# State of Illinois Department Of Transportation

## CONSTRUCTION INSPECTOR'S CHECKLIST FOR HOT- MIX ASPHALT (HMA) BINDER AND SURFACE COURSE

While its use is not required, this checklist has been prepared to provide the field inspector a summary of easy-to-read step-by-step requirements relative to the proper construction of HMA Binder and Surface Courses (Section 406 of the Standard Specifications). The following questions are based on information found in the Standard Specifications, Highway Standards, Project Procedures Guide, and Construction Manual, Manual of Test Procedures for Materials, and current policy memorandums and letters.

and Ct	arrent policy memorandums and letters.	
	Have you checked the contract Special Provisions, Supplemental Specifications and plans to see if any modifications have been made to the requirements listed herein?	
1.	PRELIMINARY MEASUREMENTS & STATIONING	
	Prior to any of the contractor's operations are you marking the pavement for beginning and ending stations?	
	Are you establishing and painting stations on the pavement and placing lath or white paint marks adjacent to the pavement wherever you will be imprinting stations in the surface course later?	
2.	TRAFFIC CONTROL	
	If the road is to remain open to traffic during the surfacing operations, is Article 701.17(c) being enforced? (Art. 406.04)	
	Are you studying the plan Traffic Control Standards, Traffic Control Plan, and pre-construction conference minutes to determine the positioning of signs and flaggers and how the contractor is to be paid for this work?	
	Has the resident submitted Form OPER 725, "Traffic Control Authorization Request"?	
	When shoulders are specified to be placed adjacent to the proposed resurfacing and the road will remain open to traffic, there shall be no more	

- completing the shoulder
- providing barricades or vertical panels
- erecting "LOW SHOULDER" signs at 2 mile intervals

than 4 lane miles of new resurfacing adjacent to the shoulder without either:

or

3.

	<ul> <li>constructing a temporary earth wedge against the edge of pavement and compacting it to the satisfaction of the Engineer. (Art. 701.07)</li> </ul>	
contra	dge of pavement/shoulder drop-offs exceeding 3 inches (75 mm), the actor shall provide barricades or vertical panels according to 2 701.07).	
	contractor keeping all vehicles and/or non-operating equipment parked from the moving traffic stream in conformance with Article 701.11?	
a.	During working hours, 8 feet (2.5 m) from pavement if parked for 2 hours or less.	
b.	For equipment and vehicles parked during other working hours, and for all non-working hours, 30 feet (9 m), ROW permitting. When ROW doesn't permit, minimum of 15 feet (4.5 m).	
paven	contractor keeping all equipment, materials and vehicles off the nent and shoulder on the side of the pavement that is open to traffic? 701.08)	
	ers shall be certified and provided as follows to direct traffic and protect orkers. (Art. 701.13)	
a.	Two Lane Highways – Two flaggers shall be required for each separate operation. Work operations controlled by flaggers shall be no more than 1 mile in length.	
b.	Multilane Highways – Flaggers shall be provided when traffic is restricted to less than the normal number of lanes with a posted speed limit greater than 40 mph and workers are present. One flagger shall be required for each separate activity of an operation that requires frequent encroachment in a lane open to traffic.	
	ou periodically driving through the contract limits to check the iveness of the contractor's traffic control devices?	
	PARATION FOR EXISTING BRICK, PCC OR HMA BASES (Art. 406.05(a), 406.05(c)& Art. 358.05)	
	HMA surfacing is to be placed on an existing PCC, brick or HMA ete, the base shall be prepared as follows:	
a.	Remove all excess crack filler (tar) on the pavement and all crack filler from cracks and joints more than 1.5 inches (38 mm).	
b.	Soft and unstable HMA patches should be removed.	

	C		Areas of deep spalling and heavy disintegration shall be cleaned of all loose and unsound material with pneumatic tools or other approved equipment.	
	so in T so	quare nclude The pa	The above "pavement cleaning" may be paid for at the contract unit price per eyard for PREPARATION OF BASE (Art. 358.07), but usually a pay item isn't ed and the work is performed as extra work in accordance with Article 109.04. avement cleaning operation is a very labor-intensive process. Consult with your vising field engineer to determine the exact scope of work to be performed as work.	
	fc	_	<u>3C 635</u> , Extra Work Daily Report, must be prepared when extra work rement preparation is performed. Send copies to the contractor and ffice.	
	CI CI	racks racks	o placing prime and first course of bituminous concrete, are all open and expansion joints having a width of 0.5 inch (13 mm) or more, and and expansion joints which have been cleaned, being filled with e for Cracks, Joints and Flangeways. (Art. 406.05(a))	
			spalls and heavily disintegrated areas that have been cleaned shall be vith Leveling Binder (Hand Method).	
4.	BASI	E PR	EPARATION FOR AGGREGATE BASES	
	Т	he ba	ase shall be prepared in accordance with Article 358.04.	
5.	<u>BITU</u>	MINC	OUS MATERIAL SELECTION FOR PRIME COAT	
			type of bituminous material that is used for the prime coat being ed from the table in Article 406.02?	
6.	<u>P</u>	RES	SURE DISTRIBUTOR	
	h to	eated ensu	prime being applied with a pressure distributor (Art. 1102.05) which is d, equipped with clean spray nozzles of such design and size orifice as ure uniform distribution, and has been calibrated so as to apply the al at the specified rate? (Art. 403.10)	
			and spray bar being provided for applying material at places which are vered by the distributor? (Art. 403.10)	
7.	<u>D</u>	IRT (	ON PAVEMENT	
			efore the prime is applied, is the existing base and gutter (if present) ed of all dust, dirt and foreign material? (Art. 406.05(b) Art. 358.05(b))	
	cl	leane	o all subsequent courses of construction, is the pavement being ed of all dirt, debris and loose material? The cost of this work is lered included in the various pay items involved. (Art. 406.06)	

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8.

9.

# (Art. 406.05(b)) Traffic will not be allowed on the primed surfaces of multi-lane pavements and the traffic control shall be according to Article 701.18(e)(2). Is the prime applied at a rate of 0.05 to 0.10 gal/sy (0.2 to 0.5 L/m<sup>2</sup>) for concrete, brick and HMA bases? (Art. 406.05(b)) Is the pavement primed one lane at a time? The following items should be followed when placing **non-emulsion** type prime: a. Is the prime coat placed not less than one hour in advance of placement of HMA, and no prime coat shall be placed more than five days in advance of HMA resurfacing? b. If the lane is to be opened to traffic is the prime coat covered immediately with fine aggregate, mechanically spread at a uniform rate of 2 to 4 lb./sv (1 to $2 \text{ kg./m}^2$ )? The following items should be followed when placing **emulsion** asphalt prime: a. Is the temperature in the shade 60°F (15°C) or higher at the time of application? Is HMA not placed over emulsified asphalt primer until the emulsion b. has broken and all free moisture has evaporated or drained off the surface? Is the area primed limited to that which can be covered with HMA the C. same day? PLACING PRIME ON AGGREGATE BASES (Art. 406.05(b) Is the prime applied at the rate of 0.25 to 0.50 gal/sy (1 to $2 \text{ L/m}^2$ )? Is the prime coat permitted to cure until the penetration has been approved by the engineer, but a minimum of 24 hours? Are pools of prime occurring in depressions being broomed or squeegeed over the surrounding surface the same day of application? Is the base primed ½ width at a time? If the lane is to be opened to traffic is the prime coat covered immediately with fine aggregate mechanically spread at a rate of 4 to 6 lb/sy $(2 \text{ to } 3 \text{ kg/m}^2)$ ?

PLACING PRIME ON EXISTING PCC, BRICK OR HMA BASES

	the plant 1102.01	t where the HMA is to be produced been approved?
		ractor notified you of proposed sources of materials prior to rt. 106.01)
		rial been inspected, tested and approved before incorporation (Art. 106.03)
	mixture 1030.04)	e designs been verified and approved by the department?
<u>MINI</u>	MUM AI	R TEMPERATURE
leveli	ing binde	perature in the shade at least 40° F (5°C) and rising when laying er and binder courses? 45° F (10°C) and rising when placing se? (Art. 406.06)
<u>LEVI</u>	ELING E	BINDER (MACHINE METHOD)
Meth	od) will l	ed as a pay item in the contract, Leveling Binder (Machine be placed prior to the HMA binder or surface course and placed e with the following:
a.	Place	d with a finishing machine. (Art. 1102.03)
b.		ning machine shall be operated at a speed that shall ensure nuous operation (Art. 406.06(e)).
C.		d and compacted in layers not exceeding a maximum depth of 2 mm) (Art. 406.05(c)).
d.		thickness placed in one day limited to 4 in. (100 mm) 406.05(c)).
e.		ing Binder (Machine Method) will be compacted to the following ty requirements: (406.05(c)(1))
	(1)	Lift thickness less than 1.25 in. (32 mm) will be compacted to he satisfaction of the engineer. (Art. 406.07)
	(2)	Lift thickness equal to or greater than 1.25 in. (32 mm) will be compacted to the density requirements of Article 406.07(c).
	Refer	to Article 406.07 (a), Table 1, for roller requirements.
f.		

14.

15.

	HMA paver equipped with an automatic electronic grade control device courses of construction?	
a.	Capable of controlling the elevation of the screed relative to either a preset grade control stringline or a grade reference device traveling on the adjacent pavement surface (Art. 1102.03).	
b.	Traveling grade reference device shall not be less than 30 ft. (9m) in length. (Art. 1102.03)	
C.	The grade reference device may be shortened to no less than 10 ft. (3 m) when traffic interference or sharp curves make the minimum of 30 ft. (9 m) impractical. (Art. 406.06(e))	
d.	When placing bituminous mixtures within 200 ft. (60 m) of a bridge abutment, the automatic grade control shall be operated from a present grade control stringline. (Art. 406.06(e))	
	s shall have a minimum 10 ft. (3 m) basic screed width for projects with r than 7500 sy (6300 m <sup>2</sup> ). (Art. 1102.03)	
	paver screed width of 8 ft. (2.4 m) minimum will be allowed for smaller ts with less than or equal to 7500 sy (6300 m <sup>2</sup> ). (Art. 1102.03)	
feature	extensions of the basic paver screed will have the same placement es and equipment functions as provided on the main body of the paver. 102.03)	
•	s shall be extended as additional sections of screed are bolted on or atically adjustable screeds are extended. (Art. 1102.03)	
PAVER	R OPERATING SPEED (Art. 406.06(e))	
necess	perating speed of the paver shall not exceed the speed which is sary to produce a uniformly spread and struck off mat having a smooth without tearing or segregation.	
	speed shall not exceed the average rate of delivery of bituminous al to the paver providing continuous operation.	
Paver	speed shall be mated with the required roller speed.	
Maxim	um paver speed of 50 ft. (15 m) per minute.	
COMP	ACTION	
minimu	equipment shall meet the requirements of Article 1101.01. The um roller requirements for HMA construction are shown in Article 7(a), Table 1.	

TABLE 1 - MINIMUM ROLLER REQUIREMENTS FOR HMA

	Breakdown Roller (one of the following)	Intermediate Roller	Final Roller (one or more of the following)	Density Requirement
Level Binder: (When the density requirements of Article 406.05(c) do not apply.)	P <sup>3/</sup>		V <sub>S</sub> , P <sup>3/</sup> , T <sub>B</sub> , T <sub>F</sub> , 3W	To the satisfaction of the Engineer.
Binder and Surface <sup>1/</sup> Level Binder <sup>1/</sup> : (When the density requirements of Article 406.05(c) apply.)	V <sub>D</sub> , P <sup>3/</sup> , T <sub>B</sub> , 3W	P <sup>3/</sup>	V <sub>S</sub> , T <sub>B</sub> , T <sub>F</sub>	As specified in Articles: 1030.05(d)(3), (d)(4), and (d)(7).
Bridge Decks <sup>2/</sup>	Тв		T <sub>F</sub>	As specified in Articles: 582.05 and 582.06.

- 1/ If the average delivery at the job site is 85 ton/hr (75 metric ton/hr) or less, any roller combination may be used provided it includes a steel wheeled roller and the required density and smoothness is obtained.
- 2/ One T<sub>B</sub> may be used for both breakdown and final rolling on bridge decks 300 ft (90 m) or less in length, except when the air temperature is less than 60 °F (15 °C).
- 3/ A vibratory roller (V<sub>D</sub>) may be used in lieu of the pneumatic-tired roller on mixtures containing polymer modified asphalt binder.

#### **EQUIPMENT DEFINITION**

- Vs Vibratory roller, static mode, minimum 125 lb/in. (2.2 kg/mm) of roller width. Maximum speed = 3 mph (5 km/h) or 264 ft/min (80 m/min). If the vibratory roller does not eliminate roller marks, its use shall be discontinued and a tandem roller, adequately ballasted to remove roller marks, shall be used.
- V<sub>D</sub> Vibratory roller, dynamic mode, operated at a speed to produce not less than 10 impacts/ft (30 impacts/m).
- P Pneumatic-tired roller, max. speed 3 1/2 mph (5.5 km/h) or 308 ft/min (92 m/min). The pneumatic-tired roller shall have a minimum tire pressure of 80 psi (550kPa) and shall be equipped with heat retention shields. The self propelled pneumatic-tired roller shall develop a compression of not less than 300 lb (53 N) nor more than 500 lb (88 N) per in. (mm) of width of the tire tread in contact with the HMA surface.
- T<sub>B</sub> Tandem roller for breakdown rolling, 8 to 12 tons (7 to 11 metric tons), 250 to 400 lb/in. (44 to 70 N/mm) of roller width, max. speed = 3 1/2 mph (5.5 km/h) or 308 ft/min (92 m/min).
- T<sub>F</sub> Tandem roller for final rolling, 200 to 400 lb/in. (35 to 70 N/mm) of roller width with minimum roller width of 50 in. (1.25 m). Ballast shall be increased if roller marks are not eliminated. Ballast shall be decreased if the mat shoves or distorts.
- 3W Three wheel roller, max. speed = 3 mph (5 km/h) or 264 ft/min (80 m/min), 300 to 400 lb/in. (53 to 70 N/mm) of roller width. The three-wheel roller shall weigh 10 to 12 tons (9 to 11 metric tons).

Is the contractor performing the start of HMA production in accordance with "Hot-Mix Asphalt QC/QA Start-up Procedures"? (Art. 1030.06)

 A rolling pattern shall be established after an acceptable test strip is done, and within the first 200 tons (180 metric tons) after production resumes. If a mixture start-up is not required, an acceptable rolling

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		pattern shall be developed during the first 300 tons (275 metric tons) of mixture produced.
16.	DENSI	TY REQUIREMENTS
		contractor checking the density of the compacted HMA according to 1030.05(d)(3), (d)(4) and (d)(7)? (Art. 406.07(c))
17.	MIXTU	RE DELIVERY TEMPERATURE
		casional temperature checks being taken from the delivered ous material while in the truck and recorded?
	Tempe	rature must be from 250°F – 350°F (120°C – 175°C) (Art. 406.06(b))
18.	TRUCK	<u>CREQUIREMENTS</u>
	Do the (Art. 10	trucks hauling the mixtures meet the following requirements?
	a.	Tight and clean dump bodies.
	b.	Completely insulated with at least $^3/_4$ inches (20 mm) insulating material on all sides, end and bottom of dump body when the air temperature is below 60°F (15°C)?
	C.	Equipped with a cover of canvas or other suitable material which shall be used if any one of the following conditions are met:
		1. Ambient air temperature is below 60°F (15°C).
		2. The weather is inclement.
		3. The mat temperature behind paver is below 250°F (120°C).
	d.	The canvas shall be rolled back before dumping the bituminous mixture into the paver.
19.	BATCH	I PLANTS (without a surge bin)
		he bituminous material is coming from a batch plant (Art. 1102.01), following requirements being met?
	a.	Is a load ticket recording the net weight of the material in the truck being submitted with each delivery? (Art. 406.13)
	b.	Are all load tickets picked up and initialed by the inspector at the jobsite? ( <a href="Documentation Section">Documentation Section</a> of the Construction Manual)
	C.	Are check weights of full truckloads being done not more than once a week? (1102.01(b)(4)) (Documentation Section of the Construction Manual)

	d.	Are the tolerances falling within the percentages allowed? (Scale Accuracy = 0.5%; Weighman Accuracy = 0.5%)	
	e.	Are all truck weight checks being reported in accordance with the Documentation Section of the Construction Manual?	
20.	WITH:	SURGE CONTINUOUS, DRIER DRUM & BATCH PLANT BINS	
		the bituminous material is coming from a continuous plant, drier drum urge bin, are the following requirements being met? (Art. 1102.01)	
	a.	Are the contents of each truck being determined by weighing on an approved scale equipped with automatic printers to the nearest 0.01 ton (0.01 metric tons)? (Art.406.13) Record Department of Agriculture scale certification date and number in Quantity Book.	
	b.	Is the length of the platform scale long enough to accommodate all axles of the longest truck?	
	C.	Are independent vehicle weight checks being made at least once a week? (Art. 109.01)	
	d.	Are all load tickets being picked up and initialed by the inspector at the jobsite? (Documentation Section of the Construction Manual)	
21.	ALIGN	MENT CONTROL	
		ringline, offset from the edge of pavement, or other approved method used to maintain a uniform edge alignment? (Art. 406.06(e))	
22.	LONG	ITUDINAL JOINTS	
		s prohibited by stage construction, any bituminous concrete course lift be complete before construction of the subsequent lift. (Art. 406.06(g))	
		s prohibited by stage construction, are longitudinal joints in all lifts being I at the centerline of the pavement? (Art.406.06(g))	
	longitu longitu	stage construction prohibits the total completion of a particular lift, the idinal joint in one lift shall be offset at least 3 inches (75 mm) from the idinal joint in the preceding lift. The longitudinal joint in the surface will be at the centerline of two lane roadways. (Art. 406.06(g))	
23.	TRAN	SVERSE CONSTRUCTION JOINTS	
	heade	transverse joint of previously-laid material cut back or formed with a r to expose a fresh vertical face that is at right angles to the centerline the specified thickness of the layer? (Art.406.06)	

**25**.

26.

**27**.

# 24. ROLLING

a.	First lane:	
	Is the first lane of binder and surface course being rolled longitudinally by starting at the low edge and working towards the high edge, overlapping on successive trips to obtain uniform coverage? (406.07(b))	
b.	Adjacent lanes:	
	Is the first pass of the roller, when placing an adjacent mat, made along the longitudinal joint on the fresh mixture with the compression wheel not more than 6 inches (150 mm) from the joint, the second pass of the roller not more than 12 inches (300 mm) on the previously-placed lane? (Art.406.07(b))	
	Are the following passes being made from the low edge of pavement to the high edge, overlapping on successive trips to obtain uniform coverage? (Art.406.07(b))	
	Note: Overlapping of success trips will be minimized when using vibratory in the dynamic mode. Refer to the rolling pattern established during the bituminous start-up.	rollers
ROL	LER TECHNIQUES	
	all steel-wheeled rollers being operated with the compression wheels rd the direction of paving? (Art.406.07(b))	
	he speed and the time of rolling being watched to avoid undue acement of the HMA? (Art.406.07(b))	
YIEL	D TESTS	
that t	der to ensure that the mat thickness is running uniform and to ensure he final tonnage will not be in excess of 103% (Art.406.13) of the prized amount, are you performing frequent yield tests?	
SHO	RT TERM PAVEMENT MARKINGS	
	vement marking tape or paint being placed between all lanes that are to traffic prior to the end of the day's work? (Art.703.04)	
a.	Yellow tape or paint, 48 inches (1.2 m) at 40-foot (12 m) intervals, is to be placed along the centerline of 2-lane highways.	
b.	White tape or paint, 48 inches (1.2 m) at 40-foot (12 m) intervals, is to be placed along the lane lines separating two or more lanes of traffic moving in the same direction.	

	C.	Yellow tape or paint, 48-inch (1.2 m) sections at 40-foot (12 m) intervals, is to be placed along the centerline of undivided multi-lane highways.
	d.	Edge line markings will be required on multilane divided highways and other highways with a paved shoulder greater than 4 ft. (1.2m) wide.  The markings shall consist of 48 inch (1.2m) stripes on 100 ft. (30m) centers installed at a 45° angle pointing in the direction of traffic. The color will match with proposed permanent striping.
	Note:	The paint option is not permitted on the final wearing surface. Also, the tape shall be transversely offset from the permanent markings and must be removed from the final wearing surface within 5 days after permanent pavement markings are placed.
28.	FRAM	E AND GRATE ADJUSTMENT
	draina casting	resurfacing existing pavement which has frames and grates of ge and utility structures present at grade, is the adjustment of the g to the finished elevation being performed prior to the surface course placed? (Art. 603.03, 603.04)
29.	SURF	ACE COURSE STATIONING
		ationing imprints being placed in the surface course at the interval ed by your Construction office?
30.	BUTT	<u>JOINTS</u>
		cations specified in the plans, are butt joints being constructed as s? (Art.406.08)
	a.	The contractor shall not begin construction of butt joints prior to beginning general operations on the project.
	b.	Temporary bituminous ramps shall be constructed immediately at all cut faces and they shall have a minimum taper rate of 1:40 (V:H).
	c.	Temporary rubber ramps may be used on roadways with permanent posted speeds of 55 mph or less at a minimum taper rate of 1:30 (V:H).
	d.	Temporary ramps shall be removed prior to placing the proposed surface course.
31.	TAPE	RS
	section feathe	butt joints aren't specified, are all tapers at the ends of the resurfacing and at all railroad crossings being diminished uniformly to a redge at a rate of 1:240 (V:H)? At paved intersections, the bituminous acing shall be feathered out in a distance of 10 ft. (3m) (Art.406.09)

	ACE COURSE SURFACE VARI	
smoot	wheel lane in the completed surfa thness with a 16 ft (5 m) straighte ntedge and provide for its jobsite	edge. The contractor shall furnish the
	traightedge bolts shall be set at <sup>3</sup> / nent and also ramps which are po	
poste	d for 40 mph (70 km/h) or less, ac	/8 in. (10mm) for ramps which are cceleration and deceleration lanes, er miscellaneous pavement surfaces.
		Office which includes: the location of of binder and surface course, and
	er or not re-profiling was perform	ned.
wheth	er or not re-profiling was perform	ned. If in accordance with the following:
wheth	er or not re-profiling was perform	
wheth	er or not re-profiling was performage deductions shall be assessed  Binder and/or Surface Course Plan Thickness, inches (mm)	d in accordance with the following:  Surface Course Mixture Deduction
wheth	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface 2 3/4 (70) or more	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled) 2 (2)
wheth	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface 2 ¾ (70) or more Less than 2 ¾ (70)	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled)  2 (2) 1 (1)
wheth	er or not re-profiling was perform	
Binder Plan T	re-profiling was perform ctions shall be assessed and/or Surface Course hickness, inches (mm)  (Existing Surface 2 3/4 (70) or more ess than 2 3/4 (70)	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled) 2 (2)
onna Remo	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Course Plan Thickness, inches (mm)	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled)  2 (2) 1 (1)  rface Re-profiled)  2 (2)  1 (2)  Shall be performed when the variation
wheth Fonna Remo	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface 2 ¾ (70) or more Less than 2 ¾ (70)  (Existing Surface Course (Existin	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled)  2 (2) 1 (1)  rface Re-profiled)  2 (2)  1 (2)  Shall be performed when the variation
wheth Tonna Remo n suri	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Less than 2 ¾ (70)  (Existing Surface Course Plan Thickness, inches (mm)	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled)  2 (2) 1 (1)  rface Re-profiled)  2 (2)  shall be performed when the variation in. (20mm)  od) shall not be considered in
Wheth Tonna Remo n suri	Binder and/or Surface Course Plan Thickness, inches (mm)  (Existing Surface Less than 2 ¾ (70)  (Exist tha	Surface Course Mixture Deduction Per Variation, ton (metric ton)  ace Not Re-profiled)  2 (2) 1 (1)  rface Re-profiled)  2 (2)  shall be performed when the variation in. (20mm)  od) shall not be considered in

## 34. VERTICAL CLEARANCE

Have you notified your district office of reduced vertical clearances under structures due to resurfacing?

### 35. DOCUMENTATION OF FINAL CONTRACT QUANTITIES

BITUMINOUS MATERIALS (PRIME COAT) will be documented as follows:

1. The specific gravity will be obtained from an approved Bill of Lading. Payment by volume (V) from weight tickets:

a. 
$$V(Gal) = \frac{\text{Net Weight (Lbs.)}}{8.328 \text{ x Specific Gravity}}$$

b. 
$$V(L) = \frac{\text{Net Weight (kg)}}{\text{Specific Gravity}}$$

Payment by volume from a meter ticket must be made using a
 <u>Department of Agriculture</u> approved meter ticket corrected for temperature. The truck distribution meter will not be accepted.

V (Gallon or Liter) = Approved meter ticket with temperature correction

3. Payment by weight will be the net weight in tons (metric tons) from approved weight ticket. Record D.O.A. decal date, ID number and scale location.

Note: Payment will not be made for material in excess of 105% of the amount specified by the engineer. (Art.1032.02)

The following items will be paid for by the ton (metric ton) determined by weight tickets tabulated daily. Payment will not be made for bituminous mixtures in excess of 103% of the amount specified by the engineer.

MIXTURE FOR CRACKS, JOINTS AND FLANGEWAYS LEVELING BINDER (MACHINE METHOD)
LEVELING BINDER (HAND METHOD)
BITUMINOUS CONCRETE BINDER COURSE
BITUMINOUS CONCRETE SURFACE COURSE

Note: The BITUMINOUS CONCRETE SURFACE COURSE is subject to an adjusted plan quantity based on the specific gravity of the mixture being used.

SHORT TERM PAVEMENT MARKING will be measured for payment as follows:

- 1. Placement will be paid at the contract unit price per foot (meter) for SHORT TERM PAVEMENT MARKING of the line width specified. (Art.703.07)
- 2. Removal of the markings will be paid for at the contract unit price per square foot (square meter) for WORK ZONE PAVEMENT MARKING REMOVAL. (Art.703.07)

Revised to conform with the Standard Specifications for Road and Bridge Construction Adopted January 1, 2007