

MINIMUM EXTENDED-SEASON PAVING PLAN

(Attach as addendum to project Bituminous Field QC Plan for extended-season paving as necessary)

I. ADVANCED PLANNING

A. Weather Forecasting

1. _____ will be used as the weather forecasting model of choice.
2. Paving operations will not be scheduled for the extended-season until advanced weather forecasts indicate acceptable temperatures and roadway conditions will be encountered throughout the anticipated duration of paving.
3. If snow, ice or other inclement cold weather event is forecast, including overnight events, paving operations will not begin unless all pavements can be completed into an acceptable condition with no drop-offs, open paving notches or open notched wedge joints prior to the forecasted event.
4. Paving operations will be scheduled to provide positive drainage at all times during periods where overnight lows are forecasted to fall below 32F.

B. Scheduling

1. All required pavement markings will be applied by the end of each day's paving. Pavement markings will be monitored by and maintained in a satisfactory state throughout the winter period.
2. Shoulder backup and guide rail installation operations will be completed within _____ calendar days of final surface paving.

II. PLANT OPERATIONS (in addition to applicable Bituminous Plant QC Plan)

A. Plant Mix Temperature Controls

1. Mix temperatures of the warm mix asphalt will be maintained within the Table A hot mix temperatures in Section 409.
2. Action points for temperature checks will be as follows:

PG 58-28	Lower action point _____F	Upper action point _____F
PG 64-22	Lower action point _____F	Upper action point _____F
PG 76-22	Lower action point _____F	Upper action point _____F
Other grades	Lower action point _____F	Upper action point _____F

Lower action points should be set high enough at the plant to ensure that mix being placed on the project will still be within tolerances.
3. Temperature checks will be performed by the plant technician at a minimum on the first three loads and once for every five loads thereafter. Plant temperature checks will be documented by the plant technician on Form CS-409EQC. Testing frequency will be increased to every load for the next three loads when an action point is exceeded, and may be reduced to once every five loads if all three temperatures fall within action points.

B. Haul Units

1. All trucks will be inspected by _____ on a daily basis to ensure that truck bodies are properly insulated or heated as outlined in Section 409.3(d), tarps or covers are in good condition, adequately cover the entire load, and are fastened to protect the load under all conditions and documented on Form CS-409EQC.
2. Truck beds will be inspected by _____ to ensure that no debris or loose, cold material is present prior to loading and documented on Form CS-409EQC

C. Balancing Production and Delivery with Field Operation

1. Mix production and delivery will be coordinated and communicated with field personnel on a daily basis as described below:

III. FIELD OPERATIONS

A. Equipment

1. A material transfer vehicle (MTV) will be utilized for all placements greater than 1500 linear feet in a day's placement unless otherwise directed due to infeasibility.
2. Pre-heating of field equipment will be performed in the following manner to minimize effects of thermal segregation of the mix:
3. For paving areas where an MTV is not utilized, the procedure that will be utilized to ensure that cold material from the hopper wings is not incorporated into the mat is as follows: _____

B. Coordination in Advance of Material Deliveries

1. Weather forecast will be checked on a daily basis by _____, using _____ to ensure that weather conducive to paving and application of pavement markings is expected for the day's placement. The daily weather check will also entail a review of the overnight and long term forecast to ensure roadway conditions will be satisfactory for any winter maintenance operations should inclement cold weather conditions materialize.
2. No material will be shipped to the project until the Department Representative on site releases the material from the plant. _____ will be the contractor's field paving point of contact to review the weather forecast and actual field conditions on site with the Representative and request a material release. The contractor's field point of contact will document the discussion, release time and any concerns expressed by the Representative on Form CS-409EQC. It is understood that a release of material by the Representative is not grounds for placing any material outside of specification limits should field conditions change from those anticipated.

C. Staffing

1. Sufficient staffing will be on hand to ensure that the paving laydown and rolling operations can proceed smoothly and without delay. It is understood that additional personnel beyond in-season paving may be required due to shorter compaction windows.

Additional staff beyond the normal in-season paving crew will be as follows:

D. Surface Preparation

1. Debris will be removed from the surface by the following method:
2. Tack coat will be applied only when the air temperature is 40°F and rising, the surface is dry, and the Representative has authorized a release of material from the plant.
3. Tack coat will be allowed to break before any paving is performed. The specific product being used for tack coat for extended-season paving operations will be

E. Mix, Surface and Ambient Temperatures and Depth Checks

- 1. Surface and ambient temperatures will be checked in advance of the paver a minimum of once hourly by _____ and documented on Form CS-409EQC. The equipment used for checking the temperature will be as follows:

When portions of the roadway paving are shaded, hourly temperature checks will be performed in the shade. When temperature readings are within 3°F of the specified limits readings will be taken every half hour.

- 2. Field mix temperature action points:

Table with 3 columns: Material Grade, Lower action point, Upper action point. Rows include PG 58-28, PG 64-22, PG 76-22, and Other grades.

- 3. Mix QC field temperature checks will be performed by _____ at a minimum on the first three loads and once for every five loads thereafter and documented on Form CS-409EQC. When an infrared thermometer is being used for QC temperature measurement, a calibrated dial thermometer will also be used on the first two measurements to verify the accuracy of the readings with the infrared thermometer. If the infrared thermometer is unreliable, the dial thermometer will be used throughout the placement. Testing frequency will be increased to every load for the next three loads when a temperature reading falls beyond an action point, and may be reduced to once every five loads if all temperatures fall within action points.

F. Paver Speed, Compaction and Mix Delivery

- 1. For daily placements with more than 10 loads, a paver speed target in feet per minute will be determined daily prior to paving by _____, which balances material deliveries with available rollers to ensure that the paving operation continues with minimal stoppages of the paver. Advanced paver speed targets will be documented on Form CS-409EQC as well as hourly measurements of actual paver speeds and the number of times per hour the paver was stopped.
2. Time available for compaction will be determined daily by _____ for each placement using a software tool such as PaveCool, MultiCool or other paving software. Sufficient rollers will be available to achieve compaction of the mix within the stop rolling timeframe shown on the software. A copy of the output of the software for each day will be attached to Form CS-409EQC.
3. A nuclear or electrical impedance gauge will be used to estimate the in-place density of the mixture during compaction. The gauge will be operated by _____ and QC measurements will be taken at intervals of every _____ lineal feet of roadway. Measurements of estimated final density at each location will be documented on Form CS-409EQC.

IV. EXTENDED-SEASON PRE-PAVE MEETING, MISCELLANEOUS

- A. A pre-pave meeting will be conducted at least 5 days prior to beginning extended-season paving with Department, Contractor and supplier, as well as any other appropriate parties.
B. Discuss in the space below any other pertinent QC items that will be employed during the extended-season paving that will aid in providing a quality end product.

Submitted By: _____ Date: _____

Reviewed By: _____ Date: _____