At the end of each day, the Contractor’s representative and the Inspector shall compare and reconcile records of the hours of work and equipment, labor and materials used in the work as ordered on a Time and Materials basis. Such accounting may not include actual costs or labor rates where these are not available but shall be used to verify quantities, types of materials or labor, and number and types of equipment. No compensation will be allowed for equipment which is inoperable due to mechanical failure.
- f. **Overhead:** The Contractor shall be entitled to an additive of up to ten percent (10%) on all appropriate and approved Equipment Rental, Operating, and Transporting costs as defined above.

- g. **Profit:** The Contractor shall be allowed up to a ten (10%) markup for profit on all properly documented and approved Equipment Rental, Operating, and Transporting costs as defined above. Where profit is a negotiated element of price, a reasonable profit will be negotiated taking into account factors such as, but not limited to:
- i. Degree of Risk
  - ii. Relative Difficulty of Work
  - iii. Size of Job
  - iv. Period of Performance
  - v. Subcontracting
- h. **Meals and Lodging Allowance:** Meals and lodging allowance may be allowed by the CM at the actual and documented costs for lodging and meals if the following conditions are met and the applicable rates and authorization for such costs are established prior to beginning the work. No additives for overhead, administrative, profit, or any other costs will be permitted for subsistence and lodging.
- i. The specific T&M work requires mobilization of a separate crew not intended to be used on the original contract, and the Contractor's base location is more than 50 miles from the work site, or
  - ii. Forces which have been working on the Contract will be used for the T&M work and have been routinely staying overnight during the life of the Project, and the T&M work will warrant an extension of the contract time, and the distance from the Contractor's base location to the work site is more than 50 miles.
- i. **Miscellaneous:** No additional allowance will be made for attachments that are common accessories for equipment as defined in the Rental Rate Blue Book, general superintendents, timekeepers and secretaries, or other costs for which no specific allowance is herein provided.
- i. Small Tools: No payment will be made for the use of small hand-held tools. Small tools are defined as any individual piece of equipment or tools having a new value \$1,000 or less.
  - ii. Insurance and Bonds: The Contractor will receive compensation equal to the cost of the bond, special railroad insurance premiums, and other additional costs necessary for the specific Time and Materials work as determined by the VRE. The Contractor shall supply documented evidence of such costs.
- j. **Subcontracting:** If all or a portion of the Time and Materials work is performed by an approved subcontractor, the sub-contractor shall receive the cost of work performed as determined in (a through i) above. In addition, the Contractor will be paid up to 10 percent of the subcontract net Time and Materials costs to cover the Contractor's profit and administrative cost per the schedule below.

Total Cost of Subcontract Work: Rate Schedule

\$0 - \$10,000	10%
>\$10,000	\$1,000 + 5% above \$10,000

The amount resulting will not be subject to any further additives. The itemized statements of costs as required below shall be submitted on a form that separates the subcontracted portions of the Time and Materials labor, materials, and equipment from the other Time and Materials costs.

- k. **Statements:** Payments will not be made for work performed on a Time and Materials basis until the Contractor has furnished VRE duplicate itemized statements of the cost of such work detailed as follows:
  - i. Payroll indicating name, classification, date, daily hours, total hours, rate, and extension of each laborer, foreperson. Contractor's superintendent and/or Project Manager shall not be included.
  - ii. Designation, dates, daily hours, total hours, rental rate, and extension for each unit of equipment.
  - iii. Quantities of materials, prices and extensions.
  - iv. Transportation of materials.
  - v. Statements shall be accompanied and supported by invoices for all materials used and transportation charges. However, if materials used on the T&M work are not specifically purchased for such work but are taken from the Contractor's stock, then in lieu of the invoices, the Contractor shall furnish an affidavit certifying that such materials were taken from their stock; that the quantity claimed was actually used; and that the price, transportation, and handling claimed represented their actual cost.
8. Provide documentation for overall project schedule impacts in the form of Gantt Chart with clearly identified critical path items.
9. Time and Materials work will be included in a subsequent Change Order.

#### **1.08 CONTRACT TIME EXTENSIONS**

##### **A. Time Extensions Due to Weather Events**

VRE may give consideration for extension of time when a delay occurs due to unforeseen causes beyond the control of or without the fault or negligence of the Contractor. However, consideration will not be given to extensions of time attributable to normal adverse weather conditions or conditions resulting from normal adverse weather. For the purposes of this Section, normal adverse weather is defined as that which is not considered extraordinary or catastrophic and is not reasonably conducive to the Contractor progressively prosecuting critical path work under the Contract. Weather events considered extraordinary or catastrophic include, but are not limited to, tornados, hurricanes, earthquakes, and floods that exceed a 25-year storm event as defined by National Oceanic and Atmospheric Administration (NOAA) for the NOAA data gathering location that is nearest the project site. The Contractor shall make

the request within the written PCO in accordance with the applicable portions of this Section and 01 32 00 "Construction Progress Documentation."

**B. Time Extensions Due to Additional Work**

If the Contractor believes a particular scope of work associated with a PCO warrants a Contract time extension, the Contractor shall make the request within the written PCO in accordance with the applicable portions of this Section. The Contractor shall provide written supporting data for any request for extension of time due to additional Work.

The written supporting data shall include the particular construction operations affected, their criticality to project milestones or overall Contract completion, and the significant dates that encompass the period of the requested time extension. The Contractor shall furnish any additional information requested by the CM or VRE as necessary for VRE to make an adequate evaluation of the request.

**1.09 CHANGE ORDERS FOR COMPENSABLE DELAY**

A. The Contractor may be entitled to compensation for a compensable delay. Compensable delays are critical delays that are not the Contractor's fault or responsibility and are VRE's fault or responsibility. The Contractor shall prepare and submit documentation and request for any such Change Order for review by the CM and VRE. Compensation may include extension of Contract term and not necessarily payment. Compensable delays may include, but are not limited to:

1. Delays due to alteration of quantities or character of work
2. Delays due to differing site conditions
3. Delays due to a VRE-ordered suspension not prompted by Contractor actions
4. Delays due to the acts or omissions of VRE or its failure to act in a timely manner

B. The following delays are not compensable:

1. Acts or omissions of the Contractor, its agents, employees, subcontractors or suppliers or causes within their control or conditions that the Contractor could reasonably have foreseen or avoided
2. Floods, tidal waves, tornadoes, hurricanes, lightning strikes, earthquakes, fires, epidemics, or similar natural phenomena
3. Normal adverse weather
4. Extraordinary, unforeseen, and unavoidable delays in material deliveries
5. Acts of government entities other than VRE
6. Unforeseen and unavoidable industry-wide labor strikes affecting the Contractor or its subcontractors' or suppliers' workforce that are beyond the Contractor's control
7. Actions of third parties that are not the responsibility of the Contractor or within its or VRE's control



8. Civil disturbances or sovereign acts of the State, including but are not limited to states of emergency or epidemic or quarantine restrictions
  9. Time period following Notice of Award to the Contractor and prior to Notice to Proceed to the Contractor
- C. If Contractor requests compensable delays or an extension to the Time for Completion due to changes in the Work it must provide to the CM adequate documentation substantiating its entitlement for the time extension. The documentation must demonstrate an anticipated actual increase in the time required to complete the Work beyond that allowed by the Contract as adjusted by prior changes to the Work, not just an increase or decrease in the time needed to complete a portion of the total Work.
- D. No extension to the Time for Completion or compensable delay shall be granted unless the additional or change to the Work increases the length of the critical path beyond the Time for Completion as demonstrated on the approved CPM schedule or bar chart schedule. Any Float belongs to VRE. A written statement in addition to an Impact Analysis Schedule shall be prepared explaining how no other sequence of work activities could have been performed to decrease the impact or eliminate the impact altogether. If requested by the CM the Contractor must provide alternate documentation detailing the claim to VRE's satisfaction
- E. To request payment for a compensable delay, the Contractor shall within 14 days after the end date of a delay event, unless directed otherwise in writing by VRE, submit a written PCO to the CM, for review and approval. With the request, the Contractor shall submit an Impact Analysis Schedule and all supporting data to objectively substantiate its request. VRE will evaluate the Contractor's Impact Analysis Schedule and all supporting data to determine entitlement and the appropriate amount of compensation, according to the following Site direct overhead expenses:
1. Field Office Overhead (FOOH)
    - a. FOOH is the extended project field office overhead and site costs and expenses that are not attributable to specific Contract pay items, but are incurred in support of the project as a result of a delay, which include:
      - i. Extended site supervision costs such as salaries for project field superintendent and administrative staff.
      - ii. Extended site office costs such as utilities (heat, electricity, water, heat, etc.), trailers, field office, office equipment, and sanitary and toilet facilities.
      - iii. Extended site costs that are not used for specific Contract pay items.
    - b. All other direct and indirect overhead expenses are considered covered by and included in Section 1.07 above. In no case shall subcontractor extended overhead be submitted or considered. VRE does not have a direct contractual relationship with any subcontractor or supplier and therefore will not direct, discuss or negotiate with subcontractors employed by the Contractor.
    - c. The Contractor is entitled to FOOH only for compensable delays for which VRE has granted a Contract time extension. The Contractor is not entitled to additional

compensation for FOOH for delays that are caused by extra work performed on a Force Account (Time and Materials) basis or for increased quantities.

- d. The Contractor's agreed amount of compensation for FOOH shall be based on the project daily FOOH rate derived from the Contractor's Itemized Project FOOH Costs set out on VRE's form or other format acceptable to VRE. The Contractor shall submit the form to VRE no later than 30 days after the Notice to Proceed date or on a date approved by VRE. On the form, the Contractor shall list each project FOOH item, the total estimated costs or expenses for each FOOH item for the original Contract time, the total project FOOH, and the project daily FOOH rate based on the total project FOOH divided by the original Contract duration. The compensation for FOOH will be calculated as follows:

$$\begin{aligned} &(\text{Daily FOOH Rate}) \times (\text{No. of Days of Compensable Delay}) = \\ &(\text{Amount of FOOH}) \end{aligned}$$

## 2. Home Office Overhead (HOOH)

- a. HOOH is the Contractor's allowable home office overhead costs and expenses that cannot be attributed and are not billed to a particular project but are incurred in support of all of the Contractor's projects, including but not limited to rent, office equipment and furnishings, insurance, office supplies, depreciation, taxes, and utilities, as well as executive salaries, administrative, staff salaries, project support staff salaries, and accounting and payroll services.
- b. The Contractor is entitled to payment of HOOH only for compensable delays for which VRE has granted a Contract time extension and only when the Contractor could not reasonably recoup its HOOH while its workforce was idled by the delay because the Contractor was required to remain on standby, ready to resume work, and unable to perform other work at the project or elsewhere during the delay.
- c. The Contractor is not entitled to compensation for HOOH for delays that are caused by extra work performed on a Force Account basis or by increased quantities.
- d. The agreed amount of compensation for extended or unabsorbed HOOH for a compensable delay will be determined as follows:

$$(A \times C) / B = D \text{ and } D \times E = F$$

Where:

A = Original total Contract amount

B = Original Contract duration (number of calendar days between and inclusive of the Contract Notice to Proceed (NTP) date and the original Contract Completion Date)

C = 6% (Agreed allowable HOOH percentage)

D = Daily allowable HOOH rate

E = Number of days of compensable delay

F = Agreed amount of compensation for HOOH

- e. In no case shall subcontractor extended overhead be submitted or considered. VRE does not have a direct contractual relationship with any subcontractor or supplier and therefore will not direct, discuss or negotiate with subcontractors employed by the Contractor.

3. When to Audit to Determine FOOH and HOOH

- a. The Contractor may propose a higher rate determined according to Federal Acquisition Regulations 48 CFR § 31 or other accounting standard if the Contractor determines that the agreed allowable HOOH percentage is insufficient.
- b. The Itemized Project FOOH Costs (IPFC) and FOOH shall be subject to field verification and VRE audit, at any time, as determined by VRE, if VRE determines that the rate the Contractor submits is not an accurate representation of the Contractor's actual FOOH at the time of occurrence of the delay. If VRE determines the daily FOOH rate is not an accurate representation of the Contractor's actual FOOH, the Contractor shall submit its actual project FOOH records at the time of occurrence of the delay, as requested by VRE. VRE may perform an audit of the Contractor's records as necessary to verify the Contractor's actual project FOOH. Adjustments to the daily FOOH rate may be made upon verification or VRE audit of the Contractor's actual project FOOH. The project daily FOOH rate will then be calculated utilizing the rate determined by the audit. VRE may also elect to perform an audit of the Contractor's actual project FOOH at the completion of the Contract, as determined by VRE, in which case the project FOOH paid previously by change order may be adjusted based on the rate determined by the audit.
- c. The Contractor's actual extended FOOH are defined to be those costs and expenses incurred from the original Contract time limit to the actual final acceptance of the project as documented by timesheets, payroll records, accounting records, contracts, invoices, bills, receipts, tickets, cancelled checks, and similar business records showing the costs and expenses actually incurred for the project field supervision and administrative staff, project field office, and overhead items submitted in accordance with this provision; and the records must be accurate and auditable.
- d. If the total sum of the extended project FOOH and unabsorbed or extended HOOH for all approved change orders exceeds 20 percent of the original Contract amount, VRE may at its option calculate the amount of FOOH and HOOH based on a VRE audit of the Contractor's actual project FOOH and HOOH records. In such event, VRE will perform the audit at VRE's expense. The VRE audit may begin on 10-days notice to the Contractor, its subcontractors, and suppliers. The Contractor, subcontractors, and suppliers shall make a good faith effort to cooperate with the auditors.

**1.10 DIFFERING SITE CONDITIONS**

- A. VRE recognizes two types of Differing Site Conditions as defined below. Contractor is responsible for identifying the presumed type of differing site conditions when submitting a request for change. The type of differing site conditions shall be confirmed by the CM.

1. Type I

During the progress of the Work, if subsurface or latent physical conditions differing materially from those indicated in the Contract are encountered at the site, the Contractor shall promptly notify VRE in writing of the specific differing conditions before the site is disturbed further and before the affected work is performed.

2. Type II

During the progress of the Work, if unknown physical conditions of an unusual nature, differing materially from those ordinarily encountered and generally recognized as inherent in the work provided for in the Contract, are encountered at the site the Contractor shall promptly notify VRE in writing of the specific differing conditions before the site is disturbed further and before the affected work is performed.

- B. Upon receipt of such written notification, VRE will acknowledge receipt and investigate the conditions. If it is determined by VRE that the conditions materially differ and cause an increase or decrease in the cost or time required for the performance of any work under the Contract, an equitable adjustment, excluding anticipated profits, will be made and the Contract may be modified in writing accordingly. VRE will notify the Contractor of the determination whether or not an equitable adjustment of the Contract is warranted.

No equitable adjustment that results in a benefit to the Contractor will be allowed unless the Contractor has provided the required written notice.

**1.11 PAYMENT FOR CONTRACT AMENDMENT WORK**

- A. Revise Schedule of Values and Application for Payment forms to record each executed Contract Amendment as a separate category. Further define line items within each Contract Amendment category exactly as defined in the executed Contract Amendment and adjust the Contract Sum as shown on the Contract Amendment. Submit the revised Schedule of Values and related forms with the next Application for Payment following execution of the Contract Amendment.
- B. Revise progress schedules to reflect any change in Contract time, revise sub-schedules to adjust time for other items of work affected by the change. Submit the revised schedules on the next previously agreed upon submittal date following execution of the Contract Amendment.

**PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION**

Not Used

**END OF SECTION**

**SECTION 01 40 00****REGULATORY AND QUALITY REQUIREMENTS****PART 1 - GENERAL****1.01 SUMMARY**

- A. Section includes general administrative and procedural requirements governing regulatory and quality requirements including, but not limited to, the following:
  - 1. References
  - 2. Regulatory Requirements
  - 3. Quality Requirements
  - 4. Testing Requirements

**1.02 REFERENCES**

- A. Virginia Department of Transportation 2020 Road and Bridge Specifications, as amended to date.
- B. U.S. Department of Labor Occupational Safety and Health Regulations (OSHA)

**1.03 REGULATORY REQUIREMENTS**

- A. Contractor precautions shall be exercised at all times for the protection of persons and property. The safety provisions of all applicable laws, building and construction codes including, but not limited to, the U.S. Department of Labor Occupational Safety and Health Regulations for Construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-596) and under Section 107 of the Contract Work Hours and Safety Standards Act (PL 91-54), shall be observed. All OSHA safety regulations shall be strictly adhered to during the entire work process.
- B. The U.S. Department of Labor Safety and Health Regulations shall be complied with except where state safety standards have been approved by the Secretary of Labor in accordance with provisions of the Occupational Safety and Health Act, in which case compliance with state and local standards is required. The Contractor shall conduct their work so as to ensure the least possible obstruction to traffic. The Contractor shall provide for the safety and convenience of the general public and residents within the project limits and the protection of persons and property.
- C. VDOT Road and Bridge Specifications, Section 107.17, *Construction and Health Standards* shall be adhered to at all times.

- D. Authority Having Jurisdiction Codes: The Contractor shall become familiar with the requirements of the jurisdiction/municipality and comply with all the requirements pertaining to the Work to be performed under the Contract or as otherwise directed by VRE.

**1.04 QUALITY REQUIREMENTS**

- A. The materials used throughout the work shall conform to the requirements of the Contract Documents. The Contractor shall regulate their supplies so that there will be a sufficient quantity of tested material on hand at all times to prevent any delay of Work.
- B. At VRE's discretion, materials may be approved at the source of supply. If it is found during the life of the Contract that previously approved sources of supply do not supply materials or equipment conforming to the requirements of the Contract Documents, do not furnish the valid test data required to document the quality of the material or equipment, or do not furnish valid quantities to document payment, the Contractor shall change the source of supply and furnish material or equipment from other approved sources.
- C. Materials shall not be furnished from a source that has been identified by the Office of Federal Activities as being on the Environmental Protection Agency list of violating facilities.
- D. Contractor shall be responsible for supplying, to VRE, certificates of supply for all materials used for the Work. If a material, i.e. concrete, is made up of more than one material, then a certificate must be furnished for each constituent. The certificate must state the supplier's name, source of supply and verify that if applicable, the product meets the standards of the Contract Documents. The certificate must be signed by the supplier and the Contractor. The certificates must be presented to the VRE Project Manager and approved prior to the use of the material on the Work. VRE reserves the right to perform tests on the materials used at any time.
- E. When materials and mixes are required to have approved mixture design(s) or job-mix formula(s), the most recently approved design(s) or formula(s) for the applicable source(s) of supply will be indicated by reference on the Contractor's copy of the approved source of supply statement. The Contractor shall be responsible for determining from his source(s) of supply and actual design(s) or formula(s) shown by the reference and shall keep informed as to any subsequently approved revisions and new designs or formulas for such source(s).

1. Submittals for all mix design data for asphalt concrete materials and mixes must be submitted to the PM no later than seven (7) calendar days prior to the preconstruction conference.

**1.05 TESTING REQUIREMENTS**

- A. VRE shall employ a third-party testing agency to ensure proper compaction of surfaces using prevailing ASTM methods during milling and paving activities to meet VDOT 2020 Road & Bridge Specifications, as amended to date. Any surfaces applied by the contractor deemed to be improperly compacted shall be corrected by the contractor. Any existing sub-courses deemed improperly compacted shall be deemed a candidate for FDR and actionable corrections shall be governed by the sections within the Scope of Work regarding Full Depth Reconstruction.
- B. VRE employed testing agency will also oversee applied surface temperatures using prevailing ASTM methods to ensure that contract specifications regarding application temperature are met. Any surfaces, including tack coats, applied that are not of proper temperature shall be remedied by the contractor; including, but not limited to, milling of contractor-applied course and repaving.

**END OF SECTION**



**SECTION 01 73 00**  
**EXECUTION OF WORK**

**PART 1 - GENERAL**

**1.01 SUMMARY**

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
1. Preconstruction Conference
  2. Subcontracting
  3. Cooperation of Contractor
  4. Cooperation Among Contractors
  5. Maintenance During Construction
  6. Use of Site and Premises
  7. Weather Limitation
  8. Barricade and Warning Signs
  9. Removal of Unacceptable and Unauthorized Work
  10. Environmental
  11. Disposal of Materials

**1.02 PRECONSTRUCTION CONFERENCE**

- A. Within twenty-one (21) calendar days after award of a contract or after notification of award, issued by the Purchasing Department, and prior to the Notice to Proceed date, the Contractor shall attend a preconstruction conference scheduled by VRE to discuss the Contractor's planned operations for prosecuting and completing the Work in accordance with the Contract. The meeting will review the parties' responsibilities and personnel assignments.
1. Submittals to be provided to the PM no later than seven (7) calendar days prior to the preconstruction conference include but are not limited to:
    - i. Project Phasing Plan
    - ii. Maintenance of Traffic (MOT) Plan
    - iii. Subcontractor List
    - iv. Contractor's Site Specific Safety Plan

- v. Test reports and certificates for mix design of asphalt concrete materials and mixes.

### **1.03 SUBCONTRACTING**

- A. All subcontractors are subject to approval by the PM and VRE prior to such subcontractors performing any Work on the project. A subcontractor list shall be submitted to the PM seven (7) days prior to the preconstruction meeting.
  - 1. If subcontractors need to be added to the list as the project progresses, a revised list shall be submitted to the PM for approval, noting changes or additions.
- B. Rejection of a subcontractor by the PM or VRE does not constitute grounds for additional monetary compensation to the Contractor.

### **1.04 COOPERATION OF CONTRACTOR**

- A. The Contractor shall give the Work the constant attention necessary to facilitate quality and progress, and shall fully cooperate with the PM, the Inspector, and other contractors involved in the prosecution of the Work. If any portion of a project is located within the limits of a municipality, military installation, or other federally owned property, the Contractor shall cooperate with the appropriate officials and their agents in the prosecution of the Work to the same extent as with VRE.
- B. The Contractor shall have on the project at all times during prosecution of the Work a competent Superintendent who is capable of reading and understanding the plans and Specifications, experienced in the type of work being performed, and who shall receive instructions from VRE, the PM, or their authorized representatives. The Superintendent shall have full authority to execute the orders and directions of the PM without delay and supply promptly such materials, equipment, tools, labor, and incidentals as may be required.

### **1.05 COOPERATION AMONG CONTRACTORS**

- A. VRE may at any time contract or approve concurrent Contracts for performance of other work on, near, or within the same geographical area of the work specified in an existing Contract. Contractors shall not impede or limit access to such work by others.
- B. When separate Contracts are awarded within the limits of one project, contractors shall not hinder the work being performed by other Contractors. Contractors working on the same project shall cooperate with each other. In the case of dispute, all Contractors shall proceed as directed by the PM.

- C. When Contracts are awarded to separate Contractors for known concurrent construction in a common area, the Contractors, in conference with the PM, shall establish a written joint schedule of operations. The schedule shall be based on the limitations of the individual Contracts and the joining of the work of one Contract with the others. The schedule shall set forth the approximate dates and sequences for the several items of work to be performed and shall ensure completion within the respective Contract time limit. The schedule shall be submitted to the PM for review and approval no later than 30 days after the award date of the later Contract and prior to the first monthly application for payment. The schedule shall be agreeable to, signed by, and binding on each Contractor. The PM may allow modifications of the schedule when benefit to the Contractors and VRE will result.
- D. Any modification of the schedule shall be in writing, mutually agreed to and signed by the contractors, and shall be binding on the contractors in the same manner as the original agreement.
- E. If the contractors fail to agree on a joint schedule of operations, they shall submit their individual schedules to the PM, who will prepare a schedule that will be binding on each Contractor.
- F. The joint schedule and any modification thereof shall become a part of each Contract involved. The failure of any Contractor to abide by the terms of the joint schedule will be justification for declaring the Contractor in default of their Contract.
- G. Each Contractor shall assume all liability, financial or otherwise, in connection with their Contract and shall protect and save harmless the Owner from any and all damages and claims that may arise because of any inconvenience, delay, or loss he experiences as a result of the presence and operations of other contractors working in or near the work covered by their Contract. They shall also assume all responsibility for any of their work not completed because of the presence or operation of other Contractors.
- H. VRE will not assume any responsibility for acts, failures, or omissions of one Contractor that delay the work of another except as provided herein.

## **PART 2 - PRODUCTS**

Not Used

**PART 3 - EXECUTION****3.01 MAINTENANCE DURING CONSTRUCTION**

- A. The Contractor shall maintain the work from the beginning of construction operations until final acceptance of the project. The maintenance shall constitute continuous and effective work prosecuted day by day with adequate equipment and forces to the end that the roadway or structures are maintained in satisfactory condition at all times, including barricades and warning signs.
- B. The Contractor must follow all VDOT Work Zone regulations during the performance of the Work.
- C. Unless otherwise specified, the Contractor shall bear all cost of maintenance work during construction and before the project is accepted and of construction and maintaining such approaches, crossings, intersections and other features as may be necessary, without direct compensation, except as provided in bullets (B) and (F) in this section; however, when the Contractor confines its operations to a specific section of a project or to areas adjacent to, but not including the surface of the roadway and reasonable width of shoulder thereto, and the surface is not disturbed or damaged by its operations or equipment, it shall not be responsible for the maintenance of the surface which remains undisturbed or undamaged.
- D. The Contractor shall keep the portions of the road being used by the public free from irregularities and obstructions of any kind which might represent a hazard or annoyance to traffic and in such condition that traffic will be adequately accommodated.
- E. Connections and Entrances: All connections with other roads, and public and private entrance shall be kept in a reasonable smooth condition for the safe passage of traffic at all times. Connections or entrances shall not be disturbed by the Contractor until necessary. Once connections or entrances have been disturbed, they shall be maintained and completed as follows:
  - 1. Connections- Connections which had an original paved surface shall be brought to final grade through the intersection, and a minimum of two lanes shall be paved with a temporary pavement as soon as possible after they are disturbed. All other connections shall be brought to final grade through the intersection and the required material or a temporary aggregate stabilization course placed as soon as possible after they are disturbed. In the event there are delays in the prosecution of the work on connections, those which were originally paved shall have a minimum of two lanes maintained with a

temporary paved surface. Those which were not originally paved shall be maintained with a temporary aggregate stabilization course.

2. Entrances- Entrances shall be graded concurrently with the roadway with which they intersect. Once an entrance has been disturbed, it shall be completed as soon as practicable including the placement of the required base and surface course or stabilization. In the event the entrance must be constructed in stages (as in the case where there is a substantial change in the elevation of the roadway with which it intersects), the surface shall be covered with a temporary aggregate stabilization course or other material salvaged from the entrance or project until the entrance can be completed and the required base and surface or stabilization course placed. Stabilization and/or surfacing material shall be applied to connections and entrances whenever directed by VRE. The Contractor shall schedule construction operations so that approved continuous access is provided to all property adjacent to the construction.
- F. The existing surface of the pavement shall be kept free of earth and other materials which might be hazardous to traffic.
1. Haul Route- The Contractor shall select haul routes between the project and material source(s) that will minimize disturbance to the community. The Contractor shall furnish to VRE, for review, their plan for the haul route and for minimizing the adverse effects of hauling operations on persons who reside adjacent to the haul route or who otherwise use a portion of the haul route for ingress or egress to their residential area. VRE may select alternate haul routes, divide the hauling traffic over several routes, and impose other restrictions deemed necessary to minimize the impact of the hauling operation on local residents.

### **3.02 USE OF SITE AND PREMISES**

- A. Unfavorable Construction Conditions: During unfavorable weather, wet ground, or other unsuitable construction conditions, the Contractor shall confine their operations to Work which will not be affected adversely by such conditions. No portion of the Work shall be constructed under conditions which would adversely affect the quality or efficiency thereof, unless special means or precautions are taken by the Contractor to perform the Work in a proper and satisfactory manner. The Contractor shall, however, maintain suitable all-weather access to all portions of the Work Site.

**3.03 WEATHER LIMITATION**

A. Contractor shall be responsible for ensuring weather conditions shall be appropriate during construction. Contractor shall place asphalt concrete mixtures when weather and surface conditions are such that the material can be properly handled, finished, and/or compacted. VRE Project Manager will allow for “adverse weather days” following submittal of Project Phasing Plan if threat of inclement weather exists during Project Phasing scheduled window provided that the Contractor absolves VRE of any delays resulting from extended schedule window.

1. The determination for an extension of the Contract Time will be made by VRE. VRE will not allow time extensions for the normal and seasonal weather conditions considered typical for a given month in accordance with the National Oceanic and Atmospheric Administration (NOAA) thirty year mean for Washington National Airport.
2. The Monthly Anticipated Adverse Weather Calendar Days listed below illustrates anticipated monthly inclement weather due to precipitation (Rain and Snow Days). If the number of days with precipitation in excess of 0.10”, as recorded at Washington Reagan National Airport, exceeds the Monthly Anticipated Adverse Weather Calendar Days, the Contractor will be entitled to an extension of one (1) day on the Time for Completion for every day in excess of the Monthly Anticipated Adverse Weather Calendar Days illustrated below. The anticipated value of Rain/Snow Days for partial months at the beginning and end of the Contract shall be evaluated on a pro-rated basis.
3. Weather days are not exclusive to the individual months that they represent in Monthly Anticipated Adverse Weather Calendar Days illustrated below. If weather days are not used in a previous month(s) they can be used to offset weather delays in subsequent months. This will be reviewed on a case by case basis and is subject to reconciliation.
4. The Contractor may be entitled to an additional day for every day that the recorded high temperature at Washington Reagan National Airport is 32 degrees Fahrenheit or less, that has not already been incurred under Monthly Anticipated Adverse Weather Calendar Days listed below. This condition does not apply to vertical construction.
5. Monthly Anticipated Adverse Weather Calendar Days:
6. January – 7, February – 5, March – 6, April – 6, May – 8, June – 6, July – 6, August – 7, September – 5, October – 5, November – 5, December - 6.

7. A time extension of no more than one (1) day will be granted for one (1) day of lost work which satisfies the requirements above, regardless of the number of adverse Weather Conditions encountered. The Contractor's sole relief shall be an extension of the Time for Completion and no claim for an increase in Contract Amount will be allowed.
  8. If Contractor is found eligible for an extension of the Contract Time, the Contracting Officer will issue a modification extending the time for Contract completion. The extension of time will be made on a calendar day basis.
- B. Asphalt shall be applied when atmospheric temperatures are above 40°F and when the base is dry. Asphalt shall not be applied when the wind is blowing to such an extent that proper and adequate compaction cannot be maintained or when sand, dust, etc., being deposited on the surface being paved, to the extent that the bond between layers will be diminished. VRE shall reserve the right to ask for roller pattern if rolling is suspected. The rolling pattern shall model the Virginia Department of Transportation standards.
1. VRE may suspend work due to unsuitable weather conditions unsuitable for the execution of work, or for any other conditions deemed to be in the public's interest.

#### **3.04 REMOVAL OF UNACCEPTABLE AND UNAUTHORIZED WORK**

- A. Work that does not conform to the Contract requirements, whether the result of unacceptable workmanship, use of unacceptable materials, damage through carelessness, or any other cause within the Contractor's control, will be considered unacceptable work.
- B. Unacceptable work shall be remedied or removed as determined by the PM and replaced in an acceptable manner at the Contractor's expense. The PM may accept the unacceptable work at a reduced price when acceptance is considered to be in the best interest of the public.
- C. Work that is done contrary to the instructions of the PM, contrary to the requirements of the Contract, beyond the Project Overview Plan and Scope of Work or as designated by the PM except as specified herein, or without authority will be considered unauthorized and will not be paid for. The PM may order the Contractor to remove or replace unauthorized work at the Contractor's expense.

#### **3.05 PROTECTION AND RESTORING PROPERTY**

- A. The Contractor shall maintain the job site in a clean, safe, orderly working condition and shall leave the premises completely clean each day.

- B. Contractor shall provide all necessary manpower, barricades, safety signs and protection needed to safely perform the required work during the Contract.
- C. Contractor shall be responsible protecting all existing structures during construction. Including, but not limited to, curb and gutter, drop-inlets, existing utilities, poles and fixtures, stabilized grasses. All existing property and structures shall be assumed to be in good repair unless specifically noted to VRE Project Manager prior to any commencement of construction activities.
- D. Any and all direct or indirect damages to existing property, structures, curb and gutter, drop-inlets, existing utilities, poles and fixtures, stabilized grasses and parking areas, by or on account of any act, omission, neglect, or misconduct in the method of executing the work or in consequence of the nonexecution thereof on the part of the Contractor, shall be repaired, and/or replaced and restored to pre-construction condition, as may be directed by VRE, at the expense of the Contractor.
- E. The Contractor shall be responsible for damage or injury to property during the prosecution of the work resulting from any act, omission, neglect, or misconduct in the method of executing the work or attributable to defective Work or materials. This responsibility shall not be released until final acceptance of the project.
- F. VRE will be responsible for removing and safely storing the parking counter loop(s). Contractor may remove subsurface sensors at time of construction if not already removed by VRE. No additional cost shall be charged to the job for removal and Contractor shall not be responsible for damage to parking lot loop sensor(s).

### **3.06 ENVIRONMENTAL**

- A. Contractor shall be responsible for the safe disposal of any project spoils.
- B. When necessary, Contractor shall also be responsible for stabilization of any denuded soils and shall keep any BMPs in good repair until such time denuded area becomes fully and substantially stabilized. Contractor shall remove any BMPs once area(s) becomes substantially stabilized.
- C. Contractor shall be responsible for ensuring that any spills are contained and that no harmful or otherwise hazardous materials are allowed to leave the construction site through runoff, erosion (wind or water), or any other natural means.
- D. The Contractor shall exercise every reasonable precaution, throughout the duration of the project, to prevent pollution of rivers, streams and impoundments.



**3.07 DISPOSAL OF MATERIALS**

- A. In performance In performance of the work of this Contract, milled materials, unsuitable materials, surplus materials or other construction debris, not designated by VRE for replacement within the project limits, shall be deposited on a site located outside the project limits in compliance with this Contract, and Federal, State and local laws and regulations. The Contractor shall obtain the necessary rights to the disposal site or sites utilized.
- B. At VREs request, the Contractor shall furnish statement signed by such disposal site owner in which the property owner agrees to the use of the property for the deposit of material from the project.
- C. Failure to comply with this provision will constitute a material breach of this Contract which will entitle VRE to any and all remedies available pursuant to this Contract and under the law including, but not limited to, actual damages, penalties, fines, removal, restoration, attorney fees, and legal expenses.

**END OF SECTION**

**SECTION 32 12 16****ASPHALT CONCRETE PAVING****PART 1 - GENERAL****1.01 SUMMARY**

Section includes materials, testing and installation of aggregate sub-base course, base course, surface course, prime coat, tack coat, asphalt concrete pavement, seal coat and striping and markers, but not limited to, the following:

1. Materials
2. Execution

All paving materials and methods shall be in accordance with 2020 VDOT Road and Bridge Specifications, as amended to date.

**1.02 SUBMITTALS**

- A. Submit test reports and certificates for mix design data for asphalt concrete materials and mixes.
- B. Certify that materials comply with specification requirements signed by asphalt concrete producer and Contractor.

**PART 2 - MATERIALS****2.01 AGGREGATE SUB-BASE COURSE**

Aggregate sub-base course shall be Grade 21A, in accordance with Section 208 of the 2020 VDOT Road and Bridge Specifications.

**2.02 AGGREGATE BASE COURSE**

Aggregate asphalt base course shall be Superpave, Type BM-25, in accordance with Section 211 of the 2020 VDOT Road and Bridge Specifications.

**2.03 ASPHALT SURFACE COURSE**

Asphalt surface course shall be Superpave, Type 9.5A, in accordance with Section 211 of the 2020 VDOT Road and Bridge Specifications.

**2.04 TACK COAT**

Tack coat shall be emulsified asphalt, CSS-1h (cationic emulsion) in accordance with Section 210 and 310 of 2020 VDOT Road and Bridge Specifications.

**2.05 PAINT FOR TRAFFIC STRIPING AND MARKINGS**

Traffic marking paint shall be VDOT approved Type A, in accordance with Sections 246 and 704 of the 2020 VDOT Road and Bridge Specifications.

**PART 3 - EXECUTION****3.01 PAVEMENT REMOVAL (MILLING)**

A. Milling of existing asphalt areas, as identified in the Contract Documents, to remove distressed asphalt and disposal of materials off-site. Mill surface to an approximate depth of 2" throughout. Milling should include the entire existing surface course.

1. The existing pavement surface shall be cleaned of deleterious material prior to the milling operation. The milled surface shall be free from transverse and longitudinal irregularities in excess of 1/4 inch when measured with a 10-foot straightedge. Special care shall be taken along the face of the curb section to remove all asphalt, seal material, or other debris from the exposed face of the curb and gutter section.
2. The milled pavement surface shall be cleaned by sweeping during and immediately after the milling operation. The contractor shall make every effort to keep the dust to a minimum and to ensure that the milled debris is not spread onto the adjacent roadways and sidewalks.
3. Any debris inadvertently spilled on sidewalks or roadways shall be promptly removed to the satisfaction of VRE.
4. Prior to applying surface course, carefully inspect base surface and remove any loose material.
5. Milled area shall be compacted/rolled (i.e. proof rolled) before laying surface course to identify soft and unstable areas and ensure a smooth, stable base for the new surface course. Do not begin paving operations until such areas have been corrected.
  - i. Use a self-powered, self-propelled unit (e.g. vibratory roller, tamper, etc.) to compact the milled asphalt.

**3.02 PLACEMENT OF SURFACE COURSE**

A. Following milling of existing asphalt, a layer of surface course of asphalt shall be installed. A compacted SM-9.5A mix shall be placed in accordance with 2020 VDOT Road and Bridge Specifications, as amended, to an approximate depth of 2" to match the existing grade. Include a tack coat between the milled surface and new asphalt.

1. Finish tolerance of asphalt paving shall have no deviations in grade greater than 1/4" when checked with a 10'-0" straight edge.
2. Ensure a smooth transition between new pavement and all existing surfaces.

3. Asphalt shall be laid within 48-hours after the milling operations are complete or before the start of the fourth day of interrupted service, whichever occurs first.
  4. Tack coat shall be applied in accordance with manufacturer recommendations to ensure that the surface course will adhere to the milled surface course. Allow sufficient time for the tack coat to break or cure before applying the surface course.
- B. Asphalt mixtures shall have a temperature between 290 degrees F and 320 degrees F when it leaves the plant. All asphalt shall come from a local asphalt facility, so that the asphalt is delivered no longer than 45 minutes after it has been loaded. All “pick” tickets from delivery to site shall be collected and handed to VRE Project Manager.
- C. Contractor shall provide for grade control of all existing slopes. The finished street shall be crowned at the center of the street and tapered toward the shoulder or curb to permit water to flow freely to the curb and not allowing standing water to remain on the street. The Contractor shall provide a warranty that no standing water shall exist after a weather event for more than 24 hours.
- D. Curb replacements shall be constructed to match adjacent and existing curb details. All curb replacements shall be priced per each lineal foot of replacement.

### **3.03 FULL DEPTH RECONSTRUCTION**

- A. Contractor shall **immediately** contact VRE Project Manager, for approval, when condition(s) are present and that would justify the need for the use of a Full-Depth Reconstruction (FDR) method. Full Depth Reconstruction shall be accounted for in the bid as a separate line item using unit pricing per square foot.
- B. To determine if FDR is needed, the Contractor shall look for signs of significant distress extending beyond the surface layer, like widespread cracking, severe rutting, large potholes, faulting, or visible damage to the base material, indicating issues with the underlying subgrade, which usually necessitates a full-depth repair to restore structural integrity.
1. Contractor shall verify the necessity of FDR in the areas designated within the Project Overview Plan.
  2. Contractor shall assess the potential need for FDR, in any additional areas outlined in the Project Overview Plan, during the milling process and before placing the sub-base course.
  3. Contractor must obtain prior approval from the Project Manager before performing any FDR work. Any FDR work done without PM approval is at the Contractor's own risk.

- C. Where required, Full Depth Reconstruction (FDR) shall be excavated to a depth of 3" below existing, milled surface grade.
  - 1. The existing base course of asphalt shall be inspected. If any damage to the base course is visible, then the VRE Project Manager shall be consulted prior to any repaving
    - i. Contractor shall saw cut and completely remove the base course of distressed asphalt in the affected areas and dispose of materials of site.
  - 2. A tack coat shall be applied to the milled/saw cut FDR location in accordance with manufacturer recommendations. Allow sufficient time for the tack coat to break or cure before applying the surface course.
    - i. Apply a second layer of tack coat at the border of saw cut joint.
- D. Following milling and saw cutting of existing asphalt, a layer of compacted base course of asphalt, using BM-25 bituminous pavement layer, shall be installed to a depth of 3" in accordance with 2020 VDOT Road and Bridge Specifications.
  - 1. Apply a tack coat between the existing sub-base course and base course. Tack coat shall be applied in accordance with manufacturer recommendations to the sub-base course of asphalt to ensure that the base course will adhere to the sub-base course. Allow sufficient time for the tack coat to break or cure before applying the base course.
- E. Following placement of base course. A subsequent layer of compacted surface course using SM-9.5A mix shall be installed to a depth of at least 2" in accordance with 2020 VDOT Road and Bridge Specifications, to match existing adjacent grade.
  - 1. Apply a tack coat between the base course and new asphalt surface course. Tack coat shall be applied in accordance with manufacturer recommendations to the base course of asphalt to ensure that the surface course will adhere to the base course. Allow sufficient time for the tack coat to break or cure before applying the surface course.

### **3.04 ROLLING**

- A. Begin rolling when mixture will bear weight of rolling without excessive displacement. Compact small, inaccessible areas with hand tampers or vibrating plate compactors.
- B. Perform initial rolling immediately after rolling of joints and outside edges. Inspect surface after initial rolling, and repair displaced or loosened areas.
- C. After the initial rolling, immediately proceed with a second rolling while the mixture is still hot. Continue until the mixture is fully compacted.
- D. Perform finish rolling while mixture is still warm enough to ensure roller marks can be removed.

- E. Remove and replace paved areas found to be defective; cut out such areas and fill with fresh, hot mixture and compact by rolling.

**3.05 TOLERANCE OF FINISHED GRADE**

Tolerance of finished grade shall be in accordance with 2020 VDOT Road and Bridge Specifications, Section 315.07.

**3.06 INSTALLATION OF CAR STOPS**

All existing car stops shall be removed and disposed of by Contractor. New car stops shall be rubber Plasicade STN-6Y 6' Parking Stops or substantially similar. Contractor shall install new curb stops in all locations adjacent to any sidewalks that are adjacent to perpendicular parking stalls. Car stops shall not be required if a grass median exists between curb of parking stall and sidewalk provided the grass median is a minimum of 4' between curb and sidewalk.

**3.07 APPLYING PAVEMENT STRIPING AND MARKINGS**

- A. Contractor responsible for ensuring surface temperature is safe for paint application per manufacturer's specifications. Prior to applying the pavement marking, the contractor must inspect the asphalt surface to ensure it is clean, dry, and free of any debris or loose particles. Any necessary cleaning should be performed to achieve optimal adhesion of the striping and markings. If needed, Contractor shall sweep surface with power broom supplemented by hand brooms to remove loose material and dirt.
  - 1. Contractor shall be responsible for any damage to asphalt as a result of striping activities.
- B. Apply paint with mechanical equipment.
- C. Provide uniform straight edges.
- D. Apply at least one coat in accordance with manufacturer's recommended rates.
- E. Striping and markings shall be substantially similar to existing layout using 2020 VDOT Road and Bridge specifications, as amended to date, for painted striping. Contractor shall coordinate with VRE Project Manager when discrepancies arise from original layout and current VDOT/ADA standards.
- F. Apply traffic striping, markings, and all other directional information to new paved surfaces and any existing surfaces that were damaged by the construction. Use traffic paint that matches the color of the existing traffic striping and markings.
- G. Traffic paint shall be applied in accordance with manufacturer's requirements.

1. All pavement markings shall consist of at least one (1) coat of VDOT Type A traffic paint. Traffic paint shall meet the requirements of Section 704 of the 2020 VDOT Road and Bridge Specifications.
  2. Do not apply paint over wet surfaces, during wet or damp weather, or when temperature is below 40 degrees F.
- H. Pavement striping and markings must be completed two (2) hours prior to VRE normal operating hours. In the event, the Contractor cannot have permanent pavement striping and markings installed within the time limits specified, the Contractor shall provide and install temporary pavement markings within the same time limits and maintain such markings until the permanent pavement markings can be installed. The cost of installing, maintaining and removing/eradicating temporary pavement markings shall be at no additional cost to VRE unless otherwise indicated by the VRE Project Manager..
1. Temporary symbols/markings shall meet the requirements of Section 704 of the 2020 VDOT Road and Bridge Specifications.
- I. All curbs shall be painted substantially similar to original layout including all markings for Fire Lanes, No Parking, etc. Striping shall be priced using lineal foot measurements
- J. The Contractor must obtain prior approval from the VRE Project Manager before proceeding with the application of pavement striping and markings. This ensures that all preparatory steps have been completed and the conditions are suitable.
- K. After the pavement striping and markings are applied, VRE will conduct a final inspection to verify that the striping and markings are properly aligned, evenly applied and meet all project specifications.

### **3.08 DISPOSAL OF MATERIALS**

- A. In performance of the work of this Contract, milled materials, unsuitable materials, surplus materials or other construction debris, not designated by VRE for replacement within the project limits, shall be deposited on a site located outside the project limits in compliance with this Contract, and Federal, State and local laws and regulations. The Contractor shall obtain the necessary rights to the disposal site or sites utilized.
- B. At VRE's request, the Contractor shall furnish statement signed by such disposal site owner in which the property owner agrees to the use of the property for the deposit of material from the project.

- C. Failure to comply with this provision will constitute a material breach of this Contract which will entitle VRE to any and all remedies available pursuant to this Contract and under the law including, but not limited to, actual damages, penalties, fines, removal, restoration, attorney fees, and legal expenses.

**3.09 WARRANTY**

- A. Contractor shall warrant the workmanship and materials against defects for a period of one (1) year from the date of final acceptance after all tests and inspections are complete.
1. Any portion of the work supplied or performed by the Contractor, which fails within the warranty period shall be repaired or replaced by the Contractor without additional cost to the Owner. Repairs will be initiated within 24 hours of receiving a call from the Owner during the warranty period.
  2. One (1) month prior to the expiration of the warranty, Contractor shall revisit the project with the Owner's representative to determine if any items require correction or if any items previously reported have not been corrected. If necessary, Contractor shall correct noted items even if correction work extends beyond the warranty expiration date.

**END OF SECTION**