



STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES. PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

September 9, 2009

Addendum No. 1

RE: Contract ID: C202311

WBS# 45066.3.ST1

F.A. # STM-000S(593)

Buncombe, Madison Counties (B-5179A)

I-26, I-40, I-240, US-19/23, US-25/70, SR-1001, Island Road
And Future I-26 Rehabilitation of Multiple Bridges

September 15, 2009 Letting

To Whom It May Concern:

Reference is made to the proposal recently furnished to you on this project.

The following revisions have been made to the proposal:

On Page Nos. 2 and 3 the Project Special Provisions entitled "Intermediate Contract Time Number 3 and Liquidated Damages", "Intermediate Contract Time Number 4 and Liquidated Damages" and "Intermediate Contract Time Number 5 and Liquidated Damages" have been revised. Please void Page Nos. 2 and 3 in your proposal and staple the revised Page Nos. 2, 2-A and 3 thereto.

On Page Nos. 51 thru 58 the Project Special Provision entitled "Repair of Bridge Decks With Latex Modified Concrete" has been combined with the Project Special Provision entitled "Hydro-Demolition of Bridge Decks". Please void Page Nos. 51 thru 58 in your proposal and staple the revised Page Nos. 51 thru 58 thereto.

On Page Nos. 60 and 61, minor revisions have been made the Project Special Provision entitled "Latex Modified Concrete-Very Early Strength". Please void Page Nos. 60 and 61 in your proposal and staple the revised Page Nos. 60 and 61 thereto.

Sincerely,

A handwritten signature in black ink, appearing to read "R. A. Garris".

R. A. Garris, PE
Contract Officer

MAILING ADDRESS:
NC DEPARTMENT OF TRANSPORTATION
CONTRACT STANDARDS AND DEVELOPMENT UNIT
1591 MAIL SERVICE CENTER
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TELEPHONE: 919-250-4128
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WEBSITE: WWW.NCDOT.ORG

LOCATION:
CENTURY CENTER COMPLEX
ENTRANCE B-2
1020 BIRCH RIDGE DRIVE
RALEIGH NC

RAG/jag
Attachments

cc: Mr. J.G Nance, PE
Mr. Ron Hancock, PE
Mr. J. J. Swain, Jr., PE
Ms. D. M. Barbour, PE
Mr. Art McMillan, PE
Mr. J.V. Barbour, PE
Mr. John Sullivan, (Attn: Mr. Jim Dahlem ,FHWA)
Project File (2)

Mr. Rick Nelson, PE
Mr. R. E. Davenport, Jr., PE
Mr. Ronnie Higgins
Mr. Larry Strickland
Ms. Marsha Sample
Ms. Norma Smith
Ms. Lori Strickland

- 2. For **New Year's Day**, between the hours of **6:00 a.m.** December 31st and **6:00 p.m.** January 2nd. If New Year's Day is on a Friday, Saturday, Sunday or Monday, then until **6:00 p.m.** the following Tuesday.
- 3. For **Easter**, between the hours of **6:00 a.m.** Thursday and **6:00 p.m.** Monday.
- 4. For **Memorial Day**, between the hours of **6:00 a.m.** Friday and **6:00 p.m.** Tuesday.
- 5. For **Independence Day**, between the hours of **6:00 a.m.** the day before Independence Day and **6:00 p.m.** the day after Independence Day.

If **Independence Day** is on a Friday, Saturday, Sunday or Monday, then between the hours of **6:00 a.m.** the Thursday before Independence Day and **6:00 p.m.** the Tuesday after Independence Day.

- 6. For **Labor Day**, between the hours of **6:00 a.m.** Friday and **6:00 p.m.** Tuesday.
- 7. For **Thanksgiving Day**, between the hours of **6:00 a.m.** Tuesday and **6:00 p.m.** Monday.
- 8. For **Christmas**, between the hours of **6:00 a.m.** the Friday before the week of Christmas Day and **6:00 p.m.** the following Tuesday after the week of Christmas Day.

Holidays and holiday weekends shall include New Year's, Easter, Memorial Day, Independence Day, Labor Day, Thanksgiving, and Christmas. The Contractor shall schedule his work so that lane closures are not required during these periods, unless otherwise directed by the Engineer.

The time of availability for this intermediate contract work shall be the time the Contractor begins to install all traffic control devices for lane closures according to the time restrictions listed herein.

The completion time for this intermediate contract work shall be the time the Contractor is required to complete the removal of all traffic control devices for lane closures according to the time restrictions stated herein and place traffic in the existing traffic pattern.

The liquidated damages are **Ten Thousand Dollars (\$10,000.00)** per hour.

INTERMEDIATE CONTRACT TIME NUMBER 3 AND LIQUIDATED DAMAGES

(2-20-07)

SPI G14 C

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for lane closures to make required repairs necessary to place Epoxy/Stone Overlays and restoring traffic to existing traffic pattern. The Contractor shall not close or narrow a lane of traffic at following locations during the following time restrictions:

LOCATIONS

Bridge Nos. 302 & 303 on US-19/23/Future I-26 in Buncombe County.

Bridge No. 429 on I-26 in Buncombe County.

Bridge No. 494 on I-40 (Black Mountain Area) in Buncombe County.

Bridge Nos. 538, 539, 540, 541, 547, 548 & 549 on I-26 in Madison County.

DAY AND TIME RESTRICTIONS

Monday through Sunday from 7:00 A.M. to 7:00 P.M.

The time of availability for this intermediate contract time will be the time the Contractor begins to install traffic control devices required for the lane closures according to the time restrictions stated herein.

The completion time for this intermediate contract time will be the time the Contractor is required to complete the removal of traffic control devices required for the lane closures according to the time restrictions stated herein and restore traffic to existing traffic pattern.

The liquidated damages are Two Thousand Five Hundred Dollars (\$2,500.00) per 15 minute time period.

INTERMEDIATE CONTRACT TIME NUMBER 4 AND LIQUIDATED DAMAGES

(2-20-07)

SPI G14 C

The Contractor shall complete the required work of installing, maintaining and removing the traffic control devices for lane closures to make required repairs necessary to place Epoxy/Stone Overlays and restoring traffic to existing traffic pattern. The Contractor shall not close or narrow a lane of traffic at following locations during the following time restrictions:

LOCATIONS

Bridge No. 543 on Island Road in Madison County.

Bridge No. 328 (over French Broad River) on SR 1001 at the intersection with US-25/70 BUS (Marshall) in Madison County.

DAY AND TIME RESTRICTIONS

Monday through Sunday from 7:00 A.M. to 7:00 P.M.

The time of availability for this intermediate contract time will be the time the Contractor begins to install traffic control devices required for the lane closures according to the time restrictions stated herein.

The completion time for this intermediate contract time will be the time the Contractor is required to complete the removal of traffic control devices required for the lane closures according to the time restrictions stated herein and restore traffic to existing traffic pattern.

The liquidated damages are Five Hundred Dollars (\$500.00) per 15 minute time period.

INTERMEDIATE CONTRACT TIME NUMBER 5 AND LIQUIDATED DAMAGES

(2-20-07)

SP1 G14 G

The Contractor shall utilize multiple lane closures to perform all the work required (milling, deck repairs, etc.) to place Asphalt Overlays and restore traffic to existing traffic pattern at the following locations:

Bridge No. 337 on US-19/23/Future I-26 in Buncombe County.

Bridge No. 338 on US-19/23/Future I-26 in Buncombe County.

The time of availability for this intermediate contract time will be the time the Contractor begins the work (installation of lane closure).

The completion time for this intermediate contract time will be the time which is forty-eight (48) consecutive hours after the Contractor begins this work (installation of lane closure).

The liquidated damages are Two Thousand Five Hundred dollars (\$2,500.00) per 15 minute time period.

Madison	547	I-26	Epoxy Stone Overlay	Day or Night	Sound deck, Make necessary repairs, Apply epoxy stone overlay, Traffic Control using Roadway Standards & MUTCD. Deck Area: 91,448 sf	1101.02 Shts 3&5 EBL Shts 5&7 WBL
Madison	548	I-26	Epoxy Stone Overlay	Day or Night	Sound deck, Make necessary repairs, Apply epoxy stone overlay, Traffic Control using Roadway Standards & MUTCD. Deck Area: 7,904 sf	1101.02 Shts 3&7
Madison	549	I-26	Epoxy Stone Overlay	Day or Night	Sound deck, Make necessary repairs, Apply epoxy stone overlay, Traffic Control using Roadway Standards & MUTCD. Deck Area: 6,640 sf	1101.02 Sht 3
Madison	550	I-26	Epoxy Stone Overlay	Day or Night	Sound deck, Make necessary repairs, Traffic Control using Roadway Standards & MUTCD. Deck Area: 5,360 sf	1101.02 Sht 3
Madison	551	I-26	Epoxy Stone Overlay	Day or Night	Sound deck, Make necessary repairs, Apply epoxy stone overlay, Traffic Control using Roadway Standards & MUTCD. Deck Area: 11,316 sf	1101.02 Shts 3&7

II. HYDRO-DEMOLITION OF BRIDGE DECK

(8-26-09)

1.0 Description

Hydro-demolition shall consist of the removal of the deck surface by means of high pressure water blasting which will remove concrete, asphalt, oil, dirt, concrete laitance and rust from the exposed reinforcing bars by direct impact, pressurization of micro and macro cracks and cavitation produced by jet instability. If reinforcing bars or bridge drainage devices are pulled up or snagged during scarification milling operations, the Contractor shall cease operations and consult with the Engineer to determine what adjustments, if any, need to be made to the roto-milling operations.

The Contractor shall submit for approval prior to beginning work, his Hydro-demolition Management Plan. This plan shall include how the Contractor shall provide for the collection, treatment, and disposal of all run-off water generated by the scarification and hydro-demolition processes. This Water Management Plan shall be prepared in accordance the NCDOT Guidelines for Managing Hydro-demolition Water (a copy of which is included in the Appendix). The contractor shall comply with applicable regulation concerning such water disposal.

2.0 Equipment

Use the following surface preparation equipment:

- Hydro-demolition machine, self-propelled with min. 17,000 psi orifice pressure.
- Sawing equipment capable of sawing concrete to the specified depth.
- Scarifying equipment that is a power-operated, mechanical scarifier or grinder capable of removing at least 1/4 inch (6 mm) for each pass.
- Hand-held high velocity (7,500 psi minimum) water-jet equipment capable of removing rust scale from reinforcing steel, or removing small chips of concrete partially loosened by the scarifying or chipping operation, and of removing rehydrated dust left from scarification.
- Power driven hand tools for removal of unsound concrete are required that meet the following requirements:
 - Pneumatic hammers weighing a nominal 35 lb (16 kg) or less.
 - Pneumatic hammer chisel-type bits that do not exceed the diameter of the shaft in width.
- Hand tools such as hammers and chisels for removal of final particles of unsound concrete.
- Vibratory screed for overlays, except as noted herein.

The hydro-demolition machine shall be self-propelled and capable of producing a water-jet through an orifice at a pressure of at least 17,000 PSI. The machine shall move the jet

transversely across the area and forward and backward so that the entire deck is covered with the water-jet and operated at a pressure sufficient to remove the unsound concrete.

The machine shall have sufficient means to control and vary the following functions:

- (1) Water pressure.
- (2) Angle and distance of the orifice in relation to the surface to be blasted.
- (3) Limits of transverse and longitudinal movement of the orifice.
- (4) Speed of the orifice in the transverse and longitudinal direction.

The high pressure pump (or pumps) shall be equipped with over-pressurization relief valves and rupture disc systems. All high pressure components shall be rated at full working pressure of the hydro-demolition system. The complete hydro-demolition system must be capable of depressurization from a single point.

The equipment must operate at a noise level of less than 90 decibels at a distance of 50 feet.

3.0 Construction Methods

Remove all existing asphalt overlays and all loose, disintegrated, unsound or contaminated concrete from the bridge deck in accordance with the following surface preparation classifications shown below:

Seal all expansion joints subjected to run-off water from the hydro-demolition process with material approved by the Engineer, prior to beginning the Class I Surface Preparation. The expansion joints shall remain sealed until water from the hydro-demolition process no longer passes over them. The contractor shall take all steps necessary to eliminate the flow of water through the expansion joints, and any other locations water could leak from the deck.

All deck drains in the immediate work area and the other sections of the bridge affected by the work being performed in the immediate work area shall be sealed prior to beginning the Deck Scarification. They shall remain sealed until it has been determined that materials from the hydro-demolition and concrete overlay operations can not be discharged through them any longer.

- A. Deck Scarification: Removal of any asphalt wearing surface from the bridge deck or if applicable, the approach roadway pavement, and scarification of the concrete deck to remove the entire concrete surface of the deck to a uniform depth of at least 1 inch, but not less than 1/2 inch above the top mat of reinforcing steel. Remove and dispose of all concrete and asphalt, and thoroughly clean the scarified surface. In areas where reinforcing steel is located in the depth to be scarified, use another method with the Engineer's approval. If reinforcing bars or bridge drainage devices are pulled up or snagged during scarification milling operations, the Contractor shall cease operations and consult with the Engineer to determine what adjustments, if any, need to be made.
- B. Class IA Surface Preparation: Scarify and remove portland cement concrete from the concrete approach pavement to the depth shown on the plans to permit the construction of a 1¼ inch (32 mm) minimum depth overlay on the approach pavement to the limits

shown on the plans. Transversely saw the existing concrete pavement to create a square construction joint for the overlay. Remove concrete in front of the sawed joint with power driven hand tools. Dispose of removed concrete and thoroughly clean the exposed scarified pavement surface.

- C. Class I Surface Preparation (Partial Depth): Remove by hydro-demolition and by chipping with hand tools all loose, unsound and contaminated deck concrete and in areas where reinforcing steel is exposed by removing deck to an average depth of 1/2 inch below the top mat of reinforcing steel. Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

- D. Class II Surface Preparation (Partial Depth): Remove by hydro-demolition and by chipping with hand tools all loose, unsound and contaminated deck concrete to an average depth of approximately one-half the deck thickness, but no less than 3/4 inch below the top mat of steel. In areas where the entire perimeter of the reinforcing steel bar is exposed, chip or use hand-held high velocity water-jet equipment to provide a minimum depth of 3/4 inch below the bar. Dispose of the removed concrete, clean, repair or replace rusted or loose reinforcing steel, and thoroughly clean the newly exposed surface.

Care shall be taken not to cut, stretch, or damage any exposed reinforcing steel.

In overhangs, removing concrete areas of less than 0.60 ft²/ft length of bridge without overhang support is permitted unless the Engineer directs otherwise. For concrete areas greater than 0.60 ft²/ft length of bridge, approval of the overhang support is required.

- E. Class III Surface Preparation (Full Depth): Remove by hydro-demolition, and chipping with hand tools all loose, unsound and contaminated deck concrete to the full slab depth. Thoroughly clean the routed out areas and dispose of concrete removed. Clean, repair, or replace reinforcing bars and fill the areas from which unsound concrete has been removed with Class AA or latex modified concrete up to the bottom of the proposed concrete overlay.

Clean or replace reinforcing bars and place Class AA concrete in accordance with the methods described below:

Refill areas where concrete was removed with Class AA concrete up to the bottom of the proposed concrete overlay in accordance with Section 420 of the Standard Specifications. Any of the methods for curing Class AA concrete as stated in the Standard Specifications are permitted except the membrane curing compound method.

Provide a raked finish to the surface of the Class AA concrete to provide a minimum relief of 1/16" and a maximum relief of 1/4". Place the overlay course only after the Class AA concrete has attained 2500 psi (17.2 MPa) as measured by an approved, non-destructive test method.

Refilling the areas from which concrete has been removed with latex modified concrete during the Class III repair is permitted if any of the following conditions are met:

- The reinforcing steel cover is 1½ inches or less for the top mat of steel.
- The area being repaired is less than 1 yd².
- The Engineer directs the fill.

For areas of less than 3 ft² suspending forms from existing reinforcing steel using wire ties is permitted. For larger areas, support forms by blocking from the beam flanges, or other approved method.

Submit for approval detailed plans for Class III Surface Preparation including under deck containment. Detail how waste, debris, and wastewater is kept from falling below. When Class III repairs adjacent to the rail are necessary, support the rail in a manner approved by the Engineer.

4.0 Surface Preparation

Two trial areas shall be designated by the Engineer to demonstrate that the equipment, personnel, and methods of operation are capable of producing results to the satisfaction of the owner's Engineer. The first trial area shall consist of approximately 50 square feet of sound concrete as determined by the Engineer. The equipment shall be calibrated to remove the sound concrete an additional 1/2 inch from the scarified surface. After completion of this test area, the equipment shall be moved to the second area consisting of deteriorated or defective concrete, to determine whether this unsound concrete will be completely removed with the previous calibration and to establish a baseline for requiring the contractor to place under-deck containment in areas subject to full depth removal, before beginning the hydro-demolition process in a span. Should it be determined that not all defective concrete has been removed, the hydro-demolition system shall be recalibrated to remove an additional 1/4 inch of sound concrete, then re-test on deteriorated concrete.

If additional defective concrete is found, the depth of cut will increase in 1/4 inch increments until only sound concrete is found remaining.

When satisfactory results are obtained, the machine parameters shall be used for production removal. The contractor shall make adjustments to the operating parameters, as required, to perform concrete removal as indicated on the drawings and to adjust to the variance in the compressive strength of the concrete.

Hand held water blasting equipment, pneumatic hammers, and hand tools may be substituted for the hydro-demolition unit in areas inaccessible (such as adjacent to the curb) or inconvenient (such as small patch areas).

The Engineer will re-inspect after each removal and require additional removals until compliance with plans and specifications are met.

Regardless of the method of removal, the removal operation shall be stopped if it is determined that sound concrete is being removed. Appropriate recalibration, or change in equipment and methods shall be performed prior to resuming the removal operation.

The Contractor shall take all steps necessary to prevent cutting or otherwise damaging existing steel designated to remain in place. Any such bars damaged (nicks deeper than 20% of the bar diameter) by the Contractor's operation shall be repaired or replaced. Defects in embedded reinforcing steel due to corrosion, which has reduced the cross sectional area of the steel by 25% or greater, shall have new reinforcing steel of similar cross section area lap-spliced to each side of the damaged area. Reinforcing bars shall be Grade 60 and meet the material requirements of Section 1070 of the Standard Specifications. Replacement bars shall be spliced to existing bars using either minimum 30 bar diameter lap splices or approved mechanical connectors.

The Contractor shall support and protect the exposed reinforcing steel, which is left unsupported by the hydro-demolition process, against displacement and damage from loads such as those caused by removal equipment and delivery buggies. All reinforcing steel damaged or dislodged by these operations shall be replaced with bars of the same size at the contractor's expense.

Rebar exposed and cleaned by hydro-demolition shall not require re-cleaning if encased in concrete within seven (7) days. Rebar exposed for more than seven (7) days shall be cleaned by high velocity water jets (4,000 PSI minimum) prior to placement of the new concrete.

When large areas of the deck on composite bridges are removed resulting in the debonding of the main stress carrying longitudinal reinforcing bars, the removal shall be performed in stages to comply with the construction sequence shown on the plans or as directed by the Engineer.

The Contractor shall shield his operations to prevent injury or damage from flying or falling debris. The Contractor shall provide a method of handling expected and unexpected blow-through of the deck where shown on the plans and as directed by the Engineer. This method shall provide for the containment of the runoff water and debris, and the protection of the area under the bridge deck. The Contractor shall be responsible for any injury or damage caused by his operations. The containment shall remain in-place until the latex modified concrete has been cast and reach minimum strength.

The removal area shall be thoroughly cleaned of all dirt, foreign materials and loose concrete to the extent necessary to produce a firm solid surface for adherence of new concrete.

Removal of concrete debris shall be accomplished either by hand or by mechanical means capable of removing wet debris and water all in the same pass and directly follow the hydro-demolition process to prevent the debris from re-setting or re-adhering to the surface of the remaining sound concrete. All concrete debris shall become the property of the

Contractor and shall be legally disposed of at the contractor's expense. The contractor shall be responsible for disposing of all debris generated by the scarification operations.

Any debris which is allowed to re-settle or re-adhere to the surface of the sound concrete shall be carefully removed by the Contractor (at no additional cost), and the Contractor shall exercise care to avoid any damage to the remaining sound concrete or exposed reinforcement. Following the removal of the debris and prior to the placement of the overlay, the entire surface shall be blasted clean with high pressure water to remove any bond-breaking residue, loose material from the concrete surface, and/or rust from the reinforcing steel. This residue shall be collected and disposed of by the contractor. The Contractor will not be permitted to allow material to fall from the deck.

All water used for hydro-demolition shall be potable. The Contractor is responsible for furnishing all of the water required for the project.

Any areas of the prepared surface contaminated by oil or other materials detrimental to good bond as a result of the contractor's operations shall be removed to such depth as may be required at the contractor's expense.

The Contractor shall provide adequate lighting as required to allow for the safe conduct of nighttime removal operation if he elects to do hydro-demolition at night. Submit a lighting plan to the Engineer for approval prior to beginning work.

5.0 Measurement and Payment

Scarifying Bridge Deck will be measured and paid for by the contract unit price per square yard and shall be full compensation for the milling of any existing asphalt wearing surface from the bridge deck or approaches, milling of the entire concrete bridge deck, repairing or replacing any damaged reinforcing steel, and the cleaning and disposal of all waste material generated.

Class IA Surface Preparation will be measured and paid for by the contract unit price per square yard and shall be full compensation for the milling of any existing concrete approach pavement, and the cleaning and disposal of all waste material generated.

Hydro-demolition of Bridge Deck will be measured and paid for by the contract unit price per square yard and shall be full compensation for Classes I, II, and III deck preparation, installation of under deck containment removal and disposal of unsound and contaminated concrete, cleaning, repairing or replacing of reinforcing steel, placement of all Class AA concrete, and for furnishing all materials, labor, tools, equipment and incidentals necessary to complete the work.

Payment will be made under:

Pay Item	Pay Unit
Scarifying Bridge Deck	Square Yard
Class IA Surface Preparation	Square Yard
Hydro-demolition of Bridge Deck	Square Yard

IV. MANAGING HYDRODEMOLITION WATER

(6-17-08)

SPI 4-03

1.0 Description

Collect and properly dispose of hydrodemolition water from bridge decks.

2.0 Construction Methods

(A) Prepare a written hydrodemolition water management plan in accordance with the Guidelines for Managing Hydrodemolition Water available at <http://www.ncdot.org/doh/preconstruct/ps/contracts/letting.html>. Submit plan and obtain approval from the Engineer prior to beginning of the hydrodemolition operation.

(B) Prior to final payment, submit a paper copy of all completed records pertaining to disposal of hydrodemolition water.

3.0 Measurement and Payment

Payment for collecting, sampling, testing, pH adjustment, monitoring, handling, discharging, hauling, disposing of the hydrodemolition water, documentation, record keeping, and obtaining permits if applicable, shall be included in the payment for other items.

V. LATEX MODIFIED CONCRETE - VERY EARLY STRENGTH (7-18-06)(Rev.4-22-09)**1.0 Description**

This work consists of furnishing and placing an overlay of latex modified concrete-very early strength (LMC-VES) over conventional existing concrete or repair concrete on bridge decks and approach pavement. Unless otherwise indicated on the plans, groove the bridge floor in accordance with Article 420-14(B) of the *Standard Specifications*.

2.0 Materials

For equipment, proportioning and mixing of modified compositions, see Section 1000-8 of the *Standard Specifications*. Prior to beginning any work, obtain approval for all equipment to be used for deck preparation, mixing, placing, finishing, and curing the latex modified concrete.

(B) Placing and Finishing

Prior to placing modified material, install a bulkhead of easily compressible material at expansion joints to the required grade and profile. Placing material across expansion joints and sawing it later is not permitted.

Place and fasten screed rails in position to ensure finishing the new surface to the required profile. Do not treat screed rails with parting compound to facilitate their removal.

Separate screed rails or construction dams from the newly placed material by passing a pointing trowel along their inside face. Carefully make this trowel cut for the entire depth and length of rails or dams after the modified composition has sufficiently stiffened and cannot flow back.

Place the latex modified concrete in one operation.

Construction joints other than those shown on the plans will be submitted to the Engineer for approval.

When a tight, uniform surface is achieved and before the concrete becomes non-plastic, further finish the surface of the floor by burlap dragging or another acceptable method that produces an acceptable uniform surface texture.

Promptly cover the surface with a single layer of clean, wet burlap as soon as the surface will support it without deformation. Wet cure only the surface for minimum 3 hours and until a compressive strength of 3000 psi is reached. Keep the curing material saturated during the wet cure period.

Do not place the latex modified concrete before the burlap is saturated and approved by the Engineer. Drain excess water from the wet burlap before placement.

As soon as practical, after the concrete has hardened sufficiently, test the finished surface with an approved rolling straightedge that is designed, constructed, and adjusted so that it will accurately indicate or mark all floor areas which deviate from a plane surface by more than 1/8 inch in 10 feet (3 mm in 3 m). Remove all high areas in the hardened surface in excess of 1/8 inch in 10 feet (3 mm in 3 m) with an approved grinding or cutting machine. Where variations are such that the corrections extend below the limits of the top layer of grout, seal the corrected surface with an approved sealing agent if required by the Engineer. If approved by the Engineer, correct low areas in an acceptable manner.

Vehicular traffic may travel across an un-grooved deck, however, complete the transverse sawed grooves across the entire deck area after the concrete achieves design strength and no later than seven days after placing the latex modified concrete.

(C) Limitations of Operations

The mixer will not be permitted on the bridge deck unless otherwise approved.

No traffic is permitted on the finished latex modified concrete surface until the total specified curing time is completed and until the concrete reaches the minimum specified compressive strength.

Do not place latex modified concrete if the temperature of the concrete surface on which the overlay is to be placed is below 40°F (4°C) or above 85°F (29°C). Measure the surface temperature by placing a thermometer under the insulation against the surface.

Prior to placing latex modified concrete, the Engineer determines the air temperature and wind speed. Do not place latex modified concrete if the ambient air temperature is below 45°F (7°C) or above 85°F (29°C), or if the wind velocity is in excess of 10 mph (16 km/h). If working at night, provide approved lighting. Provide aggregates for use in the latex modified concrete that are free from ice, frost and frozen particles when introduced into the mixer.

Do not place latex modified concrete when the temperature of the latex modified concrete is below 45°F (7°C) or above 85°F (29°C).

Stop all placement operations during periods of precipitation. Take adequate precautions to protect freshly placed latex modified concrete from sudden or unexpected precipitation. Keep an adequate quantity of protective coverings at the worksite to protect the freshly placed pavement from precipitation.

5.0 Measurement and Payment

Latex Modified Concrete Overlay-Very Early Strength will be measured and paid for in cubic yards of latex modified concrete satisfactorily placed in the completed deck.

Placing and Finishing of Latex Modified Concrete Overlay-Very Early Strength will be paid for at the contract unit price bid per square yard which price will be full compensation for furnishing all labor, materials, tools, equipment and incidentals required to complete the work in accordance with the contract documents.

Grooving Bridge Floors will be measured and paid in the actual number of square feet.

6.0 Pay Item

	Pay Unit
Latex Modified Concrete Overlay-Very Early Strength	Cubic Yard
Placing and Finishing Latex Modified Concrete-Very Early Strength	Square Yard
Grooving Bridge Floors	Square Foot