REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (PLANING) (SPECIAL)

Section 202 of the Standard Specifications is hereby revised for this project to include the following:

DESCRIPTION

This work consists of the removal of all asphalt material and the removal of waterproofing membrane from the surface of the concrete.

This work also consists of removal of the top ½ inch of the concrete bridge deck and installing secondary containment for effluent and falling debris below the work.

CONSTRUCTION REQUIREMENTS

All asphalt material and waterproofing membrane (if present) shall be removed from the surface of the bridge deck. The surface of the deck shall be relatively smooth upon completion of removal operations. Jagged or broken edges or otherwise unsmooth areas shall be removed and ground smooth.

The Contractor is responsible for cleaning and maintaining the deck prior to and during placement of the new surface treatment.

Prior to beginning removal operations, the Contractor shall submit a removal plan for approval. This plan shall include as a minimum:

(1) Methods of removal including confined areas that are unreachable with large equipment.
(2) The type and number of all equipment to be used. If cold milling is to be performed for removal of the final ½ inch of asphalt, appropriate information must be provided to demonstrate the equipment meets the requirements of this specification.
(3) The width, location and phasing of removal passes along with the proposed schedule for these passes.

The Contractor shall remove the existing asphalt by cold milling to within ½ inch of the concrete deck. Removal of the remaining ½ inch of asphalt and any existing membrane shall be performed by any one or combinations of the following three methods:

1) Scraping with a loader equipped with a smooth-edged bucket (no teeth).
2) Diamond grinding.
3) Cold milling with equipment that has the capabilities and features as described below.

Cold milling equipment must be able to:

(a) Remove concrete to a depth of ½ inch.
(b) Provide a surface relief of at most ¾ inch.
(c) Provide a 5/32 inch grade tolerance.

Cold milling equipment must have the following features:

(a) 3 or 4 riding tracks.
(b) An automatic grade control system with electronic averaging having 3 sensors on each side of the equipment.
(c) A conveyor system that leaves no debris on the bridge.
(d) A drum that operates in an up-milling direction.
(e) Bullet tooth tools with tungsten carbide steel cutting tips.
(f) A maximum tool spacing of ¼ inch.
(g) A maximum operating track pair or set (axle) weight of 47,000 pounds, or as equivalent to the Tandem Axle Group as shown on the Colorado Bridge Weight Limit Map, White (10 feet less than or equal to d less than or equal to 12 feet, with d the spacing between axle groups)
(h) A maximum track unit weight of 5875 pounds per foot.
(i) New tooth tools at the start of the job.

For all cold milling operations, the Contractor shall:

1. Saw cut the outline of the asphalt surfacing to be removed to a depth of ½ inch.
2. Provide personnel on each side of the milling drum to monitor milling activities. Maintain constant radio communication with the operator during milling activities.
3. Verify the depth of the asphalt surfacing every 50 feet at one location on each shoulder and in the traveled way or as shown in the plans.

If the Contractor proposes a milling machine that exceeds the maximum operating one track weight or maximum track weight per foot, or the machine does not conform to the same configuration assumptions used in determining these weight limit assumptions, the Contractor’s Engineer shall rate the bridge for the proposed milling machine or complete a comparative analysis using the Colorado Bridge Weight Limit Map. The Contractor shall provide to the Engineer for review a stamped certified letter and accompanying rating of the bridge or comparative analysis for the proposed milling machine.

A small width rotomill (maximum 2-foot head) and low impact hand tools may be used in confined areas where the primary removal equipment will have difficulty accessing.

In the transverse direction, removal shall extend to the face of the barriers. The removal depth near the face of the barriers shall be consistent with the remainder of the bridge deck.

Hydrodemolition and pressure jetting will not be permitted for removal operations.

After cold milling is complete, the Contractor shall ensure that the coarse aggregate remaining at the removal depth is firmly embedded and remove it if it is not.

The Contractor shall prepare the bridge deck surface for placement of the new overlay. All construction debris, wearing surface material, and residual materials from the scarification process shall be completely removed from the bridge deck.

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REVISION OF SECTION 202
REMOVAL OF ASPHALT MAT (PLANING) (SPECIAL)

If cold milling is to be performed for removal of the final ½ inch of asphalt, the Contractor shall furnish a documented history of successfully performing cold milling on bridge decks with equipment similar to that described herein. The documentation shall include three projects within the past five years and shall include equipment type used as well as specifics regarding the bridges.
The Contractor shall furnish a documented history of successfully performing cold milling on bridge decks with equipment similar to that described herein. The documentation shall include three projects within the past five years and shall include equipment type used as well as specifics regarding the bridges.

Mechanical Scarification. Prior to scarification, the depth of the rebar shall be verified in the field. The original bridge deck concrete surface shall be scarified to a depth as specified on the contract plans (½ inch minimum). Areas adjacent to the curb, bridge drains, scuppers, joints or other locations inaccessible to the milling machine shall be hand chipped. For decks with an existing wearing surface, all wearing surface material shall be completely removed in conjunction with the milling of the surface of the deck.

If mechanical milling results in the exposure of reinforcing steel, the operation shall be stopped immediately, and the depth of removal adjusted. Damaged or dislodged reinforcing steel as a result of Contractor negligence during the operation shall be repaired or replaced at the Contractor’s expense.

The Contractor shall take all necessary precautions to protect the expansion devices, barriers, and drains from damage. All damage to the bridge expansion devices, barriers, drains or any other property of CDOT resulting from removal operations shall be repaired at the Contractor’s expense without time extension and per approval of the Engineer.

The Contractor shall take all precautions to protect the bridge deck from damage that would not ordinarily occur with the removal methods described herein. This includes damage to deck reinforcing and post-tensioning. Such damage resulting from removal operations shall be repaired at the Contractor’s expense without time extension and per approval of the Engineer.

The Contractor shall provide protection to live traffic and waterways below from any falling debris in work areas.

At the completion of each day’s work, vertical edges caused by planing that are greater than ¾ inch in height shall be: Longitudinal - tapered edges parallel to the direction of traffic shall be tapered to not less than a 3:1 (horizontal: vertical) slope, Transverse - tapered edges perpendicular to the direction of traffic shall be tapered to not less than a 50:1 (horizontal: vertical) slope.

All removal operations shall be completed parallel to the travel lanes unless otherwise directed by the Engineer.

METHOD OF MEASUREMENT

Removal of Asphalt Mat (Planing) (Special) will be measured by the actual quantity completed to the required depth and accepted.

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REVISION OF SECTION 202

REMOVAL OF ASPHALT MAT (PLANING) (SPECIAL)

BASIS OF PAYMENT

The accepted quantities of Removal of Asphalt Mat (Planing) (Special) will be paid for at the contract unit price.

Payment will be made under:

<table>
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<tr>
<th>Pay Item</th>
<th>Pay Unit</th>
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<tr>
<td>Removal of Asphalt Mat (Planing) (Special)</td>
<td>Square Yard</td>
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</table>
Payment for Removal of Asphalt Mat (Planing) (Special) will be full compensation for all labor, materials, tools, equipment, and incidentals required to remove the asphalt and any waterproofing membrane [and top ½" of bridge deck] as designated in the plans, as specified in these special provisions, and as directed by the Engineer.

Asphalt depth verification will not be measured and paid for separately but shall be included in the work.

Methods to prevent debris from falling from the structure, and methods to protect the traveling public using the structure, or adjacent to the structure, from airborne debris will not be paid for separately, but shall be included in the work.

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INSTRUCTIONS TO DESIGNERS (delete instructions and symbols from final draft):
Use this project special provision when removing asphalt and membrane (if present) from structures down to the bare deck.
Use for removing asphalt, membrane, and top ½ inch of deck for Hydrodemolition applications.

▲ Use sentence/paragraph if hydrodemolition is not to be performed.

♦ Use sentence/paragraph if hydrodemolition is to be performed.

♦ The equivalent track pair weight and track unit weight is intended to conservatively approximate the milling machine to the Weight Limit Map Tandem Axle and meant to take care of some of the milling machines that are proposed. The Contractor will have to provide a rating or comparative analysis if his milling machine is heavier. The designer should anticipate being called about this. The values shown assumes the structure is a White structure, assumes the spacing between front and back track loads is greater than 10 feet and less than 12 feet and the track length on the deck is approximately 4’. If the bridge structure is rated a different color adjust this description, load and the track unit weight appropriately. Track Unit Weight=Allowable Axle Group Load ÷ 2 tracks ÷ 4’ track length on deck. The axle weight is appropriate for bridge restrictions whereas the track unit weight is more appropriate for evaluating overhang conditions.

PERMANENT CHANGES TO PROJECT DATED SPECIAL PROVISIONS

REVISION OF SECTION 202 REMOVAL OF ASPHALT MAT PLANING (SPECIAL)

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<tr>
<th>DATE</th>
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<tbody>
<tr>
<td>1/14/19</td>
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<td>Initial Website Issue</td>
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