DE SPS-2

PAVEMENT
MANAGEMENT
SYSTEMS

August 3, 1994
50451010-13.08.2

Mr. C. Wayne Kling
Chief of Materials and Research
Delaware Department of Transportation
P.O. Box 778
Dover, Delaware 19903

RE: Revised Materials Sampling and Testing Plans - SPS-2, US 113 SBL

Dear Mr. Kling:

It was brought to my attention by Alex Rutka and Bob Radish that the materials and testing plans for the SPS-2 previously sent to you had the test sections laid out in the opposite direction of traffic. Please discard these documents as they do not fit the guidelines. The enclosed revisions dated July 1994, and Tables 1 through 12 dated June 29, 1994, are amended to the Southbound traffic direction. Any confusion created by this change is regretted.

The enclosures are as follows:-

	Sampling and Testing Plans - Layers 1, 2, 3, 4, 5, and 6	5 pages
	Sampling and Testing Locations at each Layer, Sections 1 through 12, 59, and 60	14 pages
Table 1	SPS-2 Layout of Experimental Sections	2 pages
Table 2	SPS-2 Laboratory Materials Testing Plan	5 pages
Table 3	SPS-2 Scope of Material Sampling	1 page
Table 4	SPS-2 Scope of Field Testing	1 page
Table 5	Samples for the Materials Reference Library	1 page
Table 6	Sampling and Laboratory Testing - State Laboratory (Embankment and Subgrade)	1 page
Table 6A	Sampling and Laboratory Testing - FHWA Contractor Lab. (Embankment and Subgrade)	1 page
Table 7	Sampling and Laboratory Testing - State Lab. (Thin-Wall Tube Samples)	1 page

415 LAWRENCE BELL DRIVE
UNIT #3
AMHERST, N Y 14221
TEL (716) 632-0804
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Table 7A	Sampling and Laboratory Testing - FHWA Contractor Lab. (Thin-Wall Tube Samples)	1 page
Table 8	Sampling and Laboratory Testing - State Lab. (Granular Aggregate Base Course; GABC)	1 page
Table 8A	Sampling and Laboratory Testing - FHWA Contractor Lab. (Granular Aggregate Base Course; GABC)	1 page
Table 9	Sampling and Laboratory Testing - State Lab. (Permeable Asphalt Treated Base)	1 page
Table 10	Tracking Table for Molded PCC Cylinders and Beams (State Lab.)	2 pages
Table 11	Schedule for Coring and Testing of LCB Cores (State Lab.)	2 pages
Table 12	Schedule for Coring and Testing of PCC Cores (State Lab.)	5 pages

Table 6 through 12 identifies which tests are to be carried out on particular samples by which laboratory. The DE DOT Dover Laboratory would be identified as LTPP Laboratory No. 1021, while the FHWA Contractor Laboratory, Law Engineering, Atlanta, Laboratory is identified as LTPP Laboratory No. 1311. Shipments of materials samples to Law Engineering, Atlanta, are to be pre-paid.

Please do not hesitate to contact me at (716)632-0804 for clarification of any of the enclosures. The sampling and testing of PCC materials requires planning and coordination of activities to acquire and test in a timely manner. Our SPS-2 project inspector, Alex Rutka will be on-site to advise and assist in the documentation. It is understood that the plate bearing testing will be carried out by Site Engineers. We would like to have one of our technical staff, Gabe Cimini, present during the tests. Gabe assisted in the plate bearing tests in the NC DOT SPS-2, Lexington, NC, and helped in the documentation.

The NA Region FWD is on standby to do FWD testing on the subgrade embankment and granular base layers. These FWD tests should be timed to be done simultaneously (as far as practical) with the taking of levels.

With your assistance, and the help of Bob Radish, I trust we will successfully complete this SPS-2 project. At some later date, it would be interesting to compare the LTPP construction records with the DE DOT QA data.

Yours Sincerely,

William A. Phang

William A. Phang
Program Manager, FHWA-LTPP
Pavement Management Systems Limited

WAP/tf

C.C. B. Radish
I.J. Pecnik
A. Rutka
D. Morian
G. Rada
M. Symons

FHWA-LTPP SPS-2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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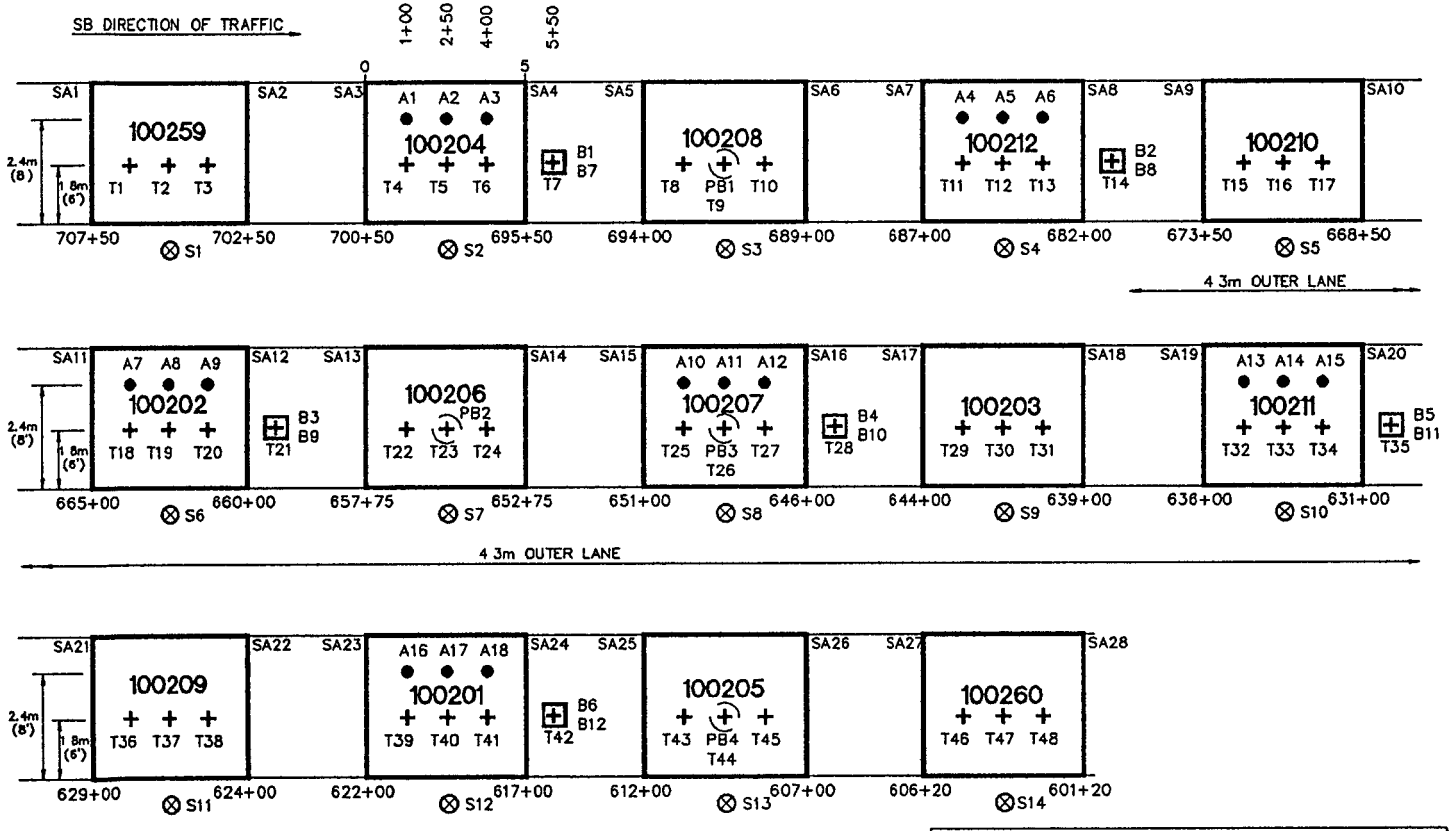
PMS PAVEMENT MANAGEMENT SYSTEMS LIMITED



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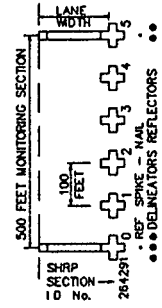

ROAD TEST

LEGEND

- ⊞ 0.6m×0.6m BULK EMBANKMENT SAMPLE TO 0.3m DEPTH (B1–B6) AND BULK SUBGRADE SAMPLE FROM 0.3m–0.6m BELOW TOP OF EMBANKMENT (B7–B12)
- ● SHELBY TUBE/SPLIT SPOON SAMPLING TO 1.2m BELOW TOP OF EMBANKMENT (A1–A18)
- + LOCATION OF NUCLEAR MOISTURE/DENSITY TESTS (T1–T48)
- ⊗ SHOULDER PROBE (S1–S14)
- ⊕ PLATE LOAD BEARING TEST (PB1–PB4)

FIELD MATERIALS SAMPLING AND TESTING
SUBGRADE/EMBANKMENT- LAYERS 1 and 2

DELAWARE DOT SPS-2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 18/94

SPS-2-2

FHWA SPS-2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

SPS2-2

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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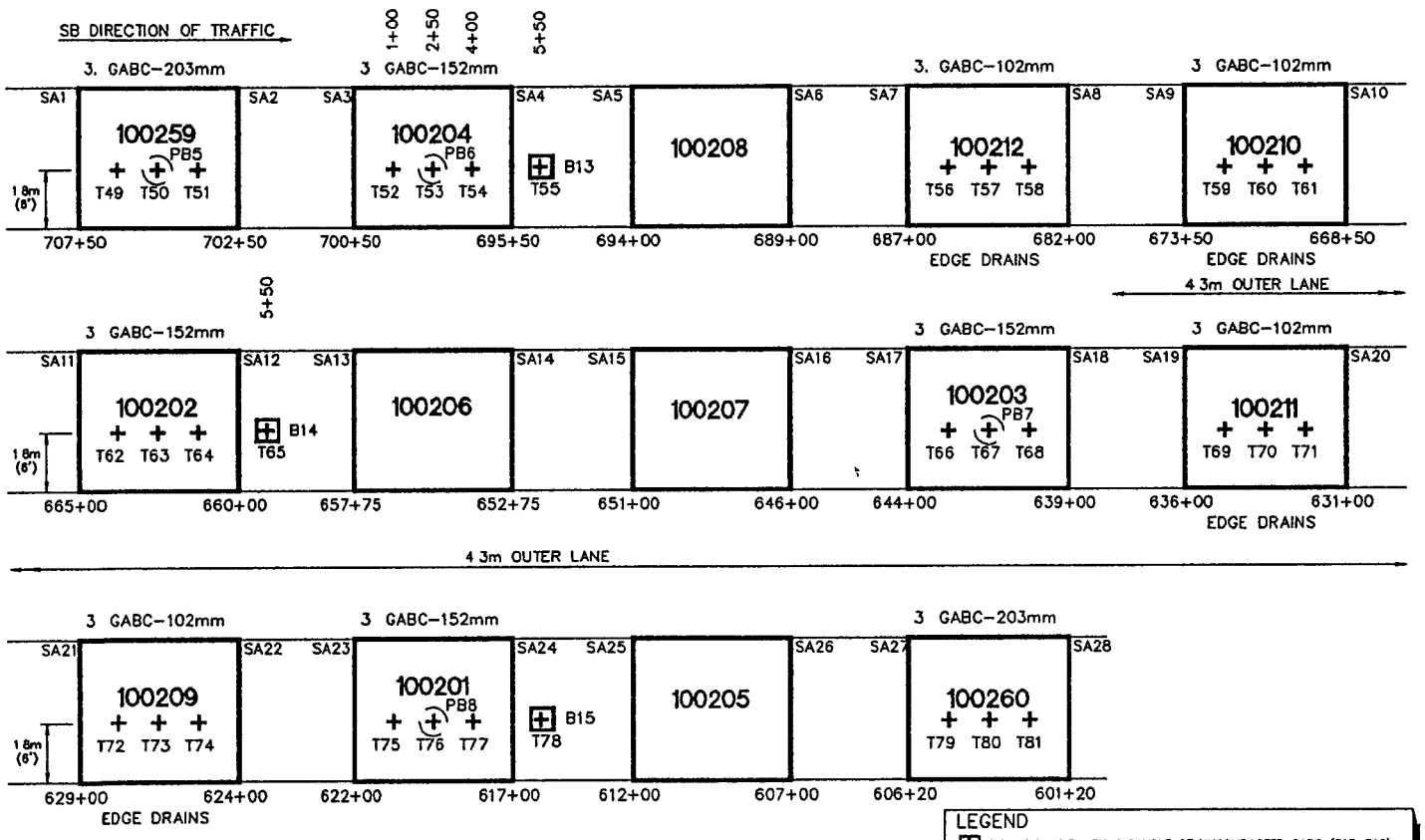

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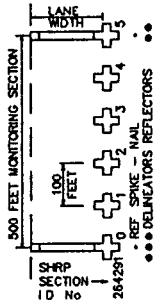

ROAD TEST

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 18/94

SPS–2–3

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FIELD MATERIALS SAMPLING AND TESTING - GRADED AGGREGATE BASE COURSE - LAYER 3

SPS2–3

FHWA-LTPP SPS-2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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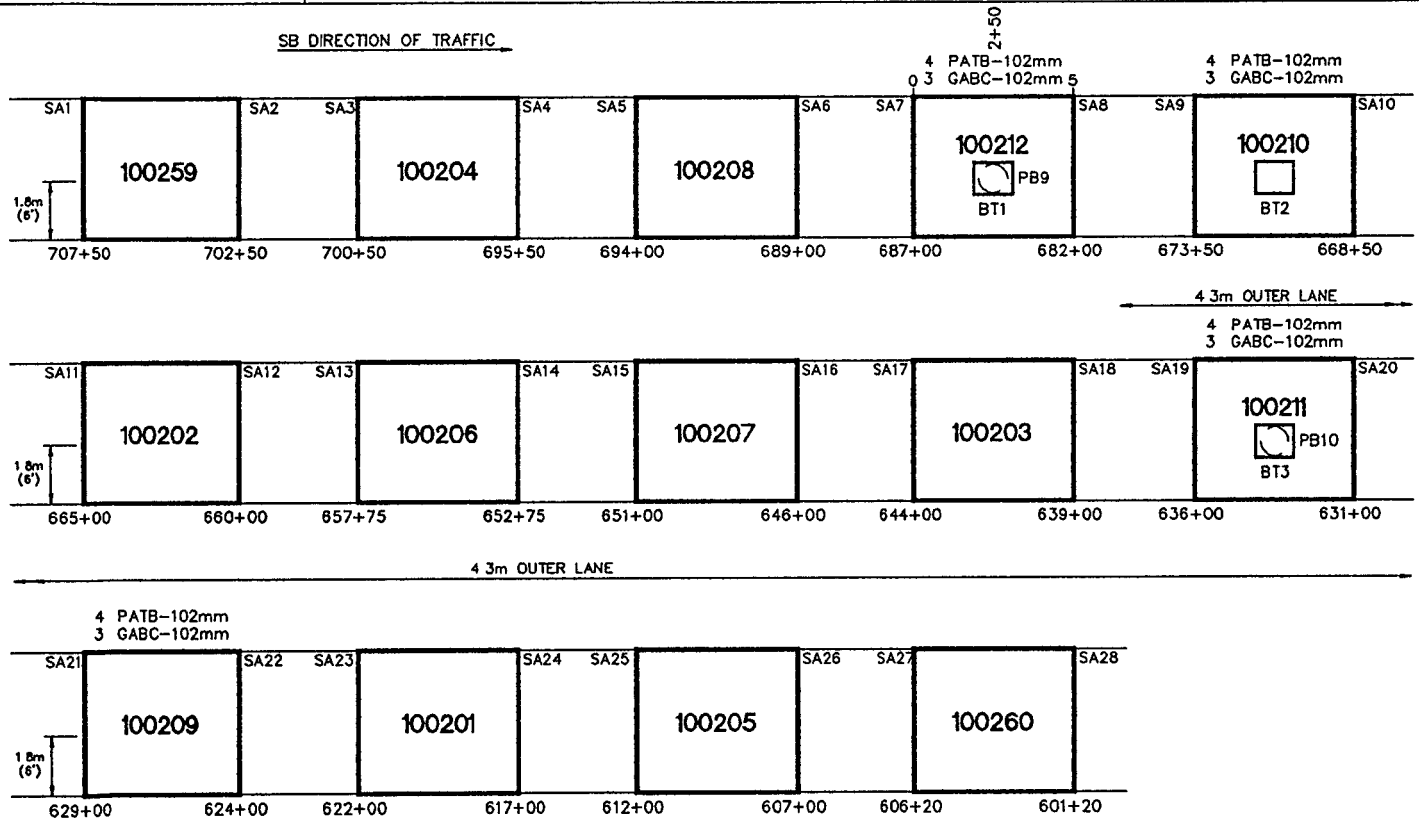

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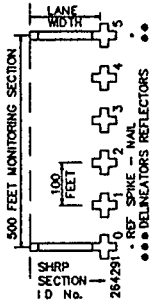

ROAD TEST

LEGEND

- BULK PLANT SAMPLES (BT1-BT3)
- PLATE LOAD BEARING TEST (PB9-PB10)

FIELD MATERIALS SAMPLING AND TESTING
PERMEABLE ASPHALT TREATED BASE - LAYER 4

DELAWARE DOT SPS-2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 18/94

SPS-2-4

FHWA SPS-2 TEST SECTIONS ONLY
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SPS-4

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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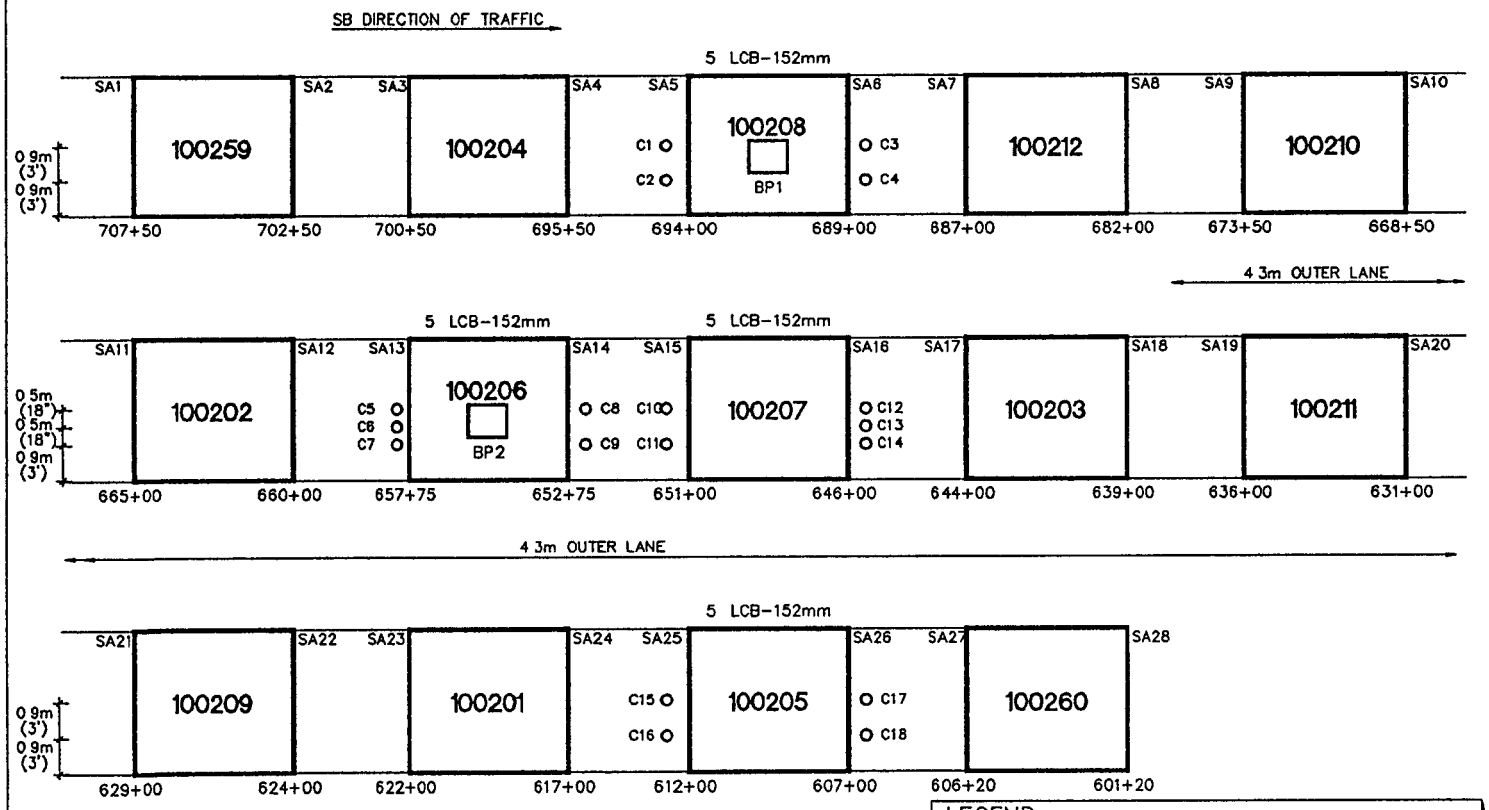

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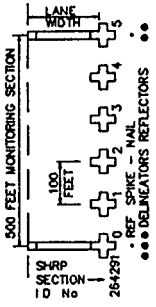

ROAD TEST

LEGEND

- ☐ BULK SAMPLES OF LCB AS-DELIVERED (BP1–BP2) (CAST 12–152mm DIAx305mm CYCLINDERS FROM EACH BULK SAMPLE)
- ○ 102mm OD CORE OF LCB TAKEN 7–12 DAYS AFTER PLACEMENT AND HOLES PATCHED PRIOR TO PLACEMENT OF PCC (C1–C18)

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 16/94

SPS–2–5

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FIELD MATERIALS SAMPLING AND TESTING - LEAN CONCRETE BASE - LAYER 5

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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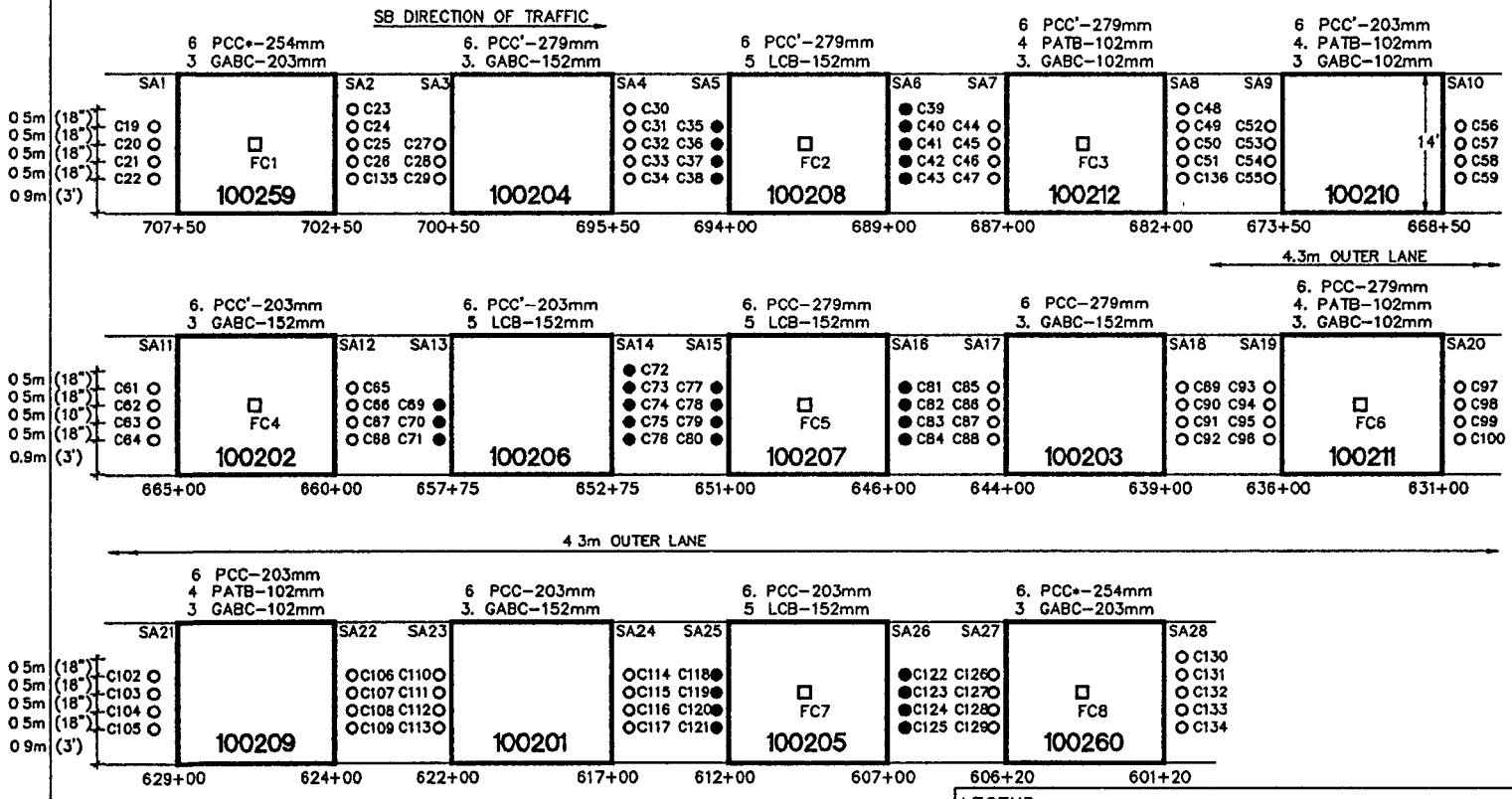

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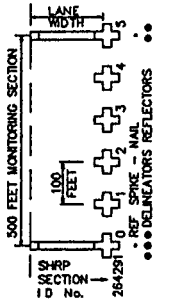

LEGEND

- ○ 102mm OD CORES OF PCC SURFACE ONLY (C19–C34,C44–C68,C85–C117,C126–C136)
- ● 102mm OD CORES OF PCC SURFACE AND LCB (C35–C43,C69–C84,C118–C125)
- □ BULK SAMPLES OF FRESH AS–DELIVERED PCC (FC1–FC8) (CAST 9–152mm DIA.x305mm CYLINDERS AND 9–152mmx152mmx508mm BEAMS FOR EACH SAMPLE)

PCC – FLEXURAL STRENGTH – 3 841 MPa (550psi)
PCC' – FLEXURAL STRENGTH – 6 205 MPa (900psi)
PCC* – COMPRESSIVE STRENGTH – 20 682 MPa (3000psi)

FIELD MATERIALS SAMPLING AND TESTING
PORTLAND CEMENT CONCRETE - LAYER 6

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 14/94

SPS–2–1

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

SPS2–1

FHWA-LTPP SPS-2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

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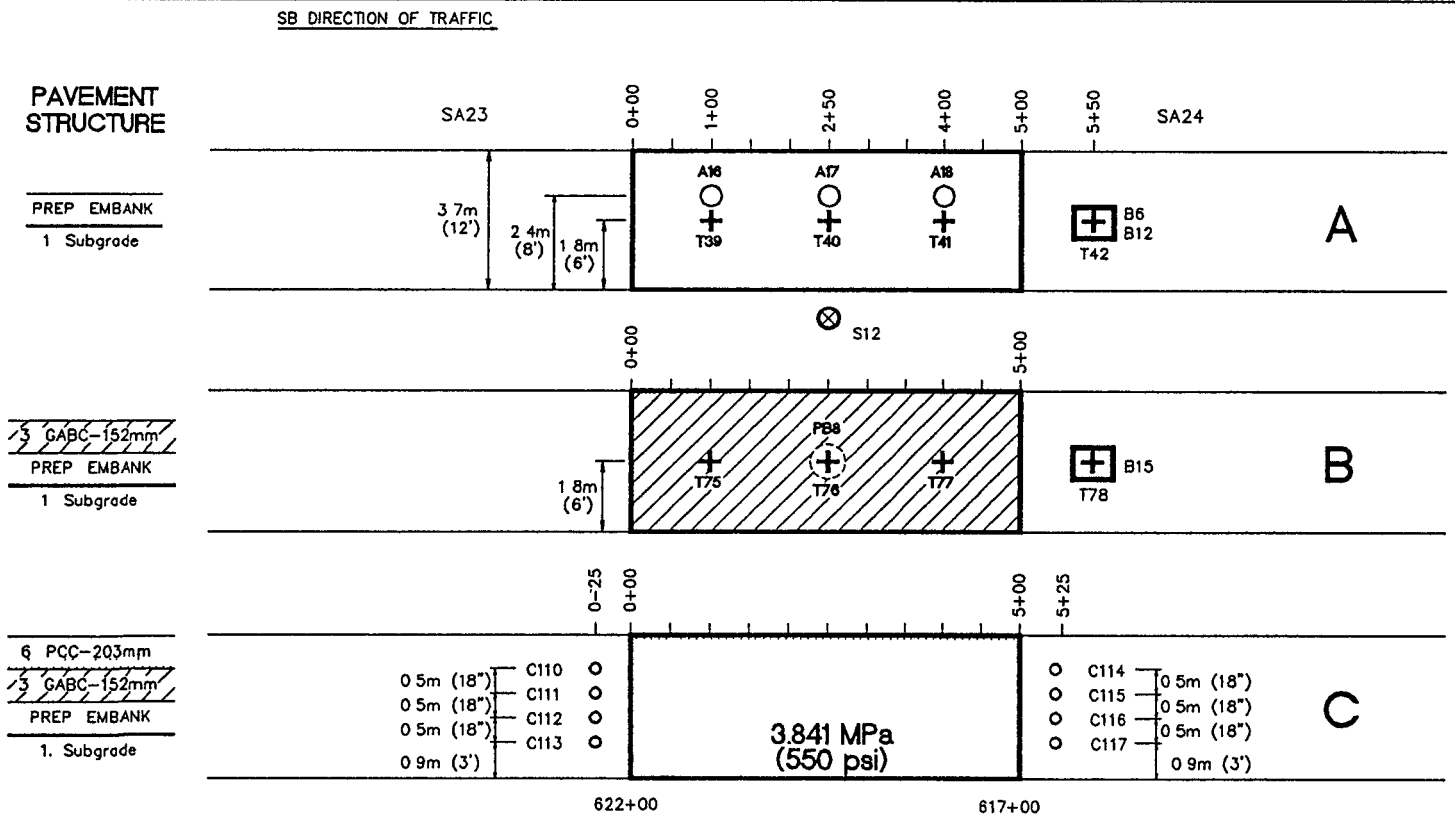
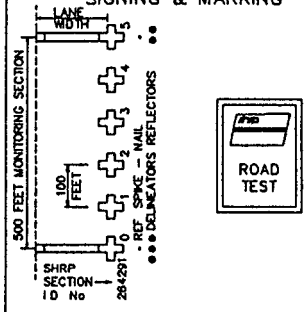


SAMPLING AND TESTING PLAN FOR SECTION 100201

TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT (T39-T42)

⊗ SHOULDER PROBE (S12)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B6) AND SUBGRADE (B12)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1 2m BELOW TOP OF PREPARED EMBANKMENT (A16-A18)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T75-T78)

◌ PLATE LOAD BEARING TEST ON GABC (PB8)

⊞ BULK SAMPLES OF UNCOMPACTED GABC (B15)

C ○ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C110-C117)

PCC - 3 841 MPa (550 psi) FLEXURAL STRENGTH

DELAWARE DOT SPS-2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 28/94

FHWA SPS-2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
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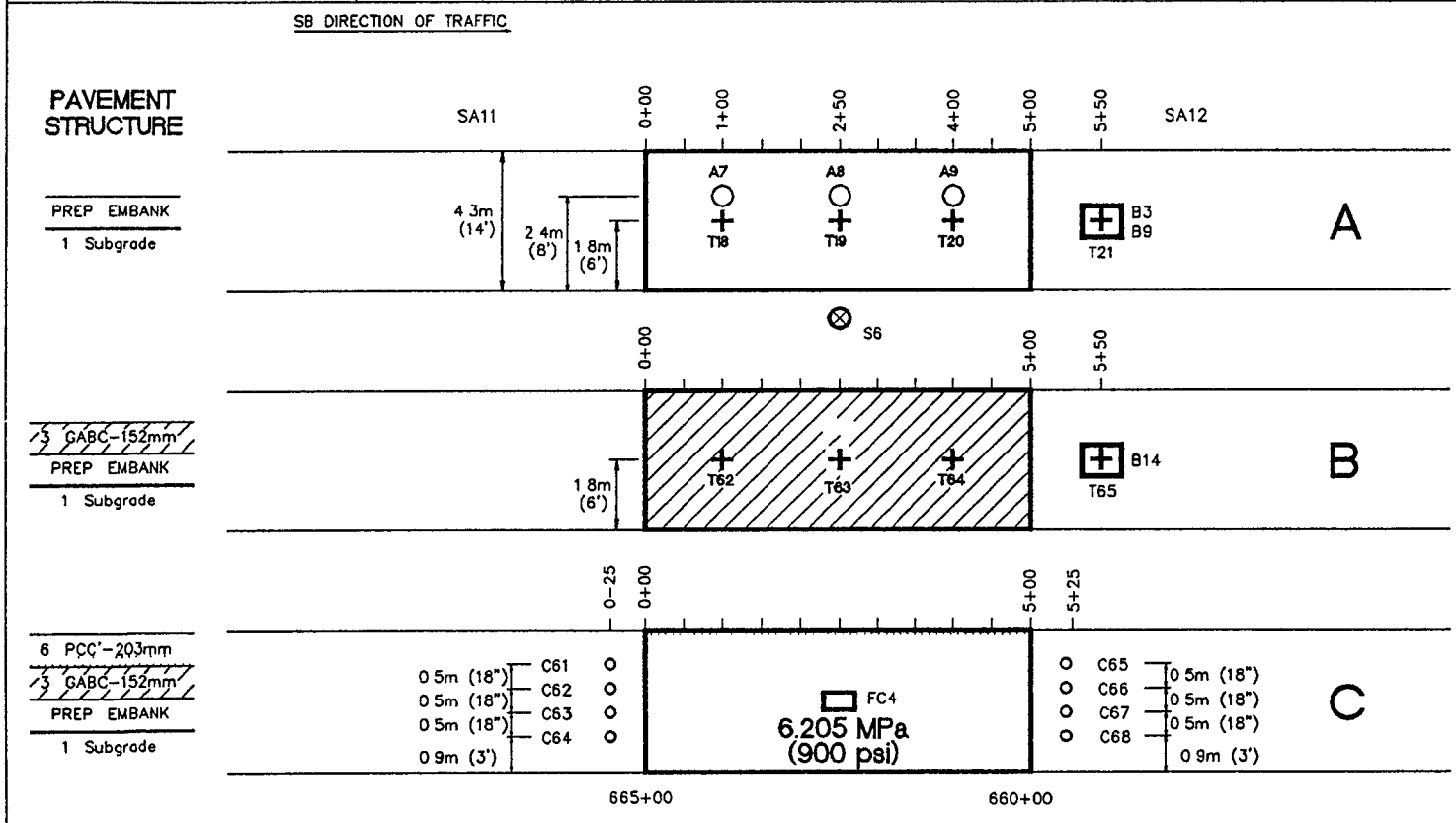
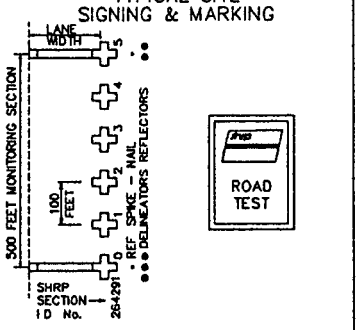
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED





A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T18–T21)

⊗ SHOULDER PROBE (S6)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B3) AND SUBGRADE(B9)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1 2m BELOW TOP OF PREPARED EMBANKMENT (A7–A9)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T62–T65)

⊞ BULK SAMPLES OF UNCOMPACTED GABC (B14)

C ○ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C61–C68)

▭ BULK SAMPLES OF FRESH PCC AS–DELIVERED (FC4)
PCC' – 6 205 MPa (900 psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100202

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

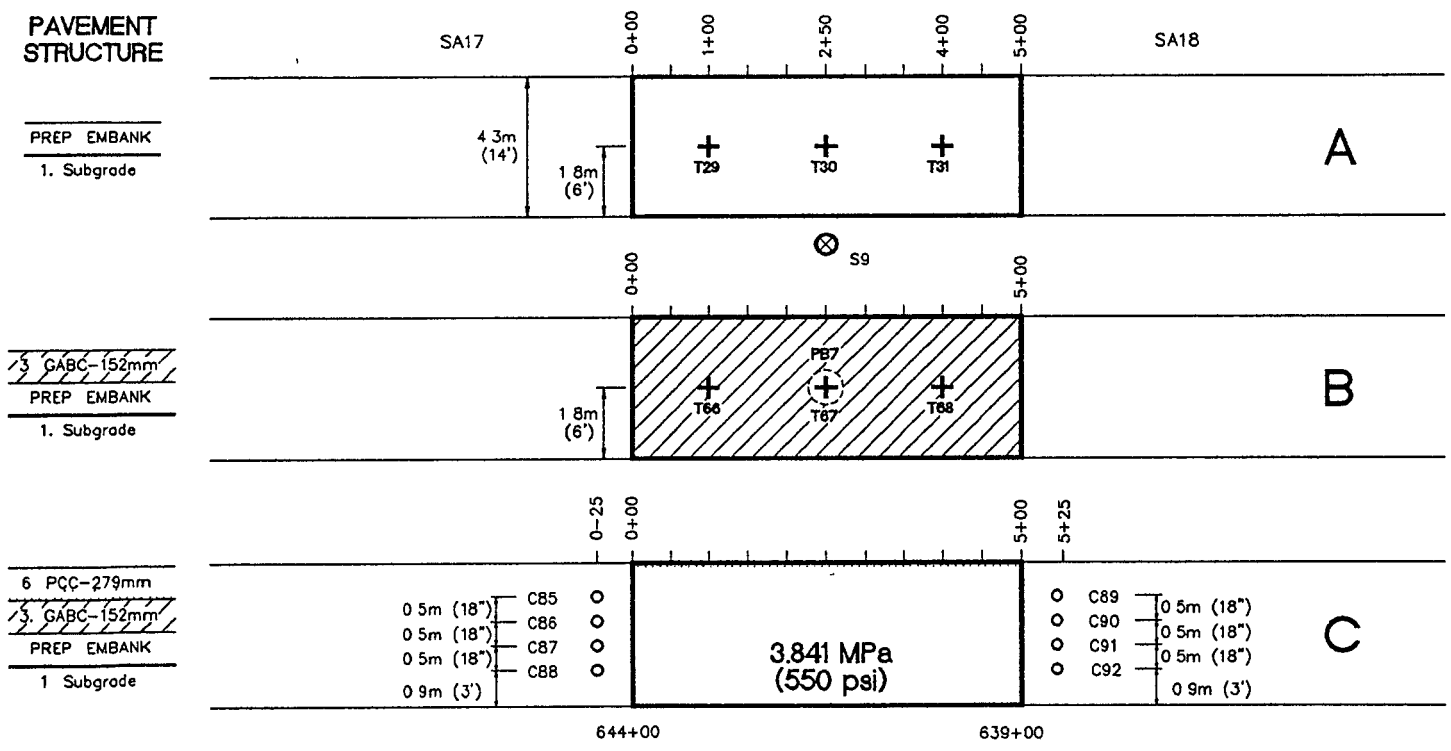
PLOTDATE: JULY 26/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED

SB DIRECTION OF TRAFFIC



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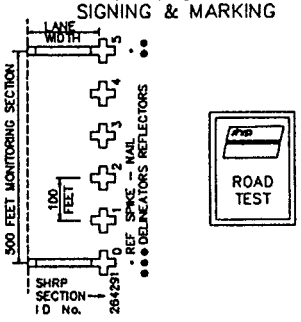

A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T29–T31)

⊗ SHOULDER PROBE (S9)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T66–T68)

◯ PLATE LOAD BEARING TEST ON GABC (PB7)

C o 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C85–C92)

PCC – 3 841 MPa (550 psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100203

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 28/94

FHWA SPS–2 TEST SECTIONS ONLY
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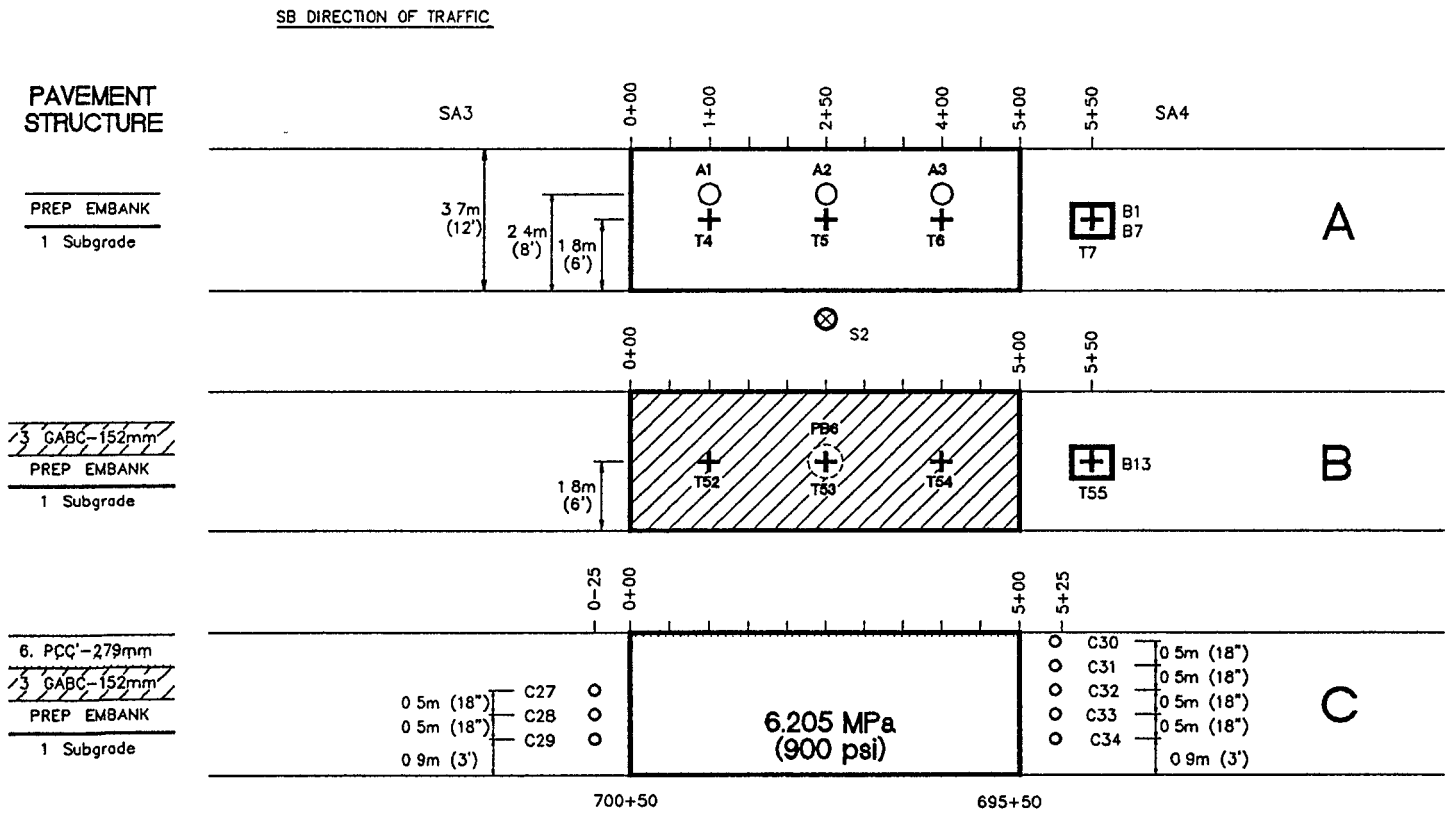
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



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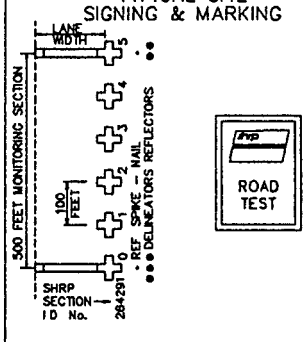

A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T4–T7)

⊗ SHOULDER PROBE (S2)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B1) AND SUBGRADE(B7)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1 2m BELOW TOP OF PREPARED EMBANKMENT (A1–A3)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T52–T55)

◌ PLATE LOAD BEARING TEST ON GABC (PB6)

⊞ BULK SAMPLE OF UNCOMPACTED GABC (B13)

C o 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C27–C34)

PCC' – 6 205 MPa (900 psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100204

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 22/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
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FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

shrp

PMS — PAVEMENT MANAGEMENT SYSTEMS LIMITED

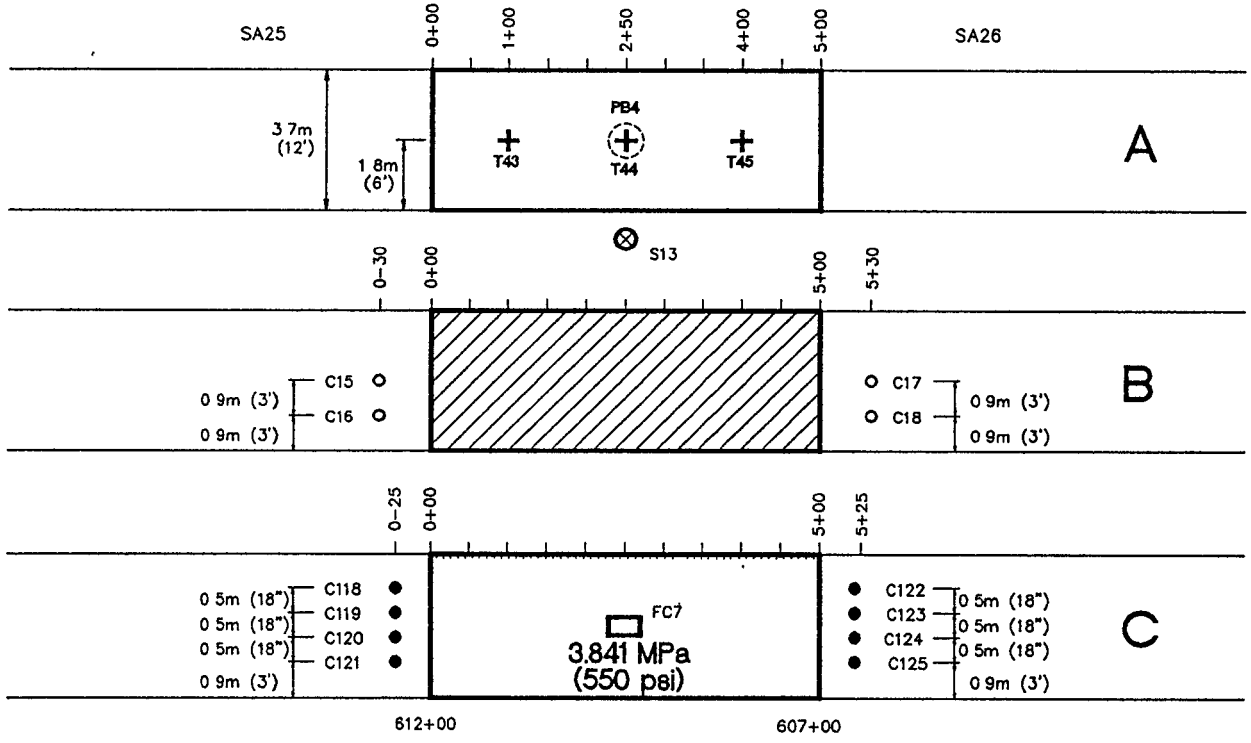
SB DIRECTION OF TRAFFIC

PAVEMENT STRUCTURE

PREP EMBANK
1. Subgrade

5 LCB–152mm
PREP EMBANK
1 Subgrade

6 PCC–203mm
5 LCB–152mm
PREP EMBANK
1 Subgrade



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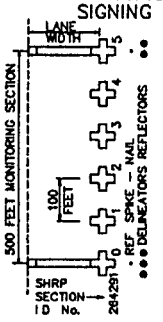

A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT (T43–T45)

⊗ SHOULDER PROBE (S13)

◌ PLATE LOAD BEARING TEST ON PREPARED EMBANKMENT(PB4)

B ○ 102mm OD CORE OF LCB TAKEN 7–12 DAYS AFTER PLACEMENT (C15–C18)

C ● 102mm OD CORE OF FINISHED PCC SURFACE AND LCB (C118–C125)

▭ BULK SAMPLES OF FRESH PCC AS–DELIVERED (FC7)

PCC – 3 841 MPa (550psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100205

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 28/94

FHWA SPS–2 TEST SECTIONS ONLY
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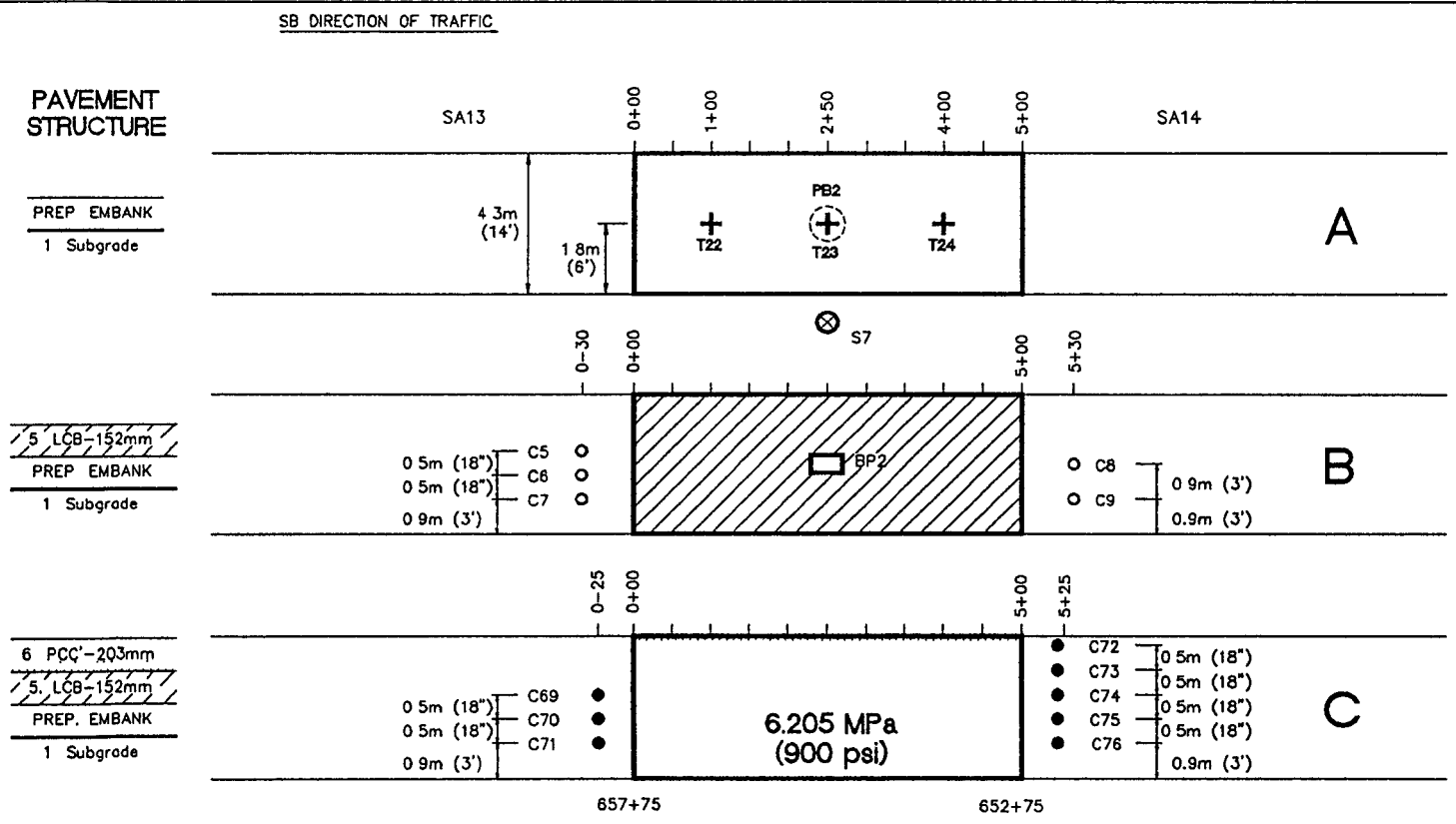
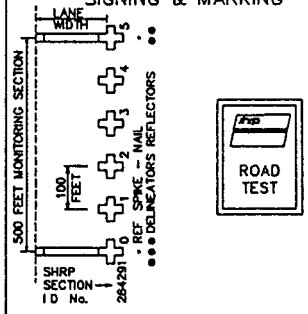
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT (T22–T24)

⊗ SHOULDER PROBE (S7)

◌ PLATE LOAD BEARING TEST ON PREPARED EMBANKMENT(PB2)

B ▭ BULK SAMPLES OF FRESH LCB AS–DELIVERED (BP2)

○ 102mm OD CORE OF LCB TAKEN 7–12 DAYS AFTER PLACEMENT (C5–C9)

C ● 102mm OD CORE OF FINISHED PCC SURFACE AND LCB (C69–C76)

PCC' – 6 205 MPa (900psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100206

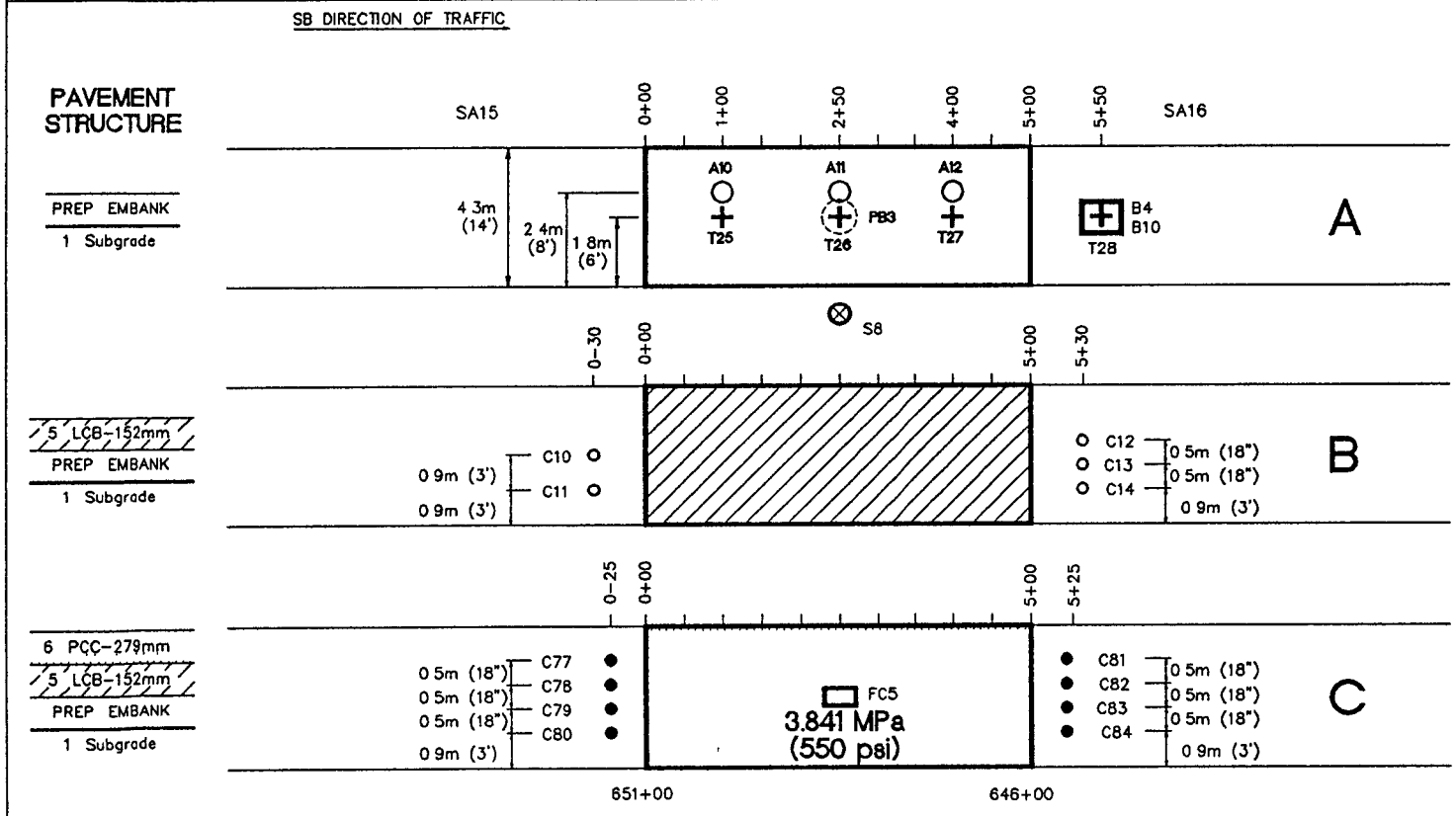
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

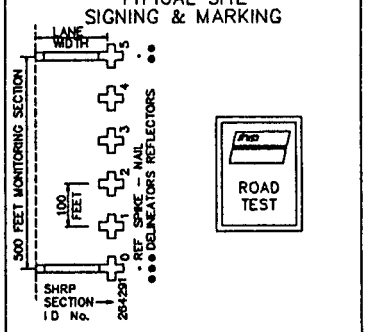
PLOTDATE: JULY 26/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED





A ✚ NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT (T25–T28)

⊗ SHOULDER PROBE (S8)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B4) AND SUBGRADE (B10)

◌ PLATE LOAD BEARING TEST ON PREPARED EMBANKMENT (PB3)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1.2m BELOW TOP OF PREPARED EMBANKMENT (A10–A12)

B ○ 102mm OD CORE OF LCB TAKEN 7–12 DAYS AFTER PLACEMENT (C10–C14)

C ● 102mm OD CORE OF FINISHED PCC SURFACE AND LCB (C77–C84)

▭ BULK SAMPLES OF FRESH PCC AS–DELIVERED (FC5)

PCC – 3.844 MPa (550 psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100207

DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 26/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
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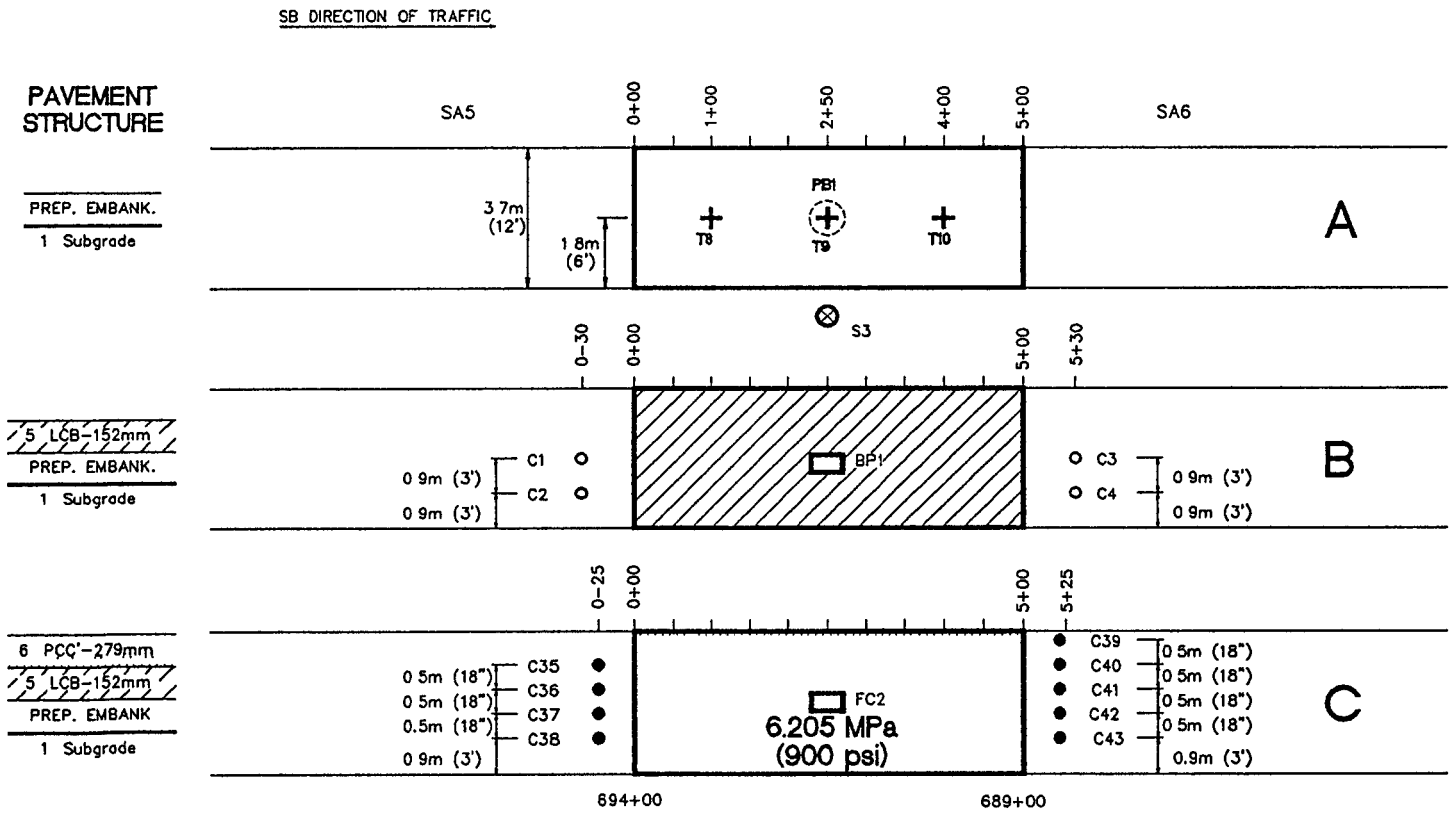
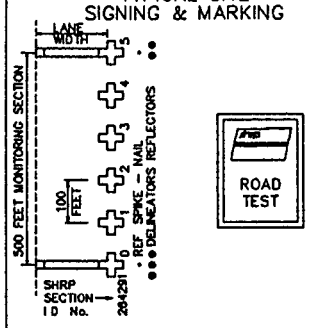
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



TYPICAL SITE SIGNING & MARKING



A ✚ NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T8–T10)

⊗ SHOULDER PROBE (S3)

◌ PLATE LOAD BEARING TEST ON PREPARED EMBANKMENT (PB1)

B ○ 102mm OD CORE OF LCB TAKEN 7–12 DAYS AFTER PLACEMENT (C1–C4)

▭ BULK SAMPLES OF FRESH LCB AS–DELIVERED (BP1)

C ● 102mm OD CORE OF FINISHED PCC SURFACE AND LCB (C35–C43)

▭ BULK SAMPLES OF FRESH PCC AS–DELIVERED (FC2)

PCC' – 6 205 MPa (900psi) FLEXURAL STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100208

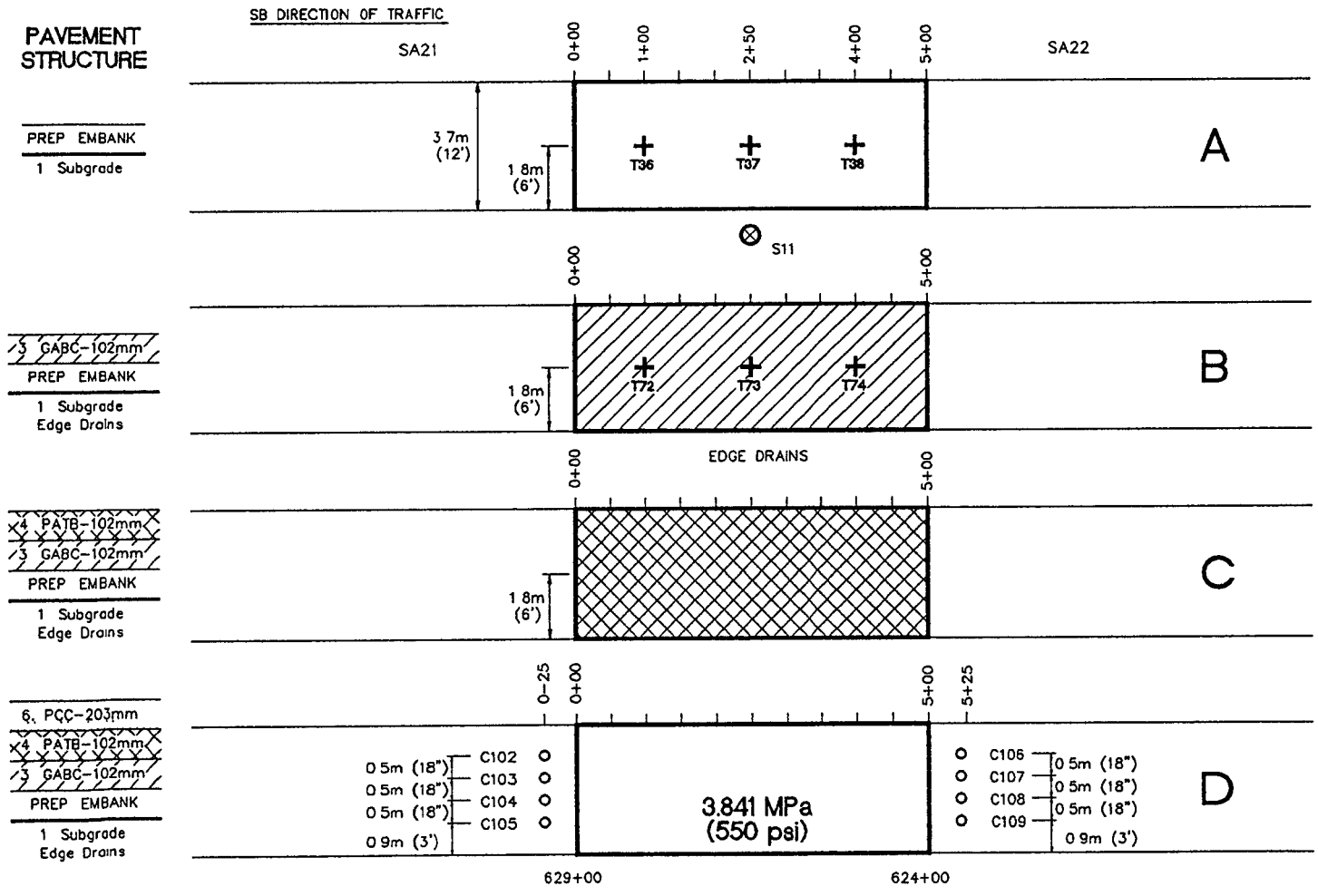
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 25/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

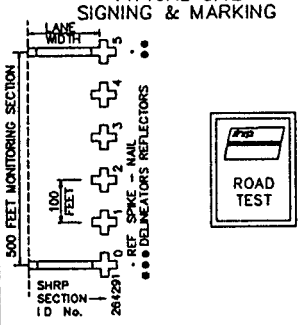
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



SAMPLING AND TESTING PLAN FOR SECTION 100209

TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T36–T38)

⊗ SHOULDER PROBE (S11)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T72–T74)

C

D o 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C102–C109)

PCC – 3.841 MPa (550 psi) FLEXURAL STRENGTH

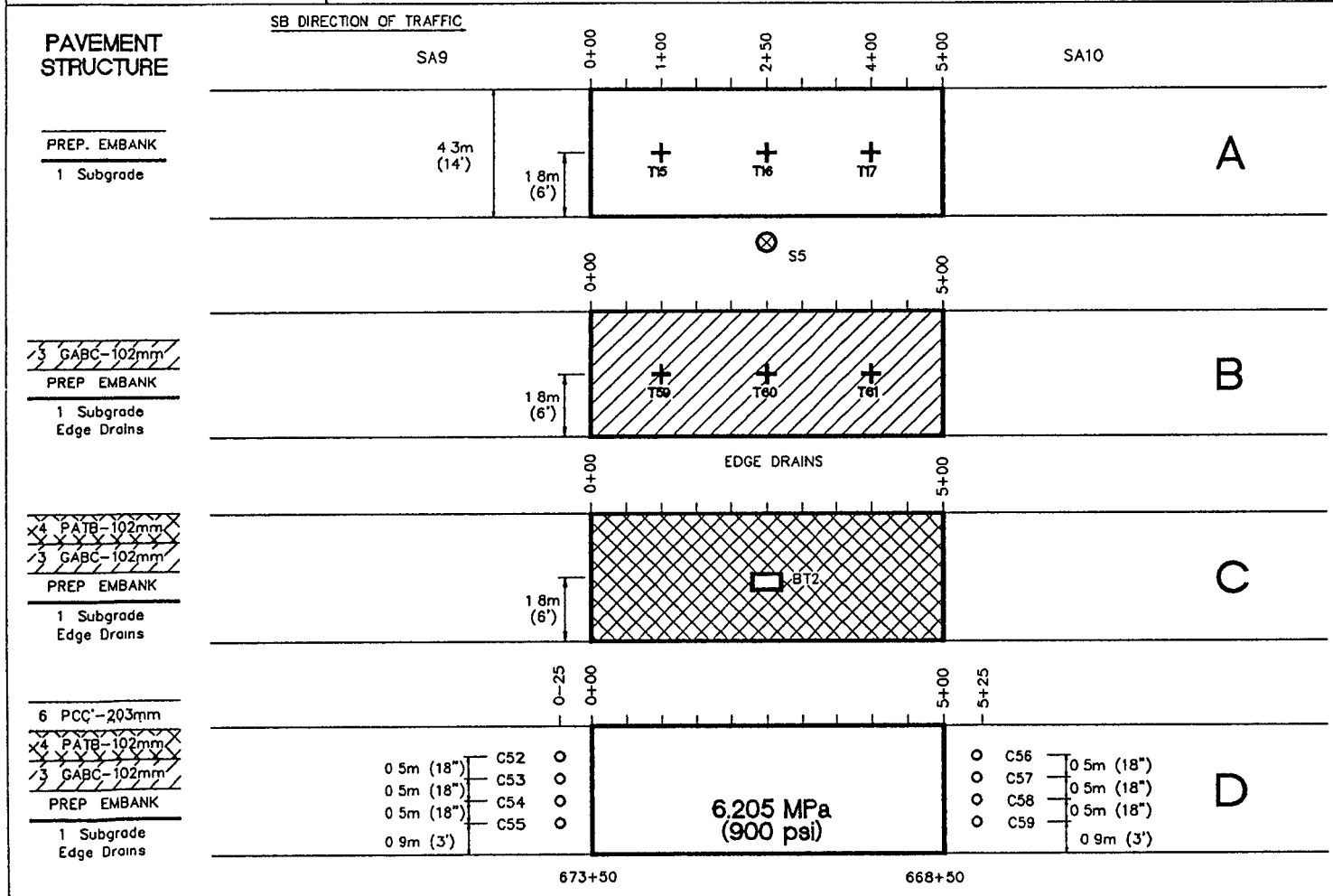
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 28/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

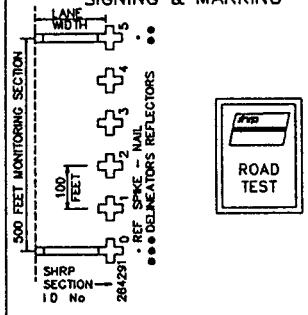
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



SAMPLING AND TESTING PLAN FOR SECTION 100210

TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T15–T17)

⊗ SHOULDER PROBE (S5)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T59–T61)

C ▭ PAVER BULK SAMPLE OF PATB (BT2)

D ○ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C52–C59)

PCC' – 6 205 MPa (900 psi) FLEXURAL STRENGTH

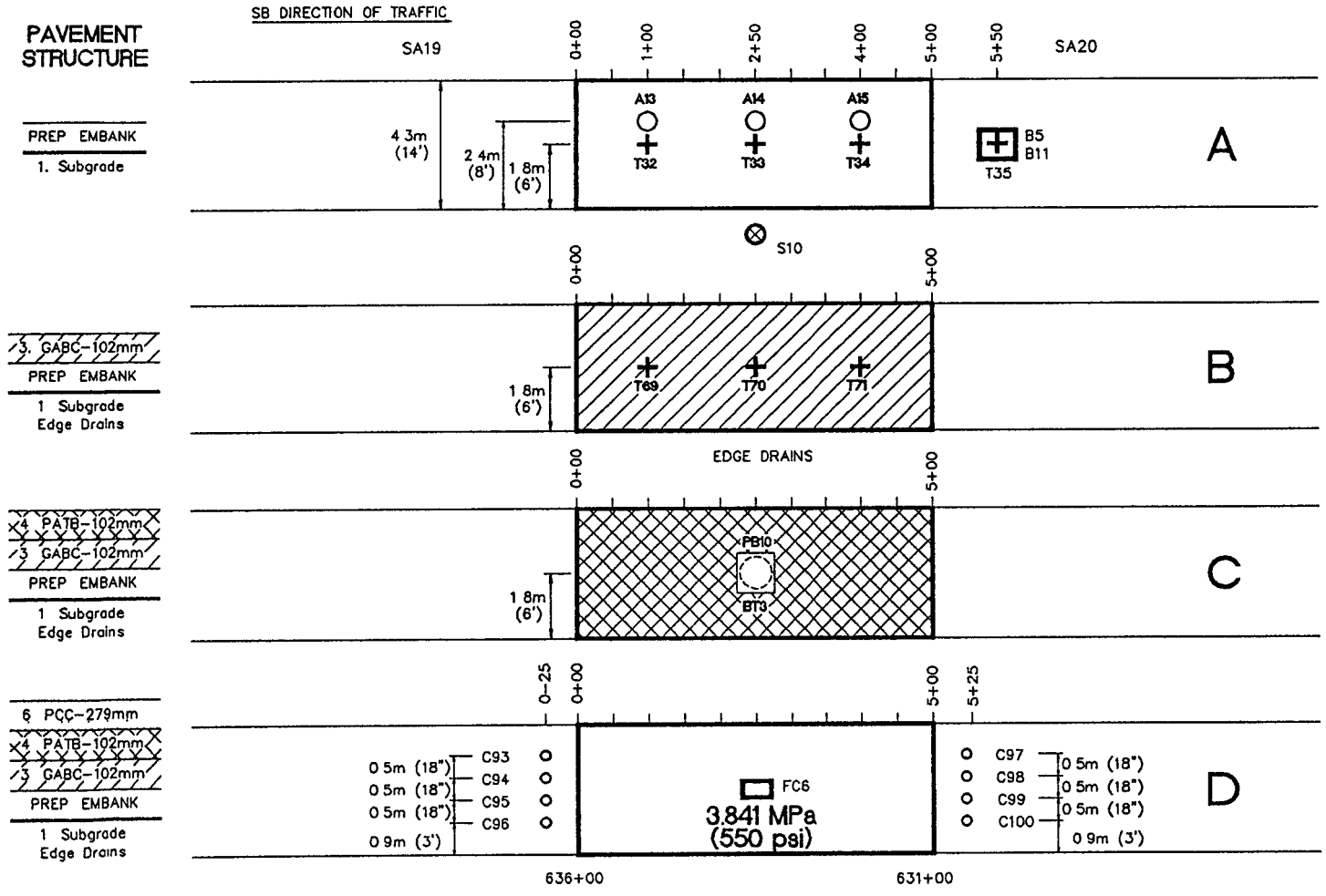
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 26/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

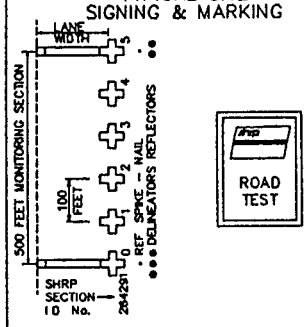
FHWA-LTPP SPS-2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



SAMPLING AND TESTING PLAN FOR SECTION 100211

TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T32-T35)

⊗ SHOULDER PROBE (S10)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B5) AND SUBGRADE(B11)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1 2m BELOW TOP OF PREPARED EMBANKMENT (A13-A15)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T69-T71)

C ◌ PLATE LOAD BEARING TEST ON PATB (PB10)

□ PAVER BULK SAMPLE OF PATB (BT3)

D ○ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C93-C100)

▭ BULK SAMPLES OF FRESH PCC AS-DELIVERED (FC6)

PCC - 3 841 MPa (550 psi) FLEXURAL STRENGTH

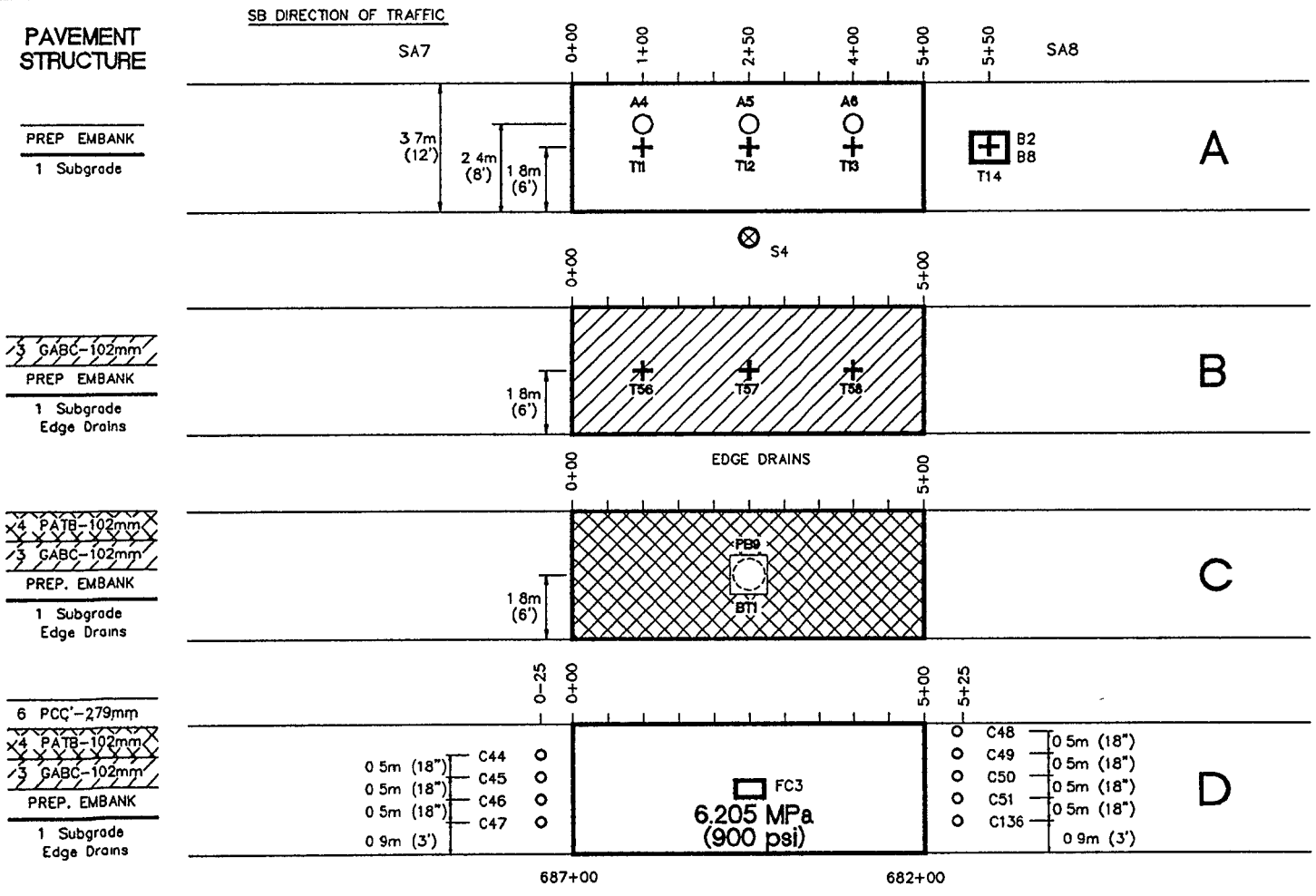
DELAWARE DOT SPS-2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 26/94

FHWA SPS-2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

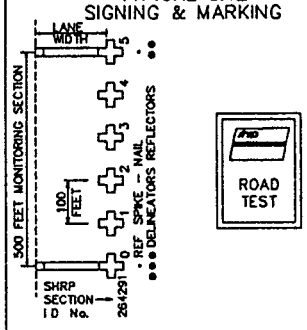
FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



SAMPLING AND TESTING PLAN FOR SECTION 100212

TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T11–T14)

⊗ SHOULDER PROBE (S4)

⊞ BULK SAMPLES OF PREPARED EMBANKMENT(B2) AND SUBGRADE(B8)

○ SHELBY TUBE/SPLIT SPOON SAMPLING TO 1 2m BELOW TOP OF PREPARED EMBANKMENT (A4–A6)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T56–T58)

C ◌ PLATE LOAD BEARING TEST ON PATB (PB9)

□ PAVER BULK SAMPLE OF PATB (BT1)

D ∘ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C44–C51,C136)

▭ BULK SAMPLE OF FRESH PCC AS–DELIVERED (FC3)

PCC' – 6 205 MPa (900 psi) FLEXURAL STRENGTH

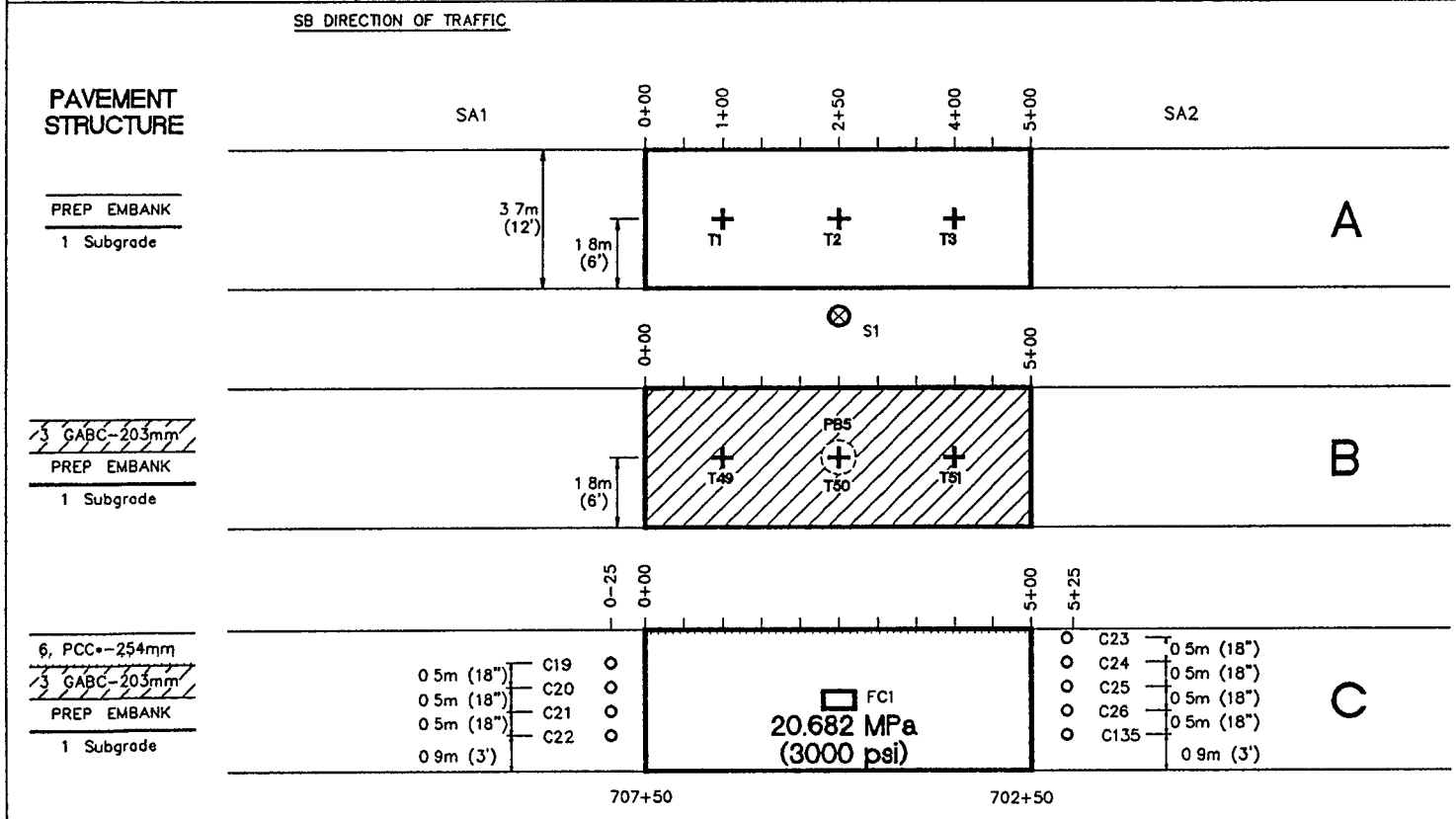
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 26/94

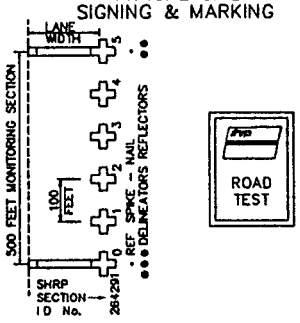
FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FHWA–LTPP SPS–2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



TYPICAL SITE SIGNING & MARKING



A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T1–T3)

⊗ SHOULDER PROBE (S1)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T49–T51)

◯ PLATE LOAD BEARING TEST ON GABC (PB5)

C ○ 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C19–C26,C135)

▭ BULK SAMPLES OF FRESH PCC AS–DELIVERED (FC1)

PCC*–20 682 MPa (3000psi) COMPRESSIVE STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100259

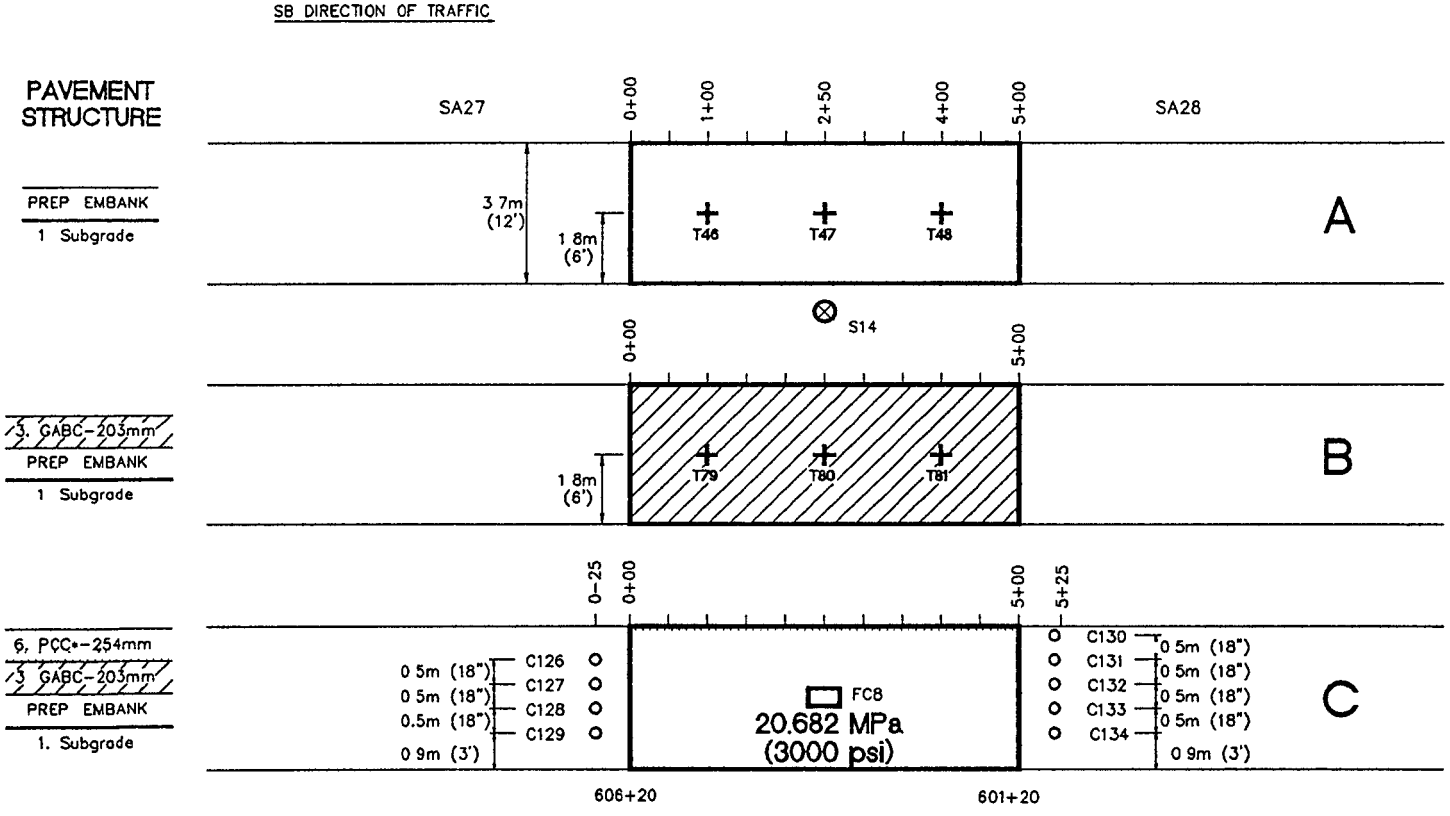
DELAWARE DOT SPS–2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 22/94

FHWA SPS–2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

FHWA-LTPP SPS-2 DELAWARE SAMPLING PLAN
STRUCTURAL FACTORS FOR RIGID PAVEMENTS

PAVEMENT MANAGEMENT SYSTEMS LIMITED



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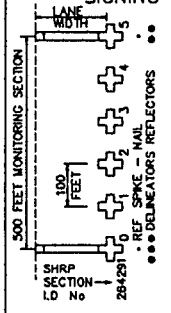

A + NUCLEAR DENSITY/MOISTURE TESTING ON PREPARED EMBANKMENT(T46-T48)

⊗ SHOULDER PROBE (S14)

B + NUCLEAR DENSITY/MOISTURE TESTING ON COMPACTED GABC (T79-T81)

C o 102mm OD CORE OF FINISHED PCC SURFACE ONLY (C126-C134)

▭ BULK SAMPLES OF FRESH PCC AS-DELIVERED (FC8)

PCC*-20 682 MPa (3000psi) COMPRESSIVE STRENGTH

SAMPLING AND TESTING PLAN FOR SECTION 100260

DELAWARE DOT SPS-2
US 113 SBL MILFORD TO GEORGETOWN

PLOTDATE: JULY 22/94

FHWA SPS-2 TEST SECTIONS ONLY
DIMENSIONAL DETAILS ONLY
DRAWING NOT TO SCALE

TABLE 1
DE DOT SPS-2 - LAYOUT: US 113 SB, MILFORD TO GEORGETOWN

CONSTR. STA.	LENGTH FT.	SECTION NO.	CONC. FLEX. STRENGTH	PAVT. THICK INS.	LANE WIDTH FT.	BASE TYPE	BASE THICK. INS.	REMARKS	MONITOR STA.	CONSTR. STA.
762+63						GABC	8"	End of Contract		
						or		88-013-04		
						SCB				
	6113	59	3000	10"	12'	GABC	8"		0	707+50
			Comp.						5	702+50
701+50										
									0	700+50
	675	4	900	11"	12'	GABC	6"		5	695+50
694+75										
									0	694+00
	675	8	900	11"	12'	LCB	6"		5	689+00
688+00										
						PATB	4"	Fabric Wrapped	0	687+00
	1250	12	900	11"	12'	GABC	4"	Edge Drains	5	682+00
675+50								Trans Underdrain		
						PATB	4"	Fabric Wrapped	0	673+50
	800	10	900	8"	14'	GABC	4"	Edge Drains	5	668+50
667+50										
									0	665+00
	850	2	900	8"	14'	GABC	6"		5	660+00
659+00										
									0	657+75
	725	6	900	8"	14'	LCB	6"		5	652+75
651+75										
									0	651+00
	675	7	550	11"	14'	LCB	6"		5	646+00
645+00										
									0	644+00
									5	639+00
637+25	775	3	550	11"	14'	GABC	6"			
						PATB	4"	Fabric Wrapped	0	636+00
	750	11	550	11"	14'	GABC	4"	Edge Drains	5	631+00
629+75								Trans. Underdrain		

TABLE 1 (Cont.)
DE DOT SPS-2 - LAYOUT: US 113 SB, MILFORD TO GEORGETOWN

CONSTR. STA.	LENGTH FT.	SECTION NO.	CONC. FLEX. STRENGTH	PAVT. THICK INS.	LANE WIDTH FT.	BASE		REMARKS	MONITOR STA.	CONSTR. STA.
						TYPE	THICK. INS.			
629+75 623+25	650	9	550	8"	12'	PATB GABC	4" 4"	Fabric Wrapped Edge Drains	0 5	629+00 624+00
614+00	925	1	550	8"	12'	GABC	6"		0 5	622+00 617+00
606+35	765	5	550	8"	12'	LCB	6"		0 5	612+00 607+00
601+00	535	60	3000 Comp.	10"	12'	GABC	8"	Plastic Dowels	0 5	606+20 601+20
550+00	5100							Begin Contract 88-013-04		

GABC- Graded Aggregate Base Course, Type B
PATB- Permeable Asphalt Treated Base
LCB- Lean Concrete Base

TABLE 2
DE DOT SPS-2 - LABORATORY MATERIALS TESTING PLAN

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: Agency	Test Conducted by: FHWA
SUBGRADE (below embankment)						
Sieve Analysis	SS01	P51	6	B7-B12		yes
Hydrometer to 0.001 mm	SS02	P42	6	B7-B12		yes
Atterberg Limits	SS03	P43	6	B7-B12		yes
Classification	SS04	P52	6	B7-B12		yes
(visual-manual only on thin-wall tubes)			18	A1-A18	yes	yes
Moisture-Density Relations	SS05	P55	6	B7-B12		yes
Resilient Modulus	SS07	P46	6	A2, A5, A9, A11, A14, A17		yes
(if thin-wall tube is not available)			6			yes
Unit Weight (if thin-wall tube is not available, test is not conducted)	SS08	P56	6	A1, A4, A8, A10, A12, A16	yes	
Natural Moisture Content	SS09	P49	6	B7-B12		yes
Unconfined Comp. Strength (if thin-wall tube is not available, test is not conducted)	SS10	P54	6	A1, A4, A8, A10, A12, A16	yes	
Permeability	SS11	P57	3	A3, A7, A18	yes	
Permeability	UG09	P48	6	B7-B12	yes	
EMBANKMENT (0.3 m select fill)						
Sieve Analysis	SS01	P51	6	B1-B6		yes
Hydrometer to 0.001 mm	SS02	P42	6	B1-B6		yes
Atterberg Limits	SS03	P43	6	B1-B6		yes
Classification	SS04	P52	6	B1-B6		yes
Moisture-Density Relations	SS05	P55	6	B1-B6		yes
Resilient Modulus	SS07	P46	6	B1-B6		yes
Natural Moisture Content	SS09	P49	6	B1-B6		yes
Permeability	UG09	P48	6	B1-B6	yes	

TABLE 2 (continued)
DE DOT SPS-2 - LABORATORY MATERIALS TESTING PLAN

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by:	
					Agency	FHWA
UNBOUND GRANULAR BASE						
Particle Size Analysis	UG01	P41	3	B13-B15		yes
Sieve Analysis (washed)	UG02	P41	3	B13-B15		yes
Atterberg Limits	UG04	P43	3	B13-B15		yes
Moisture-Density Relations	UG05	P44	3	B13-B15		yes
Resilient Modulus	UG07	P46	3	B13-B15		yes
Classification	UG08	P47	3	B13-B15		yes
Permeability	UG09	P48	3	B13-B15	yes	
Natural Moisture Content	UG10	P49	3	B13-B15		yes
PERMEABLE TREATED ASPHALT BASE						
Asphalt Content (extraction)	AC04	P04	3	BT1-BT3 from paver	yes	
Extracted Aggregate:						
Gradation of Aggregate	AG04	P14	3	BT1-BT3 from paver	yes	

TABLE 2 (continued)
DE DOT SPS-2 - LABORATORY MATERIALS TESTING PLAN

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: Agency	Test Conducted by: FHWA
LEAN CONCRETE BASE						
Compressive Strength	PC01				yes	
14 day			6	BP1-BP2		
			8	C1, C3, C5, C7, C10, C13, C15, C17		
28 day			6	BP1-BP2		
			8	C19, C23, C61, C65, C69, C72 C102, C106		
1 year			6	BP1-BP2		
			12	C21, C25, C26, C63, C67, C68 C71, C74, C76, C104,		
Core examination and Thickness	PC06		28 (all cores)	C108, C109	yes	
PORTLAND CEMENT CONCRETE						
Compressive Strength	PC01	P61			yes	
14 day 3.8 MPa (550 psi)			3	FC5-FC7		
			6	C19, C27, C35, C44, C52, C61		
6.2 MPa (900 psi)			3	FC2-FC4		
			6	C69, C77, C85, C93, C102, C110		
3000 psi			2	FC1, FC8		
28 day 3 8 MPa (550 psi)			3	FC5-FC7		
			6	C20, C28, C36, C45, C53, C62		
6 2 MPa (900 psi)			3	FC2-FC4		
			6	C70, C78, C86, C94, C103, C111		
3000 psi			2	FC1, FC8		
1 year 3 8 MPa (550 psi)			3	FC5-FC7		
			6	C21, C29, C37, C46, C54, C63		
6.2 MPa (900 psi)			3	FC2-FC7		
			6	C71, C79, C87, C95, C104, C112		
3000 psi			2	FC1, FC8		

TABLE 2 (continued)
DE DOT SPS-2 - LABORATORY MATERIALS TESTING PLAN

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by: Agency	Test Conducted by: FHWA
Splitting Tensile Strength	PC02	P62			yes	
14 day 3 8 PMa (550 psi)			3	FC5-FC7		
			6	C23,C31,C39,C48,C56,C65		
6.2 MPa (900 psi)			3	FC2-FC4		
			6	C72,C81,C89,C97,C106,C113		
3000 psi compr			2	FC1, FC8		
28 day 3 8 MPa (550 psi)			3	FC5-FC7		
			6	C24,C32,C40,C49,C57,C66		
			3	FC2-FC4		
6.2 MPa (900 psi)			6	C73,C82,C90,C98,C107,C114		
3000 psi compr.			2	FC1, FC8		
1 year 3 8 MPa (550 psi)			3	FC5-FC7		
			6	C25,C33,C41,C50,C58,C67		
6.2 MPa (900 psi)			3	FC2-FC4		
			6	C74,C83,C91,C99,C108,C115		
3000 psi compr.			2	FC1, FC8		
Coefficient of Thermal Expansion	PC03	P63	3	C43,C101,C126		yes
Static Modulus of Elasticity	PC04	P64				
28 day 3.8 MPa (550 psi)			6	C22,C30,C38,C47,C55,C64	yes	
6 2 MPa (900 psi)			6	C75,C80,C88,C96,C105,C116		
3000 psi compr.			1	C121		
1 year 3 8 MPa (550 psi)			6	C26,C34,C42,C51,C59,C68		
6 2 MPa (900 psi)			6	C76,C84,C92,C100,C109,C117		
3000 psi compr.			1	C125		
PCC Unit Weight	PC05	P65	12	C22,C30,C38,C47,C55,C64 C75,C80,C88,C96,C105,C116 C121	yes	
Core Examination and Thickness	PC06	P66	108	All cores, C19-C125	yes	
Air Content 28 day	PC08	P68	2	C20, C70	yes	

TABLE 2 (continued)
DE DOT SPS-2 - LABORATORY MATERIALS TESTING PLAN

Material Type and Properties		LTPP Designation	LTPP Protocol	Minimum No. of Tests per Layer	Sampling Location	Test Conducted by:	
						Agency	FHWA
Flexural Strength		PC09	P69			yes	
14 day	3.8 MPa (550 psi)			3	FC5-FC7		
	6.2 MPa (900 psi)			3	FC2-FC4		
	3000 psi compr.			2	FC1, FC8		
28 day	3.8 MPa (550 psi)			3	FC5-FC7		
	6.2 MPa (900 psi)			3	FC2-FC4		
	3000 psi compr.			2	FC1, FC8		
1 year	3.8 MPa (550 psi)			3	FC5-FC7		
	6.2 MPa (900 psi)			3	FC2-FC4		
	3000 psi compr.			2	FC1, FC8		

TABLE 3
SCOPE OF MATERIAL SAMPLING: PRIMARY SPS-2 EXPERIMENT

Material and Sample Description	Number of Samples	Sample Locations
Portland Cement Concrete		
Coring - 102 mm (4 inc.) diameter cores	117	C19-C59, 26A, 51A, C61-C100 C102-C134, C109A
Bulk Sampling (fresh PCC)	8	FC1-FC8
Lean Concrete Base		
Bulk Sampling (fresh LCB)	2	BP1-BP2
Coring 102 mm (4 in.) diameter cores	18	C1-C18 (if practical)
Permeable Asphalt Treated Base		
Bulk Sampling (45 kg [100 lb.] per sample, uncompacted)	3	BT1-BT3 from paver
Unbound Base/Subbase Layers (per layer)		
Bulk Sampling (181 kg [400 lb.] each sample)	3	B13, B14, B15
Moisture Content Samples	3	B13, B14, B15
Embankment (0.3 m select fill)		
Bulk Sampling (181 kg [400 lb.] each sample)	6	B1-B6
Moisture Content Samples	6	B1-B6
Subgrade		
Thin-Walled Tube Sampling (* 2 tubes)	36*	A1-A18
Splitspoon Sampling (only if thin-wall tube cannot be obtained)	36*	A1-A18
Bulk Sampling (181 kg [400 lb.] each sample)	6	B7-B12
Moisture Content Samples	6	B7-B12

TABLE 4
DE DOT SPS-2: SCOPE OF FIELD TESTING

Material	Number of Tests	Location Designation
Portland Cement Concrete (PCC)		
Slump	8	FC1-FC8
Air Content	8	FC1-FC8
Mix. Temperature	8	FC1-FC8
Lean Concrete Base (LCB)		
Slump	2	BP1-BP2
Air Content	2	BP1-BP2
Mix. Temperature	2	BP1-BP2
Permeable Asphalt Treated Base (PATB)		
Plate Bearing Test	2	PB9-PB10*
Unbound Base/Subbase Layers (per layer)		
In situ density, moisture content (nuclear gauge)	33	T49-T81
Plate Bearing Test	4	PB5-PB8
Embankment < 1.2m (4 ft.)		
In situ density, moisture content (nuclear gauge)	48	T1-T48
Plate Bearing Test	4	PB1-PB4
Subgrade		
Shoulder Auger Probe	14	S1-S14

* If practical with request to scheduling

TABLE 5
SAMPLES FOR THE MATERIALS REFERENCE LIBRARY (MRL)

MATERIAL DESCRIPTION	QUANTITY	PACKAGING
PORTLAND CEMENT	Approximately 23 kg (50 lbs.)	Seal in heavy plastic bag and placed in a 19 liter (5 gal.) pail
FLYASH	Approximately 23 kg (50 lbs)	Seal in heavy plastic bag and placed in a 19 liter (5 gal) pail
LIQUID ADDITIVE (each)	0 9 liter (1 quart)	Seal in a GLASS container protected from breakage
FINE AGGREGATE (from Plant)	Approximately 150 kg (300 lbs)	Place in 4-19 liter (5 gal) pails
COARSE AGGREGATE (from Plant)	Approximately 150 kg (300 lbs)	Place in 4-19 liter (5 gal) pails

NOTE:
- Collect material samples for both 3.8 MPa and 6 2 MPa concrete if different materials are used.
- Containers and Shipping costs are to be bourne by the MRL
- Contact Mr. Andrew Brigg - (702) 358-7574
  Mr. Jim Nichols - (702) 329-4955
  Nichols Consulting Engineers
- Address to: Materials Reference Library
  1625 Crane Way
  Sparks, NV 89431

TABLE 6
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - STATE LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
EMBANKMENT SAMPLE - TOP 12" OF FINISHED SUBGRADE												
100204	B1	BG01	695+00	1.8	2	45 kg Bulk	UG09/P48					
100212	B2	BG02	681+50	1.8	2	45 kg Bulk	UG09/P48					
100202	B3	BG03	659+50	1.8	2	45 kg Bulk	UG09/P48					
100207	B4	BG04	645+50	1.8	2	45 kg Bulk	UG09/P48					
100211	B5	BG05	630+50	1.8	2	45 kg Bulk	UG09/P48					
100201	B6	BG06	616+50	1.8	2	45 kg Bulk	UG09/P48					
SUBGRADE SAMPLE - BELOW EMBANKMENT SAMPLE												
100204	B7	BS01	695+00	1.8	2	45 kg Bulk						
100212	B8	BS02	681+50	1.8	2	45 kg Bulk						
100202	B9	BS03	659+50	1.8	2	45 kg Bulk						
100207	B10	BS04	645+50	1.8	2	45 kg Bulk						
100211	B11	BS05	630+50	1.8	2	45 kg Bulk						
100201	B12	BS06	616+50	1.8	2	45 kg Bulk						

TABLE 6A
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - FHWA-LTPP LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
EMBANKMENT SAMPLE - TOP 12" OF FINISHED SUBGRADE												
100204	B1	BG01	695+00	1.8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
100212	B2	BG02	681+50	1.8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
100202	B3	BG03	659+50	1.8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
100207	B4	BG04	645+50	1 8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
100211	B5	BG05	630+50	1.8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
100201	B6	BG06	616+50	1.8	2	136 kg Bulk	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	
SUBGRADE SAMPLE - BELOW EMBANKMENT SAMPLE												
100204	B7	BS01	695+00	1.8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46
100212	B8	BS02	681+50	1 8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46
100202	B9	BS03	659+50	1.8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46
100207	B10	BS04	645+50	1.8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46
100211	B11	BS05	630+50	1.8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46
100201	B12	BS06	616+50	1.8	2	136 kg Bulk	SS01/PS1	SS01/PS1	SS03/P43	SS04/P52	SS05/P55	SS07/P46

TABLE 7
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - STATE LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
100204	A1	TS01	699+50	2.4	3	Thin-Wall Tube	SS04/P52	SS08/P56	SS10/P54			
	A3	TS05	696+50	2.4	3	Thin-Wall Tube	SS04/P52	SS11/P57				
100212	A4	TS07	686+00	2.4	3	Thin-Wall Tube	SS04/P52	SS08/P56	SS10/P54			
	A6	TS11	683+00	2.4	3	Thin-Wall Tube	SS04/P52					
100202	A7	TS13	664+00	2 4	3	Thin-Wall Tube	SS04/P52	SS11/P57				
	A8	TS15	662+50	2.4	3	Thin-Wall Tube	SS04/P52	SS08/P56	SS10/P54			
100207	A10	TS19	650+00	2.4	3	Thin-Wall Tube	SS04/P52	SS08/P56	SS10/P54			
	A12	TS23	647+00	2.4	3	Thin-Wall Tube	SS04/P52					
100211	A13	TS25	635+00	2.4	3	Thin-Wall Tube	SS04/P52	SSO8/P56	S10/P54			
	A15	TS29	632+00	2.4	3	Thin-Wall Tube	SS04/P52					
100201	A16	TS31	621+00	2.4	3	Thin-Wall Tube	SS04/P52	SS08/P56	SS10/P54			
	A18	TS37	618+00	2.4	3	Thin-Wall Tube	SS04/P52	SS11/P57				
100204	A1	TS02	699+50	2 4	3	Thin-Wall Tube						
	A3	TS06	696+50	2.4	3	Thin-Wall Tube						
100212	A4	TS08	686+00	2.4	3	Thin-Wall Tube						
	A6	TS12	683+00	2.4	3	Thin-Wall Tube						
100202	A7	TS14	664+00	2.4	3	Thin-Wall Tube						
	A8	TS16	662+50	2.4	3	Thin-Wall Tube						
100207	A10	TS20	650+00	2 4	3	Thin-Wall Tube						
	A12	TS24	647+00	2.4	3	Thin-Wall Tube						
100211	A13	TS26	635+00	2 4	3	Thin-Wall Tube						
	A15	TS30	632+00	2 4	3	Thin-Wall Tube						
100201	A16	TS32	621+00	2 4	3	Thin-Wall Tube						
	A18	TS36	618+00	2.4	3	Thin-Wall Tube						

TABLE 7A
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - FHWA-LTPP LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
100204	A2	TS03	698+00	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100212	A5	TS09	684+50	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100202	A9	TS17	661+00	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100207	A11	TS21	648+50	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100211	A14	TS27	633+50	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100201	A17	TS33	619+50	2.4	3	Thin-Wall Tube	SS04/P52	SS07/P46				
100204	A2	TS04	698+00	2.4	3	Thin-Wall Tube						
100212	A5	TS10	684+50	2.4	3	Thin-Wall Tube						
100202	A9	TS18	661+00	2.4	3	Thin-Wall Tube						
100207	A11	TS22	648+50	2.4	3	Thin-Wall Tube						
100211	A14	TS28	633+50	2.4	3	Thin-Wall Tube						
100201	A17	TS34	619+50	2.4	3	Thin-Wall Tube						

TABLE 8
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - STATE LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
GRANULAR AGGREGATE BASE COURSE (GABC)												
100204	B13	BG-07	695+00	1.8	2	45 kg Bulk	UG09/P48					
100202	B14	BG-08	659+50	1.8	2	45 kg Bulk	UG09/P48					
100201	B15	BG-09	616+50	1.8	2	45 kg Bulk	UG09/P48					

TABLE 8A
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - FHWA-LTPP LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
GRANULAR AGGREGATE BASE COURSE (GABC)												
100204	B13	BG-07	695+00	1.8	2	136 kg Bulk	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46
100202	B14	BG-08	659+50	1.8	2	136 kg Bulk	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46
100201	B15	BG-09	616+50	1.8	2	136 kg Bulk	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46

TABLE 9
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SAMPLING AND LABORATORY TESTING - STATE LABORATORY

SECTION NO.	LOCATION NO.	SAMPLE NO.	APPROX. CONSTR. STA.	OFFSET m.	LAB TEST NO.	TYPE OF SAMPLE	LABORATORY TEST SEQUENCE					
							FIRST	SECOND	THIRD	FOURTH	FIFTH	SIXTH
PERMEABLE ASPHALT TREATED BASE												
100212	BT1	BT1	684+50		3	45 kg Paver	AC04/P04	AG04/P14				
100210	BT2	BT2	671+00		3	45 kg Paver	AC04/P04	AG04/P14				
100211	BT3	BT3	633+50		3	45 kg Paver	AC04/P04	AG04/P14				

TABLE 10
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
TRACKING TABLE FOR MOLDED PCC CYLINDERS & BEAMS

TEST SECTION	STATION & SAMPLE NO.	DATES MOLDED (FILL IN)	SPECIMEN NUMBER								
			14 DAY TESTS			28 DAY TESTS			365 DAY TESTS		
			P61	P62	P69	P61	P62	P69	P61	P62	69
LCB As Delivered											
100208	691+50 BP1		LX01 LX02			LY01 LY02			LZ01 LZ02		
			Test Date			Test Date			Test Date		
100206	655+25 BP2		LX03 LX04			LY03 LY04			LZ03 LZ04		
			Test Date			Test Date			Test Date		
PCC As Delivered											
100259	705+00 FC1		GX01	GX02	FX01	GY01	GY02	FY01	GZ01	GZ02	FZ01
			Test Date			Test Date			Test Date		
100208	691+50 FC2		GX03	GX04	FX02	GY03	GY04	FY02	GZ03	GZ04	FZ02
			Test Date			Test Date			Test Date		
100212	684+50 FC3		GX05	GX06	FX03	GY05	GY06	FY03	GZ05	GZ06	FZ03
			Test Date			Test Date			Test Date		
100202	662+50 FC4		GX07	GX08	FX04	GY07	GY07	FY04	GZ07	GZ08	FZ04
			Test Date			Test Date			Test Date		
100207	648+50 FC5		GX09	GX10	FX05	GY09	GY10	FY05	GZ09	GZ10	FZ05
			Test Date			Test Date			Test Date		

TABLE 10 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
TRACKING TABLE FOR MOLDED PCC CYLINDERS & BEAMS

TEST SECTION	STATION & SAMPLE NO.	DATES MOLDED (FILL IN)	SPECIMEN NUMBER								
			14 DAY TESTS			28 DAY TESTS			365 DAY TESTS		
			P61	P62	P69	P61	P62	P69	P61	P62	69
PCC As Delivered											
100211	633+50 FC6		GX11	GX12	FX06	GY11	GY12	FY06	GZ11	GZ12	FZ06
			Test Date			Test Date			Test Date		
100205	609+00 FC7		GX13	GX14	FX07	GY13	GY14	FY07	GZ13	GZ14	FZ07
			Test Date			Test Date			Test Date		
100260	603+70 FC8		GX15	GX16	FX08	GY15	GY16	FY08	GZ15	GZ16	FZ08
			Test Date			Test Date			Test Date		

TEST PROTOCOL

P61 - Compression testing of molded cylinders 152mm dia x 305mm

P62 - Splitting Tensile Testing of Molded Cylinders 152mm dia x 305mm

P69 - Flexural Strength (1/3 Point Loading) of Beams 152mm x 152mm x 508mm

TABLE 11
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
14	CL1	100208		3	152	LCB	694+30	1.9				PC06/P06	PC01/P61		
	CL2			3	152	LCB	694+30	0.9				PC06/P06			
			CL3	3	152	LCB	688+70	1.9				PC06/P06	PC01/P61		
			CL4	3	152	LCB	688+70	0.9				PC06/P06			
	CL5	100206		3	152	LCB	658+05	1.9				PC06/P06	PC01/P61		
	CL6			3	152	LCB	658+05	0.9				PC06/P06			
	CL7			3	152	LCB	658+05	1.9				PC06/P06	PC01/P61		
			CL8	3	152	LCB	652+45	1.4				PC06/P06			
			CL9	3	152	LCB	652+45	0.9				PC06/P06			
	CL10	100207		3	152	LCB	651+30	1.9				PC06/P06	PC01/P61		
	CL11			3	152	LCB	651+30	1.4				PC06/P06			
			CL12	3	152	LCB	645+70	0.9				PC06/P06			
			CL13	3	152	LCB	645+70	1.9				PC06/P06	PC01/P61		
			CL14	3	152	LCB	645+70	0.9				PC06/P06			
	CL15	100205		3	152	LCB	612+30	1.9				PC06/P06	PC01/P61		
	CL16			3	152	LCB	612+30	0.9				PC06/P06			
			CL17	3	152	LCB	606+70	1.9				PC06/P06	PC01/P61		
			CL18	3	152	LCB	606+70	0.9				PC06/P06			

TABLE 11 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
28	CL35	100208		3	152	LCB	694+25	2.4				PC06/P66	PC01/P61		
			CL39	3	152	LCB	688+75	2.9				PC06/P66	PC01/P61		
	CL69	100206		3	152	LCB	658+00	1.9				PC06/P66	PC01/P61		
			CL72	3	152	LCB	652+50	2.9				PC06/P66	PC01/P61		
	CL77	100207		3	152	LCB	651+25	2.4				PC06/P66	PC01/P61		
			CL81	3	152	LCB	645+75	2.4				PC06/P66	PC01/P61		
	CL118	100205		3	152	LCB	612+25	2.4				PC06/P66	PC01/P61		
			CL122	3	152	LCB	606+75	2.4				PC06/P66	PC01/P61		
365	CL37	100208		3	152	LCB	694+25	1.4				PC06/P66	PC01/P61		
			CL41	3	152	LCB	688+75	1.9				PC06/P66	PC01/P61		
			CL42	3	152	LCB	688+75	1.4				PC06/P66	PC01/P61		
	CL71	100206		3	152	LCB	658+00	0.9				PC06/P66	PC01/P61		
			CL74	3	152	LCB	652+50	1.9				PC06/P66	PC01/P61		
			CL76	3	152	LCB	652+50	0.9				PC06/P66	PC01/P61		
	CL79	100207		3	152	LCB	651+25	1.4				PC06/P66	PC01/P61		
			CL83	3	152	LCB	645+75	1.4				PC06/P66	PC01/P61		
			CL84	3	152	LCB	645+75	0.9				PC06/P66	PC01/P61		
	CL120	100205		3	152	LCB	612+30	1.4				PC06/P66	PC01/P61		
			CL124	3	152	LCB	606+70	1.4				PC06/P66	PC01/P61		
			CL125	3	152	LCB	606+70	0.9				PC06/P66	PC01/P61		

TABLE 12
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

Sheet 1/5

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
14	CP19	100259		4	254	PCC 20.7	707+75	2.4				PC06/P66	PC01/P61		
			CP23	4	254	PCC 20.7	702+25	2.9				PC06/P66	PC02/P62		
	CP27	100204		4	279	PCC 6.2	700+75	1.9				PC06/P66	PC01/P61		
			CP31	4	279	PCC 6 2	695+25	2 9				PC06/P66	PC02/P62		
	CP35	100208		4	279	PCC 6.2	694+25	2 4				PC06/P66	PC01/P61		
			CP39	4	279	PCC 6.2	688+75	2.9				PC06/P66	PC02/P62		
	CP44	100212		5	279	PCC 6 2	687+25	2.4				PC06/P66	PC01/P61		
			CP48	5	279	PCC 6.2	681+75	2.9				PC06/P66	PC02/P62		
	CP52	100210		5	203	PCC 6.2	673+75	2.4				PC06/P66	PC01/P61		
			CP56	5	203	PCC 6.2	668+25	2.4				PC06/P66	PC02/P62		
	CP61	100202		4	203	PCC 6 2	665+25	2.4				PC06/P66	PC01/P61		
			CP65	4	203	PCC 6 2	659+75	2 4				PC06/P66	PC02/P62		
	CP69	100206		4	203	PCC 6 2	658+00	1.9				PC06/P66	PC01/P61		
			CP72	4	203	PCC 6 2	652+50	2.9				PC06/P66	PC02/P62		
	CP77	100207		4	279	PCC 3 8	651+25	2 4				PC06/P66	PC01/P61		
			CP81	4	279	PCC 3 8	645+75	2 4				PC06/P66	PC02/P62		
	CP85	100203		4	279	PCC 3.8	644+25	2 4				PC06/P66	PC01/P61		
			CP89	4	279	PCC 3 8	638+75	2 4				PC06/P66	PC02/P62		
	CP93	100211		5	279	PCC 3 8	636+25	2.4				PC06/P66	PC01/P61		
			CP97	5	279	PCC 3 8	630+75	2.4				PC06/P66	PC02/P62		
	CP102	100209		5	203	PCC 3 8	629+25	2 4				PC06/P66	PC01/P61		
			CP106	5	203	PCC 3 8	623+75	2 9				PC06/P66	PC02/P62		
	CP110	100201		4	203	PCC 3 8	622+25	2 4				PC06/P66	PC01/P61		
			CP114	4	203	PCC 3 8	616+75	2 4				PC06/P66	PC02/P62		
	CP118	100205		4	203	PCC 3 8	612+25	2 4				PC06/P66	PC01/P61		
			CP122	4	203	PCC 3 8	606+75	2 4				PC06/P66	PC02/P62		
	CP126	100260		4	254	PCC 20.7	606+45	2 4				PC06/P66	PC01/P61		
			CP130	4	254	PCC 20 7	600+95	2 9				PC06/P66	PC02/P62		

TABLE 12 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

Sheet 2/5

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
28	CP20	100259		4	254	PCC 20.7	707+75	1.9				PC06/P66	PC01/P61	PC08/P68	
	CP22			4	254	PCC 20.7	707+75	1.3				PC06/P66	PC05/P65	PC04/P64	
			CP24	4	254	PCC 20.7	702+25	2.4				PC06/P66	PC02/P62		
			CP135	4	254	PCC 20.7	702+25	0.9				PC06/P66	PC03/P63*		
	CP28	100204		4	279	PCC 6.2	700+75	1.3				PC06/P66	PC01/P61		
			CP30	4	279	PCC 6.2	695+25	2 9				PC06/P66	PC05/P65	PC04/P64	
			CP32	4	279	PCC 6.2	695+25	1.9				PC06/P66	PC02/P62		
	CP36	100208		4	279	PCC 6.2	694+25	1.9				PC06/P66	PC01/P61		
	CP38			4	279	PCC 6 2	694+25	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP40	4	279	PCC 6.2	688+75	2 4				PC06/P66	PC02/P62		
			CP43	4	279	PCC 6.2	688+75	0 9				PC06/P66	PC03/P63*		
	CP45	100212		5	279	PCC 6 2	687+25	1.9				PC06/P66	PC01/P61		
	CP47			5	279	PCC 6.2	687+25	0.9				PC06/P66	PC05/P65	PC04/P64	
			CP49	5	279	PCC 6 2	681+75	2 4				PC06/P66	PC02/P62		
			CP136	5	279	PCC 6 2	681+75	0.9				PC06/P66	PC08/P68		
	CP53	100210		5	203	PCC 6 2	673+75	1.9				PC06/P66	PC01/P61		
	CP55			5	203	PCC 6.2	673+75	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP57	5	203	PCC 6.2	668+25	1 9				PC06/P66	PC02/P62		
	CP62	100202		4	203	PCC 6.2	665+25	1 9				PC06/P66	PC01/P61		
	CP64			4	203	PCC 6.2	665+25	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP66	4	203	PCC 6 2	659+75	1 9				PC06/P66	PC02/P62		
	CP70	100206		4	203	PCC 6 2	658+00	1.4				PC06/P66	PC01/P61	PC08/P68	
			CP73	4	203	PCC 6.2	652+50	2 4				PC06/P66	PC02/P62		
			CP75	4	203	PCC 6.2	652+50	1 4				PC06/P66	PC05/P65	PC04/P64	

TABLE 12 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

Sheet 3/5

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
28	CP78	100207		4	279	PCC 3.8	651+25	1.9				PC06/P66	PC01/P61		
	CP80			4	279	PCC 3.8	651+25	0.9				PC06/P66	PC05/P65	PC04/P64	
			CP82	4	279	PCC 3.8	645+75	1.9				PC06/P66	PC02/P62		
	CP86	100203		4	279	PCC 3.8	644+25	1.9				PC06/P66	PC01/P61		
	CP88			4	279	PCC 3.8	644+25	0.9				PC06/P66	PC05/P65	PC04/P64	
			CP90	4	279	PCC 3 8	638+75	1.9				PC06/P66	PC02/P62		
	CP94	100211		5	279	PCC 3.8	636+25	1.9				PC06/P66	PC01/P61		
	CP96			5	279	PCC 3.8	636+25	0.9				PC06/P66	PC05/P65	PC04/P64	
			CP98	5	279	PCC 3.8	630+75	1.9				PC06/P66	PC02/P62		
			CP100	5	279	PCC 3 8	630+75	0.9				PC06/P66	PC03/P63*		
	CP103	100209		5	203	PCC 3.8	629+25	1.9				PC06/P66	PC01/P61		
	CP105			5	203	PCC 3 8	629+25	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP107	5	203	PCC 3.8	623+75	2 4				PC06/P66	PC02/P62		
	CP111	100201		4	203	PCC 3 8	622+25	1 9				PC06/P66	PC01/P61		
			CP115	4	203	PCC 3 8	616+75	1 9				PC06/P66	PC02/P62		
			CP117	4	203	PCC 3 8	616+75	0 9				PC06/P66	PC05/P65	PC04/P64	
	CP119	100205		4	203	PCC 3 8	612+25	1 9				PC06/P66	PC01/P61		
	CP121			4	203	PCC 3.8	612+25	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP123	4	203	PCC 3 8	606+75	1 9				PC06/P66	PC02/P62		
			CP125	4	203	PCC 3 8	606+75	0 9				PC06/P66	PC03/P63*		
	CP127	100260		4	254	PCC 20.7	606+45	1 9				PC06/P66	PC01/P61		
	CP129			4	254	PCC 20.7	606+45	0 9				PC06/P66	PC05/P65	PC04/P64	
			CP131	4	254	PCC 20 7	600+95	2 4				PC06/P66	PC02/P62		
			CP133	4	254	PCC 20.7	600+95	1 4				PC06/P66	PC03/P63*		

TABLE 12 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

Sheet 4/5

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
365	CP21	100259		4	254	PCC 20.7	707+75	1.4				PC06/P66	PC01/P61		
			CP25	4	254	PCC 20.7	702+25	1.9				PC06/P66	PC02/P62		
			CP26	4	254	PCC 20.7	702+25	1.4				PC06/P66	PC04/P64		
	CP29	100204		4	279	PCC 6.2	700+75	1.4				PC06/P66	PC01/P61		
			CP33	4	279	PCC 6.2	695+25	1 4				PC06/P66	PC02/P62		
			CP34	4	279	PCC 6.2	695+25	0.9				PC06/P66	PC04/P64		
	CP37	100208		5	279	PCC 6.2	694+25	1.4				PC06/P66	PC01/P61		
			CP41	5	279	PCC 6.2	688+75	1.9				PC06/P66	PC02/P62		
			CP42	5	279	PCC 6.2	688+75	1.4				PC06/P66	PC04/P64		
	CP46	100212		5	279	PCC 6.2	687+25	1.4				PC06/P66	PC01/P61		
			CP50	5	279	PCC 6.2	681+75	1.9				PC06/P66	PC02/P62		
			CP51	5	279	PCC 6 2	681+75	1 4				PC06/P66	PC04/P64		
	CP54	100210		4	203	PCC 6 2	673+75	1.4				PC06/P66	PC01/P61		
			CP58	4	203	PCC 6 2	668+25	1.4				PC06/P66	PC02/P62		
			CP59	4	203	PCC 6 2	668+25	0.9				PC06/P66	PC04/P64		
	CP63	100202		4	203	PCC 6.2	665+25	1.4				PC06/P66	PC01/P61		
			CP67	4	203	PCC 6.2	659+75	1.4				PC06/P66	PC02/P62		
			CP68	4	203	PCC 6 2	659+75	0.9				PC06/P66	PC04/P64		
	CP71	100206		4	203	PCC 6.2	658+00	0 9				PC06/P66	PC01/P61		
			CP74	4	203	PCC 6 2	652+50	1 9				PC06/P66	PC02/P62		
			CP76	4	203	PCC 6 2	652+50	0 9				PC06/P66	PC04/P64		
	CP79	100207		4	279	PCC 3.8	651+25	1.4				PC06/P66	PC01/P61		
			CP83	4	279	PCC 3 8	645+75	1.4				PC06/P66	PC02/P62		
			CP84	4	279	PCC 3 8	645+75	0 9				PC06/P66	PC04/P64		

TABLE 12 (Cont.)
DE DOT SPS-2: US 113 SB, MILFORD TO GEORGETOWN
SCHEDULE FOR CORING AND TESTING OF LCB & PCC - 4" OD CORES

Sheet 5/5

AGE DAYS	CORE # 0+00 END	SECTION NO.	CORE # 5+00 END	LAYER NO.	LAYER THICK. mm.	MATERIAL DESCRIP-TION	APPROX. CONSTR. STA.	OFFSET m.	DATE PLACED	TEST DATE	AGE DAYS	LAB. TEST ASSIGNMENTS FIRST	SECOND	THIRD	FOURTH
365	CP87	100203		5	279	PCC 3.8	644+25	1.4				PC06/P66	PC01/P61		
			CP91	5	279	PCC 3.8	638+75	1.4				PC06/P66	PC02/P62		
			CP92	5	279	PCC 3.8	638+75	0.9				PC06/P66	PC04/P64		
	CP95	100211		5	279	PCC 3.8	636+25	1.4				PC06/P66	PC01/P61		
			CP99	5	279	PCC 3.8	630+75	1.4				PC06/P66	PC02/P62		
			CP100	5	279	PCC 3.8	630+75	0.9				PC06/P66	PC04/P64		
	CP104	100209		4	203	PCC 3.8	629+25	1.4				PC06/P66	PC01/P61		
			CP108	4	203	PCC 3.8	623+75	1.9				PC06/P66	PC02/P62		
			CP109	4	203	PCC 3.8	623+75	1.4				PC06/P66	PC04/P64		
	CP112	100201		4	203	PCC 3.8	622+25	1.4				PC06/P66	PC01/P61		
			CP115	4	203	PCC 3.8	616+75	1.9				PC06/P66	PC02/P62		
			CP117	4	203	PCC 3 8	616+75	0.9				PC06/P66	PC04/P64		
	CP120	100205		4	203	PCC 3.8	612+25	1.4				PC06/P66	PC01/P61		
			CP124	4	203	PCC 3.8	606+75	1.4				PC06/P66	PC02/P62		
			CP125	4	203	PCC 3.8	606+75	0.9				PC06/P66	PC04/P64		
	CP128	100260		4	254	PCC 20 7	606+45	1.4				PC06/P66	PC01/P61		
			CP132	4	254	PCC 20.7	600+95	1.9				PC06/P66	PC02/P62		
			CP134	4	254	PCC 20.7	600+95	0.9				PC06/P66	PC04/P64		

* Cores CP43, 100, 133, 135 for test PC03/P63
Coefficient of Thermal Expansion are
to be shipped to:-
FEDERAL HIGHWAY ADMINISTRATION
c/o Ms Marcia Simon
TFHRC, HNR-20
6300 Georgetown Pike
McLean, Virginia 22101-2296