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COLD MILLING OF ASPHALT PAVEMENT

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42.01. SCOPE OF WORK

This specification covers the requirements for preparing a foundation for the placement of asphalt course(s) by the removal of excess granular or bituminous material to grade and cross section determined on site by the Contract Administrator or as stated in the contract documents. The sweeping and cleaning of the milled surface and the hauling of milled material/RAP to designated stockpiles and disposal areas.

42.02. REFERENCES OR RELATED DOCUMENTS

Not Applicable

42.03. MIX DESIGNS

Not Applicable

42.04. MATERIALS

Not Applicable

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42.05. EQUIPMENT

42.05.01 Large Cold Planing Machine (Milling Machine with a 1.0 m to 3.6m cutting drum)

The cold planing machine used for removing all or part of existing granular or bituminous pavement to the desired depth and cross slope. It shall be power operated, capable of accurately establishing profile grades by referencing from either the existing pavements or from an independent grade control and a positive means of controlling cross slope elevation while maintaining a grade tolerance of 6.35mm (+/-). The planing machine shall be self-propelled and be capable of either picking up the cold milled material/RAP and discharging same into a truck by a conveyor system or leaving milled material in a sized windrow for separate pickup. The machine shall consist of a minimum 1.0 m wide cutting drum equipped with tungsten carbide tipped teeth capable of producing a lacing pattern not more than 12.7 mm deep. The milling or cold planing machine shall be equipped with an on-board water spray system used to effectively control dust and particulate emissions during the milling operation.

42.05.02 Small or Mini Planing Machine (Milling Machine with a cutting drum less than 1.0 m)

The small cold planing machine used for localized areas cutting around manholes, catch water basins, valve boxes, areas inaccessible to the large cold planing machine. The small or mini planing machine shall be self-propelled with a cutting drum equipped with tungsten carbide tipped teeth.

42.05.03 Water Truck

A vehicle with a sufficient size storage tank used to hold water for the purpose of refilling the cold planers on board storage tank.

42.05.04 Rotary Power Broom/Hydraulic Sweeper

Rotary power broom/Hydraulic sweep shall be self-propelled and capable of clearing debris, sweeping the pavement, and removing the fine loose pieces of dirt/RAP and other debris left behind from milling operation.

42.05.05 Backhoe or Skid Steer Loader

Backhoe or Skid steer loader will be capable of removing and loading into haul trucks loose asphalt pieces/ RAP or debris left behind from the milling and cleanup operation.

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42.05.06 Mobile Vacuum Sweeper

Mobile vacuum sweeper will be used in or other sensitive areas when power brooms/hydraulic sweepers cannot be used due to the potential generation of dust during cleanup operation.

Vacuum sweeper shall be self propelled and capable of removing the fine loose pieces of RAP or debris from the road surface. It will be equipped with an on board water spray system to control dust and particle emission.

42.05.07 Haul Trucks

Vehicle capable of transporting millings/rap from the jobsite to a designated dump site

42.06. CONSTRUCTION

- a) The bituminous surface shall be removed to the depth, width, grade, and cross section as indicated in the contract documents or as directed by the Contract Administrator. The cut shall be automatically controlled, with the controls set such that the maximum difference in level between adjacent runs shall not exceed 7 mm. The average depth of cut measured across the cut from the adjacent surfaces to the top of the milled surface at intervals along the work shall not vary more than 7 mm from the specified thickness. Prior to milling operations the contractor shall determine, using appropriate equipment such as metal detectors etc. the location of hidden utilities or buried objects that may be damaged by the milling operations. The onus of locating such structures and determining their susceptibility to damage is the sole responsibility of the contractor. ***(The Corporation assumes no responsibility for damages to the milling machine that may result from striking a buried casting or other foreign objects)***. When milling adjacent to concrete curb and gutters, access chambers or other similar structures the cold milling machine shall be operated as close as possible to the structure without causing damage to it. Any material not removed by the cold milling machine shall be removed by hand or other approved method. When necessary for traffic safety or when directed by the Contract Administrator, coldmix or asphalt ramps shall be placed by the contractor. If the concrete curb, sub-surface utilities or structure is damaged by the milling operation, the contractor shall notify the relevant Authority and arrange for the damage to be rectified and reinstated to preconstruction condition. All costs associated with the rectification work shall be borne by the contractor. Any weakened planes of asphalt and basecourse which are not removed by the milling operation but in the opinion of the Contract Administrator will break up under traffic shall be removed either by an additional pass of the cold milling machine or by other means to the satisfaction of the Contract Administrator. The milled surface shall be free from tears, gouges, breaks, or excessive grooves. The pavement shall be swept and the site left in a

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clean and tidy state to the satisfaction of the Contract Administrator prior to roadway being opened to traffic or as required for application of new asphalt overlay.

- b) It shall be the contractor's responsibility to prevent milled material/RAP from entering catch basins and /or manholes, and any material entering same will be removed at the contractor's expense.
- c) At the end of each workday all the loose material/debris shall be swept up using a power broom/sweeper leaving the site in a clean and tidy state. The milled pavement shall not have greater than 25 mm difference in elevation from any adjacent pavement or casting.
- d) The contractor shall provide all necessary labour, material, and equipment to load the asphalt millings/RAP in trucks and remove same from site.

All cold milled material/RAP generated will remain the property of the City of Windsor and shall be transported to a storage site as specified in the contract document at no additional cost to the Corporation.

- e) At the end of each workday the Contractor shall place temporary asphalt padding around all exposed chamber tops, crosswalks, and ramps to protect pedestrians, cyclists, and vehicle traffic during construction. Longitudinal and transverse ramps used to tie the milled surface into the existing road levels shall have a minimum taper length of 1.0 m for each 50mm variation in levels. Where speed limit exceeds 60km/h, transverse ramps shall have a taper length of 2.5m for each 50mm. Temporary ramps and loose material from underlying surface shall be completely removed and the area swept clean of debris before placing Hot Mix Asphalt.
- f) ***The Corporation assumes no responsibility for damages to the milling machine that may result from striking a buried casting or other foreign objects.***

42.07. QUALITY ASSURANCE

The Contractor is responsible for maintaining the specified depth of milling, surface texture, grade and cross slope as state in the contract or as directed by the contract administrator. Any area that does not meet the requirements will be re-milled or padded with asphalt to bring the pavement to proper grade and slope at no additional cost to the Corporation.

42.08. MEASUREMENT FOR PAYMENT

Measurement for payment shall be by depth of cut in area per square metres (m²) as specified in the contract documents. The quantity to be paid for will be the actual area of

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pavement milled, irrespective of the number of passes required to obtain the specified width and depth.

42.09. BASIS OF PAYMENT

Payment at the contract price for the above tender items shall include full compensation for furnishing all Labour, Equipment, Material, Tools and incidentals required doing the work and transporting RAP material to location specified in the contract documents.