uniform appearance with the grooves having a depth $^{5}/_{32}$ inch ± $^{1}/_{32}$ inch. Maintain a 1-inch gap between each tine strip to prevent overlapping the tined surface and producing a weak surface area.

Measure the groove depth in accordance with Idaho IT 147. Make adjustments to the tining operation when more than 3 readings in a set of 10 are outside the intended depth range.

Round the edges of the pavement along each side of each slab and on each side of transverse expansion joints, formed joints, and construction joints, to a radius of $^{1}/_{8}$ inch before the concrete has taken its initial set. Produce a well-defined and continuous radius and a smooth dense mortar finish. Do not unduly disturb the surface of the slab by tilting the tool during use.

Eliminate tool marks appearing on the slab adjacent to the joints. In doing this, do not disturb the rounding of the corner of the slab. Completely remove concrete on top of the joint filler.

Test joints with a straightedge before the concrete has set. Make correction if one side of the joint is higher than the other or if they are higher or lower than the adjacent slabs.

Correct areas of concrete pavement which are not finished as specified in these requirements by retexturing.

The Contractor may retexture by cutting transverse grooves in the concrete pavement surface by means of saw blades or other approved devices. Space the grooves $^{3}/_{4}$ inch center to center and $^{1}/_{8}$ inch in width and depth. Obtain approval to use alternative patterns. Do not polish the concrete pavement surface after cutting.

2. Longitudinal Tining. Perform final texturing with a spring steel tine device that will produce grooves parallel with the centerline.

   Tine the concrete surface within 5 inches, but not closer than 3 inches, of longitudinal pavement edges and formed joints.

3. Transverse Tining. Perform final texturing with a spring steel tine device that will produce grooves parallel to the transverse joints or perpendicular to the centerline.

   Repeat the grooving pattern across the pavement. Secure the tines of a double tine comb together. Do not use the comb within 1 foot of either edge when the finishing machine causes edge slump. Comb these unfinished edges by hand.

K. Surface Test. Test the finished pavement the next working day after placement as follows:

1. Use a 10-foot straightedge on the surface at locations determined by the Engineer. When the straightedge is laid on finished pavement in a direction parallel with centerline or perpendicular to centerline, locate surface areas that vary more than $^{1}/_{4}$ inch from the lower edge. Remove high points that cause the surface to exceed these tolerances by grinding.

2. Furnish and operate the profiler. Operate the profiler at the manufacturer's recommended speed. Calibrate at the beginning of the work and as needed thereafter.

   Supply a profiler, calibrated, in good working condition, and ready for operation before work of any concrete pavement begins. Provide a competent and experienced operator to operate the equipment.

   Profile the surface in IRI.

   Make 2 profiles 3 feet from and parallel to the edge of each driving lane.

   Surface smoothness testing must be verified by the Engineer. The profile run must be witnessed by the Engineer and an electronic copy of the results submitted immediately after the end of the run. Testing will not be accepted unless witnessed by the Engineer. At the Engineer's request, submit the profile data in a format suitable for evaluation using ProVAL or other acceptable software.

The Engineer may elect to perform additional testing as verification. If the results vary from the Contractor's IRI results by more than 10 percent when profiled under the same environmental conditions, the Engineer will use the Department's IRI results for acceptance.

Use Class 1 or Class 2 profilers as defined by ASTM E950. Operate profilers in accordance with the manufacturer's instructions and AASHTO R 57. Set the profiler as follows:

a. High pass or pre-filter: off or a minimum of 200 feet.

b. Bump detection: on.

c. Dip detection: on.

d. Resolution: 0.01 inch.

e. Low pass filter: off.

f. All other filters: off.

Apply the following IRI requirements where longitudinal grade is 4.5 percent or less, pavement on tangent alignment and pavement on horizontal curves having a centerline radius of curve 1,000 feet or more must meet the surface smoothness requirements for the smoothness schedule specified. The Engineer will add consecutive 0.1 mile sections of roadway tested together to obtain a mile section. Overlapping of the 0.1 mile or 1 mile sections to change cumulative test results is not allowed.

a. Schedule I projects. Target IRI of 60.0 to 70.0 inches per mile or less per 0.1 mile. Corrective action required above 95.0 inches per mile per 0.1 mile.

b. Schedule II projects. Target IRI of 70.0 to 80.0 inches per mile or less per 0.1 mile. Corrective action required above 95.0 inches per mile per 0.1 mile.

c. Schedule III projects. Target IRI of 95.0 inches per mile per 0.1 mile.

A Schedule II project adjoining existing pavements may be revised to a Schedule I project provided the adjoining pavement is ground and maintained at the minimum specified thickness.

A profile is not required in the following areas of pavement:

a. Pavement on horizontal curves having a centerline radius of curve less than 1,000 feet and pavement within the superelevation transition of such curves.

b. Pavement within 50 feet of a transverse joint that separates the pavement from an existing pavement not constructed under the contract.

c. Pavement for ramps, approaches, structure decks, city streets, or county roads.

d. Pavement within 50 feet of a transverse joint that separates the pavement from a structure deck or an approach slab.

After individual high point grinding has been completed, perform additional grinding in sections requiring corrective action to reduce the IRI to a maximum of 80.0 inches per mile in any 0.10 mile along any line parallel to the centerline.

Perform additional grinding as necessary to extend the area ground in each lateral direction so the lateral limits of grinding are at a constant offset from, and parallel to, the nearest lane line or pavement edge, and in each longitudinal direction so the grinding begins and ends at lines perpendicular to the pavement centerline, within any one ground area. Ensure ground areas are neat, rectangular areas of uniform surface appearance.

Produce a pavement surface true to grade and uniform in appearance with longitudinal corrugations that present a narrow ridge, corduroy appearance. Produce ridge peaks approximately $^{1}/_{16}$ inch higher than the bottoms of the grooves with approximately 53 to 57 evenly spaced grooves per foot. Remove fins resulting from grinding before opening to traffic.

Use power driven, self-propelled grinding equipment specifically designed to smooth and texture portland cement concrete pavement with diamond blades. Use a machine with an effective wheel base of at least 12 feet and of a shape and dimension that does not encroach on traffic movement outside the work area. Use equipment capable of grinding the surface without causing spalls at cracks, joints, or other locations.

Smoothly feather transitions between ground and unground areas of concrete at transverse boundaries.

Do not exceed $^{1}/_{8}$ inch vertical variations in elevation between ground and unground areas of concrete. Feather out these variations with additional grinding using an appropriate cross-slope adjustment.

Grinding to obtain smoothness incentives will be allowed provided the grinding will not result in pavement thickness below the specified thickness.

If correction of the roadway as specified will not produce satisfactory results as to smoothness or it reduces pavement thicknesses and serviceability, the Engineer may accept the completed pavement and will deduct from monies due or that may become due to the Contractor the sum of $1,000 for each individual high point or $7,500 for each 0.1 mile section. In these circumstances, the Engineer's decision whether to accept the completed pavement or to require corrections as described is final.

L. Curing. Cure concrete pavement with a system 2 white-pigmented, membrane-forming curing compound as specified in 709.01.

Cure the concrete with 2 applications of the curing compound for a total coverage of at least 1 gallon per 75 square feet. Apply each application of the curing compound under pressure at a rate at least 1 gallon per 150 square feet on textured surfaces of concrete pavement. Apply the second coat of membrane in the opposite direction of the first coat.

Uniformly spray the entire surface of the pavement with the 2 complete applications of the membrane-forming curing compound after finishing the surface and sides and before the initial set has taken place by an approved machine method.

Thoroughly mix the membrane-forming curing compound before use. Agitate the curing compound during application to prevent settling and separation. Show the intended method for mixing and agitating the compound before each paving usage for Engineer approval. Hand spray odd widths or shapes and slab edges. Do not apply curing compound to the inside faces of joints to be sealed. If the film is damaged within 72 hours, immediately repair the damaged portion with additional compound at no additional cost to the Department.

The Engineer will sample, test, and approve each manufacturer's identified lot of curing compound before use. Allow 3 weeks for laboratory testing of the curing compound once it has been received by the Central Materials Laboratory. Quantities of curing compound over 1,000 gallons can be inspected and sampled by the Department at the manufacturer's plant for acceptance testing. Direct inspection requests to the Engineer and the Central Materials Laboratory in writing at least 30 calendar days before ordering material.

M. Cold Weather Concreting Work Plan. Submit a cold weather concreting and curing work plan for approval when there is a probability of air temperatures below 40 °F during the placing and curing periods. Detail the methods and equipment proposed to produce mixed concrete and deliver it with a temperature of between 50 °F and 85 °F at the time of placing. The water and/or the aggregate may need to be heated to a temperature from 70 °F to 150 °F. Include the methods to protect the finished concrete from freezing and cracking and address how curing will be continuously monitored to ensure the required strength is developed before opening to traffic. Detail