

714 BRIDGE DECK CONCRETE OVERLAYS

714.01 DESCRIPTION

This work shall consist of placing various concrete overlays as a wearing surface on bridge decks, to the prescribed depth and to the lines and grades shown on the contract plans and as specified herein.

714.02 LOW SLUMP CONCRETE OVERLAY

(A) **General** – This work shall consist of placing a low slump concrete wearing surface on bridge decks, to the prescribed depth and to the lines and grades shown on the plans and as specified herein. Also included shall be removal and disposal of existing asphalt overlay and waterproofing membrane, if present, and between a 1/4” to 1/2” thickness of concrete from the top of existing deck slabs.

(B) Materials.

- (1) Portland Cement Concrete – [817, Class I](#). High early strength cement shall not be permitted.
- (2) Fine Aggregate – [803.01](#).
- (3) Coarse Aggregate – Coarse aggregate shall be a crushed trap stone as specified in [803.02](#), except that the grading shall be Size No. 78 as specified in AASHTO M 43.
- (4) Water – [822.01](#).
- (5) Bonding Agent – Grout for bonding the low slump concrete to previously placed concrete shall consist of equal parts by weight of Portland cement and sand mixed with sufficient water to form stiff slurry that will not run or puddle in low spots. For sealing vertical joints between adjacent lanes and at curbs, this grout shall be thinned to paint consistency.

(C) Equipment.

- (1) General – Equipment used shall be subject to the approval of the Chief Engineer and in conformance to the requirements of [Division 900](#), where applicable, except concrete spreading and finishing machines. The finishing machine shall be inspected and approved by the Chief Engineer before work is started. A mechanical strike-off shall be required to provide a uniform thickness of concrete in front of the oscillating screed.
- (2) Screed Machine – At least one oscillating screed shall be designed to consolidate the concrete to 100 percent of the unit weight, determined in accordance with ASTM C 138-71T, by vibration. A sufficient number of identical vibrators shall be effectively installed such that at least one vibrator is provided for each 5 feet of screed length. The bottom face of this screed shall be at least 5 inches wide with a turned up or rounded leading edge to minimize tearing of the surface of the plastic concrete. Each screed shall have an effective weight of at least seventy-five pounds for each square foot of bottom face area. Each screed shall be provided with positive control of the vertical position, the angle of tilt, and the shape of the crown. Design of the finishing machine together with appurtenant equipment shall be such that positive

machine screeding of the plastic concrete will be obtained within one inch of the face of existing curbs. The length of the screed shall be sufficient to extend at least 6 inches beyond the line where a saw cut is intended to form the edge of a subsequent placement section, and shall overlap the sawn edge of a previously placed course at least 6 inches. Provision shall be made for raising the screeds to clear the screeded surface for traveling in reverse.

- (3) Rails – Supporting rails upon which the finishing machine travels will be required on all surfacing projects. The support for these rails shall be fully adjustable (not shimmed) to obtain the correct profile. When placing concrete in a lane abutting a previously completed lane, that side of finishing machine adjacent to the completed lane shall be equipped to travel on the completed lane.

(D) Construction Requirements.

- (1) Surface Preparation – Work on the surface shall not commence until the lower course meets the compressive strength of 4,500 psi on field test cylinders made in the field and cured in the laboratory but not less than 7 days after placement. The entire surface of the newly placed concrete floor shall be sandblasted to remove all dirt, oil and other foreign material as well as any laitance followed by oil-free, dry air cleaning. Curbs, sidewalks, concrete and/or metal barrier railings, hand railing, etc., shall be protected from the sandblasting. Grout shall be applied on this cleaned, dry surface by brushing on a thin and even coat, then immediately followed by placing and finishing a low slump concrete. The rate of progress in applying grout shall be limited so that the grout does not become dry before it is covered with new concrete.
- (2) Placement – The placement of the concrete shall be a continuous operation. The new concrete shall be manipulated and mechanically struck off slightly above final grade. It shall then be mechanically consolidated to 100 percent of the rodded unit weight with minus 2 percent tolerance. The rodded unit weight will be determined in accordance with ASTM C 138-71T. The elapsed time between depositing the concrete on the floor and final screeding shall not exceed 10 minutes.
- (3) Joints – At transverse and longitudinal joints, the surface course previously placed shall be sawn to a straight and vertical edge before the adjacent surface course is placed. No edges shall be chipped. Concrete shall not be placed adjacent to a surface course less than 36 hours old except to a continuation of placement of a lane or strip beyond a joint in the same lane or strip. As soon as finishing has been completed, all vertical joints with adjacent concrete shall be sealed by painting with thinned grout.
- (4) Texture – When a tight, uniform surface has been achieved the surface shall be textured with metal tines as described in [905.09\(F\)](#).
- (5) Curing – The surface shall then be immediately covered with wet burlap meeting the requirements specified in [814.01](#). Curing shall be done in the manner described in [703.18](#), except that the burlap shall be kept constantly wet for 72 continuous hours instead of seven days.
- (6) Temperature – The PCC Surface mixture shall not be placed at temperatures lower than 45°F. It may be placed at 45°F when rising temperatures are predicted and then only if and until the prediction indicates 8 hours over 45°F for the curing period. At

temperatures above 85°F, the Chief Engineer may require placements to be made at night or early morning hours, if in his opinion a satisfactory surface finish is not being achieved.

714.03 LATEX-MODIFIED CONCRETE OVERLAY

(A) **General** – This work shall consist of placing a one course, latex modified concrete overlay on bridge decks, to the prescribed depth and to the lines and grades shown on the plans and as specified herein. Also included shall be removal and disposal of existing asphalt overlay and waterproofing membrane, if present, and between a 1/4” to 1/2” thickness of concrete from the top of existing deck slabs.

(B) **Materials** – Materials and their use shall conform to the following requirements:

- (1) Portland Cement Concrete – [817, Class J](#). High early strength cement shall not be permitted.
- (2) Fine Aggregate – [803.01](#).
- (3) Coarse Aggregate – Coarse aggregate shall be a crushed trap stone as specified in [803.02](#), except that the grading shall be Size No. 7 as specified in AASHTO M 43.
- (4) Water – [822.01](#).
- (5) Latex Admixture – The formulated latex admixture shall be Dow SM-100 Modifier A, Tylac 97-314 (Thermoflex 8002), Polysar 1186 or Deco-Rez 4776. A manufacturer’s certification shall accompany these products stating that the latex being supplied is of identical formulation to that supplied to the FHWA Turner-Fairbanks Highway Research Station for initial approval.

Other Styrene-Butadiene latex admixtures may be used provided they have been tested in accordance with and meet the acceptable criteria of the testing program outlined in Report No. FHWA-RD-78-35 of the Federal Highway Administration.

Each shipment of latex admixture shall be accompanied by a report of tests performed in accordance with the Certification Program found in Section VII of Report No. FHWA-RD-78-35. In addition to the actual test results, the report shall include the date of manufacture, batch or lot number(s), quantity represented, manufacturer’s name, place of manufacture, a statement that all test results are satisfactory and the date on which the one year certification will expire.

The latex admixture shall be packaged and stored in containers and storage facilities which will protect the material from freezing and from temperatures above 85°F. Additionally, the material shall not be stored in direct sunlight and shall be shaded when stored outside buildings during moderate temperatures. Any latex admixture which has been exposed to freezing temperatures shall not be used.

- (6) Latex Modified Concrete Mix Design – Latex concrete shall meet the following requirements:

Material or Property	Modified Concrete
Cement Content, bags/C.Y.	7.0
Latex Emulsion Admixture	

Modifier, gal./bag	3.5
Air Content, % of plastic mix	7.5 or less
Water/Cement ratio including water in latex emulsion, max.	0.40
*Slump, inches	4-6
Percent Fine Aggregates as percent of total aggregate by weight	50-60
**Strength, psi	3750 in 28 days

Notes: * The slump shall be measured 4 to 5 minutes after discharge from the mixer. During this waiting period, it shall be deposited on the deck on a suitable container and not be disturbed. Care shall be exercised to ensure that traffic vibrations do not affect the measurement.

** 6"x 12" cylinders shall be wet cured for 24 hours, stripped and air cured before testing.

- (C) **Equipment** – All equipment for the deck preparation, mixing, placing and finishing of latex modified concrete shall be approved by the Chief Engineer prior to the start of any work. A standby mobile mixer shall be on the site during the entire mixing operation.
- (1) **Proportioning and Mixing Equipment** – Proportioning and mixing equipment shall be a self-contained, mobile, continuous mixer subject to the following requirements:
- (a) **Mixing Unit** – The mixing unit shall have a metal plate or plates permanently attached in a prominent place on which are plainly marked the gross volume of the unit in terms of mixed concrete, operating speed, auger mixing angle and the weight-calibrated cement constant of the machine in terms of a revolution counter or other output indicator, all as rated by the manufacturer.
 - (b) **Compartments** – Separate compartments shall be provided to carry the necessary ingredients needed for the manufacture of latex modified concrete. Aggregate bins shall be covered at all times. The cement bins shall be free of moisture and contamination at all times. Suitable means as approved by the Chief Engineer shall be provided to carry water and additives on the truck and to incorporate the additives with the mixing water in the mix.
 - (c) **Feed Systems** – The unit shall have a feeder system mounted under the compartment bins to deliver the ingredients to the mixing unit. Each bin shall have an accurately controlled, individual gate to form an orifice for volumetrically measuring the material drawn from each respective bin compartment. The cement bin feeding mechanism shall be set to discharge continuously at a uniform rate, a given volumetric weight equivalent of cement during the mixing operation. The fine aggregate feeding mechanisms shall be coordinated with the cement feeding mechanisms to deliver the required proportions.
 - (d) **Mixer Unit** – The mixer unit shall be an auger type mixer incorporated into the truck's discharge chute or other suitable mixing mechanism approved by the Chief Engineer and shall produce concrete of uniform consistency and discharge the mix without segregation.

- (e) Dials and Measuring Devices – The unit shall be equipped with an accurate revolution counter indicator permitting the reading of the volumetric weight equivalent of cement discharge during the concrete mixing operation. The counter shall be equipped with a ticket printout to record this quantity. A fine aggregate dial shall permit the setting of of required openings for volumetric proportioning of aggregates.

The unit shall be equipped with a water flow meter or gauge to indicate the discharge rate of water by volume entering the mix. The water and additive measuring devices shall be coordinated with the cement and aggregate feeding mechanisms. The flow meters shall be equipped with scales commensurate with the type and amount of material being added.

A tachometer to indicate the drive shaft speed shall be mounted on the unit. All indicating devices that bear on the accuracy of proportioning and mixing of concrete shall be in full view and near enough to be accurately read or readjusted by the operator while concrete is being produced. The operator shall have convenient access to all controls.

- (f) Calibration – The unit shall be constructed to permit convenient calibration of the gate openings and meters. The calibration shall be conducted at least once a year by the manufacturer of the concrete in the presence of DCDOT representatives. The manufacturer of the concrete shall make satisfactory arrangements with the Chief Engineer at least one week in advance of calibration.

Recalibration shall be conducted in the event of a change in the source of fine aggregate. Additional calibrations shall be conducted when deemed necessary by the Chief Engineer. Each unit approved by the Chief Engineer shall carry a copy of the calibration certification.

Certification of the calibration by an approved testing authority will be accepted as evidence of this accuracy if the yield is shown to be true with a tolerance of 1.0 percent according to the following test:

With the cement meter set on zero and all controls set for the desired mix, activate the mixer, discharging mixed material into a one quarter cubic yard container, 36"x36"x9". When the container is level struck full, making provisions for settling the material into all corners, the cement meter must show a discharge of 2 bags of cement for modified mortar (8 bags/c.y. mix).

- (g) Mixing and Delivery Control – Cement and aggregate shall be proportioned, measured and batched by the volumetric equivalent method. In the operation, the entire measuring and batching mechanism must produce the specific proportions of each ingredient. Tolerances in proportioning the various ingredients shall be as follows:

Cement, weight percent	0 to +4
Fine Aggregate, weight percent	2
Water, weight or volume percent	1

Latex, weight or volume percent . 2

The tolerances are based on a volume/weight relationship established during the calibration of the measuring devices. During mixing, the driveshaft speed as indicated by the tachometer shall be maintained at the operating speed 50 RPM. The auger mixing angle shall be set in the range determined by the manufacturer. The interval between the continuous placing of succeeding batches shall not exceed 30 minutes. The mixer shall be equipped to spray water over the entire placement width as it moves ahead to ensure that the surface to be overlaid is wetted prior to receiving the modified material.

- (2) Placing and Finishing Equipment – An approved finishing machine, meeting the requirements of [905.06\(B\)](#), shall be used for finishing all large areas of work. The finishing machine shall be self-propelled and capable of forward and reverse movement under positive control. Provisions shall be made for raising all screeds to clear the screeded surface for traveling in reverse.

The machine may also be of the vibrating screed type designed to consolidate the modified composition by vibration. The vibration frequency shall be variable with positive control between 3000 and 11,000 vpm. The bottom face of the screeds shall be not less than 4 inches wide and shall be metal covered. The screeds shall be provided with positive control of the vertical position. Screed rails shall be constructed of 1/2" bar stock not less than 2 inches wide, drilled and countersunk for attachment to the prepared surface. A suitable portable lightweight or wheeled work bridge shall be required and used behind the finishing operation.

Placing and finishing equipment shall include hand tools, meeting the requirements of [905.09](#), for placement and brushing in freshly mixed modified concrete and for distributing it to approximately the correct level for striking off with the screed. Approved hand-operated vibrators and screeds shall be used to place and finish small areas of work.

(D) Construction Requirements

- (1) Surface Preparation – Not more than 24 hours prior to placement of the latex modified concrete overlay, the entire surface of the deck shall be sandblasted to remove all laitance, dirt, oil and other foreign material followed by an air blast cleaning using compressed air with a high velocity nozzle. The edges of previously placed lanes of over layment shall be sandblasted to remove the trowel cut surfacing and promote bond. If necessary, detergent cleaning, followed by sandblasting and air blast cleaning shall be required. Immediately prior to placement of latex modified concrete, the clean surface shall be thoroughly wetted for a period of not less than one hour. Any standing water in depressions or holes in the areas of concrete removal shall be blown out with compressed air.
- (2) Placing and Finishing – Anchorages for supporting rails shall provide horizontal and vertical stability. Screed rails shall not be treated with parting compound to facilitate their removal.

The admixture shall be placed and struck off to approximately 1/4" above final grade. It shall then be consolidated and finished at final grade with the vibrating devices. Spud vibration shall be used at the edges and adjacent to joint bulkheads.

Hand finishing with a float may be required along the edge of the placement or on small areas of repair. Edge tooling shall be required at joints, except next to metal expansion dams, curbs and previously placed lanes.

Screed rails and/or construction bulkheads shall be separated from the newly placed material by passing a pointing trowel along their inside face. Metal expansion dams shall not be separated from the over layment. Care shall be exercised to ensure that this trowel cut is made for the entire depth and length of rails after the mixture has stiffened sufficiently.

The surface shall be promptly covered with a single layer of clean wet burlap as soon as the surface will support it without deformation. Within one hour of covering with wet burlap, a layer of 4 mil polyethylene film shall be placed on the wet burlap and the surface cured for 24 hours. The curing material shall then be removed for an additional 72 hour air cure. Wet burlap-polyethylene sheets may be substituted for the polyethylene film with the approval of the Chief Engineer, but shall not replace the initial wet burlap application.

When the latex modified overlay has been cured, it shall be textured in accordance with the requirements of [703.21\(C\)](#).

- (3) Limitation of Operations – No vehicular traffic shall be permitted on the latex concrete surface until 120 hours after placement. At temperatures below 55°F, the Chief Engineer may require a longer curing period.

The latex modified mixture shall not be placed at temperatures below 45°F. It may be placed at 45°F when rising temperatures are predicted and then only if and until the prediction indicates a temperature of over 45°F during the initial 8 hours of the curing period. At temperatures above 85°F, the Chief Engineer may require placements to be made at night or early morning hours if in his opinion a satisfactory surface finish is not being achieved.

A construction dam or bulkhead shall be installed in case of a major delay in the placement operation resulting in the formation of the plastic film. During minor delays, the placement shall be protected from drying with several layers of wet burlap.

Adequate precautions shall be taken to protect freshly placed modified concrete from sudden or unexpected rain. All placing operations shall stop when rain begins. The Chief Engineer may order removal of any material damaged by rainfall.

- (4) Application of Live Loads – Truck mixers and other heavy equipment shall not be permitted on the latex modified concrete overlay, nor shall the traveling public, until authorized by the Chief Engineer. Such authorization may only be given after the prescribed curing period has taken place, after the last concrete has been placed, and providing that the concrete placed on the deck has attained a minimum strength of 3500 psi. Specimens shall be cured in the same manner the deck is cured.

714.04 MICROSILICA CONCRETE OVERLAY

- (A) **General** – This work shall consist of placing a one course, microsilica concrete overlay on bridge decks, to the prescribed depth and to the lines and grades shown on the plans and as specified herein. Also included shall be removal and disposal of existing asphalt

overlay and waterproofing membrane, if present, and between a 1/4" to 1/2" thickness of concrete from the top of existing deck slabs.

(B) Materials.

- (1) Concrete – The concrete for PCC overlay including filling depressions created by removal of concrete, shall conform to [703](#) except for the following modifications:

Portland Cement	635 lb/cy
Water(Cement+Silica Fume)Ratio	0.40 (max.)
Slump	6 + 2 in.
Air Content	7 + 2 percent
Silica Fume	8 to 10% (Solids) by weight of cement added as admixture in slurry form
Synthetic Fiber	1 lb.
Compressive Strength	4500 psi @ 28 days

- (2) Silica Fume – Silica Fume shall conform to the following chemical and physical requirements:

Silicon Dioxide (SiO ₂),min %	85.0
Sulphur Trioxide (SO ₃),max %	3.0
Moisture Content, max %	3.0
Loss on ignition, max %	6.0
Avail. Alkaline as Na ₂ O,max %	1.5
Percent Retained on 45-micrometer (No. 325) Sieve, max %	5.0
Specific Surface(Nitrogen adsorption)	
min m /g	18
max m /g	28

Silica fume shall not be used in dry form.

(C) Removal of Concrete and Surface Preparation.

- (1) Removal of concrete shall consist of the following steps:
- (a) Scarification to remove 1/4" to 1/2" thickness for the entire area of the deck.
 - (b) Removing deteriorated concrete up to top layer of the existing reinforcement, at designated locations as shown on the plans or as directed by the Chief Engineer.
 - (c) Removing concrete to depths below the top layer of reinforcement if additional loose or deteriorated concrete is detected. Such additional removal shall be done only upon approval by the Chief Engineer.

- (2) All bridge deck areas to be overlaid shall be protected from intrusion from construction operations and by adhering to the following conditions:
 - (a) Barricades shall be placed between all work areas and adjacent public areas.
 - (b) Plywood shall be placed over any surface that concrete or oil-leaking equipment will pass over.
 - (c) Water run-off shall be controlled to prevent staining of non-construction areas or automobiles.
- (3) Surface preparation:
 - (a) The existing concrete surface upon which concrete is to be placed shall be pre-saturated with water and kept continuously wet at least 12 hrs before placing concrete.
 - (b) Immediately, prior to concrete overlay placement, the existing, roughened concrete surface shall be SSD (Saturated, Surface-Dry), clean, free of all dust, dirt, grease, oil, wax, debris or other foreign matter. The concrete surface pore structure shall be open.
 - (c) The existing concrete surface temperature shall not be less than 40°F or greater than 85°F at the time of concrete placement.
- (D) **Equipment** – As per [714.02\(C\)](#), except that all scarification removal of concrete shall be done by hydro-jetting.
- (E) **Construction Methods.**
 - (1) The Contractor shall have a technical representative of the Silica Fume manufacturer available at the job site at all times during placement of overlay at no additional cost to the District. After the surface has been cleaned and immediately before placing concrete, a thick coating of bonding grout shall be scrubbed into the wet, prepared surface. This bonding grout shall consist of two parts of fine sand and one part portland cement plus micro silica (in the same proportion as the mix design) mixed with water to give a thick paint or creamy consistency. Care shall be exercised to insure that all parts receive a thorough, even coating and that no excess grout is permitted to collect in pockets. The rate of progress in applying grout shall be limited so that grout does not become dry before it is covered with new concrete.
 - (2) Discharge of concrete from the delivery trucks shall be completed within 60 minutes after introduction of mixing water to the cement and aggregates.
 - (3) The new concrete shall be manipulated and mechanically struck off slightly above final grade. It shall then be mechanically consolidated and screeded to final grade with slope to the drains.
 - (4) Fresh concrete, 3 inches or more in thickness, shall be vibrated internally in addition to the surface screed vibration.
 - (5) Immediately after leveling to final grade, start finishing with bull float to produce a tight, uniform surface. Use a light fog-spray of water to keep the concrete surface moist between the finishing operations.

- (6) After the broom finish, continue light fogging only as necessary to keep the concrete surface wet before start of curing.
 - (7) When a tight uniform surface has been achieved, the surface shall be textured in accordance with [703.21\(C\)](#).
- (F) Curing.**
- (1) At the time when fresh concrete can support a worker's weight without damaging the finish, cover the surface with a single layer of wet burlap. Cover burlap with layer of clear 4 mil thick polyethylene sheeting.
 - (2) Provide a wet burlap cure for at least 7 days. The burlap shall meet the requirements specified in [814.01](#). The burlap shall be kept continuously wet. Do not cover the wet burlap.
 - (3) For 14 days after casting, the concrete shall be protected from damage due to mechanical disturbances such as shock and vibration due to adjacent construction activity. Protect finished concrete surfaces for damage.
- (G) Tolerances** – Horizontal surfaces shall be true planes within 1/4 inch in 10 feet as determined by a 10 foot straightedge placed anywhere on the surface in any direction (Class B per ACI 301-84).
- (H) Contractor Quality Control** – As a minimum, the Contractor shall conduct a program of field quality control as outlined in the following paragraphs:
- (1) For each placement before concrete is placed, the following shall be inspected and approved:
 - (a) Existing slab surface cleanliness, temperature and water saturation.
 - (b) Concrete batch ticket.
 - (c) Elapsed time since batching and number of mixing truck drum revolutions.
 - (d) Concrete temperature.
 - (e) Hot weather concreting conditions.
 - (f) Slump in accordance with ASTM C 143-78 for each truck load.
 - (g) Air content per ASTM C231-82 for each truck load.
 - (h) Water addition at the site.
 - (2) The slump shall be measured at the job site before addition of the high-range water reducer, if it is added at the job site. The slump shall also be measured at the point of final placement.
 - (3) The air content shall be measured at the point of final placement.
 - (4) Concrete test specimens shall be made in accordance with ASTM C31-88. One set of samples shall be taken not less than once day nor less than once for each 4,000 square feet of surface area cast in one day. Each set shall consist of six (6) cylinders. The specimens shall be tested for compressive strength in accordance with ASTM C39-85. Two (2) specimens shall be tested at seven (7) days and three (3) specimens

at twenty-eight (28) days. The sixth specimen shall be held in reserve. The samples for strength test shall be removed from concrete at the point of final placement.

(I) Limitations of Operations.

(1) A bulkhead shall be installed in case of major delay in the placement operation. During minor delays of one hour or less, the end of the placement may be protected from drying with several layers of wet burlap.

(2) The elapsed time between depositing the concrete on the floor and final screeding shall not exceed ten (10) minutes.

At transverse and longitudinal joints, the surface course previously placed shall be sawn to a straight and vertical edge before the adjacent surface course is placed. No edges shall be chipped. Concrete shall not be placed adjacent to a surface course less than 36 hours old except to a continuation of placement in a lane or strip beyond a joint in the same lane or strip. As soon as finishing has been completed, all vertical joints with adjacent concrete shall be sealed by painting with thinned grout.

(3) Screed rails or trips may be removed at any time after the concrete overlay has taken initial set. Adequate precaution shall be taken during screed removal to protect the edge of the new surface from damage.

(4) Preparation of any area may be started in a lane or strip adjacent to newly placed overlay 24 hours following its placement. During the next 7 days following the placement of the overlay, the work shall be restricted as follows:

(a) No operations shall be undertaken which will interfere with the curing process.

(b) No power-driven tools, including chipping and jack hammers shall be used.

(c) No vehicles or construction equipment shall be permitted on a finished overlay until water curing is complete. At temperatures below 50°F, a longer waiting time will be required.

(J) Cleanup – Debris shall not be allowed to accumulate at any time. Clean-up and debris removal shall be done daily.

(K) Protection – The Contractor shall be responsible for protecting the work from damage such as impact, overloading, marring of surfaces or other damage until Final Acceptance.

(L) Acceptance – Should an approval not be obtained for any work requiring approval, such work and all subsequent work will be rejected. Appearance of plastic shrinkage cracks due to inadequate finishing and curing shall be cause for rejecting the work so affected. Surface concrete in the rejected area shall be removed and replaced at no additional cost to the Department.

714.05 MEASURE AND PAYMENT

(A) Measure – The unit of measure for the various types of Bridge Deck Concrete Overlay will be the square yard, complete in place. The number of square yards will be the actual surface area computed from measurements taken in the field.

- (B) **Payment** – Payment for the specified type of Bridge Deck Concrete Overlay will be made at the contract unit price per square yard, which payment will include removal and disposal of existing asphalt surface and membrane waterproofing, scarifying if specified, sandblasting, air cleaning, grouting, and proportioning, mixing, placing, finishing, and curing concrete. Payment will also include the cost of furnishing all materials, tools, equipment, incidentals and labor necessary to complete the item as shown on the plans and specified herein.
- (C) **Payment for Deck Repair** – Payment for removal and disposal of deteriorated concrete beyond the prescribed thickness will be paid for at the contract unit price per cubic yard for Structure Hard Surface Excavation.