

**DETAILED SPECIFICATIONS
COLD MILLING/COLD MICROMILLING**

AWARD #23371

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DETAILED SPECIFICATIONS

ITEM 490 – PRODUCTION COLD MILLING

490-1 DESCRIPTION:

This work shall consist of the milling, shaping and removal of portions of existing surfaces by a cold milling process, and subsequent cleaning, utilizing equipment and procedures meeting the requirements in this specification.

The work shall consist of Production Cold Milling of bituminous concrete as indicated in the contract documents and as shown on the plans.

490-2 MATERIALS:

490-2.01 Equipment

Milling machines shall be power operated, self-propelled machines capable of removing the desired thickness of existing surfaces. The machines shall have sufficient power, traction, and stability to accurately maintain depth of cut and slope. They shall be capable of producing a finished profile and cross slope to within 1/4 inch of that required and shall produce a uniform surface texture free from gouges and ridges greater than 3/8 inch in depth.

The machines shall be equipped with a means to control dust and other particulate matter created by the cutting action.

The machines shall have an integral loading system or sufficient equipment shall be provided to accomplish complete removal of milled material at a rate equivalent to the milling rate.

Vacuum trucks, street sweepers or power brooms shall be used to clean the milled surfaces. The Authorized User's representative may disallow the use of power brooms in urban, residential, or other sensitive areas if the dust raised by the broom is deemed by the Authorized User's representative to be objectionable.

490-3 CONSTRUCTION DETAILS:

490-3.01 General

Milling shall be performed at the locations and in accordance with the details indicated on the plans.

When indicated on the plans, profile and cross slope shall be controlled by a taut reference string line. The reference elevation and string line shall be established by the Contractor and subject to the approval of the Authorized User's representative.

Areas not accessible to the milling machine, such as around and/or adjacent to inlets, manholes, curbs, and transverse joints on structures, may be removed by a small milling machine, handwork or other methods approved by the Authorized User's representative.

DETAILED SPECIFICATIONS

ITEM 490 – PRODUCTION COLD MILLING (Cont'd)

All milled material, including that removed by other means, shall be immediately removed from the milled surfaces and adjacent surfaces. Surfaces shall be cleaned of all fines and dust prior to opening to traffic. The Contractor shall conduct operations in such a manner that dust is controlled and is not objectionable. Milled and adjacent surfaces shall be cleaned again, as directed by the Authorized User's representative, prior to the placement of tack coats, or pavement courses if traffic has been allowed on the milled surface and/or if more than 48 hours have elapsed since the initial cleaning.

The Contractor shall maintain drainage at catch basins, according to the details shown on the plans, or in a manner approved by the Authorized User's representative.

When working adjacent to traffic, the Contractor shall immediately remove material that is spilled on the traveled way.

Milled surfaces to be overlaid with asphalt concrete shall be covered with at least a single course of asphalt concrete before the end of the paving season. Portland cement concrete overlays shall be completed over milled surfaces before the end of the paving season. Damage to milled surfaces resulting from traffic or other causes such as, but not limited to, raveling, fuel spillage or any contaminants which would inhibit bond, shall be repaired or remilled by the Contractor in a manner approved by the Authorized User's representative.

490-3.02 Production Cold Milling

Production cold milling of bituminous surfaces shall be performed in accordance with the details and at the locations indicated on the plans.

490-3.04 Production Cold-Mill Surface Planing

Production cold-mill surface planing of bituminous concrete surfaces shall be performed in accordance with the details and at the locations indicated on the plans. When specified, the milling machine shall control the profile and cross slope with a moving reference at least 30 feet in length. The moving reference may be a floating beam, ski, or other suitable type such that the resulting milled surface is sufficiently even.

In areas accessible to the milling machine, construct a milled surface to a maximum 1/2-inch tolerance. If the pavement surface is not being constructed or has not been constructed to this tolerance based upon visual observation or upon riding quality, the Authorized User's representative may test the surface with a 15 foot straight edge or string line placed parallel to the centerline of the pavement and with a 10 foot straight edge or string line placed transversely to the centerline of the pavement on any portion of the pavement. Variations exceeding 1/2 inch will be satisfactorily corrected at no additional cost to the Authorized User.

DETAILED SPECIFICATIONS

ITEM 490 – PRODUCTION COLD MILLING (Cont'd)

490-4 METHOD OF MEASUREMENT:

The quantity shall be measured as the number of square yards of pavement surface milled in accordance with the plans and this specification.

In no case will a deduction in area be made for minor unmilled areas due to catch basins, manholes, transverse joints, or minor low areas in pavements from the measured surface area that has been milled. Minor unmilled or low areas are those areas of 10 square yards or less.

490-5 BASIS OF PAYMENT:

The unit price bid per square yard shall include the cost of furnishing all labor and equipment necessary to complete the milling, including the removal of pavement by other means, the removal and disposal of milled material (if applicable), the removal and hauling of milled material (if applicable) to a designated storage area when indicated in the contract documents and cleaning the resultant surface after milling (if applicable). No payment will be made for additional cleaning that may be necessary just prior to placement of any overlaying pavement courses or tack coats. The cost of maintaining drainage shall be included in the price bid for work zone traffic control. The cost of providing tack coats, overlay courses, and temporary pavement wedges around drainage structures, manholes, valve boxes, bridge abutments and beginning and ends of milled pavement shall be paid for separately.

Payment will be made under:

490.10 Production Cold Milling of Bituminous Concrete Square Yard

490.15 Production Cold-Mill Surface Planing of Bituminous Concrete Square Yard

DETAILED SPECIFICATIONS

ITEM 490.17011009 – PRODUCTION COLD MICROMILLING

DESCRIPTION:

This work shall consist of the production cold micromilling, shaping and removal of portions of existing asphalt pavement surfaces and subsequent cleaning as indicated in the contract documents and as directed by the Authorized User's representative.

MATERIALS:

Provisions of §490-2 Materials and §490-2.01 Equipment shall apply.

CONSTRUCTION DETAILS:

Provisions of §490-3 Construction Details apply except as modified below:

General: The Authorized User will ensure that the delivery site is accessible to the Contractor during all approved hours in which milling operations are conducted.

Equipment: The Contractor shall provide a milling machine with a minimum 7-foot micromilling drum that has at least 3 wraps of teeth. The spacing between each tooth shall not exceed 1/4 inch. Other tooth spacing configurations for the micromilling drum may be allowed by the Director, Materials Bureau, if demonstrated to meet the surface texture requirements. The milling machine shall be capable of milling to the depth indicated in the contract documents. The Contractor may utilize a machine with a micromilling drum less than 7 feet wide for non-mainline areas, including shoulders and ramps of less than 7 feet, gore areas, turnouts, etc.

The Contractor shall submit a copy of the manufacturer's specifications to the Authorized User's representative a minimum of 2 workdays prior to the construction of a test section indicating the drum is designated as a micromilling drum meeting the requirements of this specification.

Test Section: Prior to micromilling, the Contractor shall select the machine operation speed and inform the Authorized User's representative. The Contractor shall select a test area with a minimum length of 500 lane feet and mill a lane width at the selected speed. The suggested target forward speed for the milling machine is 30 feet per minute. The Authorized User's representative will randomly select 5 locations along the test section, and the Contractor shall measure the texture of the milled surface in accordance with Test Method NY 490-01 Texture Measurement for Micromilled Surface, witnessed by the Authorized User's representative. The texture value shall be no less than 5.0 at any of the tested areas. The Authorized User's representative will review texture measurements, consistency of profile, and cross slope of the test section. If the texture value at any location is below 5.0, the Contractor shall adjust the operation, typically by reducing the forward speed of the machine. The Contractor shall mill an additional 500-foot path and measure the texture of the milled surface at 5 random locations selected by the Authorized User's representative and repeat until the texture value is 5.0 or greater. Production micromilling will not be allowed until acceptable results are obtained. A test section is not required for equipment used for non-mainline areas.

DETAILED SPECIFICATIONS

ITEM 490.17011009 – PRODUCTION COLD MICROMILLING (Cont'd)

Production Micromilling: The Contractor shall perform micromilling using the settings from the acceptable test section such as forward speed, drum revolutions, etc. There shall be no visible longitudinal lip between passes. Any lip greater than 1/4 inch in differential shall be milled again to remove the differential. The Contractor shall perform micromilling such that the milled surface is free from waves or irregularities exceeding 1/4 inch, measured using a 10-foot straight edge. To maintain an acceptable profile, there may be occasional exceptions where the bottom of a wheel path and other low point defects may not be textured.

The Contractor shall perform one texture measurement on the milled surface every 500 feet along the length of the milling path and record the data on BR 359. The first measurement shall be located at a transverse offset of 3 feet from the right edge of the milling. Further transverse offsets shall be 3 feet greater than the previous offset. At no time shall the transverse offset be closer than 3 feet to the left edge of milling. When the transverse offsets have reached the limits of the milling width, the texture measurement shall be taken at the transverse offset 3 feet from the right edge of the milling. The measurement locations shall then continue every 500 feet beginning at a transverse offset of 3 feet from the right edge. After the initial 5,000 feet, the frequency of testing will be reduced to once every 1000 feet if measurements exceed the minimum value of 5.0. If the subsequent reduced measurements are not meeting the minimum value of 5.0, the testing frequency shall increase to every 500 feet.

The Authorized User's representative shall witness at least 5 texture measurements per day. If the texture value is below 5.0, the Contractor shall stop and re-mill the area below a minimum of 5.0. The Authorized User's representative will determine the limits by performing texture measurements to the limits of re-mill. The Contractor shall also modify the operation so that the minimum texture results are achieved.

The equipment used for non-mainline areas (shoulders and ramps of less than 7 feet, gore areas, turnouts, etc.) shall provide a textured surface comparable to the mainline milled surface and to the same tolerances as the mainline milling machine. Texture measurements are not required when micromilling the shoulders if the same equipment and settings are used as the mainline. If a separate machine is used on the shoulders, the Contractor shall perform texture measurements and ensure the texture values are at least 5.0.

The Authorized User's representative will perform at least one random texture measurement per mainline lane mile for quality assurance. If the texture value is below 5.0, the Authorized User's representative will take additional tests to determine the limits of the area that has texture value below 5.0. The Contractor shall re-mill these areas to provide the required surface texture.

METHOD OF MEASUREMENT:

Provisions of §490-4 Method of Measurement apply.

BASIS OF PAYMENT:

Provisions of §490-5 Basis of Payment apply except as modified below:

The cost of texture measurement will be included in the bid price.

Payment will be made under:

490.17011009 Production Cold Micromilling Square Yard