## 1-9 8/09

#### **SECTION 301 CLASS I BASE COURSE**

MATE	DIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
WATE	KIAL	TESTED			•				TIME	REMARKS
		BY		METHOD		CONTAINER	DISTR.			
AGGREGATE BASES (DEDICATED STOCKPILE)	Recycled PC Concrete	301.02 1003.03 Mat. Lab	Prelim. Source Approval	Dist. Lab S 101 & S 801	1/Stockpile*	12 full sample sacks			5 weeks	*See S 801 for maximum stockpile quantities. Raw material stockpiles shall be approved by Dist. Lab Engr. prior to crushing.
		301.07 Contractor	Quality Control	Contractor S 101 & S 801	*					*Must be controlled so that materials placed in stockpile will conform to specifications when tested by the Department.
		301.02 1003.03 Dist. Lab		Proj. Engr. S 101	1/source	6 full sample sacks			4 days	Material must be source approved. *For moisture-density relationships.
		301.02 1003.03 Dist. Lab	Accept.	Proj. Engr. S 101	1/1000 yd <sup>3</sup>	1 full sample sack			4 days	Material must be source approved.
	Sand-Clay- Gravel	301.07 Contractor	Quality Control	Contractor S 101 or S 401	*					*Must be controlled so that materials placed in stockpile will conform to specifications when tested by the Department.
		301.02 1003.03 Dist. Lab	Accept.	Proj. Engr. S 101 or S 401	1/source	6 full sample sacks			10 days	For moisture-density relationships.
		301.02 1003.03 Dist. Lab	Design	Proj. Engr. S 101 or S 401	1/1000 yd <sup>3</sup>	1 full sample sack			5 days	Must be accepted prior to mixing with cement. If individual components are to be mixed in the pugmill, approval procedure shall be approved by the Materials Engineer Administrator.

## SECTION 301 CLASS I BASE COURSE (Cont'd)

MATERIAL		REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.			
AGGREGATE BASES (DEDICATED STOCKPILE)	Stone or Crushed Slag	301.07 Contractor	Quality Control	Contractor S 101	*					*Must be controlled so that materials placed in stockpile will conform to specifications when tested by the Department.
(Cont'd)		301.02 1003.03 Dist. Lab	Design*	Proj. Engr. S 101	1/source	6 full sample sacks			4 days	(QPL 2) *For moisture-density relationships.
		301.02 1003.03 Dist. Lab	Accept.	Proj. Engr. S 101	1/1000yd <sup>3</sup>	1 full sample sack			4 days	
		1003.03 Dist. Lab	IA	Dist. Lab S 101 or S 401		SEE	INDEPEN	IDENT ASSUR	ANCE PROGR	AM S 701.
ASPHALTIC CONCRETE BASES		FC	R ALL REL	ATED MATERI	ALS, SEE SEC	TION 502 OF THI	S MANUAL	SEE INDEPI	ENDENT ASSU	RANCE PROGRAMS S 701.
ASPHALTIC MATERIAL	Curing Membrane					SEE SECTION 5	06 OF THI	S MANUAL.		
	Prime Coat					SEE SECTION 5	05 OF THI	S MANUAL.		

MATER	ΡΙΔΙ	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
MAIL	VIAL	TESTED BY		METHOD		CONTAINER	DISTR.		TIME	KLIMAKKO
CEMENT (HYDRAULIC)	Types I, II & IP	1001.01 Mat. Lab	Prelim. Source Approval	Mfr. S 102	1/month/type	1 gal friction top can or acceptable moisture proof container				(QPL 7) Composited and blended from daily plant samples and submitted for quality control verification.
		301.02 1001.01 Proj. Engr.	Accept.		1/shipment		CD 1 & 7			(QPL 7)
		301.02 1001.01 Mat. Lab	Verif.	Proj. Engr. S 102	1/project/ source	1 gal friction top can			21 days	(QPL 7)
PORTLAND CEMENT CONCRETE BASES		301.01 301.16	Design/ Quality Control/ Accept.			SEE SE	ECTION 70	06 & 901 OF TH	HIS MANUAL.	
CEMENT AT	Percent Cement	301.07 Contractor	Quality Control	Contractor TR 436	2/half day*					*In addition to start-up of plant each day and after each shut down.
CENTRAL MIX PLANT		301.16 Proj. Engr.	Accept.	Proj. Engr. TR 436	1/half day				1 hr	
	Gradation	301.07 Contractor	Quality Control	Contractor S 101	1/half day*	1 full sample sack				*When gradation is a requirement of specifications.
		301.16 Proj. Engr.	Accept.	Proj. Engr. S 101	1/day*	1 full sample sack			4 hr.	*Gradation will be run when questionable or individual components of SCG are mixed in a pugmill.
	Moisture Content	301.07 Contractor	Quality Control	Contractor S 101 S 401	1/half day*					*In addition to start-up of plant each day and after each shut down.
	Proportions	301.07 Contractor	Quality Control	Contractor TR 436	*					*Shall be monitored continuously.
		301.16 Proj. Engr.	Accept.	Contractor TR 436	1/half day				1 hr.	
	Pulverization	301.07 Contractor	Quality Control	Contractor S 401	1/half day					
2405		301.16 Proj. Engr.	Accept.	Proj. Engr. S 401	1/half day				1/2 hr.	
BASE MATERIAL ON ROADWAY	Density	301.11 Contractor	Quality Control	Contractor TR 401	*					*Shall test sufficient to ensure specifications will be met.
INOADWAT		301.16 Proj. Engr.	Accept.	Proj. Engr. TR 401	1/1000 lin ft/ 2 lane rdwy or 1/2000 lin ft/shoulder				1/2 hr.	
		301.16 Dist. Lab	IA	Dist. Lab TR 401		SEE	INDEPEN	IDENT ASSUR	ANCE PROGR	AM S 701.

## SECTION 301 CLASS I BASE COURSE (Cont'd)

MATE	RIAL	REF. TESTED	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
		BY		METHOD		CONTAINER	DISTR.			
BASE MATERIAL ON ROADWAY	Cross Slope & Grade	301.11 Contractor	Quality Control	Contractor	*					*Shall take measurements sufficient to ensure specifications are met.
(Cont'd)		301.16 Proj. Engr.	Accept.	Proj. Engr.	1/half day				1/4 hr.	Use an approved 10-ft metal static straightedge or other approved device.
	Moisture Content (For Soil Cement	301.11 Contractor	Quality Control	Contractor TR 403	*					*Shall test sufficient to ensure specifications are met.
	or Cement Stabilized Mixtures)	301.16 Proj. Engr.	Accept.	Proj. Engr. S 101 S 401	1/half day				1 hr.	(TR 403)
	Thickness & Width	301.11 Contractor	Quality Control	Contractor	*					*Shall take measurements sufficient to ensure specifications are met.
		301.16 Proj. Engr.	Verif.	Proj. Engr. TR 602	1/half day				1/4 hr.	Proj. Engr. shall notify the Dist. Lab when section is complete.
		301.16 Dist. Lab	Accept.	Dist. Lab TR 602	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder*			300 lin ft per location	3 days	*See DOTD TR 602. For small quantity, Proj. Engr. Documents in field book.
SOIL (RAW)	Dedicated Stockpile	301.11 Contractor	Quality Control	Contractor S 401						Control uniformity of moisture and soil type while stockpile is being built.
		301.02 301.05 Dist. Lab	Design*/ Accept.	Proj. Engr. S 401	1/1000 yd <sup>3</sup>	6 full sample sacks**			21 days max	*For cement content & moisture- density relationships. **When soils are to be blended, each component must meet specifications before blending. Design and final acceptance will be conducted on the blend.
		301.02 301.05 Dist. Lab	IA	Dist. Lab S 401		SEE	INDEPEN	DENT ASSUR	ANCE PROGRA	ÀM S 701.
WATER		1018.01 Mat. Lab	Accept.	Proj. Engr. S 303	1/source*	1 qt plastic bottle			21 days	*Drinkable water need not be sampled.

## **SECTION 302 CLASS II BASE COURSE**

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.		TIME	
NOTE: WHEN A	CLASS II BASE C		ODUCED BY		NT MIXING. USE	THE SAMPLING	1	S IN SECTION 3	OT OF THIS MA	NUAL.
AGGREGATE BASES	Recycled PC Concrete	302.02 1003.03 Mat. Lab	Prelim. Source Approval	Dist. Lab S 801	1/stockpile*	6 full sample sacks			5 weeks	*See S 801 for maximum stockpile quantities. Raw material stockpiles shall be approved by Dist. Lab Engineer prior to crushing.
		301.01 302.02 302.08 Contractor	Quality Control	Contractor S 101	*					*Must test sufficient to ensure materials being delivered meet specification requirements.
		302.02 Dist. Lab	Design*	Proj. Engr. S 101	1/source	6 full sample sacks			4 days	Material must be source approved. *For moisture-density relationships.
		302.02 Dist. Lab	Accept.	Dist. Lab S 101	1/1000 yd <sup>3</sup>	1 full sample sack		100 yd <sup>3</sup>	4 days	Material must be source approved.
	Sand-Clay- Gravel	302.01 302.02 302.08 Contractor	Quality Control	Contractor S 101 or S 401	*					*Must test sufficient to ensure materials being delivered meet specification requirements.
		302.02 Dist. Lab	Design*	Proj. Engr. S 101	1/source	6 full sample sacks			10 days	*For moisture-density relationships.
		302.02 Dist. Lab	Accept.	Proj. Engr. S 101	1/1000 lin ft/ 2-lane rdwy or 1/ 2000 lin ft/ shoulder*	1 full sample sack		200 lin ft or 100 yd <sup>3</sup>	5 days	*For stockpiles, ramps, turnouts, etc. minimum frequency shall be 1 per 1000 yd <sup>3</sup> .

## SECTION 302 CLASS II BASE COURSE (cont'd)

MATE	DIAI	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
WATE	KIAL	TESTED BY		METHOD	1	CONTAINER	DISTR.		TIME	REMARKS
AGGREGATE BASES (cont'd)	Stone or Crushed Slag	302.01 302.02 302.08 Contractor	Quality Control	Contractor S 101	*					*Must test sufficient to ensure materials being delivered meet specification requirements.
		302.02 Dist. Lab	Design*	Proj. Engr. S 101	1/source	6 full sample sacks			4 days	(QPL 2) *For moisture-density relationships.
		302.02 Dist. Lab	Accept.	Dist. Lab S 101	1/1000 yd <sup>3</sup>	1 full sample sack		100 yd <sup>3</sup>	4 days	(QPL 2) Materials must be source approved.
		302.02 Dist. Lab	IA	Dist. Lab S 101		SEE	INDEPEN	IDENT ASSUR	ANCE PROGR	AM S 701.
ASPHALTIC CONCRETE BASES			FO	R ALL MATER	IALS, SEE 502	OF THIS MANUAI	SEE INI	DEPENDENT A	ASSURANCE P	ROGRAM S 701.
ASPHALTIC MATERIALS	Curing Membrane					SEE SECTION 5	06 OF THI	S MANUAL.		
	Prime Coat					SEE SECTION 5	05 0F THI	S MANUAL.		
CEMENT (Hydraulic)	Types I, II & IP	302.02 1001.01 Mat. Lab	Prelim. Source Approval	Mfr. AASHTO T 127	1/month/type	1 gal friction top can or acceptable moisture proof container				(QPL 7) Composited and blended from daily plant samples and submitted for quality control verification.
		302.02 1001.01	Accept.		1/shipment		CD 1 & 7			(QPL 7)
		302.02 1001.01 Mat. Lab	Verif.	Proj. Engr. S 101	1/project/ source	1 gal friction top can			21 days	(QPL 7)
CONCRETE, PORTLAND CEMENT, BASE		302.01 302.12	Design/ Quality Control/ Accept.			SEE	SECTION	N 901 OF THIS	MANUAL.	
BASE MATERIAL ON ROADWAY	Cement Spread Rate (For soil cement or	302.01 302.08 Contractor	Quality Control	Contractor TR 436	each transport*					*The contractor shall determine the length of spread prior to mixing. Use an approved sampling device.
	cement treated bases only)	302.12 Proj. Engr.	Accept.	Proj. Engr. TR 436	1/day*				1/2 hr.	*The Proj. Engr. will verify the length of spread prior to mixing. At the discretion of the Proj. Engr. additional testing shall be performed when cement content changes. Use an approved sampling device.
	Cross Slope & Grade	301.01 302.08 Contractor	Quality Control	Contractor	*					*Shall check sufficient to ensure specifications are met.
		302.12(d) Proj. Engr.	Accept.	Proj. Engr.	1/half day				1/4 hr.	Use an approved 10 ft metal static straightedge or other approved device.

## SECTION 302 CLASS II BASE COURSE (cont'd)

		REF.	PURP.	SAMPLED	MIN.	MIN. QUANT.	CERT.	SMALL	TYPICAL	
MATERI	IAI		1 0141 .	BY	FREQ.			QUANTITY	HANDLING	REMARKS
WATERI	IAL	TESTED			1				TIME	REWARKS
		BY		METHOD		CONTAINER	DISTR.			
	Density	302.01	Quality	Contractor	*					*Shall test sufficient to ensure
MATERIAL ON ROADWAY		302.08 Contractor	Control	TR 401						specifications are met.
(Cont'd)		302.12	Accept.	Proj. Engr.	1/1000 lin ft/				1/2 hr.	
(Cont a)		Proj. Engr.	лосори.	TR 401	2-lane rdwy or				1/2 111.	
					1/2000 lin ft/					
					shoulder					
		302.12	IA	Dist. Lab		er.	INDEDEN	DENT ASSUR	ANCE BROCK	AM C 704
		Dist. Lab	IA	TR 401		SEE	INDEPEN	NDEN I ASSUR	ANCE PROGR	AM 5 701.
l -	Moisture	302.01	Quality	Contractor	*					*Shall test sufficient to ensure
	Content (For	302.08	Control	S 101 or						specifications are met.
8	Soil Cement	Contractor		S 401						
	or treated	302.05	Accept.	Proj. Engr.	1/1000 lin ft/	1 gal friction top			1 hr.	*May be obtained by M.C. %
	Sand-Clay-	302.12		S 101 or	2-lane rdwy or	can*				determined during application of TR
(	Gravel only)	Proj. Engr.		S 401	1/2000 lin ft/ shoulder					415 B, if available on in-place moisture at the time of compaction
					Silouidei					(TR 403).
l F	Pulverization	302.01	Quality	Contractor	*					*Soil cement shall be tested
(	(For soil-	302.08	Control	S 401						sufficiently to ensure specifications
c	cement only)	Contractor								are met.
		302.05	Accept.	Proj. Engr.	1/1000 lin ft/	1 gal friction top			1/2 hr.	DOTD TR 431
		302.12		S 401	2-lane rdwy or	can				
		Proj. Engr			1/2000 lin ft/ shoulder					
					Shoulder					
	Thickness &	302.01	Quality	Contractor	*					*Shall be measured sufficiently to
V	Width	302.05	Control							ensure specifications are met.
		302.08								
		Contractor 302.12	Verif.	Proj. Engr.	1/half day				1/4 hr.	Proj. Engr. To notify Dist. Lab when
		TR 602	veni.	TR 602	I/IIaii uay				1/4 111.	section is completed.
		Proj. Engr.		11(002						Scotion is completed.
		302.12	Accept.	Dist. Lab	1/1000 lin ft/			300 lin ft per	3 days	See DOTD TR 602. For small
		Dist. Lab		TR 602	2-lane rdwy or			location		quantity, Proj. Engr. documents in
					1/2000 lin ft/					field book.
GEOTEXTILE C	Class D	203.11	Accept.		shoulder SEF	SECTION 203 OF	THIS MAR	NI I A I		Only required when aggregate base
SEPARATOR	Ciass D	302.04	лосері.		JEE .	GLUTION 203 OF	IIII WAI	TOAL.		course placed on un-treated or lime-
FABRIC		1019								treated soils.
		Mat. Lab								
	Density (93%)	302.01	Quality	Contractor	*					*Shall test sufficient to ensure
ON ROADWAY		302.05	Control	TR 401						specifications are met. Minimum
FOR SOIL		302.08								density is required on roadway prior to
CEMENT		Contractor								spreading cement. Check M.C. %
										before mixing with cement (TR 403).
n l								l l		
		302.05	Accept.	Proj. Engr.	1/half day				1/2 hr.	

# I-16 2/07

## SECTION 302 CLASS II BASE COURSE (cont'd)

		REF.	PURP.	SAMPLED	MIN.	MIN. QUANT.	CERT.	SMALL	TYPICAL	
MATE	DIAI			BY	FREQ.			QUANTITY	HANDLING	REMARKS
MAIL	VIAL	TESTED			Ī				TIME	KEWAKKO
		BY		METHOD		CONTAINER	DISTR.			
(	Soils/Soil-	302.05	Design*	Proj. Engr.	1/1000 lin ft/	6 full sample			21 days	*For cement content and moisture-
	Aggregate	Dist. Lab		S 101 or	2-lane rdwy or	sacks of blend				density relationships. Design will be
FOR SOIL				S 401	1/ 2000 lin ft/					conducted on blend.
CEMENT					shoulder					
(Cont'd)		302.02	A 4	Desi Fare	1/1000 lin ft/	4 full semals		200 lin ft	E deve	Diametra of a city or denote policie a critic
		Dist. Lab	Accept.	Proj. Engr. S 101 or		1 full sample sack of blend & 1		200 IIn π	5 days	Blending of soils prior to mixing with cement will not be allowed for
		DISt. Lab		S 401	1/ 2000 lin ft/	sample sack of				adjustment of LL or Pl.
				3 401	shoulder	each component				adjustifient of LL of Fi.
					Silouldei	each component				
		302.02	IA	Dist. Lab		SEE	INDEPEN	DENT ASSUR	ANCE PROGR	AM S 701.
		Dist. Lab		S 101 or						
				S 401						
SOILS (RAW) IN		302.01	Quality	Contractor	*					*Shall test sufficient to ensure
	Aggregate	302.08	Control	S 101 or						specifications will be met when placed
FOR SOIL		Contractor		S 401						on roadway. Check M.C. % before
CEMENT										spreading cement.
		302.05	Design*	Proj. Engr.	1/1000 yd <sup>3</sup>	6 full sample			21 days	*For cement content and moisture-
		Dist. Lab		S 101 or	1	sacks of blend &				density relationships. Design will be
				S 401		1 full sample				conducted on blend.
						sack of each				
						component				
		302.02	Accept.	Proj. Engr.	1/1000yd <sup>3</sup>	1 full sample		100 yd <sup>3</sup>	5 days	Blending of soils prior to mixing with
		Dist. Lab		S 101 or S 401		sack of blend & 1				cement will not be allowed for
				5 401		full sample sack of each				adjustment of LL or PI.
						component				
		302.02	IA	Dist. Lab			INDEPEN	DENT ASSUR	ANCE PROGR	AM S 701.
		Dist. Lab		S 101 or						
				S 401						
		1018.01	Accept.	Proj. Engr.	1/source*	1 qt plastic bottle			21 days	*Drinkable water need not be
Water		Mat. Lab		S 303						sampled.

## SECTION 303 IN-PLACE CEMENT STABILIZED BASE COURSE

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
		TESTED		METHOD		CONTAINER	DISTR.		TIME	
										MEMBRANE, REFER TO SECTION
	NUAL. FOR D	ETAILS ON A	SPHALTIC	CONCRETE O	R PORTLAND	CEMENT CONCR	ETE, REFE	ER TO SECTIO	NS 502 AND 9	01 OF THIS MANUAL, AS
APPLICABLE.										
TO SPREADING CEMENT	Contractor Furnished Soil	303.07 Contractor	Quality Control	Contractor S 101 or S 401						Must test sufficient to ensure material will meet specification requirements before placing on roadway. Check M.C.% on all materials before spreading cement.
(Existing or Furnished Soils/Soil- Aggregate)		303.02 Dist. Lab	Accept.	Proj. Engr. S 101 or S 401	1/1000 yd <sup>3</sup>	1 full sample sack			4 days	Contractor furnished material will be approved before incorporation into existing material. Furnished material not meeting the requirement of specification Subsection 302.02(a) will not be incorporated in the base.
	Density (93%)	303.04 303.07 Contractor	Quality Control	Contractor TR 401	*					*Shall be tested frequently enough to ensure specifications are met. Minimum density is required on roadway prior to mixture with cement. All blending of soils materials will be accomplished before testing.
		303.04 Proj. Engr	Accept.	Proj. Engr. TR 401	1/half day				30 min.	
	In-Place Material on Roadway	303.04 303.05 Dist. Lab	Design*/ Accept.	Contractor S101 or S401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder	6 full sample sacks			14 days	*For cement content and moisture- density relationships (if needed). Design will be conducted on the final blend.
	Pulverization	303.04 303.07 Contractor	Quality Control	Contractor TR 401	*					*Shall be tested frequently enough to ensure specifications are met.
		303.04 303.11 Proj. Engr.	Accept.	Proj. Engr. TR 431	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder				1/2 hr.	Shall be obtained after blending of any contractor furnished material. Pulverization shall be approved prior to spreading cement.

## SECTION 303 IN-PLACE CEMENT STABILIZED BASE COURSE (Cont'd)

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.		TIME	
										MEMBRANE, REFER TO SECTION ID 901 OF THIS MANUAL, AS
MIXTURE WITH CEMENT ON ROADWAY	Cement Spread Rate	303.07 Contractor	Quality Control	Contractor* TR 436	each transport	**				*The contractor shall determine the length of spread prior to mixing.  **Use an approved sampling device.
		303.11 Proj. Engr.	Accept.	Proj. Engr.* TR 436	1/day	**			1/2 hr.	*The Proj. Engr. will verify the length of spread prior to mixing. **Use an approved sampling device.
	Cross Slope & Grade	303.07 Contractor	Quality Control	Contractor	*					*Shall test sufficient to ensure specifications are met. Use an approved 10 ft metal static straightedge.
		303.07 Proj. Engr.	Verif.	Proj. Engr.	*				1/4 hr.	Use an approved 10 ft. metal static straightedge or other approved device.
	Density	303.07 Contractor	Quality Control	Contractor TR 401	*					*Shall test sufficient to ensure specifications are met.
		303.11 Proj. Engr.	Accept.	Proj. Engr. TR 401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder				1/2 hr.	
		303.11 Dist. Lab	IA	Dist. Lab TR 401		SEE	INDEPEN	IDENT ASSUR	ANCE PROGR	AM S 701.
	Moisture Content	303.05 303.07 Contractor	Quality Control	Contractor S 101 or S 401	*					*Shall test sufficient to ensure specifications are met. (DOTD TR 403)
		303.05 303.11 Proj. Engr.	Accept.	Proj. Engr. S 101 or S 401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder	1 gal friction top can*			1 hr.	*May be obtained by M.C.% determined during application of TR 415 B, if available on in-place moisture at the time of compaction (TR 403).
	Thickness & Width	303.07 Contractor	Quality Control	Contractor	*					*Shall be measured sufficiently to ensure specifications are met.
		303.11 TR 602 Proj. Engr.	Verif.	Proj. Engr. TR 602	1/half day				1/4 day	Proj. Engr. shall notify Dist. Lab when section is complete.
		303.11 Dist. Lab	Accept.	Dist. Lab TR 602	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder*			300 lin ft per location	3 days	*See DOTD TR 602. For small quantity, Proj. Engr. documents in field book.

## **SECTION 304 LIME TREATMENT**

MATE	RIAI	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
MATE	INAL	TESTED		METHOD		CONTAINED	DICTO		TIME	KEMAKKO
FOR DETAILS O	N HADBUILIC	BY CEMENT AN	ID WATER		CTION 301 OF	CONTAINER	DISTR.	II S ON ASPH	ALTIC CURING	MEMBRANE, REFER TO SECTION
										01 OF THIS MANUAL, AS
APPLICABLE.							<b>,</b>			- · · · · · · · · · · · · · · · · · · ·
CURING	Type B (only)	304.05					SEE S	ECTION 506 O	F THIS MANUA	AL.
MEMBRANE		1002.01								
		Mat. Lab/								
LIME		Proj. Engr.	Prelim.	Mfr.	4/		ı	ı	1	T
(Hydrated and		304.02 1018.03	Prelim. Source	Nitr. S 102	1/quarter					
Quicklime)		Mat. Lab	Approval	3 102						
Quickiinic)		304.02	Accept.		1/shipment		CD			(QPL 34)
		1018.03					1 & 7			
		Mat. Lab								
		304.02	Verif.	Proj. Engr.	1/projet/	1 gal friction top			21 days	(QPL 34)
		1018.03 Mat. Lab		S 102	source	can				*Not required if sampled under another item.
MIXTURE ON	Density-	304.08	Quality	Contractor	*					*Shall Check sufficient to ensure
ROADWAY	(Type B)	Contractor	Control	TR 401						specifications are met.
		304.07	Accept.	Proj. Engr.	1/1000 lin ft/				30 min	
		Proj. Engr.		TR 401	2-lane rdwy or					
					1/2000 lin ft/					
					shoulder					
		304.07	IA	Dist. Lab		SEE	INDEDEN	IDENT ASSUR	ANCE PROGR	AM S 701
		Dist. Lab		TR 401		JLL	INDLI LI	DENT ASSOR	ANGETROOK	
	Density-	304.07	Accept.	Proj. Engr.						Compact to the satisfaction of the
	(Type C & D) Density-	Proj. Engr. 304.07	Accept.	Proj. Engr.						Engineer.
	(Type E)	Proj. Engr.	лосері.	i ioj. Liigi.			SEE S	ECTION 203 O	F THIS MANUA	AL.
	Lime Spread	304.08	Quality	Contractor*	Each	**			30 min.	*The contractor shall determine the
	Rate	Contractor	Control	TR 436	transport					length of spread.
										**Use an approved sampling device
		304.05	Accept.	Proj. Engr.*	1/1000 lin ft/	**			30 min.	*The Proj. Engr. shall verify the length
		Proj. Engr.		TR 436	2-lane rdwy or					of spread.
		, ,			1/2000 lin ft/					**Use an approved sampling device.
					shoulder					
	<u> </u>									

## SECTION 304 LIME TREATMENT (Cont'd)

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.		TIME	-
MIXTURE ON ROADWAY (Cont'd)	Pulverization (Type B & C)	304.08 Contractor	Quality Control	Contractor S 101	*					*Shall Check sufficient to ensure specifications are met.
(conta)		304.06 Proj. Engr.	Accept.	Proj. Engr. S 101	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder	1 gal friction top can			1/2 hr.	
	Pulverization (Type D & E)	304.06	Accept.	Proj. Engr		*				*Satisfaction of Engineer.
	Thickness & Width (Type B)	304.08 Contractor	Quality Control	Contractor	*					*Shall Check sufficient to ensure specifications are met.
	(1) (1)	304.05 Proj. Engr	Verif.	Proj. Engr. TR 602	1/half day				1/4 hr.	Proj. Engr. to notify Dist. Lab when section is complete.
		304.11 Dist. Lab	Accept.	Dist. Lab TR 602	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder			300 lin ft per location	3 days	See DOTD TR 602. For small quantity, Proj. Engr. Documents in field book.
	Thickness & Width	304.05 Proj. Engr.	Accept.	Proj. Engr. TR 602*	*					*Satisfaction of the Project Engr. Documents in field book.
	Thickness & Width (Type E)	304.05 Proj. Engr.	Accept.			FT THICKNESS R	EQUIREN	MENTS SEE SE	CTION 203 OF	THIS MANUAL.
SOIL OR SOIL- AGGREGATE	% Lime*	304.04 304.05 Dist. Lab	Design	Proj. Engr. S 101 or S 401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder*	6 full sample sacks			10 days	*Not required when percent lime is specified in plans or project specifications.
Water		304.02 1018.01 Mat Lab	Accept.	Proj. Engr. S 303	1/source*	1 qt plastic bottle			21 days	*Drinkable water need not be sampled.

## -21 2/0/

## **SECTION 305 SUBGRADE LAYER**

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
				METHOD		CONTAINER	DISTR.			
NOTE: WHEN A AND CONSTRU						JSE THE SAMPLI	NG SCHE	DULES IN SEC	TION 301 OF 1	THIS MANUAL. FOR PLACEMENT
AGGREGATES	Stone,	305.02	BLE SECTION	DNS OF THIS	MANUAL.	SEE SEC	TION 302	OF THIS MANU	JAL	
	Recycled PC	305.04								
	Concrete, Crushed Slag	Dist. Lab								
	Asphaltic	203.09	Prelim.	Dist. Lab	1/source/	6 sacks			4 weeks	Source shall be approved by
	Concrete	1007.09	Source	S 101	blend					Materials Lab prior to use.
	Blended	Mat Lab 1003.01	Approval Quality	Contractor	*					*Must test sufficient to ensure
	Calcium	1003.01	Control	S 101						materials being delivered meet
	Sulfate	Contractor	Control	3 101						specification requirements.
		1003.01	Design*	Proj. Engr.	1/source	6 full sample			4 days	*For moisture-density relationships.
		1003.10 Dist. Lab		S 101		sacks				
		305.04	Accept.*	Proj. Engr.	1/1000 yd <sup>3</sup>	1 full sample		100 yd <sup>3</sup>	4 days	*Shall not be placed within 10 ft of
		1003.01		S 101	1/1000 yu	sack		100 ya		metal pipe. Shall be from an
		1003.10								approved source.
CEMENT						SEE SECTION 3	02 OF THI	S MANUAL.	•	•
ASPHALTIC MATERIALS	Curing Membrane					SEE SECTION 5	06 OF THI	S MANUAL.		
	Prime Coat					SEE SECTION 5	05 OF THI	S MANUAL.		
GEOTEXTILE FABRIC		305.02 1018.19				SEE SEC	TION 203	OF THIS MAN	JAL	
LIME (Hydrated or Quicklime)						SEE SECTION 3	04 OF THI	S MANUAL.		
,	D. L. et ettert	005.04	A	L D E	4/4000 15 - 61/		1		1/01	Terror to the state of the stat
MIXTURE WITH LIME AND/OR	Pulverization*	305.04 Proj. Engr.	Accept.	Proj. Engr. S 401	1/1000 lin ft/ 2-lane rdwy or				1/2 hr.	*For soil after mixing with cement and/or lime.
CEMENT ON		Proj. Engr.		5 401	1/2000					and/or lime.
ROADWAY					lin ft/shoulder					
SOIL		305.04	Design*	Proj. Engr.	1/1000 lin ft/	6 full sample			10 days	*For Moisture Density relationships.
COIL		Dist. Lab.	Design	S 401	2-lane rdwy or	sacks			10 days	To Moisture Bensity relationships.
					1/2000					
					lin ft/shoulder					
		305.04	Accept.*	Proj. Engr.	1/1000 lin ft/	1 full sample			4 days	*When soils are to be blended, each
		Dist. Lab		TR 602	2-lane rdwy or	sack				component must meet specifications
										before blending. Design and final
					lin ft/shoulder					acceptance will be conducted on the blend.
			Accept.*		lin ft/shoulder 1/1000 lin ft/				4 days	component must meet spe before blending. Design a acceptance will be conduct

## SECTION 305 SUBGRADE LAYER (Cont'd)

		REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING		
MATE	MATERIAL			DI	FREQ.			QUANTITY	TIME	REMARKS	
		TESTED BY		METHOD		CONTAINER	DISTR.		IIVIE		
SUBGRADE LAYER	Density		SEE SECTIONS 302 AND 308 OF THIS MANUAL								
LATER	(Stone Recycled										
	PCC, Soil										
	Cement,										
	Crushed										
	Slag)							ı			
	Density	305.01	Quality	Contractor	*					*Shall check sufficiently to ensure	
	(Blended Calcium	Contractor	Control	S 401						specifications requirements.	
	Sulfate)	305.04 Dist. Lab	Accept.	Proj. Engr. S 401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/				1/2 hr.	Shall not be placed within 10 ft of metal pipe. Shall be from an approved source.	
	Thickness &	305.04	Verif.	Proj. Engr.	shoulder	02 202 or 204 of 6	hic Manu	al ac annliachl	District Lab	not required to perform DOTD TR	
	Width	303.04	veiii.	TR 602	602 Measurem		ilis Mailu	аі аз арріісарі	e. District Lab	not required to periorin DOTA TK	
		305.02 1018.01 Mat. Lab	Accept.	Proj. Engr. S 303	1/source	1 qt plastic bottle			21 days	Drinkable water need not be sampled.	
WATER											

# 1-23 2/07

## **SECTION 306 SCARIFYING & COMPACTING ROADBED**

МАТ	MATERIAL		PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
WAI				METHOD		CONTAINER	DISTR.		TIME	KLMAKKS
		BY				CONTAINER	אופוע.			
EXISTING	Density	306.02	Accept.	Proj. Engr.	1/1000 lin ft/				1/2 hr.	
MATERIAL		Proj. Engr		TR 401,	2-lane rdwy or					
				TR 415 or	1/2000 lin ft/					
				TR 418	shoulder					
ASPHALTIC MATERIAL	Prime Coat	306.02				SEE SEC	TION 506	TO THIS MANU	JAL.	
1										

## -24 2/07

## **SECTION 307 PERMEABLE BASES**

MATER	PIAI	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
MAIL	VIAL	TESTED BY		METHOD		CONTAINER	DISTR.		TIME	KEMAKKO
AGGREGATE	Stone	307.02 1003.06 Dist. Lab	Accept.	Proj. Engr. S 101	1/1000yd3	(QPL 2)				
ASPHALTIC MATERIALS	Asphalt Cement	307.02	Prelim. Source Approval, Accept., Verif.		SEE	(QPL 41)				
ANTI-STRIP		307.02 1002.02	Prelim. Source Approval, Accept. Verif.		SEE	(QPL 57)				
ADMIXTURE		307.02 1011.02	Prelim. Source Approval, Accept., Verif.		SEE	(QPL 58)				
CEMENT (HYDRAULIC)		307.02 1001	Prelim. Source Approval, Accept., Verif.		SEE	SECTION 901 OF	THIS MAI	NUAL		(QPL 7)
CURING COMPOUND		307.03 601.10 1011.01	Prelim. Source Approval, Accept.		SEE	SECTION 601 OF	THIS MAI	NUAL		(QPL 65)
PERMEABLE ASPHALT BASE (PLANT)	JMF	307.02 Contractor	Design*		1/mix/plant					*Contractor shall submit to the Dist. Lab Engr. The proposed job mix formula with supporting design data. Approval is required prior to starting work.
		307.02 Dist. Lab	Verif.*	Proj. Engr. S101, S201, S601	1/JMF					*Dist. Lab verifies % retained coating in accordance with TR 317.
	Anti-Strip Additive %	307.02 Proj. Engr.	Accept.	Proj. Engr. S 605	1/2500 tons	*				*% AS from meter.
	Asphalt Cement	307.02 Proj. Engr.	Accept.	Proj. Engr. S 605	1/2500 tons	*				*% AC from meter.

## 1-25 2/07

## **SECTION 307 PERMEABLE BASES**

MATERIAL -		REF. TESTED BY	PURP.	SAMPLED BY METHOD	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING TIME	REMARKS
ASPHALT BASE	Loose Mixture (Gradation, % AC, & %	307.02 Contractor	Quality Control	Contractor S 203 & S 605	1/1000 tons	suitable sampling bucket				
(Cond't)	Crushed	307.02 Dist. Lab	Verif.	Proj. Engr. S 203	1/5000 tons	1 gal friction top can			3 days	
PERMEABLE CONCRETE BASE (PLANT)	Mix Design	307.02 Contractor/ Dist. Lab	Design/ Accept.	*	1/mix/plant				3 days	*Contractor shall submit to the Dist. Lab Engr. the proposed job mix formula with supporting data. Approval is required prior to starting work.
		307.02 Proj. Engr.	Verif.	*	1/truck					*Obtain "batch tickets" to verify quantities from mix design.
	Cross Slope & Grade	307.05 Contractor	Quality Control	Contractor	*					*Under thickness shall not exceed 1/2" (12 mm).
		307.05 Proj. Engr.	Accept.	Proj. Engr.*	1/day					*Use 10 ft metal static straight edge or approved device.
	Thickness & Width	307.01 Contractor	Quality Control	Contractor	*					*Shall measure sufficiently to ensure specifications are met.
		307.06 Proj. Engr.	Accept.	Contractor/ Proj. Engr. TR602	1/2000 lin ft					Under thickness shall not exceed 1/2" (12 mm).
	Temperature	307.03 Proj. Engr.	Accept.*	Proj. Engr. S 605	1/5000 tons					*Required for Asphaltic Concrete only.
WATER		1018.01	Accept.	Proj. Engr. S 303	1/source*	1 qt plastic bottle			21 days	*Drinkable water need not be sampled.

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS
		TESTED BY		METHOD		CONTAINER	DISTR.		TIME	
										MEMBRANE, REFER TO SECTION 01 OF THIS MANUAL, AS
MATERIAL FOR BASE PRIOR TO SPREADING CEMENT	Contractor Furnished Soil	308.07 Contractor	Quality Control	Contractor S 101 or S 401						Must test sufficient to ensure materia will meet specification requirements before placing on roadway. Check M.C.% on all materials before spreading cement.
(Existing or Furnished Soils/Soil- Aggregate)		308.02 303.04 Dist. Lab	Accept.	Proj. Engr. S 101 or S 401	1/1000 yd <sup>3</sup>	1 full sample sack			4 days	Contractor furnished material will be approved before incorporation into existing material. Furnished material not meeting the requirement of specification Subsection 302.02(a) will not be incorporated in the base. I A-4 or A-6 soil group is used, the blend shall meet the durability requirements of DOTD TR 432, Method D.
	Density (93%)	308.04 307.02 Contractor	Quality Control	Contractor TR 401	*					*Shall be tested frequently enough to ensure specifications are met. Minimum density is required on roadway prior to mixture with cement. All blending of soils materials will be accomplished before testing. Check M.C. % before mixing with cement (TR 403).
		308.04 Proj. Engr	Accept.	Proj. Engr. TR 401	1/half day				30 min.	
	In-Place Material on Roadway	308.05 Contractor	Design*	Contractor S101 or S401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder	6 full sample sacks			21 days	*Only when Portland - Pozzolan or Portland Blast-Furnace Slag, cement is used.
		308.05 Dist. Lab	Verif.	Contractor S101 or S401	1/soil type	6 full sample sacks			21 days	
	Pulverization	308.05 303.07 Contractor	Quality Control	Contractor TR 401	*					*Shall be tested frequently enough to ensure specifications are met.
		308.05 308.11 Proj. Engr.	Accept.	Proj. Engr. TR 431	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder				1/2 hr.	Shall be obtained after blending of any contractor furnished material. Pulverization shall be approved prior to spreading cement.

## SECTION 308 IN-PLACE CEMENT TREATED BASE COURSE (Cont'd)

MATE	RIAL	REF.	PURP.	SAMPLED BY	MIN. FREQ.	MIN. QUANT.	CERT.	SMALL QUANTITY	TYPICAL HANDLING	REMARKS	
		TESTED BY		METHOD		CONTAINER	DISTR.		TIME		
										MEMBRANE, REFER TO SECTION ND 901 OF THIS MANUAL, AS	
MIXTURE WITH ( CEMENT ON S ROADWAY	Cement Spread Rate	308.05 308.07 Contractor	Quality Control	Contractor TR 436	each transport	*				The contractor shall determine the length of spread prior to mixing. *Use and approved sampling device.	
		308.11 Proj. Engr.	Accept.	Proj. Engr. TR 436	1/day	*			1/2 hr.	The Proj. Engr. will verify the length of spread prior to mixing. *Use an approved sampling device.	
	Cross Slope & Grade	308.07 Contractor	Quality Control	Contractor	*					*Shall test sufficient to ensure specifications are met.	
		308.11 Proj. Engr.	Accept.	Proj. Engr.	1/half day				1/4 hr.	Use an approved 10 ft. metal static straightedge or other approved device.	
	Density	308.07 Contractor	Quality Control	Contractor TR 401	*					*Shall test sufficient to ensure specifications are met.	
		308.11 Proj. Engr.	Accept.	Proj. Engr. TR 401	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder				1/2 hr.		
		303.11 Dist. Lab	IA	Dist. Lab TR 401	SEE INDEPENDENT ASSURANCE PROGRAM S 701.						
	Moisture Content	308.05 303.07 Contractor	Quality Control	Contractor S 101 or S 401	*					*Shall test sufficient to ensure specifications are met. (DOTD TR 403)	
		303.05 308.11 Proj. Engr.	Accept.	Proj. Engr. S 101 or S 401	1/half day	1 gal friction top can*			1 hr.	*May be obtained by M.C.% determined during application of TR 415 B, if available on in-place moisture at the time of compaction (TR 403).	
	Thickness & Width	308.07 Contractor	Quality Control	Contractor	*					*Shall be measured sufficiently to ensure specifications are met.	
		308.11 TR 602 Proj. Engr.	Verif.	Proj. Engr. TR 602	1/half day				1/4 day	Proj. Engr. shall notify Dist. Lab when section is complete.	
		308.11 Dist. Lab	Accept.	Dist. Lab TR 602	1/1000 lin ft/ 2-lane rdwy or 1/2000 lin ft/ shoulder			300 lin ft per location	3 days	See DOTD TR 602. For small quantity, Proj. Engr. documents in field book.	