CITY OF FARGO SPECIFICATIONS

PAVEMENT MILLING OR GRINDING

PART 1
DESCRIPTION OF WORK

The work to be done under this section of the Specifications and the accompanying plans shall consist of furnishing all labor, material, accessories, and plant necessary to complete the improvement of certain streets, avenues or alleys in the City of Fargo.

This work shall include the milling of asphalt pavements and/or diamond grinding of concrete pavements to produce a uniform section and smooth riding surface, and shall include the removal and disposal of all milling/grinding residue and the sweeping and cleaning of the existing and milled surfaces, and all other work as may be necessary to properly complete the pavement profiling work in accordance with these Specifications and the accompanying plans.

PART 2
MATERIALS

2.1. EQUIPMENT

All equipment shall be maintained in good repair and shall meet the approval of the Engineer. Water for the milling and cleaning operation is available from the city hydrants, however the use of such hydrants shall comply with the City of Fargo Water Department regulations.

2.1.1. MILLING MACHINE

The milling machine shall be a self-propelled machine specifically designed to fully or partially remove existing pavement to the desired depth, profile, cross slope and surface texture. The machine shall have a control system to automatically control the elevation and transverse slope of the milling head. The machine shall be equipped with a conveyor capable of loading the milled material directly from the roadway to a truck. The machine shall be equipped with a minimum 15-foot long skid or rolling straightedge and grade control sensors to automatically maintain proper grade and alignment.

2.1.2. BROOMS

The Contractor will be required to have a mechanical broom of the revolving type and be so constructed that the revolutions may be adjusted to its progression. Brooms used for finish sweeping shall be of the "pick-up" or vacuum type wherein material from the road surface is removed by the machine for subsequent disposal at a different location.

2.1.3. DIAMOND GRINDING MACHINE

Grinding and texturing shall be completed utilizing diamond blades, mounted on a self-propelled machine, designed for grinding and texturing of pavements. The equipment shall not cause strain or damage to the underlying surface of the pavement. Grinding and texturing equipment that causes excessive ravels, aggregate fractures, spalling, or disturbance of the joints shall not be permitted.

PART 3
CONSTRUCTION

3.1. SURFACE PREPARATION

The existing pavement surface shall be cleaned of deleterious material prior to any milling or grinding operation.

3.2. MILLING FULL WIDTH

The milled surface shall be free from transverse and longitudinal irregularities in excess of 1/4 inch when measured with a 10-foot straightedge. Special care shall be taken along the face of the curb section to remove all asphalt, seal material, or other debris from the exposed face of the curb and gutter section. Milling shall proceed from curb to curb at a width and depth designated by the Engineer.

3.3. EDGE MILLING

The pavement edge shall be milled from the face of the gutter section to approximately 10 feet out from the edge of the gutter section; that point being at a distance where the milling shall "daylight" out or that the transition in depth shall be non-discernible. Special care shall be taken along the face of the gutter section to remove all asphalt, seal material, or other debris from the exposed face of the curb and gutter section. Milling depth along the curb shall generally be from 1" to 1 1/2" in depth or as designated by the Engineer.

3.4. DISPOSAL OF MILLED ASPHALT MATERIAL

Unless otherwise designated in the special instructions, all milled asphalt material shall be hauled to the City of Fargo Landfill at 7th Ave N. and 45th St. The Contractor shall coordinate all hauling times with the landfill personnel. The milled material shall be dumped at the location designated by the landfill personnel who will then move and stockpile the material.

3.5. CLEANING OF THE MILLED SURFACE

The milled pavement surface shall be cleaned by sweeping during and immediately after the milling operation. The Contractor shall make every effort to keep the dust to a minimum and to ensure that the milled debris is not spread onto the adjacent boulevards and sidewalks. Any debris inadvertently spilled on sidewalks or boulevards shall be promptly removed to the satisfaction of the Engineer.

3.6. DIAMOND GRINDING

Grinding shall be performed in the longitudinal direction so grinding begins and ends at lines normal to the pavement centerline. The allowable overlap between passes shall be 0 to 2 inches

and the maximum allowable depth variance between adjacent passes shall be 1/8 inch. The grinding shall be feathered out as directed by the Engineer.

The surface of the ground pavement shall have a texture consisting of grooves between .090 and .130 inches wide. The peaks of the ridges shall be approximately 1/32 inch higher than the bottom of the grooves.

High shoulders shall be ground to provide drainage and safety.

Where present in a given area of grinding, pavement marking tape shall be obliterated by the Contractor prior to grinding operations, with the exception of centerline skips, which shall be ground with the pavement surface. Obliteration shall be in accordance with section 4000 of these Specifications.

The pavement shall be left in a clean condition. The removal of all slurry or residue resulting from the grinding operation shall be continuous. The grinding operation should be controlled so the residue from the operation does not flow across lanes utilized by traffic.

3.7. DISPOSAL OF CONCRETE SLURRY MATERIAL

The Contractor shall dispose of or recycle all slurry and other residue created by the grinding of concrete pavements. The disposal site shall be selected by the Contractor, and shall be appropriate for the disposal of concrete slurry, such as a settling pit or other appropriate facility.

3.8. TRAFFIC CONTROL

The Contractor shall conduct his work in such a manner as to interfere as little as possible with the use of the streets for public travel. When streets or public thoroughfares are impacted by construction activity, the public shall be protected by placement of adequate warning devices. All barricades and obstructions shall be illuminated by means of amber lights or reflective sheeting for nighttime hours. All traffic control devices shall be constructed, maintained, and located in accordance with the current version of the “Manual of Uniform Traffic Control Devices” as set forth by the U. S. Department of Transportation and the Federal Highway Administration. Where necessary, temporary “No Parking” signs shall be furnished, installed, and removed by the Contractor at no additional cost to the City.

3.9. CASTINGS AND GATE VALVES TO GRADE

All casting and/or valve box adjustments required on the project shall be in accordance with Section 2400 of these Specifications.

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PART 4
GUARANTEE, MEASUREMENT & PAYMENT

4.1. GUARANTEE

The guarantee is not applicable to this section.

4.2. MEASUREMENT AND PAYMENT

4.2.1. MILLING PAVEMENT SURFACE

Milling pavement surface shall be measured by the square yard of actual milled surface. Payment will be based on the unit bid price per square yard at the applicable depth ranges.

4.2.2. EDGE MILLING

Edge milling will be measured and paid for based on the linear feet of edge milling completed. Payment will be based on the unit bid price per linear foot.

4.2.3. DIAMOND GRINDING

Diamond-grinding concrete pavement surfaces shall be measured by the square yard of actual ground surface. Payment will be based on the contract unit price per square yard for Surface Grinding.

4.2.4. TRAFFIC CONTROL

Traffic control shall be paid on a lump-sum basis per section of the project or as provided for on the bid sheet, and shall include all costs to control parking and protect the travelling public as outlined in this specification.

4.2.5. OTHER COSTS

All costs for cleaning/sweeping the existing surface, transporting and disposal of the milled material or slurry, and all other costs necessary to complete the work as specified herein shall not be bid items; the costs shall be charged to other items unless a bid item is specifically included on the bid sheet.