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20 January 1999

Mr. Aramis Lopez
Pavement Performance Division - LTPP (HNR-40)
Federal Highway Administration
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject: Final Report - SPS-8 Project (0508) on US-65 in Jefferson County, Arkansas

Dear Aramis,

Enclosed is the Final Report for the Specific Pavement Studies (SPS-8) project on US-65 in Jefferson County, Arkansas. This report documents the construction of *The Strategic Study of Environmental Effects in the Absence of Heavy Loads for Flexible and Rigid Pavements* project at this location, as well as the monitoring of the sections to date.

Please feel free to contact me should you have any questions or comments regarding any of the information included in this report.

Sincerely,

Timothy J. Martin, M.S.
Graduate Engineer, SRCO

TJM:dmj

Enclosure: As stated.

c.w/Enc: Gary Bennett, ARSHTD
Shiraz Tayabji, ERES-MD
Jerry Daleiden, SRO
Gonzalo Rado, PCS/LAW
John E. Nichols, Reg. Engr.
Mark Gardner, SRCO/File&Library

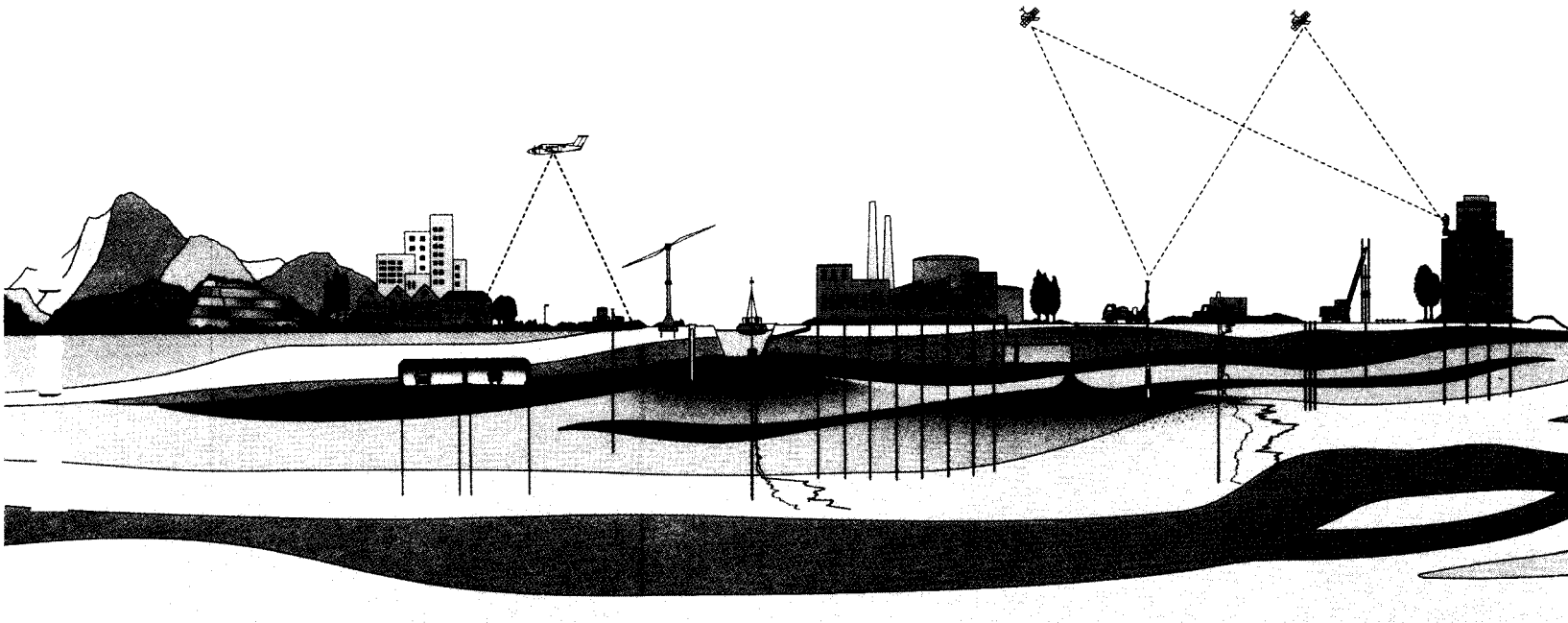
BRENT RAUHUT ENGINEERING, INC.

FINAL REPORT

SPS-8 PROJECT 0508
ENVIRONMENTAL EFFECTS IN THE ABSENCE OF HEAVY LOADS
US-65 EAST TERMINAL INTERCHANGE, RIGHT FRONTAGE ROAD
JEFFERSON COUNTY, ARKANSAS

FHWA/LTPP
SOUTHERN REGION COORDINATION OFFICE

December 1998



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FINAL REPORT - SPS-8 PROJECT 0508

STUDY OF ENVIRONMENTAL EFFECTS IN THE ABSENCE OF HEAVY LOADS US-65 EAST TERMINAL INTERCHANGE, RIGHT FRONTAGE ROAD JEFFERSON COUNTY, ARKANSAS

INTRODUCTION

As part of the Strategic Highway Research Program's (SHRP) Long Term Pavement Performance (LTPP) Studies, sections of roadway are being selected to apply very specific treatments to study various facets of construction (both new and rehabilitation). These projects are referred to as Specific Pavement Studies (SPS). This particular project, on US-65 Frontage Road in Jefferson County, Arkansas was identified as a potential candidate for inclusion in the Study of Environmental Effects in the Absence of Heavy Loads (SPS-8).

SPS-8 General Experiment Design

The specific products of the SPS-8 Experiment are included in table 1. In general, the experiment is intended to validate and/or improve the environmental effects models and in turn improve on the design of pavement structures in all environmental conditions.

Table 1. Key Products of SPS-8

1. Evaluation of existing environmental effects (damage) models.
2. Determination of the effects of specific design features, thickness and pavement type, on pavement performance in the absence of heavy loads.
3. Development of a comprehensive data base for use by state and provincial engineers and other researchers for evaluating environmental effects on pavement performance.

Although the General Pavement Studies (GPS) sections provided valuable and timely information, controlled Specific Pavement Studies of newly constructed and reconstructed or rehabilitated (resurfaced) pavement sections are needed to provide an accurate estimate of the relative influence of key pavement elements that affect pavement performance. The importance of this experiment is highlighted by its ability to evaluate the interaction of traffic, structural parameters and climatic factors on pavement performance in a controlled manner.

SPS-8 test sites can include two flexible or two rigid sections with varying structural sections (or two of each if the participating agency is willing). As shown in table 2, the sections are to be built with specific pavement structures in a variety of environmental conditions to assess their impact on pavement performance.

For additional information on the general experimental design for SPS-8, please refer to "Specific Pavement Studies: Experimental Design and Research Plans for Experiment SPS-8, Study of Environmental Effects in the Absence of Heavy Loads, August 1991."

Selection/Nomination of US-65

This project was let for construction by the State of Arkansas on 31 January 1996. After reviewing the details provided by the state on this project, and preparation of a tentative layout of the test sections (to ensure that adequate space was available for such a project), the project was officially nominated on 24 June 1996. Appendix A contains the nomination forms which provide information on the project location, significant dates, traffic information and the agency's pavement structural design for the project in question. The section was officially approved for use by the FHWA/LTPP Division in August 1996.

Specific Experiment Design for US-65

Plans for this project were prepared by the Arkansas State Highway and Transportation Department (Arkansas SHTD). The typical sections for this particular project are included as figures 1 and 2, respectively.

The acting subgrade for this project is actually fill for an embankment greater than four feet. The material is considered to be a sandy clay. The state elected to build two flexible and two rigid sections with this project.

PRECONSTRUCTION MONITORING

Because of the nature of this particular experiment (being new construction), monitoring of preconstruction pavement surface distress and structural capacity were not required. The primary preconstruction monitoring included rod and level measurements made immediately prior to construction (See appendix B) to evaluate variability in the thicknesses of each layer placed, and extensive material sampling and testing to document the material properties for each of the layers incorporated in these test sections. As specified for all SHRP test sections, a thorough material sampling and testing program was established for these test sections on US-65 in Jefferson County, Arkansas (See appendix C). Preconstruction sampling focused on collection of bulk samples from each of the various pavement layers. All subgrade sampling and testing was conducted by the Arkansas SHTD on 14 July 1997 (see table 3).

Over four feet of embankment material was brought in at each of the test sections. LTPP directives state that if over four feet of fill/embankment material is used that this material will then act as the subgrade. Revisions in the Material Sampling and Testing Plan (MSTP) have been made and are included in this report, to indicate the changes in sampling and testing.

Table 2. Experimental Design for SPS-8, Study of Environmental Effects in the Absence of Heavy Loads

PAVEMENT STRUCTURE [1, 2]			FACTORS FOR MOISTURE, TEMPERATURE, AND SUBGRADE TYPE [3]																							
			WET												DRY											
Type	Surface Thickness in.	Base Thickness in.	FREEZE						NO-FREEZE						FREEZE						NO-FREEZE					
			Active		Fine		Coarse		Active		Fine		Coarse		Active		Fine		Coarse		Active		Fine		Coarse	
FLEXIBLE	4	6	X		X		X		X		X		X		X		X		X		X		X		X	
	7	12	X		X		X		X		X		X		X		X		X		X		X		X	
RIGID	8	6		X		X		X		X		X		X		X		X		X		X		X		X
	11	6		X		X		X		X		X		X		X		X		X		X		X		X

Notes:

1. Dense-graded HMAC and jointed plain concrete (JPC) for flexible and rigid pavements, respectively.
2. Dense-graded aggregate base (DGAB).
3. Active soil can be either frost susceptible or swelling type relative to the climatic zone.

o Flexible and rigid pavement sections may be constructed at the same site.

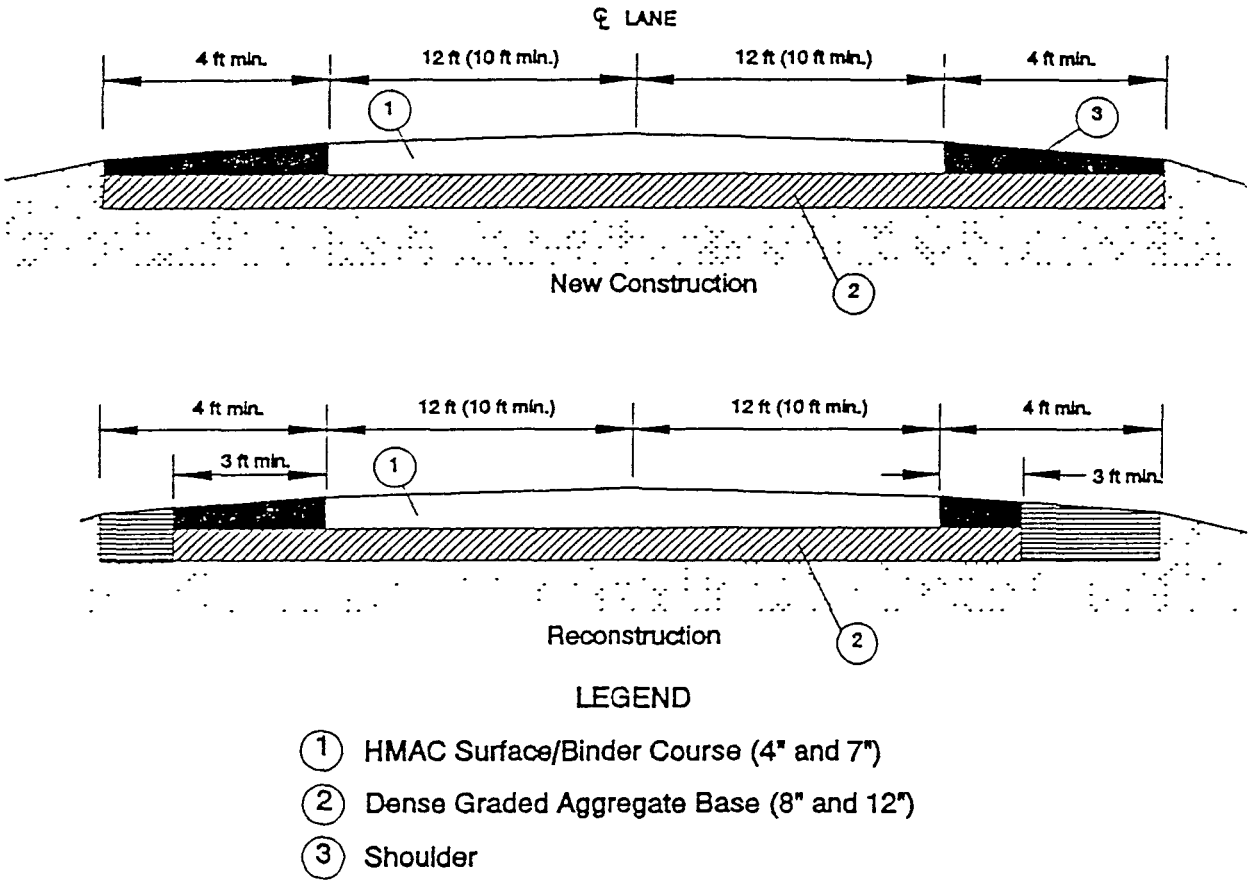


Figure 1. Pavement Cross Sections for Flexible Test Sections, 050803 and 050804

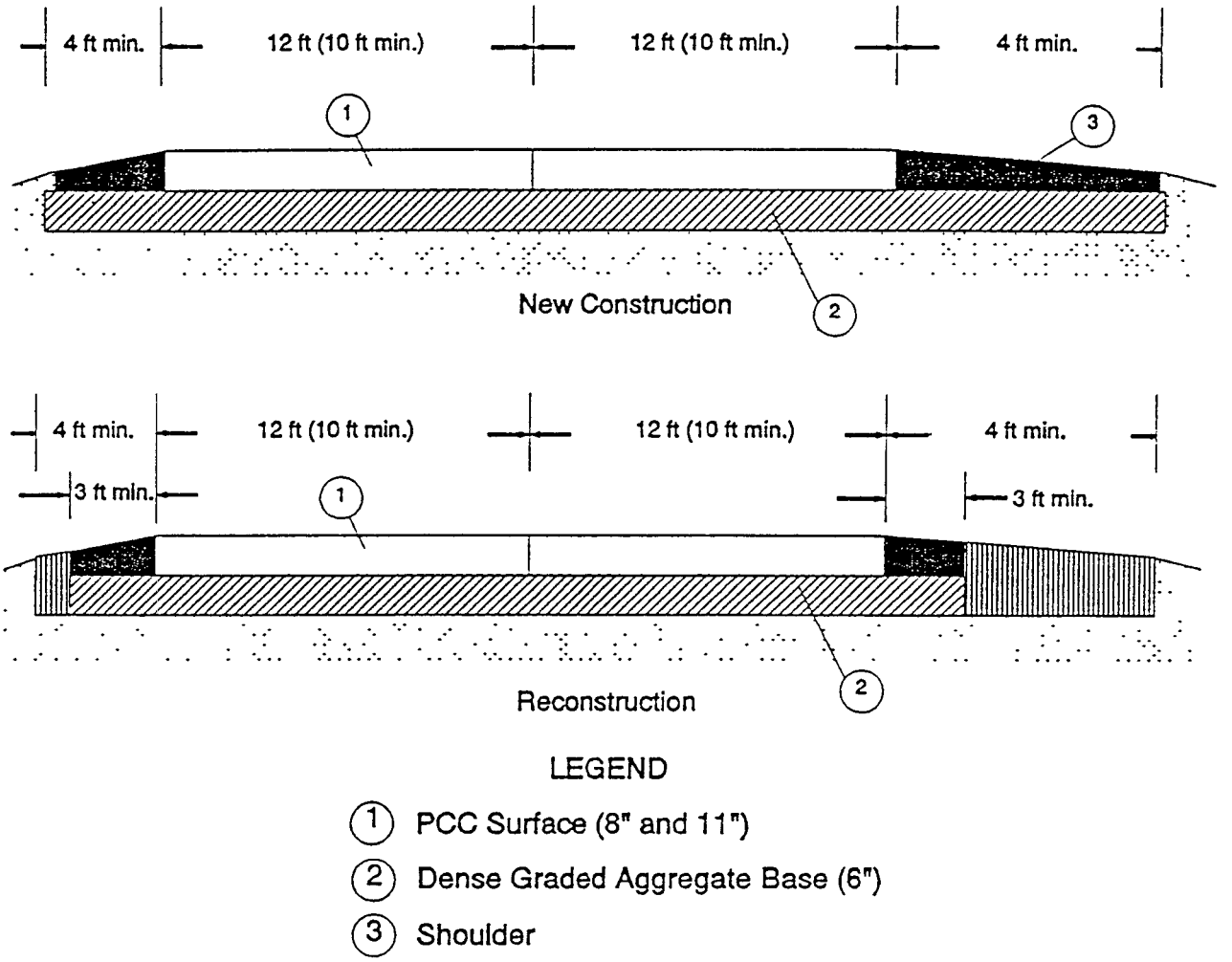


Figure 2. Pavement Cross Sections for Rigid Test Sections, 050809 and 050810

Table 3. Subgrade Sampling and Testing by the Arkansas SHTD

Activity Completed	Test Section			
	050803	050804	050809	050810
Subgrade Sampling	07/14/97	07/14/97	07/14/97	07/14/97
Subgrade Density	07/14/97	07/14/97	07/14/97	07/14/97
Subgrade Elevation	07/15/97	07/15/97	07/15/97	07/15/97
DGAB Placement	08/11/97	08/11/97	08/11/97	08/11/97
DGAB Sampling	10/02/97	10/02/97	09/02/97	09/02/97
DGAB Density	10/02/97	10/02/97	09/02/97	09/02/97
DGAB Elevation	10/02/97	10/02/97	09/02/97	09/02/97
PCC Placement			09/04/97	09/04/97
PCC Sampling			09/04/97	09/04/97
PCC Elevation			09/05/97	09/05/97
Binder Placement	10/09/97	10/09/97		
Binder Sampling	10/09/97	10/09/97		
Binder Density	10/09/97	10/20/97		
Binder Elevation	10/10/97	10/20/97		
Surface Placement	11/25/97	11/25/97		
Surface Bulk Sampling	11/25/97	11/25/97		
Surface Density	11/25/97	11/25/97		
Surface Elevation	12/08/97	12/08/97		

CONSTRUCTION

Construction began with the placement of Dense-Graded Aggregate Base (DGAB) material in August 1997. The base material was completed with a CB-534 vibratory dual steel-wheel roller. The DGAB for sections 050809 and 050810 was completed on 1 September 1998. Sampling, densities and elevations were performed by the SRCO and Arkansas SHTD personnel.

On 4 September 1997, the paving of the Portland Cement Concrete (PCC) surface began and was completed the evening of the same day. Specimens of the PCC were taken and molded by the Arkansas SHTD. Slump tests and air content were performed along the sections while paving operations commenced. Close adherence to the construction guidelines was observed by the Arkansas SHTD and the general contractor during the paving of the PCC surface. The following day, the final elevations for sections 09 and 10 were taken on the surface of the PCC. That same day, the transverse and longitudinal joints were sawed and sealed. For more detailed information on the material and methods used, see the construction data forms (appendix D).

On 2 October, the DGAB for sections 050803 and 050804 was completed, and sampling and elevations proceeded prior to the application of the prime coat. Laydown of the binder layer commenced on 9 October 1997. The paver used for laydown of the binder and surface layers was a Blaw-Knox PF400A. The HMAC was laid in two 14′ passes. The lane widths were 10′ and the shoulder was 4′. The binder was completed using a Caterpillar CB-534 roller weighing approximately 8 tons. The number of passes varies with the lift thicknesses accordingly. On 25 November 1997, the final surface layer was laid continuously through both sections in a 1.5″ lift. Material specifications can be found in appendix D.

The material was produced from a supplier located approximately 1.5 miles from the site. The asphalt plant was a standard batch plant using granite aggregate. Photographs of the construction, sampling and plant are included in appendix E.

The automated weather station (AWS) was installed on 25 September 1997. The AWS is located at the District 2 compound, approximately 1.5 km from the SPS-8 project.

POSTCONSTRUCTION MONITORING

Upon completion of the construction, postconstruction monitoring of the pavement performance was initiated. This involves manual surveys, FWD testing, and profilometer testing. LTPP directives indicate that the manual surveys and profilometer testing need to be performed biennially. FWD testing is to be performed annually. Manual surveys were completed 10 December 1997. Profilometer and FWD testing is scheduled to be conducted the week of 15 March 1998.

Material Sampling and Testing

Postconstruction coring was completed on 10 December 1997. As previously noted, specific samples and corresponding tests to be performed are designated in the Material Sampling and Testing Plan included in appendix C.

SUMMARY

Having completed observations of the construction for this SPS-8 project, located on US-65 in Pine Bluff, Arkansas, it appears that this project will contribute significantly to the LTPP objectives by providing valuable information about the environmental effects in the absence of heavy loads affecting flexible and rigid pavements. The efforts of the Arkansas SHTD, and their willingness to participate in this study, are greatly appreciated. Special thanks go to David Bushy, Boon Thian, and Jim Gee.

Monitoring is underway and we will continue noting changes in the surface distress, surface profile, and structural capacity, and compare the data with other projects of this nature around the country in an attempt to improve existing design methods.

APPENDIX A

SITE NOMINATION FORMS, APPROVAL CORRESPONDENCE, AND OTHER PERTINENT INFORMATION

Brent Rauhut Engineering Inc.

3 July 1996

Mr. Monte Symons
Pavement Performance Division - LTPP
Federal Highway Administration
Turner-Fairbanks Highway Research Center
6300 Georgetown Pike, Room F-215
McLean, Virginia 22101

Subject: Nominations of SPS-8 and SPS-9A Projects from Arkansas

Dear Monte,

We received the attached project nominations from Arkansas on 27 June 1996. Arkansas has evaluated these projects and feel they would be suitable for inclusion in the SPS-8 and SPS-9A experiments of LTPP. After review, I concur with their evaluation and recommend these projects for approval. Please note the following deviations from experiment criteria that should be considered in your review.

The SPS-8 project is located on a relatively short terminal interchange and frontage road. Arkansas desires to construct both rigid and flexible sections. Unfortunately, the available project length is insufficient unless one of the sections is located on a portion of the roadway with 5° horizontal curvature. Having spoken to Mr. John Miller of PCS/LAW in May, we agreed that if the thicker section was constructed in the curve it would be better, as this section would intuitively be less sensitive to curvature effects. This is the only known deviation for this project.

The SPS-9A is co-located with the recently approved SPS-6 project in Arkansas, although space constraints may require location of the SPS-9A test sections in the opposite direction. Plans for the project include rubblization of the existing pavement prior to overlay. This entire project will be overlaid with a SUPERPAVE™ mix (state mix), making Test Section 01 redundant. The nomination recognizes this and proposes to have a SUPERPAVE™ section (02) and an alternate binder grade test section (03) This will be similar to the Mississippi SPS-9A project.

I hope you find this information sufficient to make your decision. Please do not hesitate to contact me if you require clarification or additional information. Also, please note that Arkansas requested notification of approval status as soon as possible, since these projects are both very near construction Your prompt consideration would be greatly appreciated.

Sincerely,

Mark P. Gardner, P E
Project Engineer, SRCO

MPG dmj

Enclosure As stated.

c.w/Enc: John Miller, PCS/LAW
Lester Frank, FHWA-AR Div.
Boon Thian, ARSHTD
Morris Reinhardt, RE/SRCO

8240 Mopac Suite 220 • Austin, Texas 78759 • (512) 346-0870 • FAX (512) 346-8750

ARKANSAS STATE HIGHWAY
AND
TRANSPORTATION DEPARTMENT

Dan Flowers
Director
Telephone (501) 569-2000

P.O. Box 2261
Little Rock, Arkansas 72203-2261
Telefax (501) 569-2400

June 24, 1996

Mr. Morris Reinhardt
LTPP Southern Regional Engineer
8240 N. Mopac, Suite 250
Austin, TX 78759

Re: SPS - 8 AHTD Job No. R20054
SPS - 9A AHTD Job No. R20138
Nominations

Dear Mr. Reinhardt:

Enclosed are nomination forms for SPS-8 and SPS-9A projects proposed for construction as part of construction projects on "Hwy. 65 Southwest" - East Terminal Interchange in Jefferson County and "Pulaski Co. Line - Redfield Rehab." in Grant/Jefferson Counties, Arkansas. Please process these nominations as soon as possible in order that the Roadway Design Division can complete plans and specifications in time for change orders as Job R20054 and R20138 have already been let in January and June, 1996 respectively. R20054 construction has already started in March, 1996. R20138 construction is anticipated to start in August, 1996.

Yours truly,

Jim Gee
Materials Engineer

JG BT

SHEET A. SPS-8 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Arkansas SHRP SECTION NO. 050800

PROJECT LOCATION

ROUTE NUMBER 65

ROUTE SIGNING [ ] Interstate [X] U.S. [ ] State [ ] County
Other _____

PROJECT LOCATION Start Milepost _____ End Milepost _____
Start Milepost _____ End Milepost _____

DIRECTION OF TRAVEL [ ] North B. [ ] South B. [ ] West B. [ ] East B.

PROJECT LOCATION DESCRIPTION East Terminal Interchange
Frontage road along south side of interchange (Right frontage road)

COUNTY Jefferson
HIGHWAY AGENCY DISTRICT NUMBER 2
SHRP ENVIRONMENTAL ZONE
[ ] Wet Freeze [X] Wet No-Freeze [ ] Dry Freeze [ ] Dry No-Freeze

SUBGRADE SOIL CATEGORY
[ ] Active [X] Fine Grained [ ] Coarse Grained

TYPE OF ACTIVITY DEGREE OF ACTIVITY

[ ] Swelling [ ] Frost Heave [ ] Low [ ] Moderate [ ] High

SIGNIFICANT DATES

LATEST DATE OF APPROVAL NOTIFICATION FROM SHRP	ASAP
CONTRACT LETTING DATE	1-31-96
ESTIMATED CONSTRUCTION START DATE	3-15-96
ESTIMATED DATE TEST SECTIONS OPENED TO TRAFFIC	6-30-98
ESTIMATED CONSTRUCTION COMPLETION DATE	6-30-98

PROJECT DESCRIPTION

PROJECT TYPE [X] New Route [ ] Removal and Reconstruction
[ ] Parallel Roadway
Other Terminal Interchange and Frontage Roads

DESIGN TRAFFIC DATA

ANNUAL AVERAGE DAILY TRAFFIC (TWO DIRECTIONS)	38
% HEAVY TRUCKS AND COMBINATIONS (OF AADT)	0
ESTIMATED 18K ESAL RATE IN STUDY LANE (1,000 ESAL/YR)	0
TOTAL DESIGN 18K ESAL APPLICATIONS IN DESIGN LANE	0
DESIGN PERIOD (Years)	20

SHEET B. SPS-8 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Arkansas SHRP SECTION NO. 050800

AGENCY'S PAVEMENT STRUCTURE DESIGN FOR SITE

LAYER[1] NO.	LAYER[2] DESCRIPTION CODE	MATERIAL TYPE[3] CLASS CODE	THICKNESS[4] (INCHES)	STRUCTURAL[5] COEFFICIENT
1	1 1			
2	0 5	2 3	7.0	
3	0 3	0 1	1.5	
4				
5				
6				
7				
8				
9				

STRUCTURAL DESIGN METHOD [ ] 1972 AASHTO [ ] 1986 AASHTO [ ] Modified AASHTO
Other ASHTD minimum standard

AASHTO DESIGN RELIABILITY FACTORS R% _____ S_o _____

OUTSIDE SHOULDER TYPE

[ ] Turf [ ] Granular [X] Asphalt Concrete [ ] Surface Treatment
[ ] PCC [ ] Curb and Gutter Other _____

OUTSIDE SHOULDER WIDTH (Feet) 4

SUBSURFACE EDGE DRAINS [ ] Yes [X] No

NOTES

1. Layer 1 is the natural occurring subgrade soil. The pavement surface will have the largest assigned layer number.

2. Layer description codes:
   Surface Layer..... 03 Base Layer..... 05 Subgrade..... 07
   Subsurface HMAC... 04 Subbase Layer... 06 Embankment (Fill)... 11

3. Refer to Tables 1 through 4 for material class codes.

4. If subgrade depth to a rigid layer is known, enter this depth for subgrade thickness, otherwise leave subgrade layer thickness blank.

5. Enter AASHTO structural layer coefficient value, as appropriately modified, used in pavement design or typical coefficient used by agency for this material. For the subgrade, enter either AASHTO soil support value or resilient modulus value (psi) used in design.

SHEET C. SPS-8 CANDIDATE PROJECT NOMINATION AND INFORMATION FORM

STATE Arkansas SHRP SECTION NO. 050800

TEST SECTION LAYOUT

NUMBER OF TEST SECTIONS ENTIRELY ON: FILL 4 CUT _____

SHORTEST TRANSITION BETWEEN CONSECUTIVE TEST SECTIONS (Feet) 100

VERTICAL GRADE (Avg %) (+ upgrade; - downgrade) 0 %

HORIZONTAL CURVATURE (Degrees) [ ] Tangent 0°

COMMENTS ON DEVIATIONS FROM DESIRED SITE LOCATION CRITERIA

Test sites are about 100' to a 5° horizontal curve

OTHER SHRP TEST SECTIONS

FLEXIBLE - DOES AGENCY DESIGN CONFORM TO GPS-1 PROJECT CRITERIA? [X] Yes [ ] No

RIGID - DOES AGENCY DESIGN CONFORM TO GPS-3 PROJECT CRITERIA? [X] Yes [ ] No

DISTANCE TO NEAREST GPS TEST SECTION ON SAME ROUTE (Miles) 0.5±

TEST SECTION NUMBER OF NEAREST GPS SECTION 054019

SUPPLEMENTAL TEST SECTIONS

IF SUPPLEMENTAL EXPERIMENTAL TEST SECTIONS ARE PROPOSED, COMPLETE THE FOLLOWING

TOTAL NUMBER OF SUPPLEMENTAL TEST SECTIONS 0

FACTORS TO BE INVESTIGATED

APPENDIX B

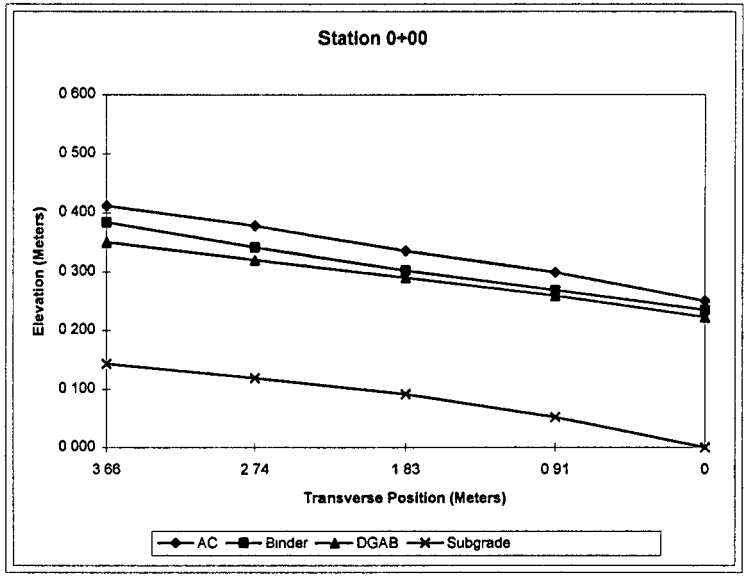
SURFACE PROFILE DATA

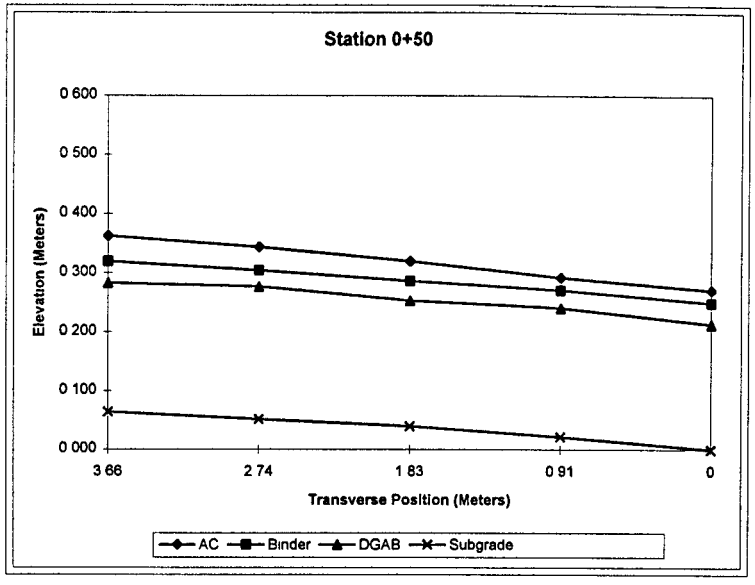
Arkansas SPS-8 (050803)

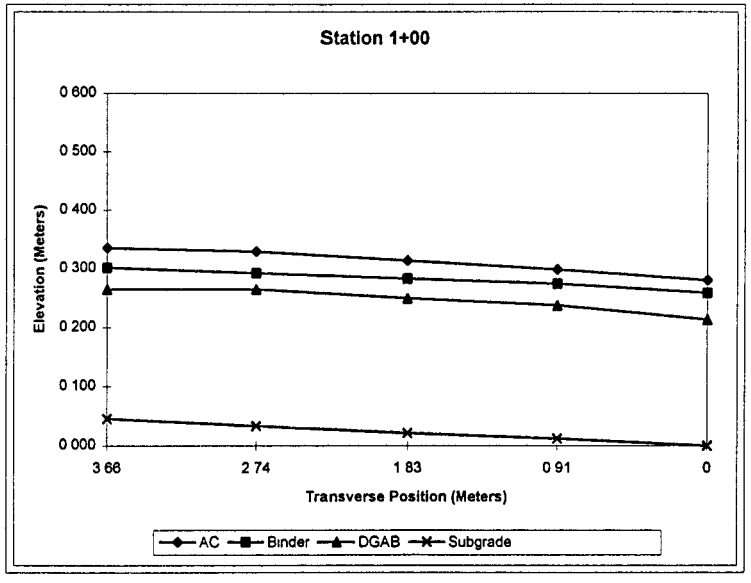
Transverse Offset	4 LAYERS	ELEVATION 0 Meters	AC THICKNESS Meters	Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	AC THICKNESS Meters	Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	AC THICKNESS Meters	Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	AC THICKNESS Meters	Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	AC THICKNESS Meters	Binder THICKNESS Meters	DGAB THICKNESS Meters
0+00	AC	2.783	0.015	0.012	0.223	2.832	0.030	0.009	0.207	2.868	0.034	0.012	0.198	2.911	0.037	0.021	0.201	2.944	0.027	0.034	0.207
	Binder	2.768				2.801				2.835				2.874				2.917			
	DGAB	2.755				2.792				2.822				2.853				2.883			
	Subgrade	2.533				2.585				2.624				2.652				2.676			
0+50	AC	2.893	0.021	0.037	0.213	2.914	0.021	0.030	0.219	2.941	0.034	0.034	0.213	2.966	0.040	0.027	0.226	2.984	0.043	0.037	0.219
	Binder	2.871				2.893				2.908				2.926				2.941			
	DGAB	2.835				2.862				2.874				2.899				2.905			
	Subgrade	2.621				2.643				2.661				2.673				2.685			
1+00	AC	2.932	0.021	0.046	0.213	2.950	0.024	0.037	0.226	2.966	0.030	0.034	0.229	2.981	0.037	0.027	0.232	2.987	0.034	0.037	0.219
	Binder	2.911				2.926				2.935				2.944				2.954			
	DGAB	2.865				2.890				2.902				2.917				2.917			
	Subgrade	2.652				2.664				2.673				2.685				2.697			
1+50	AC	2.960	0.024	0.055	Unknown	2.975	0.024	0.040	Unknown	2.990	0.034	0.030	Unknown	2.999	0.034	0.021	Unknown	2.993	0.021	0.037	Unknown
	Binder	2.935				2.950				2.957				2.966				2.972			
	DGAB	2.880				2.911				2.926				2.944				2.935			
	Subgrade	0.000				0.000				0.000				0.000				0.000			
2+00	AC	2.938	0.024	0.049	Unknown	2.960	0.027	0.052	Unknown	2.984	0.037	0.046	Unknown	2.993	0.027	0.040	Unknown	3.024	0.037	0.049	Unknown
	Binder	2.914				2.932				2.947				2.966				2.987			
	DGAB	2.865				2.880				2.902				2.926				2.938			
	Subgrade	0.000				0.000				0.000				0.000				0.000			
2+50	AC	2.926	0.030	0.043	0.216	2.957	0.027	0.058	0.216	2.987	0.037	0.055	0.223	3.021	0.049	0.052	0.229	3.048	0.046	0.058	0.235
	Binder	2.896				2.929				2.950				2.972				3.002			
	DGAB	2.853				2.871				2.896				2.920				2.944			
	Subgrade	2.637				2.655				2.673				2.691				2.710			
3+00	AC	2.902	0.009	0.061	0.195	2.938	0.018	0.061	0.198	2.975	0.030	0.067	0.192	3.011	0.043	0.061	0.195	3.045	0.049	0.064	0.198
	Binder	2.893				2.920				2.944				2.969				2.996			
	DGAB	2.832				2.859				2.877				2.908				2.932			
	Subgrade	2.637				2.661				2.685				2.713				2.734			
3+50	AC	2.890	0.012	0.052	0.186	2.938	0.018	0.064	0.186	2.984	0.027	0.067	0.189	3.033	0.040	0.061	0.201	3.072	0.040	0.064	0.207
	Binder	2.877				2.920				2.957				2.993				3.033			
	DGAB	2.825				2.856				2.890				2.932				2.969			
	Subgrade	2.640				2.670				2.701				2.731				2.761			
4+00	AC	2.877	0.015	0.058	0.186	2.935	0.024	0.064	0.195	2.990	0.034	0.070	0.198	3.042	0.043	0.061	0.213	3.091	0.046	0.070	0.213
	Binder	2.862				2.911				2.957				2.999				3.045			
	DGAB	2.804				2.847				2.886				2.938				2.975			
	Subgrade	2.618				2.652				2.688				2.725				2.761			
4+50	AC	2.877	0.027	0.058	0.198	2.938	0.037	0.055	0.210	2.999	0.046	0.049	0.229	3.057	0.052	0.055	0.235	3.106	0.049	0.058	0.241
	Binder	2.850				2.902				2.954				3.005				3.057			
	DGAB	2.792				2.847				2.905				2.950				2.999			
	Subgrade	2.594				2.637				2.676				2.716				2.758			
5+00	AC	2.883	0.034	0.061	0.204	2.938	0.037	0.064	0.213	2.996	0.046	0.064	0.219	3.051	0.055	0.055	0.235	3.103	0.055	0.064	0.232
	Binder	2.850				2.902				2.950				2.996				3.048			
	DGAB	2.789				2.838				2.886				2.941				2.984			
	Subgrade	2.585				2.624				2.667				2.707				2.752			
	AVG		0.021	0.048	0.204		0.026	0.048	0.208		0.035	0.048	0.210		0.043	0.044	0.218		0.041	0.052	0.219
	MAX		0.034	0.061	0.223		0.037	0.064	0.226		0.046	0.070	0.229		0.055	0.061	0.235		0.055	0.070	0.241
	MIN		0.009	0.012	0.186		0.018	0.009	0.186		0.027	0.012	0.189		0.034	0.021	0.195		0.021	0.034	0.198
	STD		0.007	0.014	0.013		0.006	0.018	0.012		0.006	0.019	0.015		0.007	0.017	0.015		0.010	0.014	0.013

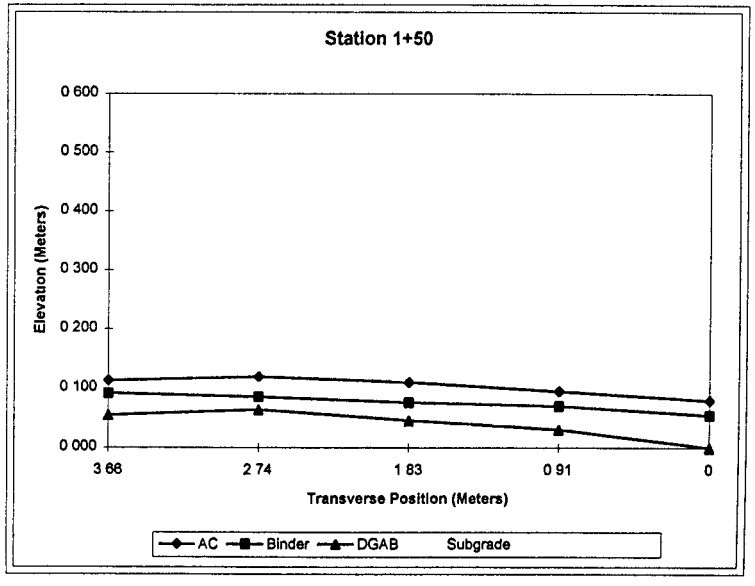
	AC	Binder	DGAB
SECTION AVG	0.033	0.048	0.212
SECTION MAX	0.055	0.070	0.241
SECTION MIN	0.009	0.009	0.186
SECTION STD	0.011	0.016	0.015

Arkansas SPS-8 (050803)

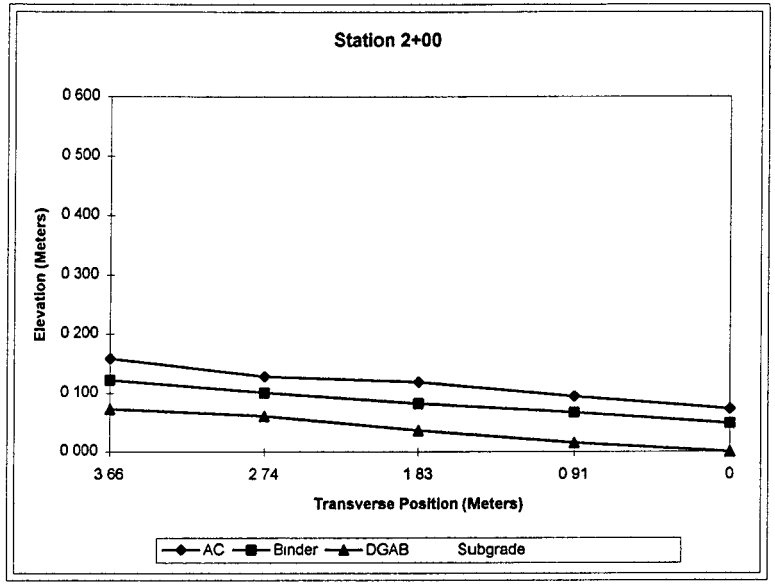


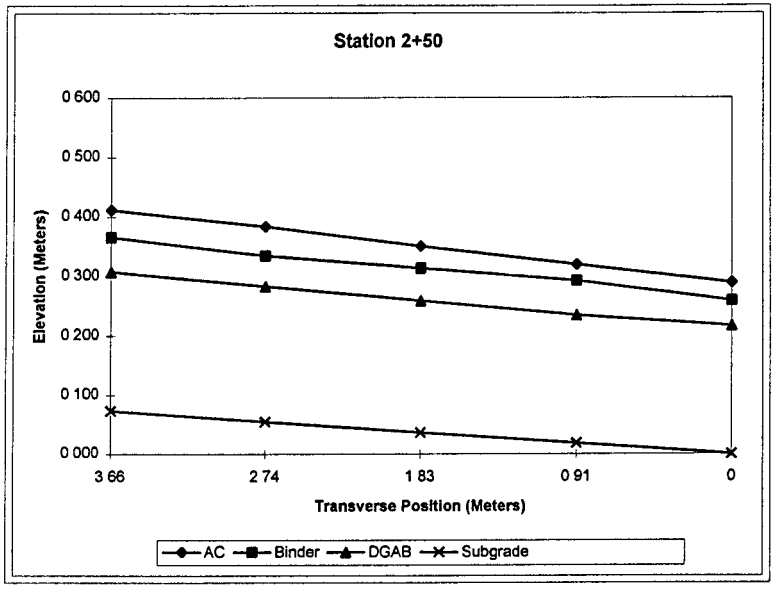


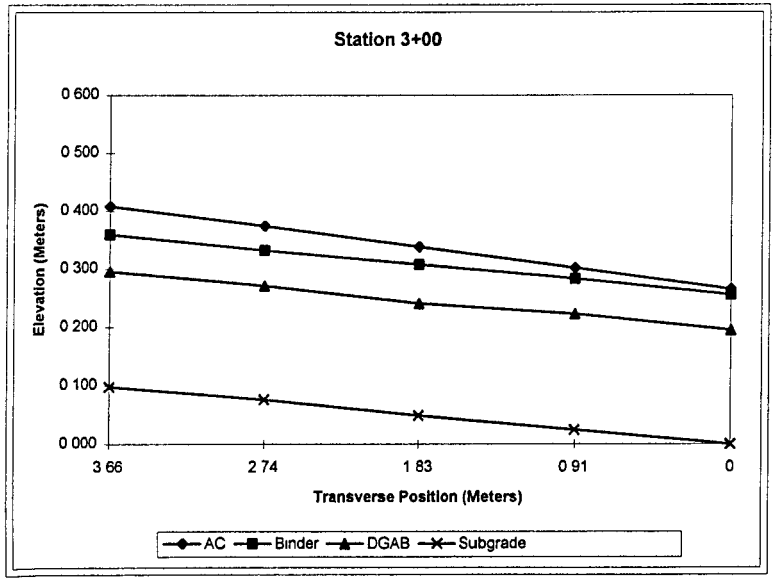


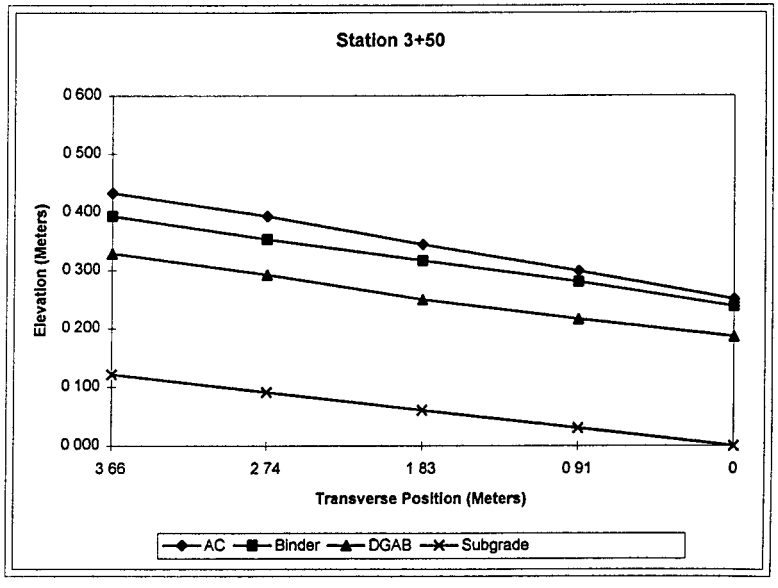


Arkansas SPS-8 (050803)









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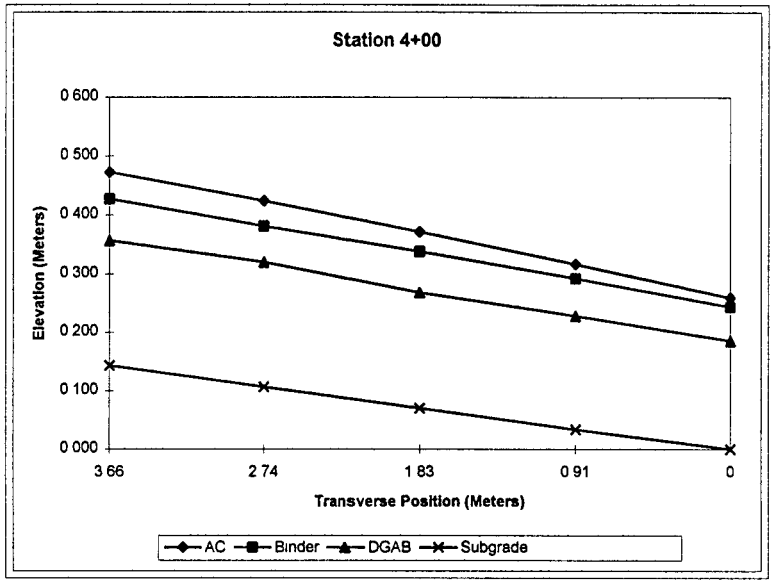
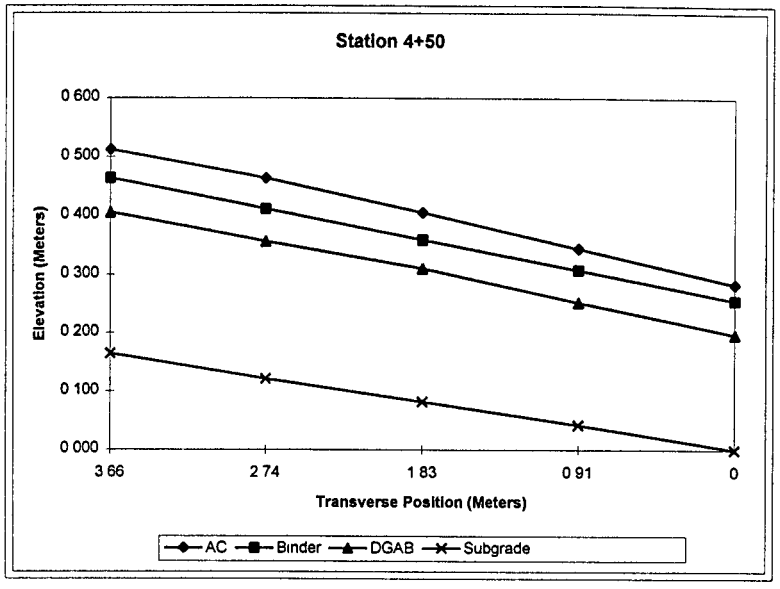
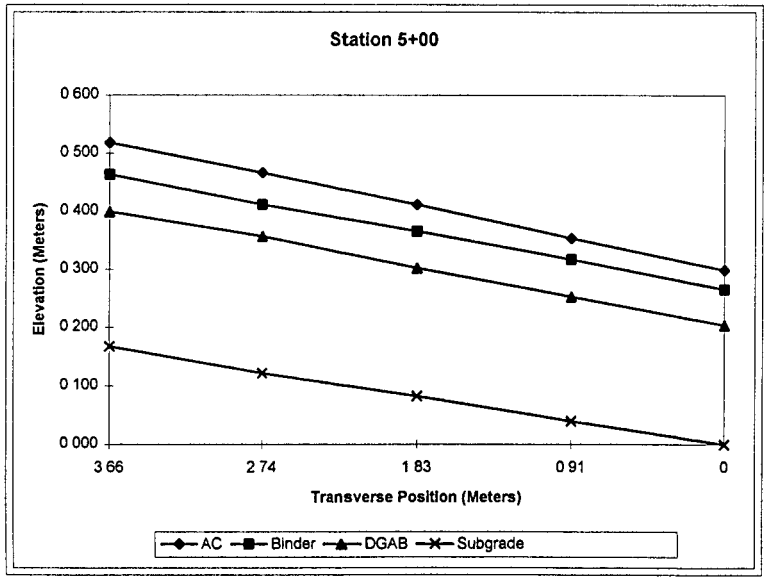




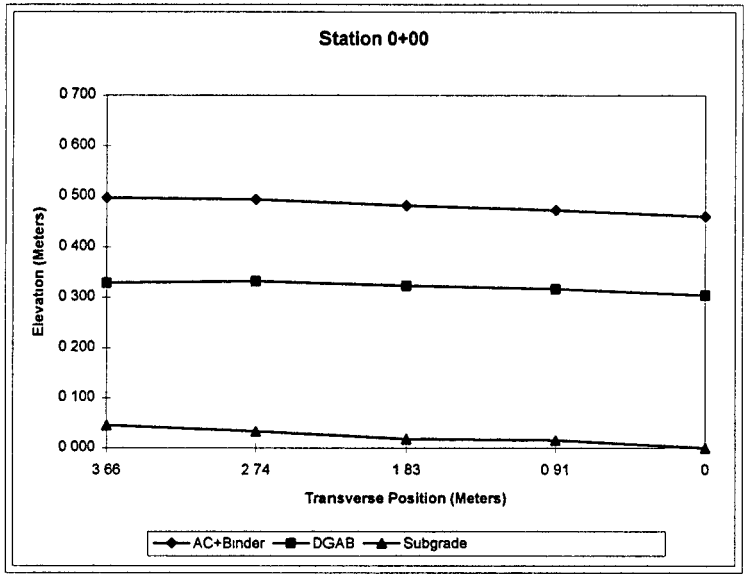


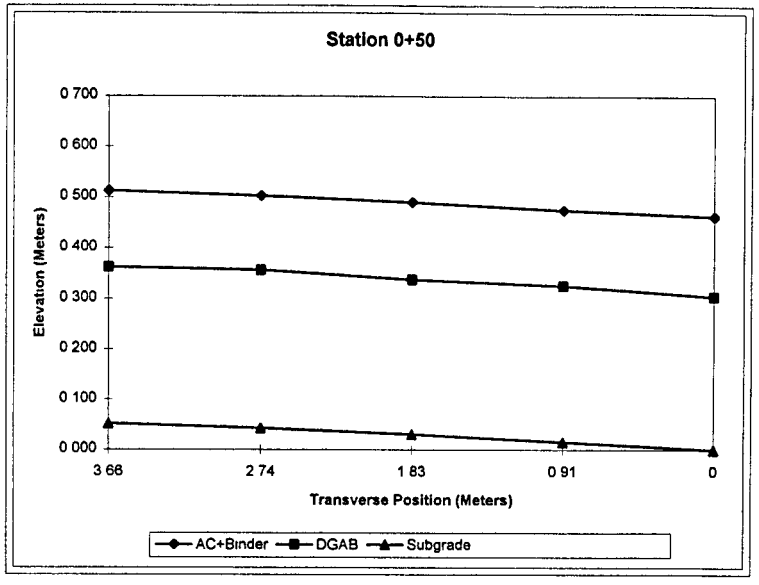
Arkansas SPS-8 (050804)

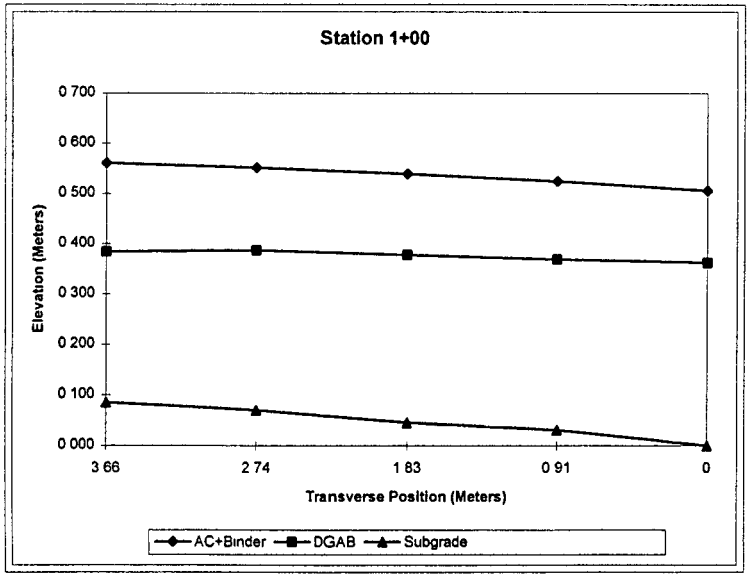
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	AC+Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	AC+Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	AC+Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	AC+Binder THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	AC+Binder THICKNESS Meters	DGAB THICKNESS Meters
0+00	C+Binder	3.100	0.155	0.305	3.112	0.155	0.302	3.121	0.158	0.305	3.133	0.162	0.299	3.136	0.168	0.283
	DGAB	2.944			2.957			2.963			2.972			2.969		
	Subgrade	2.640			2.655			2.658			2.673			2.685		
0+50	C+Binder	3.085	0.158	0.305	3.097	0.149	0.311	3.112	0.152	0.308	3.124	0.146	0.314	3.133	0.149	0.311
	DGAB	2.926			2.947			2.960			2.978			2.984		
	Subgrade	2.621			2.637			2.652			2.664			2.673		
1+00	C+Binder	3.082	0.143	0.363	3.100	0.155	0.338	3.115	0.162	0.332	3.127	0.165	0.317	3.136	0.177	0.299
	DGAB	2.938			2.944			2.954			2.963			2.960		
	Subgrade	2.576			2.606			2.621			2.646			2.661		
1+50	C+Binder	3.072	0.149	0.320	3.094	0.165	0.287	3.112	0.165	0.287	3.127	0.168	0.287	3.139	0.189	0.262
	DGAB	2.923			2.929			2.947			2.960			2.950		
	Subgrade	2.603			2.643			2.661			2.673			2.688		
2+00	C+Binder	3.060	0.171	0.308	3.085	0.171	0.293	3.112	0.180	0.287	3.133	0.177	0.296	3.155	0.186	0.296
	DGAB	2.890			2.914			2.932			2.957			2.969		
	Subgrade	2.582			2.621			2.646			2.661			2.673		
2+50	C+Binder	3.039	0.168	0.326	3.075	0.180	0.323	3.109	0.195	0.314	3.139	0.201	0.305	3.167	0.198	0.305
	DGAB	2.871			2.896			2.914			2.938			2.969		
	Subgrade	2.545			2.573			2.600			2.633			2.664		
3+00	C+Binder	3.030	0.183	0.299	3.069	0.183	0.305	3.109	0.183	0.317	3.146	0.186	0.308	3.179	0.198	0.305
	DGAB	2.847			2.886			2.926			2.960			2.981		
	Subgrade	2.548			2.582			2.609			2.652			2.676		
3+50	C+Binder	2.978	0.158	0.320	3.005	0.137	0.317	3.085	0.171	0.341	3.136	0.177	0.344	3.182	0.192	0.317
	DGAB	2.819			2.868			2.914			2.960			2.990		
	Subgrade	2.499			2.551			2.573			2.615			2.673		
4+00	C+Binder	2.954	0.143	0.296	3.005	0.140	0.296	3.063	0.155	0.280	3.118	0.168	0.274	3.170	0.186	0.265
	DGAB	2.810			2.865			2.908			2.950			2.984		
	Subgrade	2.515			2.569			2.627			2.676			2.719		
4+50	C+Binder	2.954	0.165	0.290	3.002	0.162	0.299	3.057	0.168	0.311	3.112	0.174	0.323	3.158	0.177	0.326
	DGAB	2.789			2.841			2.890			2.938			2.981		
	Subgrade	2.499			2.542			2.579			2.615			2.655		
5+00	C+Binder	2.950	0.162	0.299	3.002	0.180	0.293	3.051	0.183	0.293	3.103	0.192	0.308	3.142	0.198	0.311
	DGAB	2.789			2.822			2.868			2.911			2.944		
	Subgrade	2.490			2.530			2.576			2.603			2.633		
	AVG		0.160	0.312		0.161	0.307		0.169	0.309		0.174	0.308		0.183	0.298
	MAX		0.183	0.363		0.183	0.338		0.195	0.341		0.201	0.344		0.198	0.326
	MIN		0.143	0.290		0.137	0.287		0.152	0.280		0.146	0.274		0.149	0.262
	STD		0.011	0.020		0.015	0.015		0.013	0.018		0.015	0.018		0.015	0.020

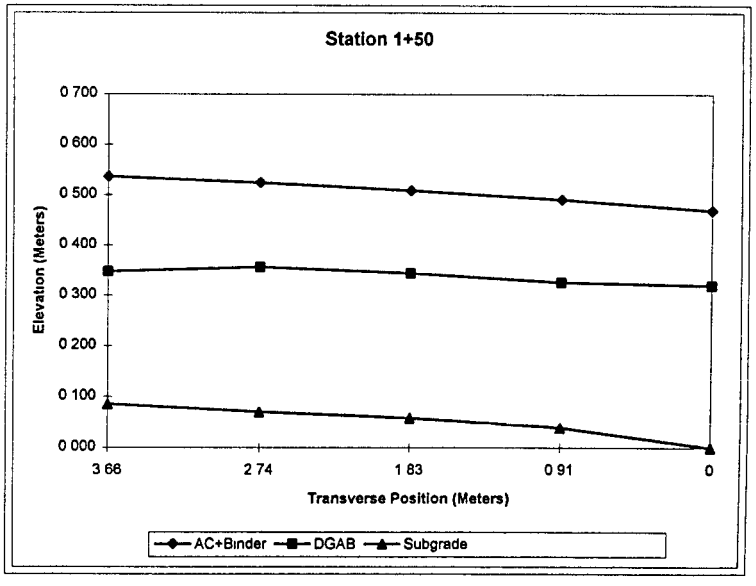
	AC+Binder	DGAB
SECTION AVG	0.170	0.306
SECTION MAX	0.201	0.363
SECTION MIN	0.137	0.262
SECTION STD	0.016	0.019

Arkansas SPS-8 (050804)

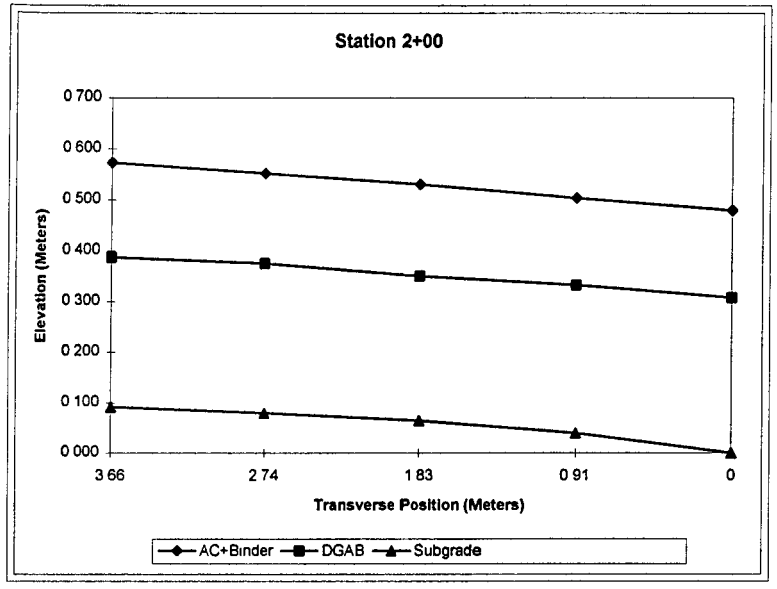


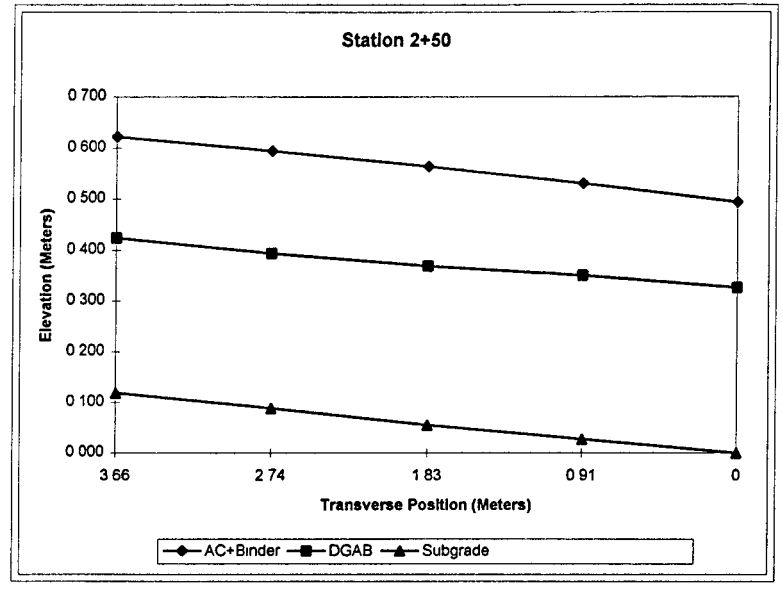


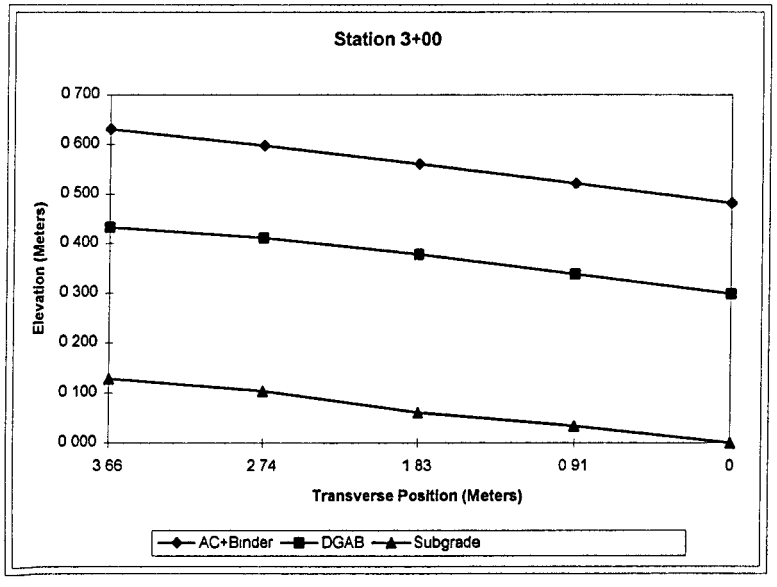


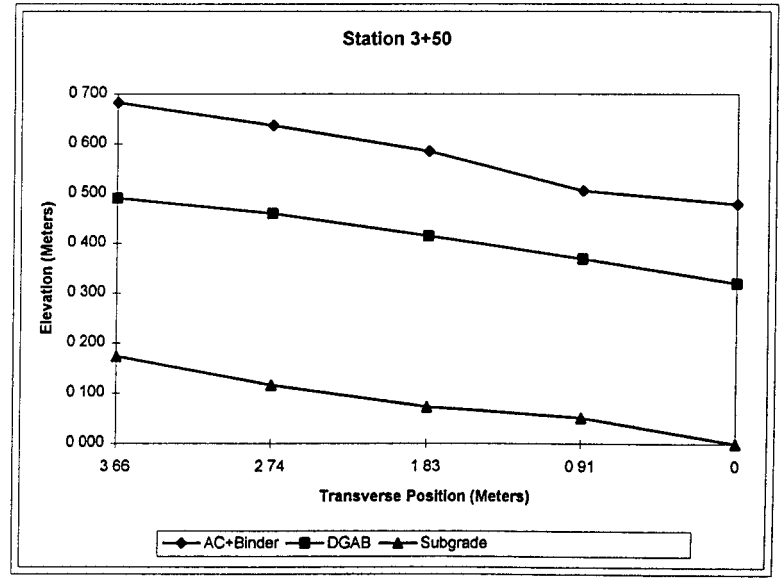


Arkansas SPS-8 (050804)

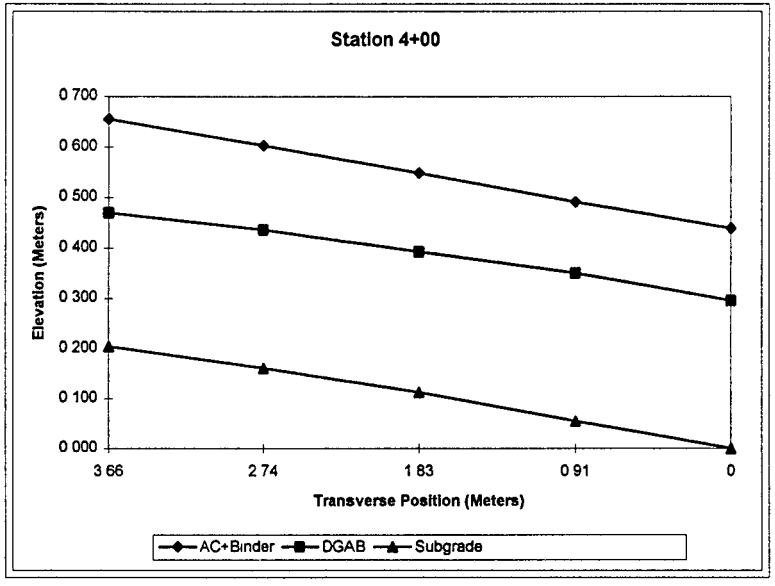


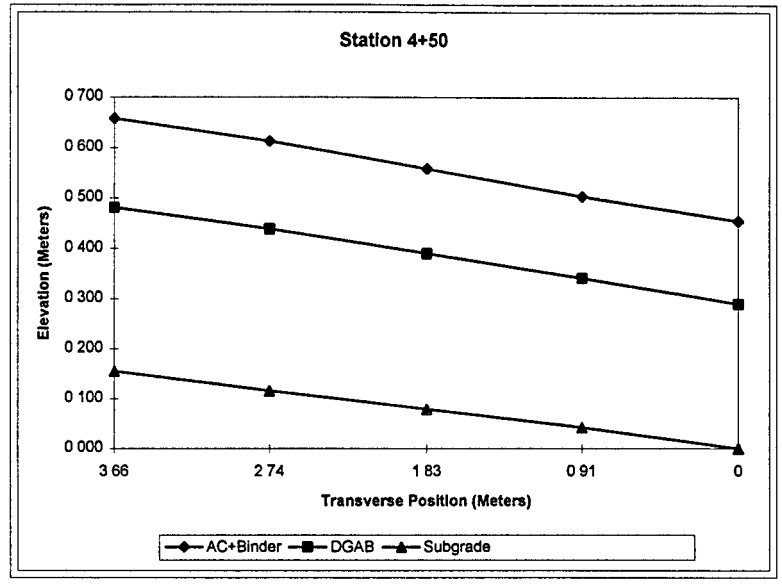


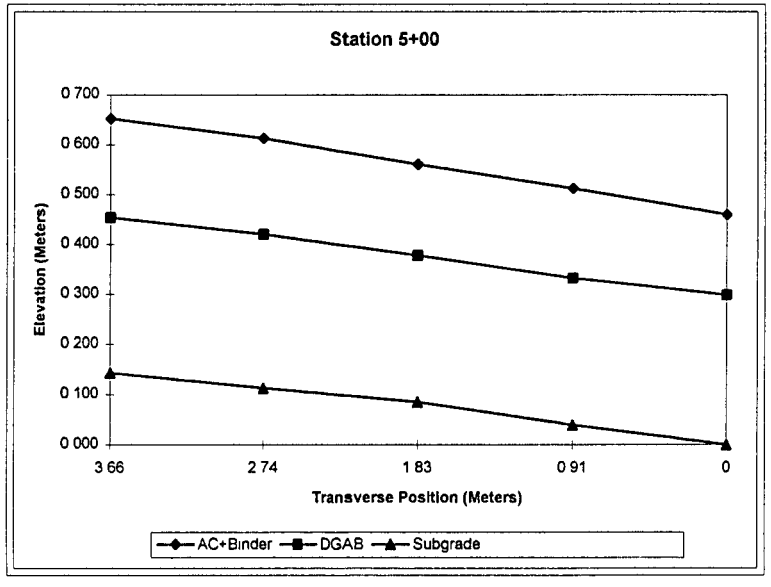




Arkansas SPS-8 (050804)





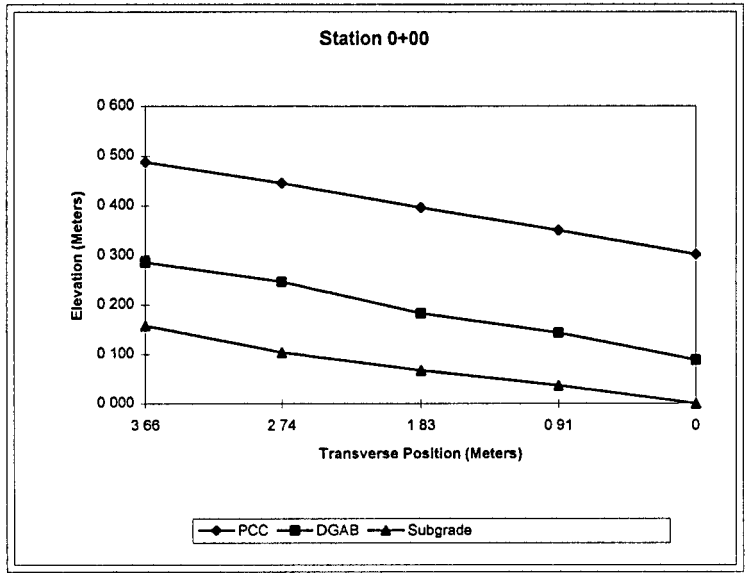


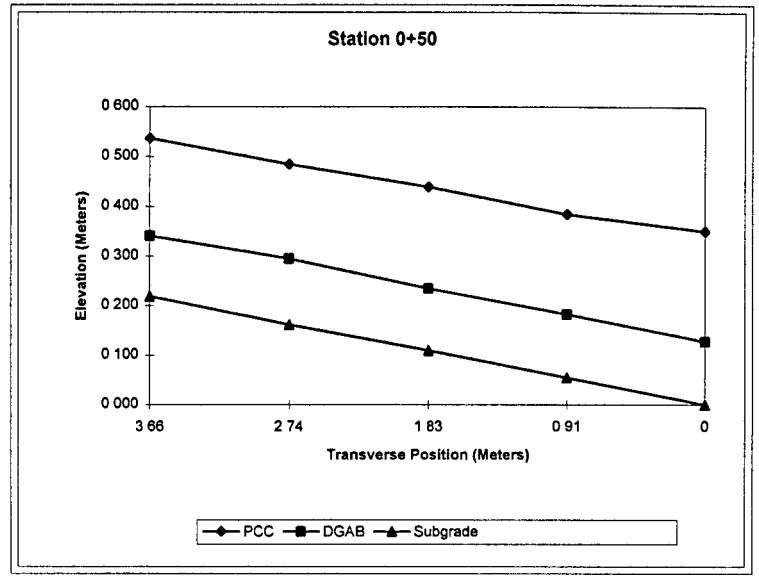
Arkansas SPS-8 (050809)

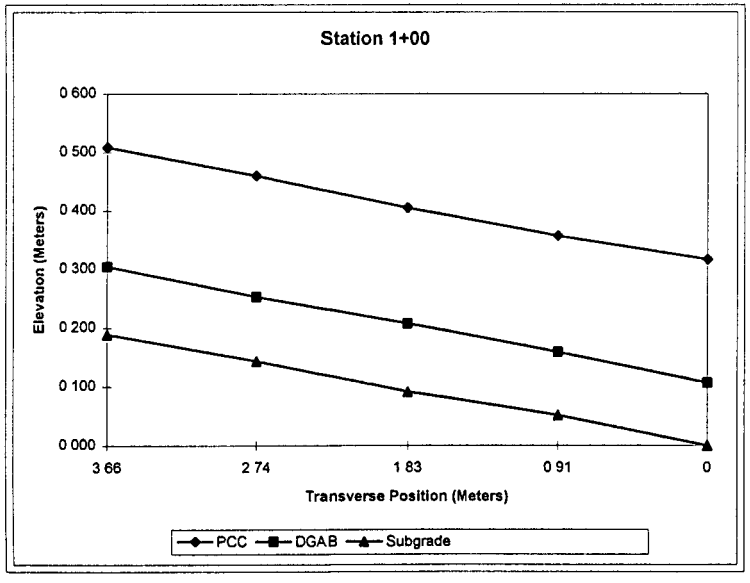
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0.91 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1.83 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters
0+00	PCC	3.274	0.213	0.088	3.322	0.207	0.107	3.368	0.213	0.116	3.417	0.198	0.143	3.459	0.201	0.128
	DGAB	3.060			3.115			3.155			3.219			3.258		
	Subgrade	2.972			3.008			3.039			3.075			3.130		
0+50	PCC	3.277	0.223	0.128	3.310	0.201	0.128	3.365	0.204	0.125	3.411	0.189	0.134	3.463	0.195	0.122
	DGAB	3.054			3.109			3.161			3.222			3.267		
	Subgrade	2.926			2.981			3.036			3.088			3.146		
1+00	PCC	3.267	0.210	0.107	3.307	0.198	0.107	3.356	0.198	0.116	3.411	0.207	0.110	3.459	0.204	0.116
	DGAB	3.057			3.109			3.158			3.203			3.255		
	Subgrade	2.950			3.002			3.042			3.094			3.139		
1+50	PCC	3.274	0.213	0.119	3.307	0.204	0.113	3.353	0.204	0.119	3.402	0.201	0.140	3.447	0.201	0.143
	DGAB	3.060			3.103			3.149			3.200			3.246		
	Subgrade	2.941			2.990			3.030			3.060			3.103		
2+00	PCC	3.283	0.213	0.128	3.319	0.207	0.119	3.359	0.201	0.131	3.405	0.204	0.128	3.447	0.207	0.131
	DGAB	3.069			3.112			3.158			3.200			3.240		
	Subgrade	2.941			2.993			3.027			3.072			3.109		
2+50	PCC	3.304	0.232	0.143	3.338	0.213	0.155	3.380	0.213	0.168	3.426	0.201	0.174	3.466	0.219	0.149
	DGAB	3.072			3.124			3.167			3.225			3.246		
	Subgrade	2.929			2.969			2.999			3.051			3.097		
3+00	PCC	3.328	0.216	0.143	3.365	0.210	0.134	3.405	0.219	0.137	3.444	0.229	0.131	3.487	0.235	0.137
	DGAB	3.112			3.155			3.185			3.216			3.252		
	Subgrade	2.969			3.021			3.048			3.085			3.115		
3+50	PCC	3.380	0.198	0.116	3.411	0.201	0.131	3.447	0.213	0.143	3.478	0.226	0.146	3.511	0.235	0.155
	DGAB	3.182			3.210			3.234			3.252			3.277		
	Subgrade	3.066			3.078			3.091			3.106			3.121		
4+00	PCC	3.420	0.189	0.119	3.432	0.183	0.110	3.456	0.195	0.107	3.487	0.210	0.107	3.511	0.226	0.104
	DGAB	3.231			3.249			3.261			3.277			3.286		
	Subgrade	3.112			3.139			3.155			3.170			3.182		
4+50	PCC	3.417	0.198	0.128	3.432	0.201	0.119	3.441	0.198	0.113	3.463	0.213	0.110	3.475	0.219	0.091
	DGAB	3.219			3.231			3.243			3.249			3.255		
	Subgrade	3.091			3.112			3.130			3.139			3.164		
5+00	PCC	0.000	Unknown	0.140	0.000	Unknown	0.134	0.000	Unknown	0.128	0.000	Unknown	0.119	0.000	Unknown	0.104
	DGAB	3.194			3.206			3.222			3.234			3.240		
	Subgrade	3.054			3.072			3.094			3.115			3.136		
	AVG		0.211	0.123		0.202	0.124		0.207	0.127		0.208	0.131		0.215	0.125
	MAX		0.232	0.143		0.213	0.155		0.219	0.168		0.229	0.174		0.235	0.155
	MIN		0.189	0.088		0.183	0.107		0.195	0.107		0.189	0.107		0.195	0.091
	STD		0.012	0.016		0.008	0.015		0.008	0.017		0.012	0.020		0.014	0.020

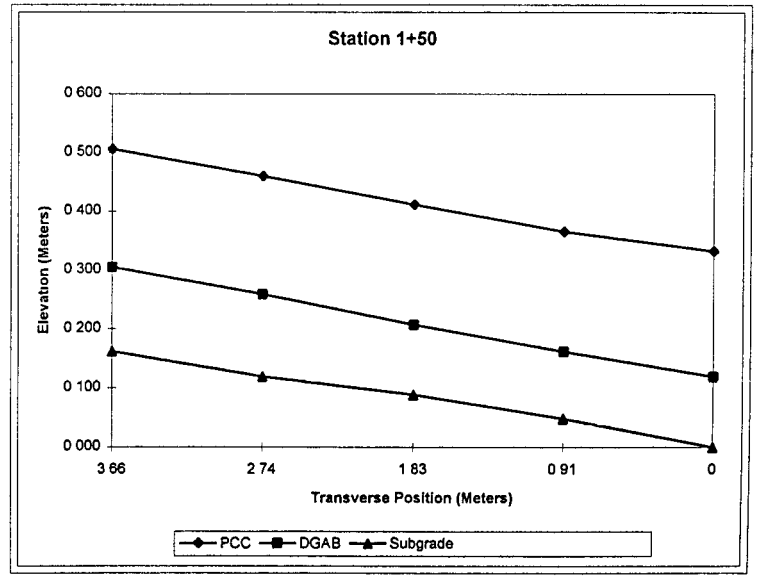
	PCC	DGAB
SECTION AVG	0.208	0.126
SECTION MAX	0.235	0.174
SECTION MIN	0.183	0.088
SECTION STD	0.012	0.017

Arkansas SPS-8 (050809)

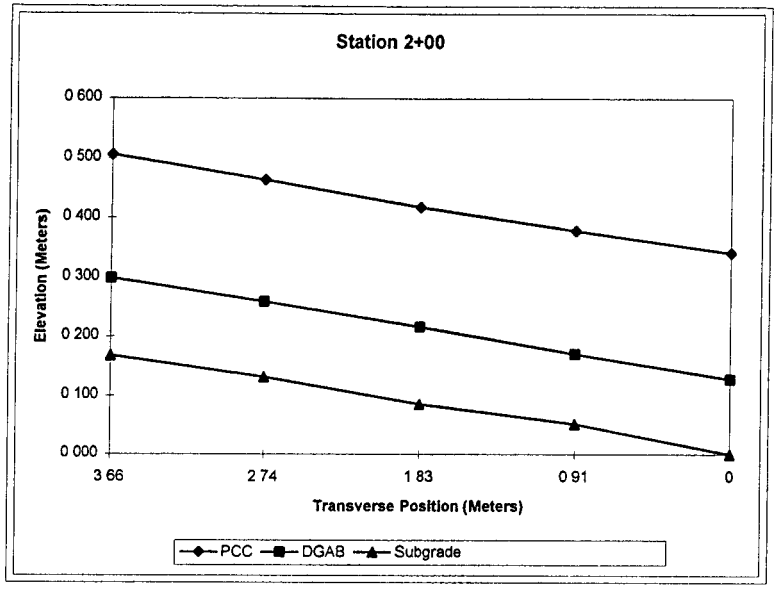


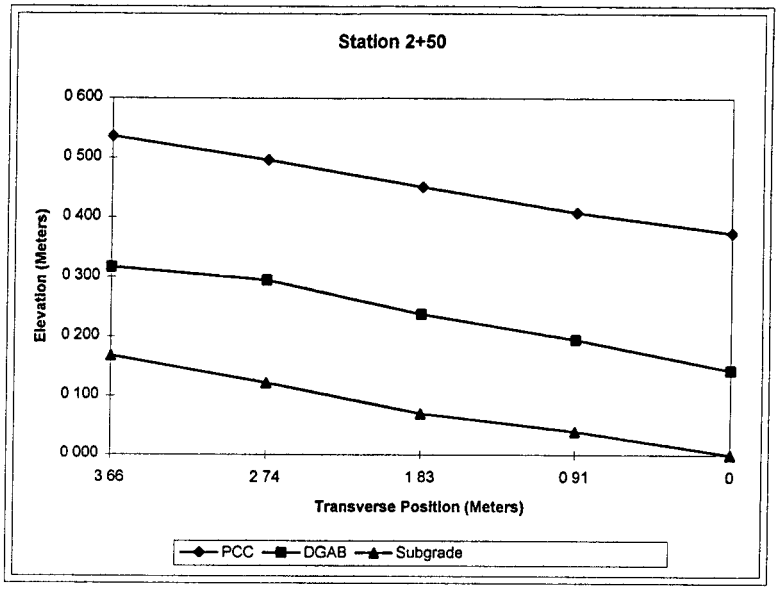


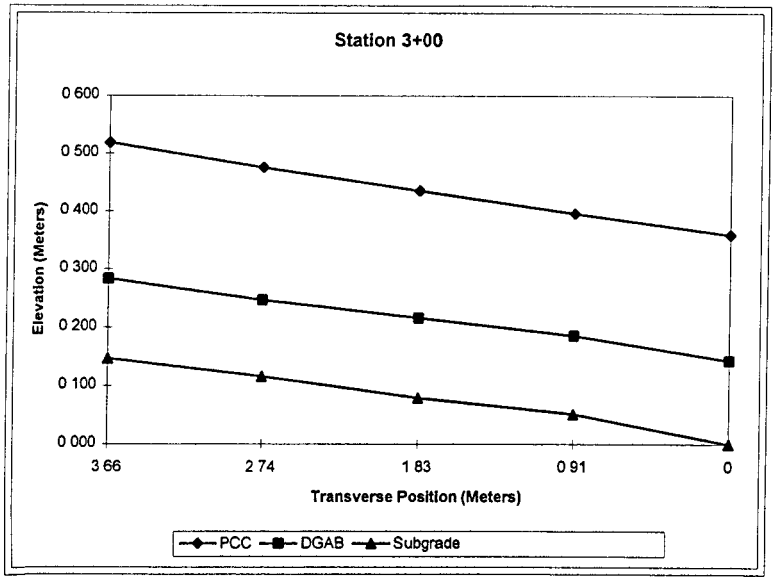


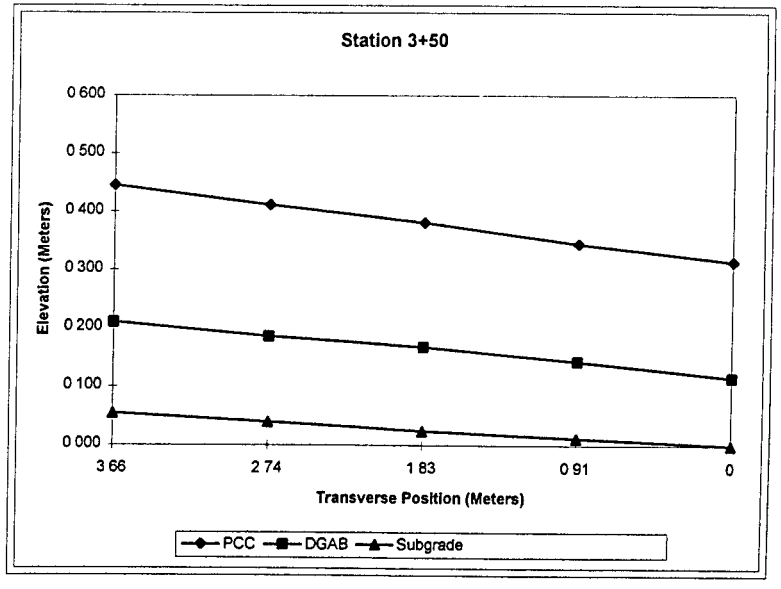


Arkansas SPS-8 (050809)

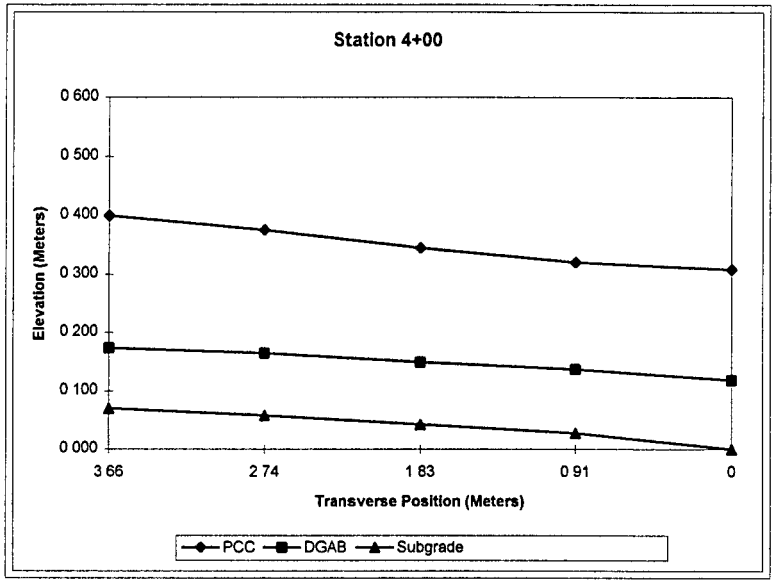


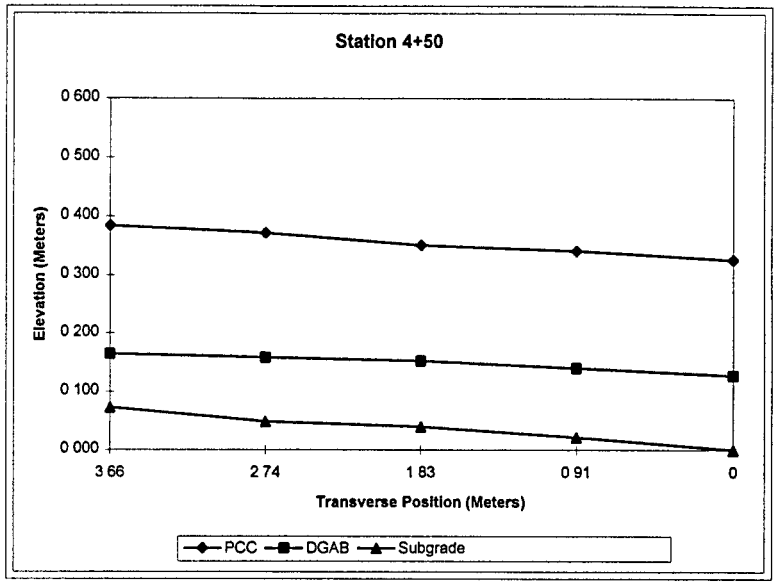


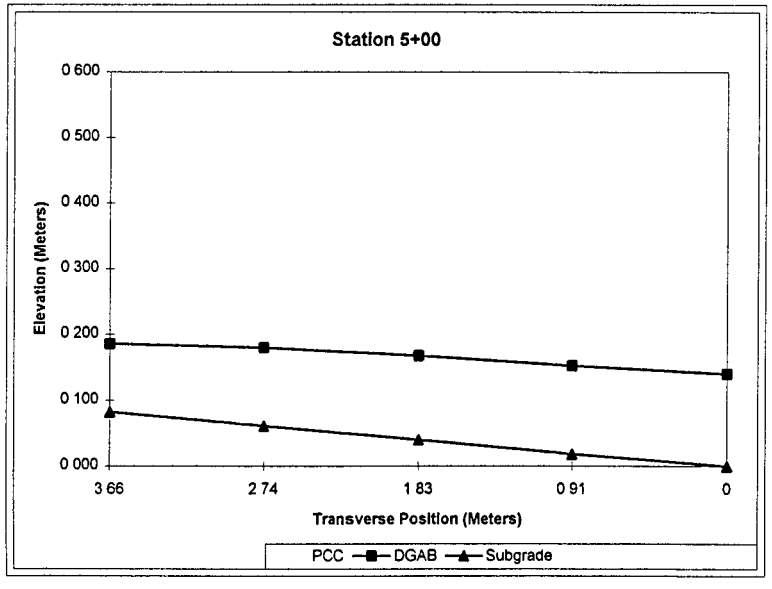




Arkansas SPS-8 (050809)





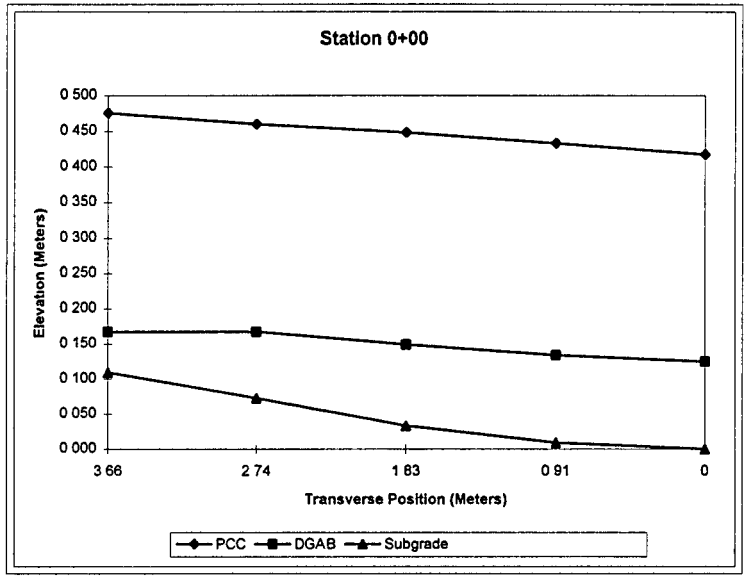


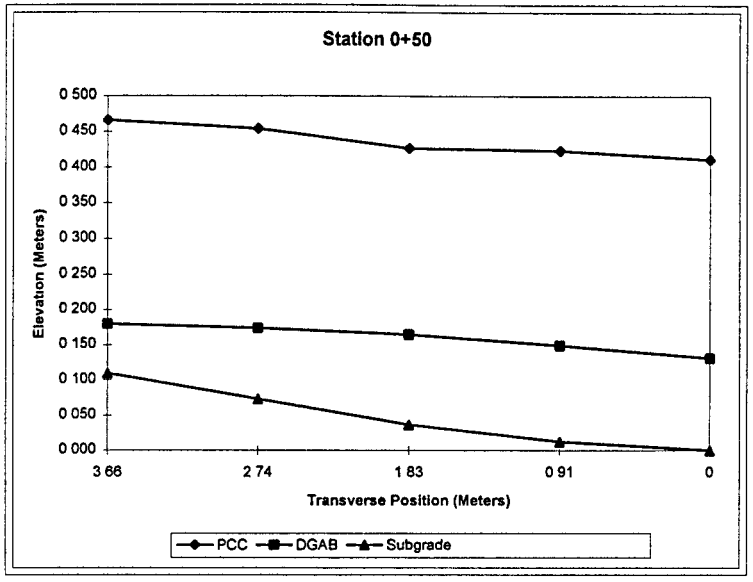
Arkansas SPS-8 (050810)

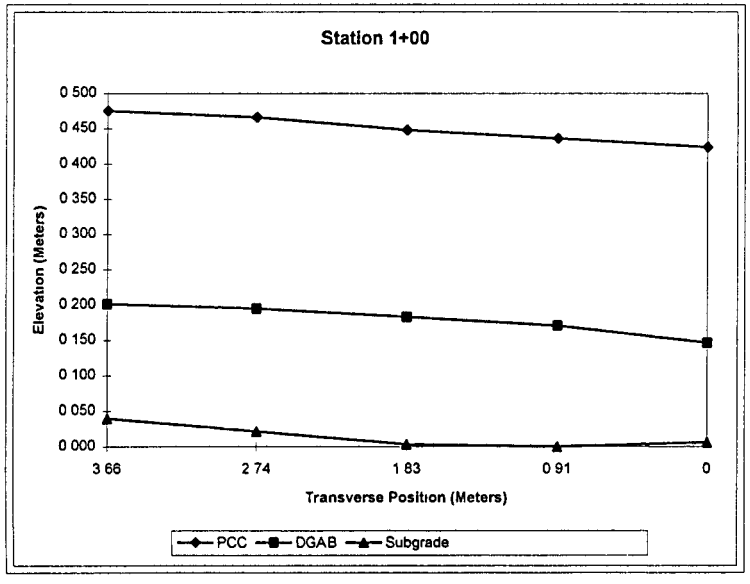
Transverse Offset	3 LAYERS	ELEVATION 0 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 0 91 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 1 83 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 2.74 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters	ELEVATION 3.66 Meters	PCC THICKNESS Meters	DGAB THICKNESS Meters
0+00	PCC	2 573	0 293	0 125	2 588	0 299	0 125	2 603	0 299	0 116	2 615	0 293	0 094	2 630	0 308	0 058
	DGAB	2 280			2 289			2 304			2 323			2 323		
	Subgrade	2 155			2 164			2 188			2 228			2 265		
0+50	PCC	2 579	0 280	0 131	2 591	0 274	0 137	2 594	0 262	0 128	2 621	0 280	0 101	2 633	0 287	0 070
	DGAB	2 298			2 316			2 332			2 341			2 347		
	Subgrade	2 167			2 179			2 204			2 240			2 277		
1+00	PCC	2 588	0 277	0 140	2 600	0 265	0 171	2 612	0 265	0 180	2 630	0 271	0 174	2 640	0 274	0 162
	DGAB	2 310			2 335			2 347			2 359			2 365		
	Subgrade	2 170			2 164			2 167			2 185			2 204		
1+50	PCC	2 588	0 277	0 122	2 603	0 274	0 134	2 618	0 277	0 128	2 633	0 280	0 110	2 649	0 290	0 085
	DGAB	2 310			2 329			2 341			2 353			2 359		
	Subgrade	2 188			2 195			2 213			2 243			2 274		
2+00	PCC	2 576	0 262	0 110	2 588	0 256	0 113	2 606	0 262	0 128	2 621	0 265	0 152	2 640	0 287	0 143
	DGAB	2 313			2 332			2 344			2 356			2 353		
	Subgrade	2 204			2 219			2 216			2 204			2 210		
2+50	PCC	2 582	0 283	0 140	2 591	0 283	0 125	2 609	0 290	0 104	2 621	0 290	0 085	2 637	0 305	0 058
	DGAB	2 298			2 307			2 320			2 332			2 332		
	Subgrade	2 158			2 182			2 216			2 246			2 274		
3+00	PCC	2 576	0 308	0 107	2 594	0 314	0 094	2 612	0 320	0 088	2 627	0 326	0 079	2 640	0 329	0 070
	DGAB	2 268			2 280			2 292			2 301			2 310		
	Subgrade	2 161			2 185			2 204			2 222			2 240		
3+50	PCC	2 591	0 277	0 110	2 609	0 283	0 110	2 624	0 293	0 116	2 646	0 308	0 119	2 652	0 314	0 119
	DGAB	2 313			2 326			2 332			2 338			2 338		
	Subgrade	2 204			2 216			2 216			2 219			2 219		
4+00	PCC	2 588	0 277	0 107	2 600	0 277	0 113	2 621	0 283	0 131	2 630	0 277	0 152	2 640	0 271	0 165
	DGAB	2 310			2 323			2 338			2 353			2 368		
	Subgrade	2 204			2 210			2 207			2 201			2 204		
4+50	PCC	2 588	0 305	0 110	2 591	0 283	0 113	2 621	0 293	0 116	2 640	0 287	0 122	2 661	0 293	0 119
	DGAB	2 283			2 307			2 329			2 353			2 368		
	Subgrade	2 173			2 195			2 213			2 231			2 249		
5+00	PCC	2 594	0 283	0 085	2 615	0 274	0 098	2 643	0 274	0 101	2 673	0 277	0 101	2 701	0 277	0 107
	DGAB	2 310			2 341			2 368			2 396			2 423		
	Subgrade	2 225			2 243			2 268			2 295			2 316		
	AVG		0 284	0 118		0 283	0 122		0 286	0 121		0 289	0 114		0 295	0 101
	MAX		0 308	0 140		0 314	0 171		0 320	0 180		0 326	0 174		0 329	0 165
	MIN		0 262	0 085		0 265	0 094		0 262	0 088		0 271	0 079		0 271	0 058
	STD		0 013	0 016		0 013	0 021		0 016	0 023		0 016	0 028		0 018	0 038

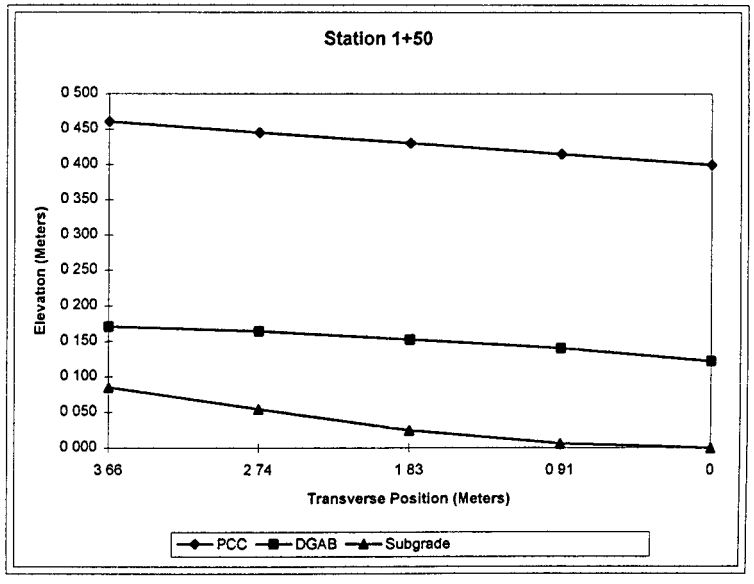
	PCC	DGAB
SECTION AVG	0 286	0 116
SECTION MAX	0 329	0 180
SECTION MIN	0 262	0 058
SECTION STD	0 016	0 027

Arkansas SPS-8 (050810)

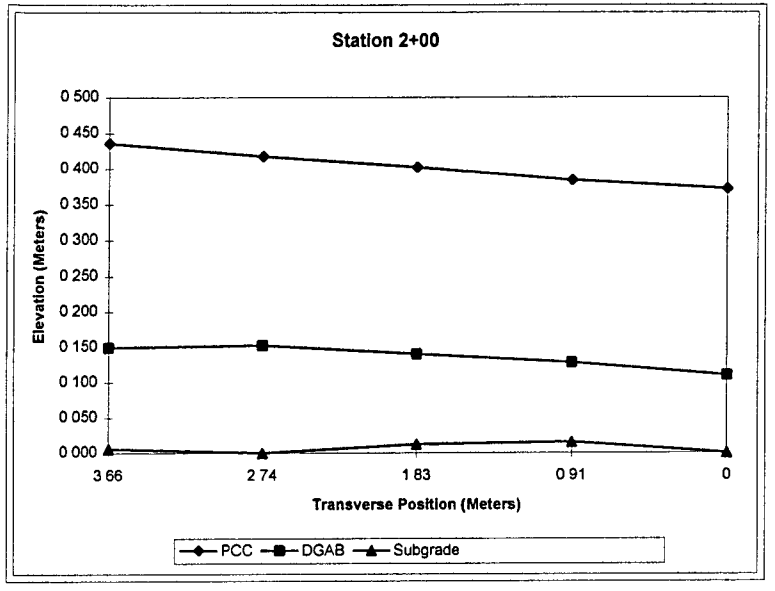


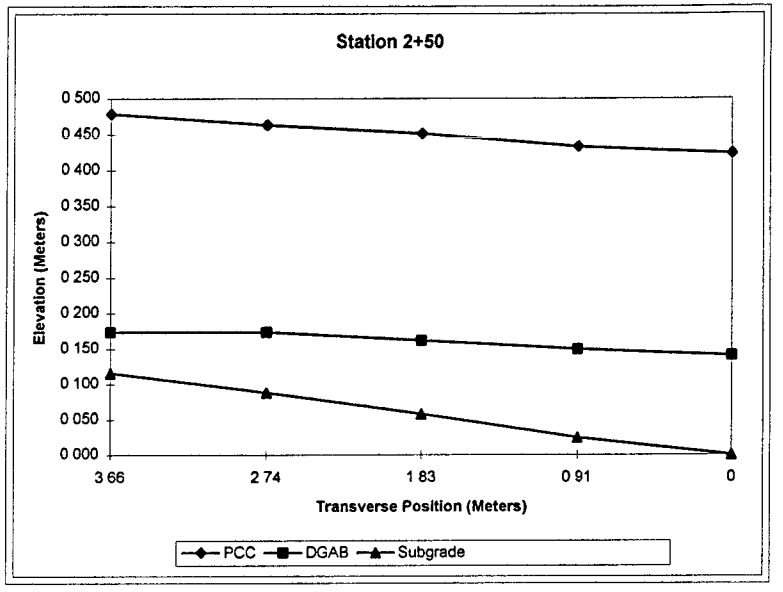


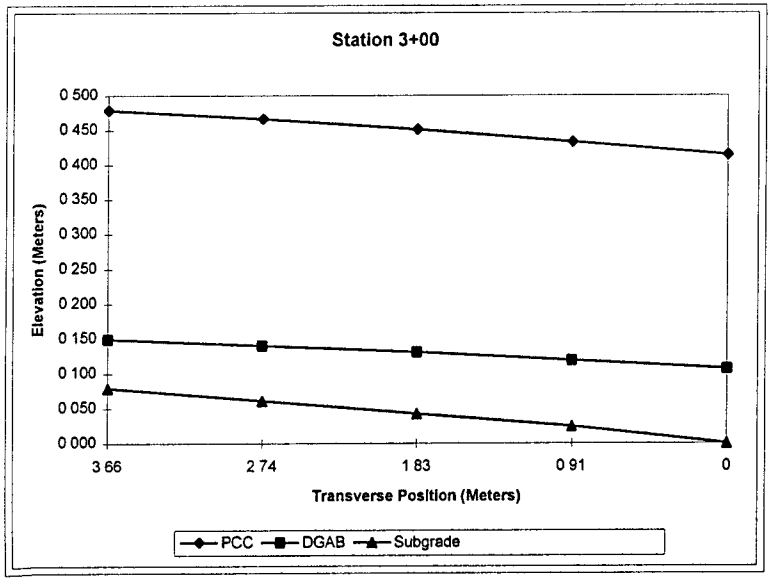


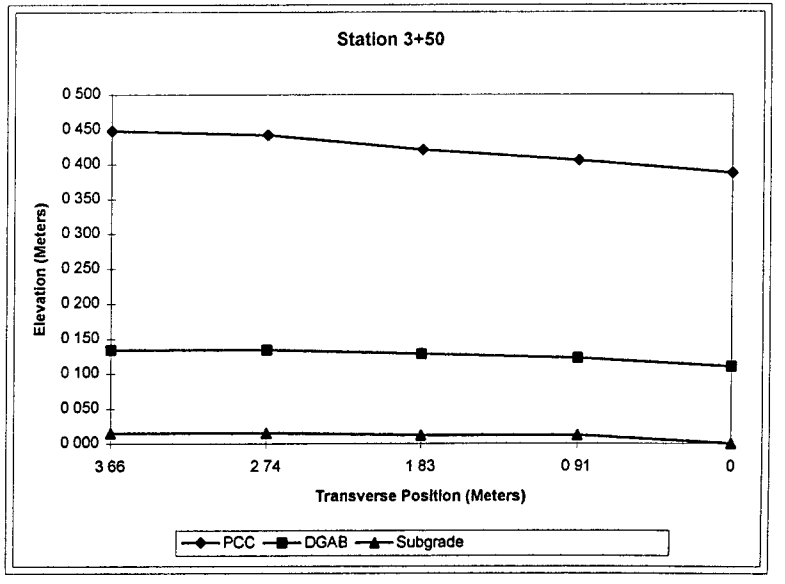


Arkansas SPS-8 (050810)

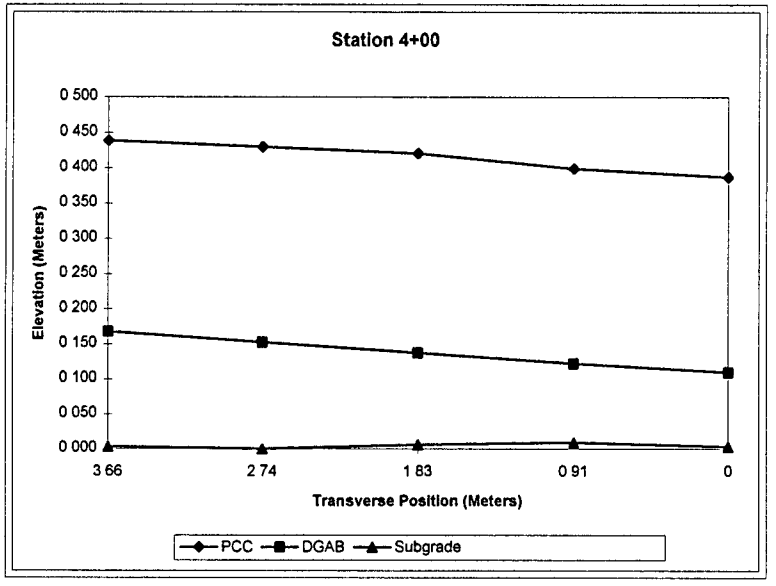


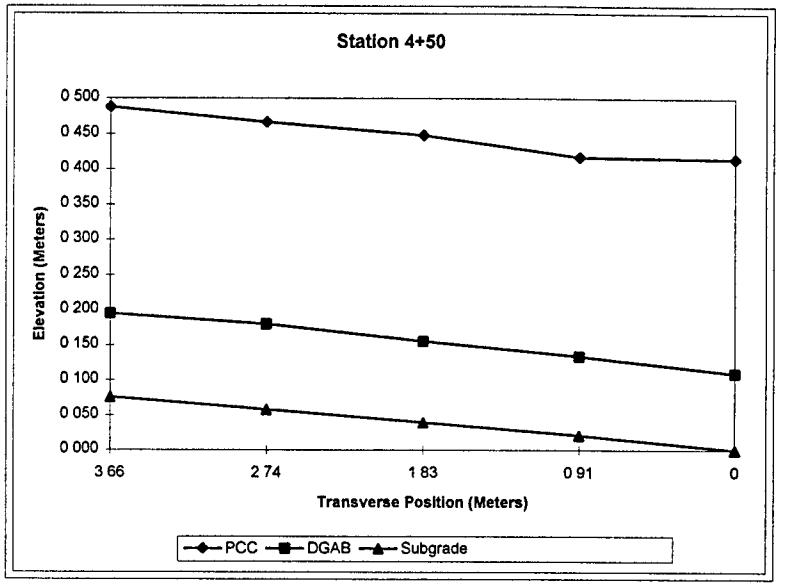


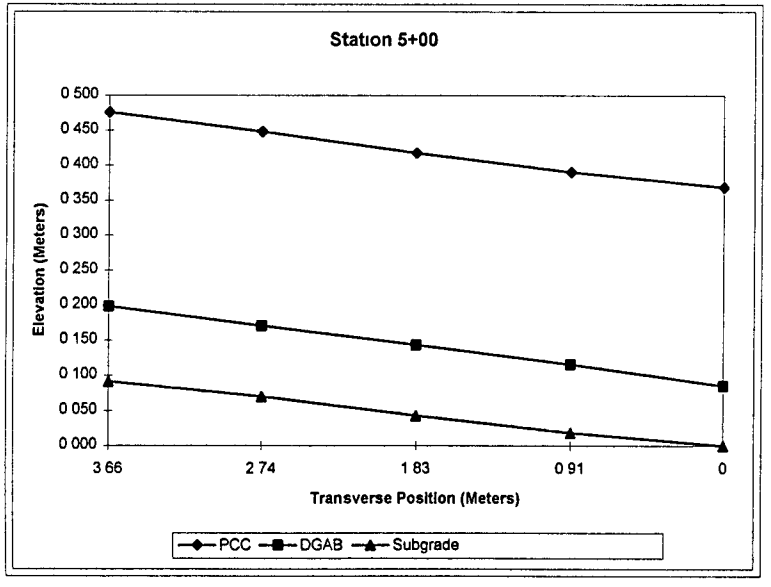




Arkansas SPS-8 (050810)







APPENDIX C

MATERIALS SAMPLING AND TESTING PLAN

Brent Rauhut Engineering Inc.

22 October 1996

Mr. Boon Thian
Research Division
Arkansas State Highway &
Transportation Department
P.O. Box 2261
Little Rock, Arkansas 72203

Subject: Arkansas SPS-6 (05A600) and SPS-8 (050800) Projects Material Sampling and Testing Plans, Revised October 1996

Dear Boon,

Enclosed are copies of the plans for material sampling and testing activities for the Arkansas SPS-6 and SPS-8 projects, located in the southbound lanes of US-65 in Jefferson County, Arkansas. These plans have been prepared to identify details of the material sampling, field testing and laboratory materials testing to occur as part of their construction.

If you have any questions or comments regarding the information provided in these plans, please do not hesitate to contact me. A copy of these documents is also being provided to Mr. Monte Symons of the FHWA, for review and approval.

Sincerely,

Jerry F. Daleiden, P.E.
Project Engineer, SRCO

JFD:dmj

Enclosures: As stated.

c.w/Enc: Monte Symons, FHWA/LTPP-PPD
John Miller, PCS/LAW-Kennesaw, GA
Files: 05A600 (Grn) and 050800 (Grn)

c.w/o Enc: Morris Reinhardt, RE/SRCO

8240 Mopac, Suite 220 • Austin, Texas 78759 • (512) 346-0870 • FAX (512) 346-8750

MATERIAL SAMPLING
AND
TESTING PLAN

ARKANSAS SPS-8 PROJECT 050800
US-65 EAST TERMINAL INTERCHANGE,
RIGHT FRONTAGE ROAD
JEFFERSON COUNTY, ARKANSAS

PREPARED BY:

BRENT RAUHUT ENGINEERING INC.
FHWA/LTPP SOUTHERN REGION COORDINATION OFFICE
8240 MOPAC, SUITE 220
AUSTIN, TEXAS 78759

REVISED OCTOBER 1996

MATERIAL SAMPLING AND TESTING PLAN
ARKANSAS SPS-8 PROJECT (050800)
US-65 EAST TERMINAL INTERCHANGE, RIGHT FRONTAGE ROAD
JEFFERSON COUNTY, ARKANSAS

INTRODUCTION

As part of their participation in the FHWA/LTPP studies, the State of Arkansas has elected to construct an SPS-8 project to study the environmental effects in the absence of heavy loads. This project will consist of four test sections along the right frontage road of the US-65 East Terminal Interchange, in Jefferson County, Arkansas. It is the intent of this document to provide a complete plan for the material sampling, testing, and laboratory material testing that will occur as a part of this project.

This document has been prepared in accordance with guidelines provided by the Federal Highway Administration entitled "Specific Pavement Studies Material Sampling and Testing Requirements for Experiment SPS-8, Study of Environmental Effects in the Absence of Heavy Loads, August 1992". Recognizing the apparent variability in the construction of roadway projects, the goal of this effort is to develop a sampling and testing plan for the project materials that will be consistent with other projects in this experiment, and therefore make the information obtained suitable for analysis.

The objective of the SPS-8 study is to investigate the performance of selected flexible and rigid pavement structures constructed on different subgrade types in different environmental regions. The factors addressed in this study include pavement type, surface and base thickness, and subgrade classification. Arkansas' involvement in the study will provide critical information in the wet-no freeze environmental zone, on fine-grained subgrade soil. The data produced by this experiment will be used to evaluate existing design methods and performance equations. The interaction of the factors previously discussed will be determined in combination with the effect of environmental region and soil type. The effects of these factors will be studied under realistic performance conditions with significant materials and construction control. Herein lies the need for a sampling and testing plan, provided in the following pages.

This sampling and testing plan has been developed by Brent Rauhut Engineering, Inc. the Southern Region Coordination Office under contract to the Federal Highway Administration. If, during the construction activities, any questions arise regarding the sampling and/or testing to be conducted, one should first coordinate these questions with the Arkansas State Highway and Transportation Department, who may refer them to the Southern Region Coordination Office.

This document has been prepared in three distinct parts, each covering a particular area of this rather formidable exercise. The three sections are:

A. General Layout Information

B. Materials Sampling and Testing

C. Laboratory Material Testing

The General Layout section provides tables and figures of the layout showing the four test sections along the roadway and the layer structure for these test sections.

The Material Sampling and Testing section defines in detail all of the material samples to be obtained, testing to be performed in the field, and provides an itemized list showing where each sample is to be shipped for laboratory testing.

Finally, the Laboratory Material Testing section outlines the laboratory material test program to be conducted and provides tracking charts showing the testing to be performed on each sample of each material in each laboratory.

SECTION A

GENERAL LAYOUT INFORMATION

SECTION A

GENERAL LAYOUT INFORMATION

This section of the plan provides a description of the SPS-8 project in terms of the location of the test sections along the roadway. Table A-1 lists the test sections in order of increasing station, providing an indication of the cross-section of each test section. Table A-2 tracks the test sections from the beginning of the first section at Station 592+50 to the end of the last section at Station 628+50. This table indicates transition areas between sections and the variation of pavement layer materials within these transitions. Figure A-1 depicts the layout of the test sections along the roadway and shows the variation of material type and layer thickness.

The referenced project stationing was provided by the Arkansas SHDT in the form of preliminary project plans. If there are significant changes in alignment or stationing, this plan should be reviewed closely to determine if revisions are warranted.

TABLE A-1. TEST SECTION LAYOUT

Section (Cell ID)	Cross Section	Begin Station	End Station
050809	8″ PCC Surface	592+00	598+00
	6″ DGAB Base		
	48″ ± Select Fill		
050810	11″ PCC Surface	599+00	605+00
	6″ DGAB Base		
	48″ ± Select Fill		
050803	1½″ AC Surface	613+00	619+00
	2½″ AC Binder		
	8″ DGAB Base		
	48″ ± Select Fill		
050804	1½″ AC Surface	623+00	629+00
	5½″ AC Binder		
	12″ DGAB Base		
	48″ ± Select Fill		

TABLE A-2. ORDERING OF SECTIONS ALONG CENTER LINE STATIONING

Begin Sta.	End Sta.	Section ID	Thickness (In.)		
			AC Surface*	PCC Surface	DGAB
592+00	598+00	050809	0	8	6
598+00	599+00	Transition	0	8-11	6
599+00	605+00	050810	0	11	6
605+00	613+00	Transition	0-4	11-0	6-8
613+00	619+00	050803	4	0	8
619+00	623+00	Transition	4-7	0	8-12
623+00	629+00	050804	7	0	12

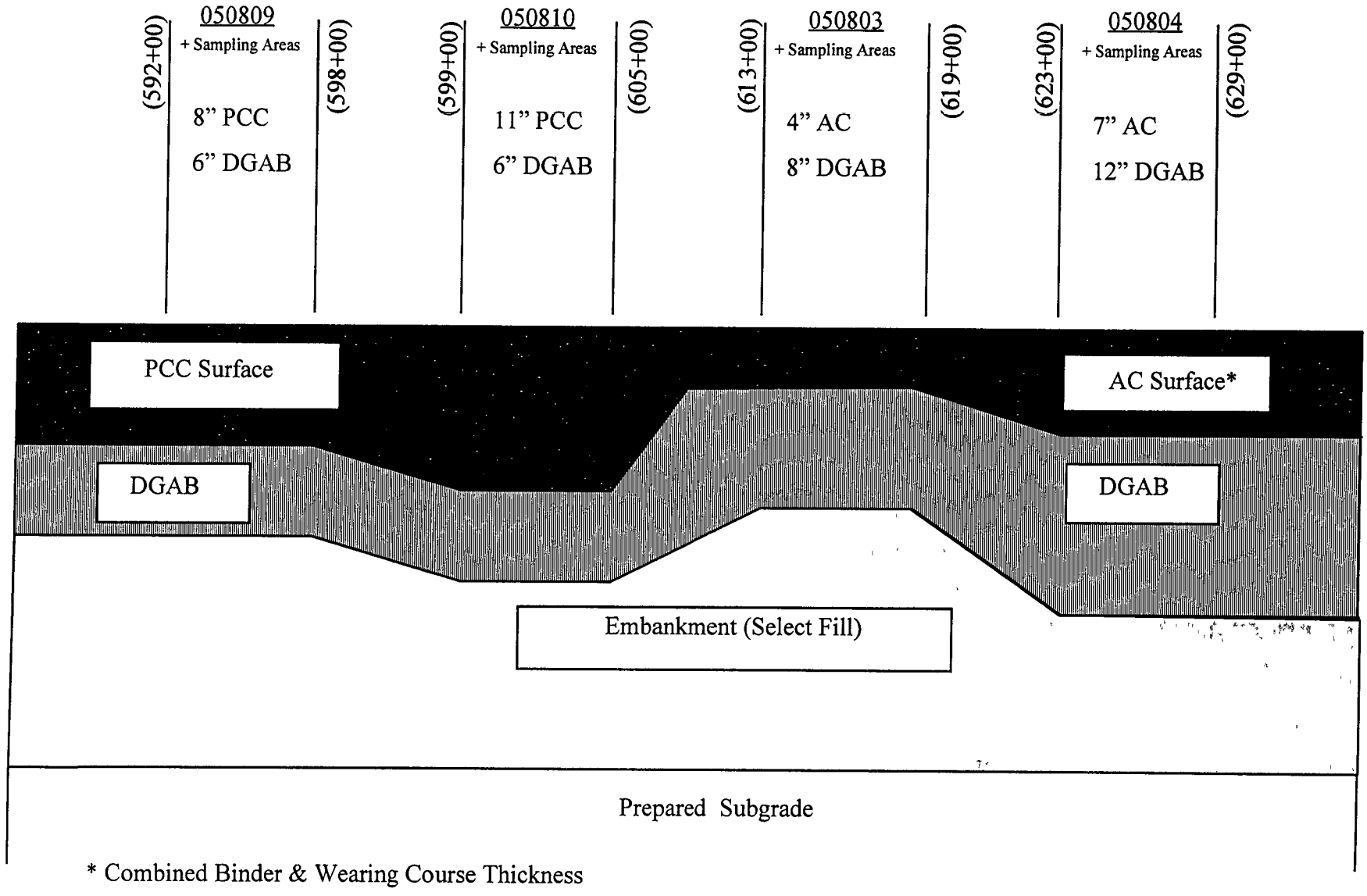


FIGURE A-1. LAYOUT OF TEST SECTIONS
ARKANSAS SPS-8 (050800)

SECTION B

MATERIAL SAMPLING AND TESTING

SECTION B

MATERIAL SAMPLING AND TESTING

This section of the plan provides for the material sampling and testing activities that occur in the field. Tables B-1 and B-2 provide the scope of the material sampling and field testing activities, respectively. Table B-3 describes special sampling needs for the Materials Reference Library and provides contact information to coordinate sample shipping arrangements.

Figures B-1 through B-8 show the locations and numbering scheme for the many samples and tests scheduled. Figures B-2 through B-6 show the sampling and testing to occur for each stage of the paving, while Figures B-7 and B-8 show all sampling and testing scheduled for each test section.

Finally, Tables B-4 and B-5 list samples to be shipped to the state laboratory (or their designee), and those samples to be shipped to the FHWA/LTPP testing contractor, respectively. Shipment of samples to the FHWA/LTPP testing contractor, LAW Engineering in Atlanta, Georgia, should be coordinated through the Southern Region Coordination Office.

TABLE B-1. SCOPE OF MATERIAL SAMPLING

Material And Sample Description	Nº. Of Samples	Sample Location
Portland Cement Concrete		
Coring - 4″ Diam. Cores	26	C1-C26
Bulk Sampling (Molded into test specimens)	3	FC1, FC2, FC3
Asphalt Concrete		
Coring - 4″ Diam. Cores	16	C27-C42
Bulk Sampling - Surface Mix (200 lb/sample)	3	BV21,BV22,BV23 - From Plant
Bulk Sampling - Binder Mix (200 lb/sample)	3	BV1,BV2,BV3 - From Plant
Bulk Sampling - Asphalt Cement (5 gal/sample)	3	BC1,BC2,BC3 - From Plant
Dense-Graded Aggregate Base		
Bulk Sampling (400 lb/sample)	4	B11-B14
Moisture Content Samples (Jars)	4	B11-B14
~~Embankment~~		
~~Bulk Sampling (400 lb/sample)~~	~~4~~	~~B7-B10~~
~~Moisture Content Samples (Jars)~~	~~4~~	~~B7-B10~~
~~Subgrade~~		
Thin-Walled Tubes (2 per hole)	24	A1-A12
Bulk Sampling (400 lb/sample)	6	B1-B6
Moisture Content Samples (Jars)	18	A1-A12, B1-B6
Permeability	2	A2,A8
Expansion Index	3	B1,B3,B5

TABLE B-2. SCOPE OF FIELD TESTING

Material And Test Description	Nº. Of Tests	Sample Location
Portland Cement Concrete		
Air Content	3	FC1,FC2,FC3
Slump	3	FC1,FC2,FC3
Temperature	3	FC1,FC2,FC3
Asphalt Concrete - Surface		
In Situ Density (Nuclear Gauge)	6	T49-T54
Asphalt Concrete - Binder		
In Situ Density (Nuclear Gauge)	6	T43-T48
Dense-Graded Aggregate Base		
In Situ Density, Moisture Content (Nuclear Gauge)	12	T31-T42
Plate-Bearing Test	2	PB3,PB4
~~Embankment~~		
~~In Situ Density, Moisture Content (Nuclear Gauge)~~	~~12~~	~~T19-T30~~
Subgrade		
In Situ Density, Moisture Content (Nuclear Gauge)	18	T1-T18
Shoulder Auger Probe	3	S1-S3
Plate-Bearing Test	2	PB1,PB3

TABLE B-3. MATERIAL SAMPLING FOR THE MATERIALS REFERENCE LIBRARY (MRL)

Material And Sample Description	Nº. Of Samples	Sample Location
Asphalt Cement (5 Gallon Containers)	3	From Plant
Aggregate - Surface Gradation (55 Gallon Drum)	1	From Plant
Aggregate - Binder Gradation (55 Gallon Drum)	1	From Plant
Finished Asphaltic Concrete Mix - Surface (5 Gallon Containers)	3	From Paver
Finished Asphaltic Concrete Mix - Binder (5 Gallon Containers)	3	From Paver

Note: Containers for this sampling will be provided by the LTPP Materials Reference Library (MRL). Scheduling information including (1) date containers needed, (2) state agency contact name, and (3) shipping address and telephone number should be provided to the MRL Contractor as soon as it is feasible to do so. The contact name, address and telephone number for the MRL Contractor are as follows:

Mr. Rod Soule
Nichols Consulting Engineers, Chtd.
1885 So. Arlington Ave., Suite 111
Reno, Nevada 89509
(702) 329-4955

These samples should be labeled according to applicable guidelines provided elsewhere and shipped to the MRL Contractor upon completion of sampling activities.

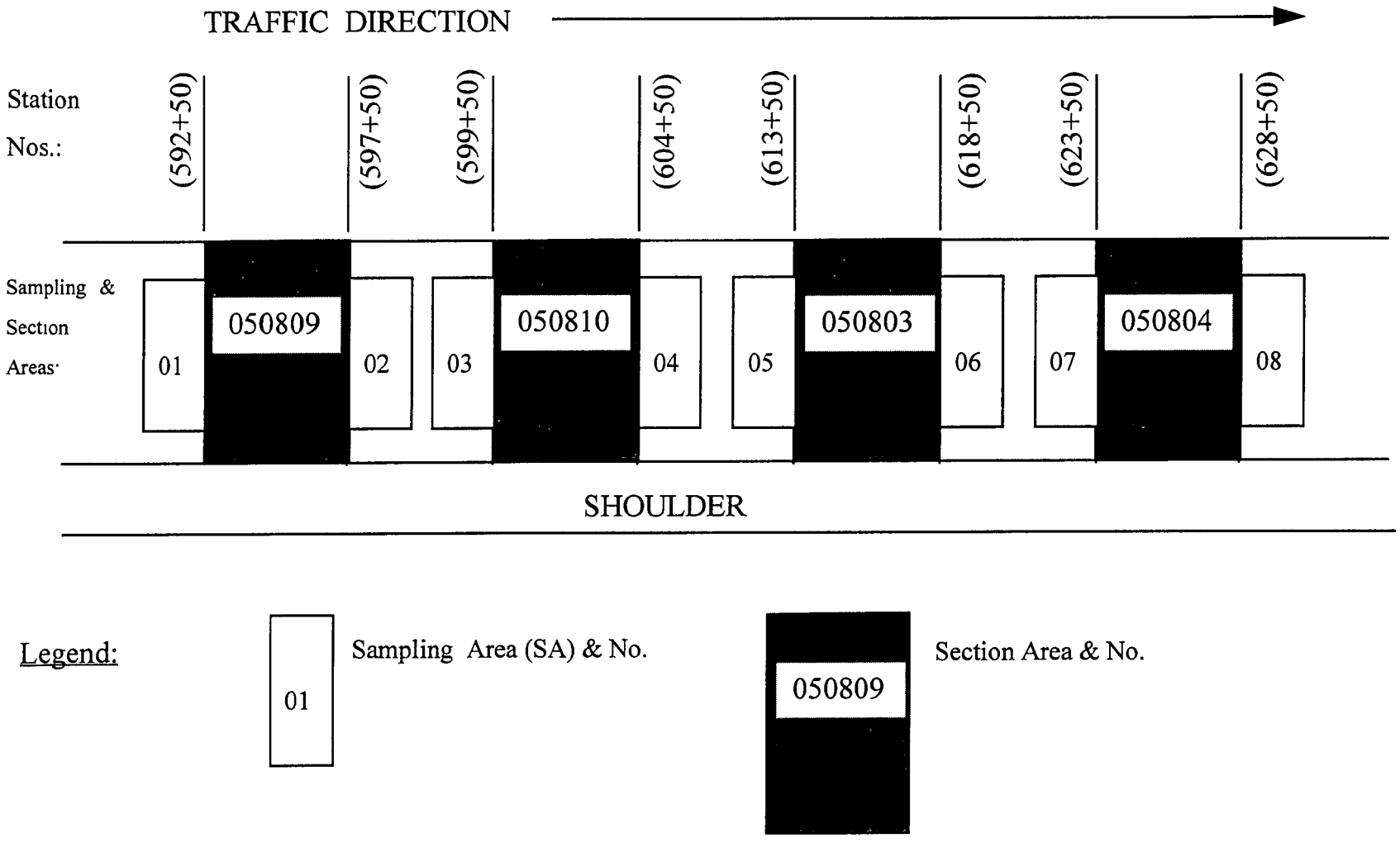
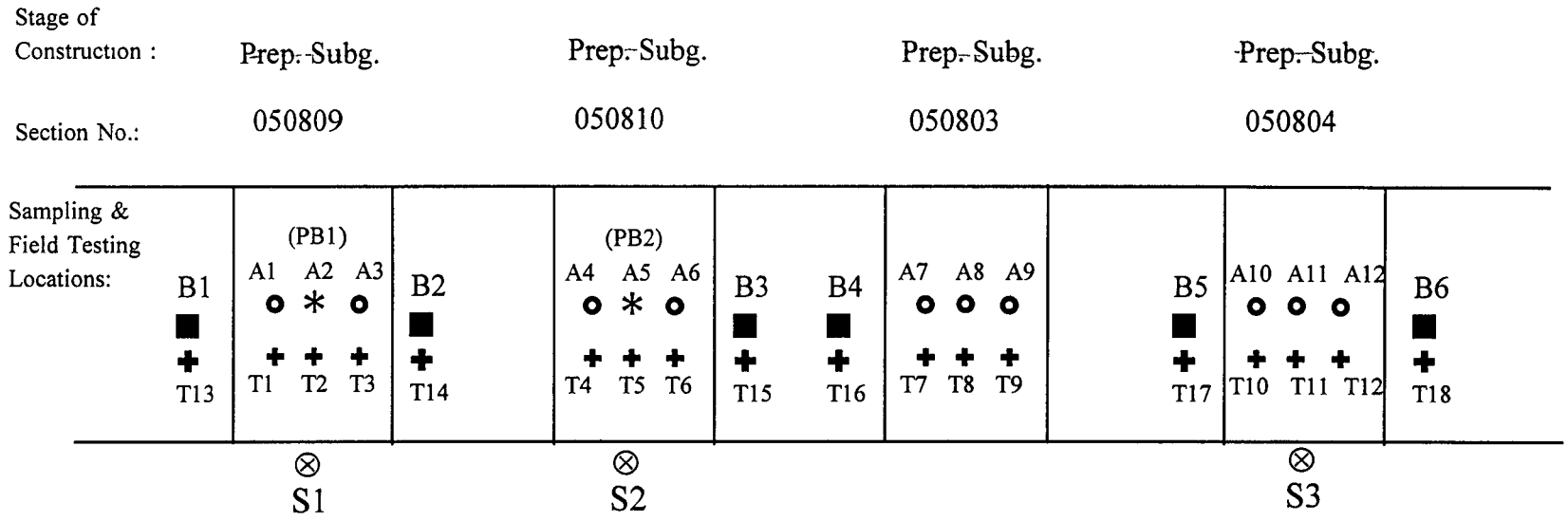


FIGURE B-1. SITE LAYOUT WITH SAMPLING AREAS ARKANSAS SPS-8 (050800)



Legend:

- ✚ In Situ Density and Moisture Content Test Locations (T1 - T18)
- ■ 2' x 2' Bulk Sampling Locations (B1 - B6)
- o Shelby Tube Sampling to 4' Below Top of Subgrade (A1 - A12)
- * Plate Bearing Tests (PB1, PB2) (at same locations as and performed before Shelby Tube Sampling tests (A2, A5))
- ⊗ Shoulder Probe to 20' Below Top of Subgrade (S1 - S3)

~~Prep. Subg. - Prepared Subgrade~~

FIGURE B-2. SAMPLING AND TESTING LOCATIONS FOR ~~SUBGRADE~~ ACTING SUBGRADE ARKANSAS SPS-8 (050800)

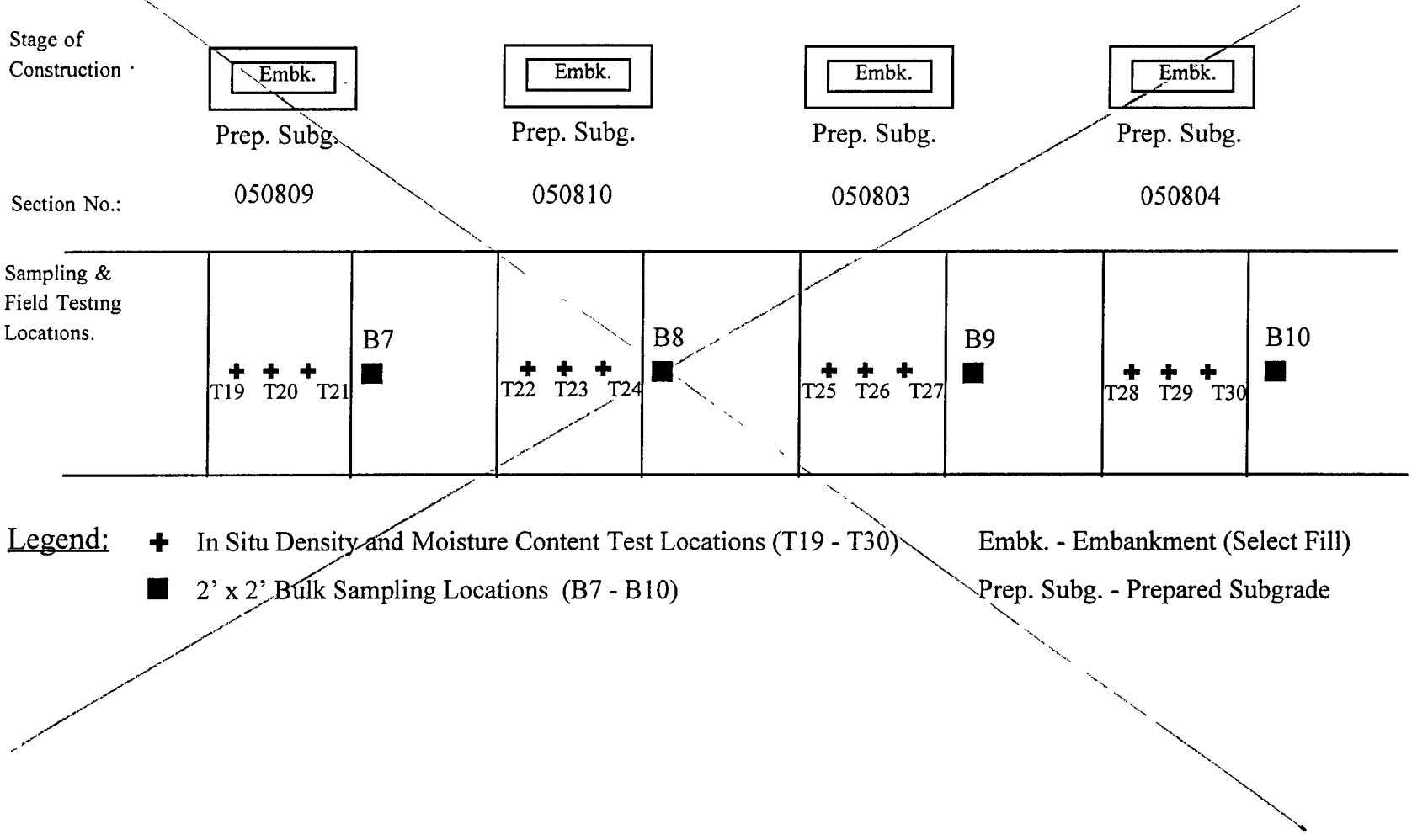
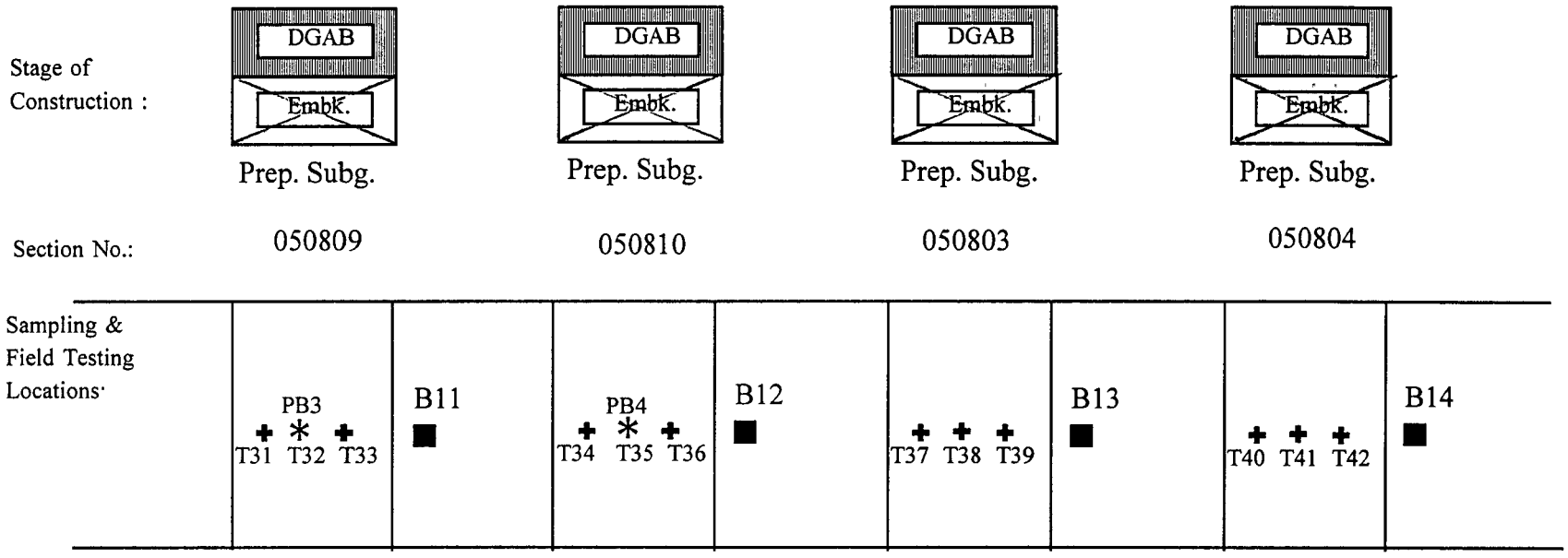


FIGURE B-3. SAMPLING AND TESTING LOCATIONS FOR EMBANKMENT ARKANSAS SPS-8 (050800)



Legend:

✚ In Situ Density and Moisture Content Test Locations (T31 - T42)

■ 2' x 2' Bulk Sampling Locations (B11 - B14)

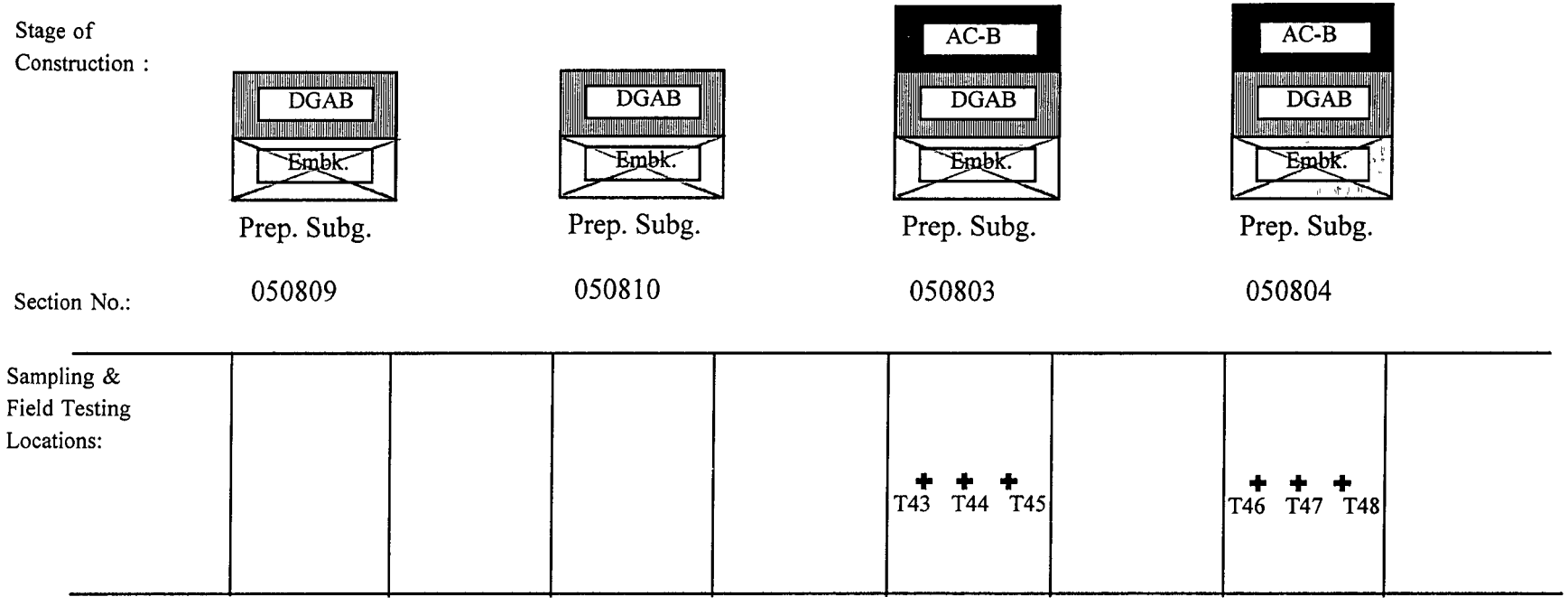
* Plate Bearing Test Locations (PB3, PB4) (at same location as and performed before In Situ Density Tests (T32, T35))

DGAB - Dense Graded Aggregate Base

~~Embk. - Embankment (Select Fill)~~

Prep. Subg - Prepared Subgrade

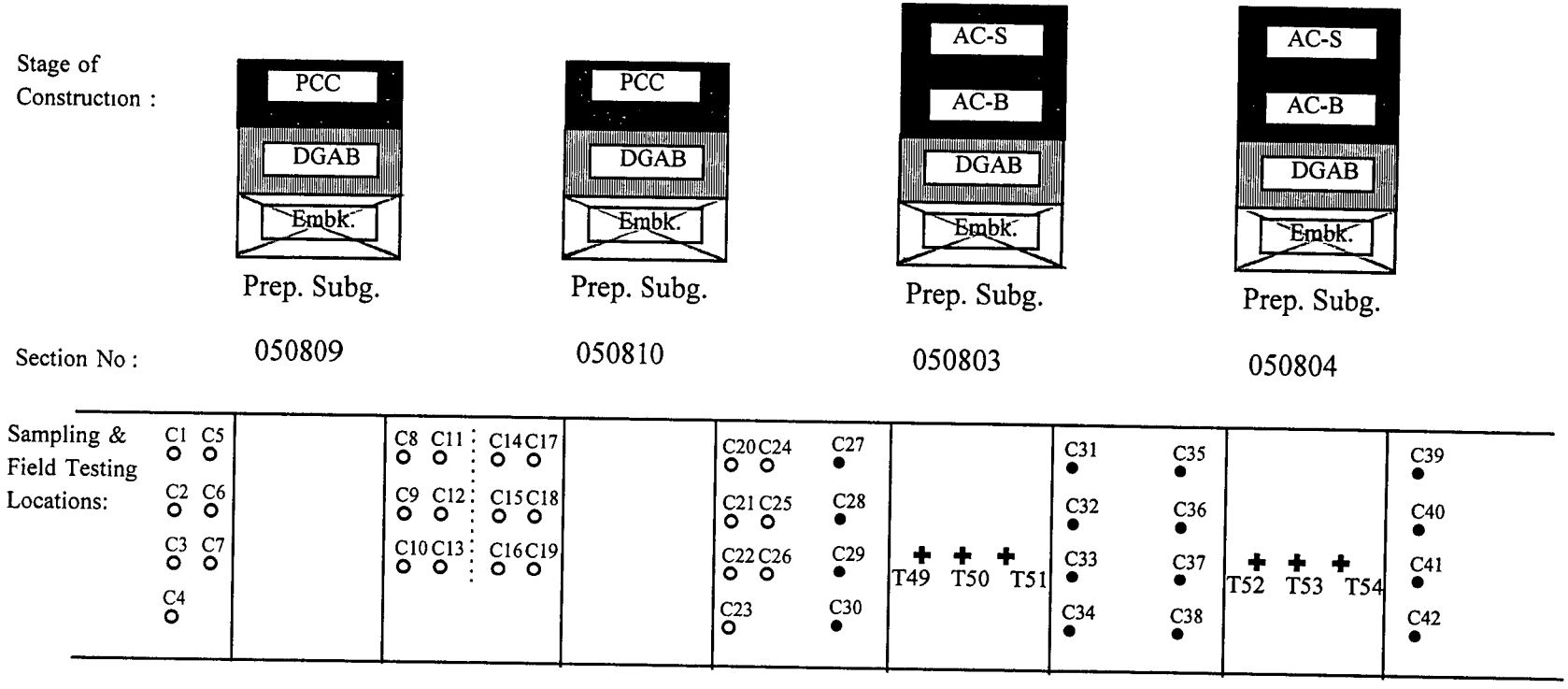
FIGURE B-4. SAMPLING AND TESTING LOCATIONS FOR DGAB ARKANSAS SPS-8 (050800)



Legend: ✚ In Situ Density Test Locations (T43 - T48)

AC-B - Asphalt Concrete Binder
DGAB - Dense Graded Aggregate Base
~~Embk. - Embankment (Select Fill)~~
Prep. Subg. - Prepared Subgrade

FIGURE B-5. SAMPLING AND TESTING LOCATIONS FOR AC BINDER ARKANSAS SPS-8 (050800)

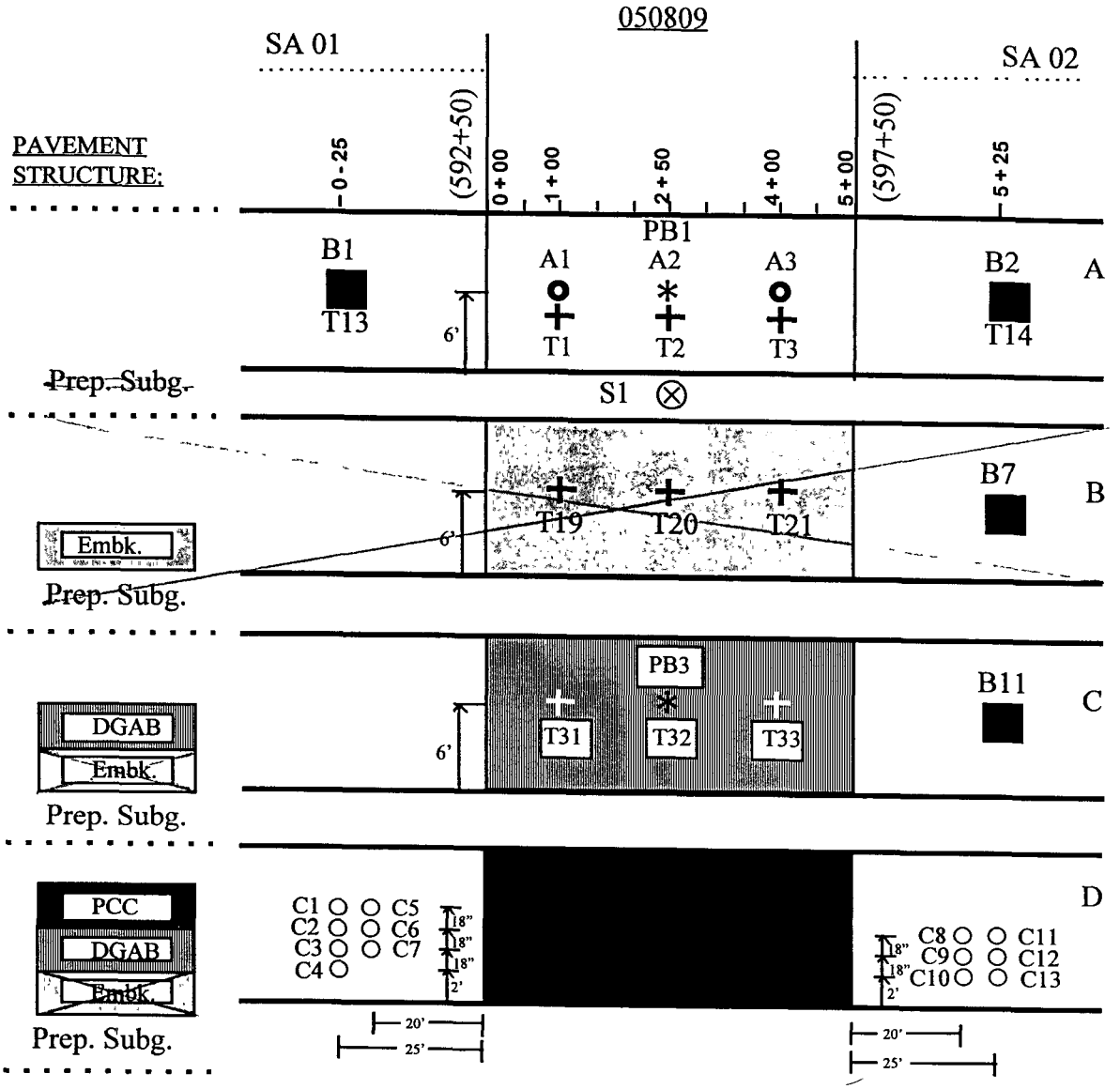


Legend:

- ○ 4" Diameter Core of PCC Surface (C1 - C26)
  - 14 day - C1, C5, C10, C14, C20, C23
  - 28 day - C2, C3, C6, C9, C11, C12, C15, C18, C21, C24, C26
  - 1 year - C4, C7, C8, C13, C16, C17, C19, C22, C25
- ● 4" Diameter Core of AC Surface (C27 - C42)
- ✚ In Situ Density Test Locations (T49 - T54)

AC-S - Asphalt Concrete Surface
AC-B - Asphalt Concrete Binder
PCC - Portland Cement Concrete
DGAB - Dense Graded Aggregate Base
~~Embk. - Embankment (Select Fill)~~
Prep. Subg. - Prepared Subgrade

FIGURE B-6. SAMPLING AND TESTING LOCATIONS FOR SURFACE MATERIALS ARKANSAS SPS-8 (050800)



A Testing on Prepared Subgrade (T1-T3, T13-T14, A1-A3, PB1, B1-B2, S1)

~~B Testing on compacted Embankment (T19 - T21, B7)~~

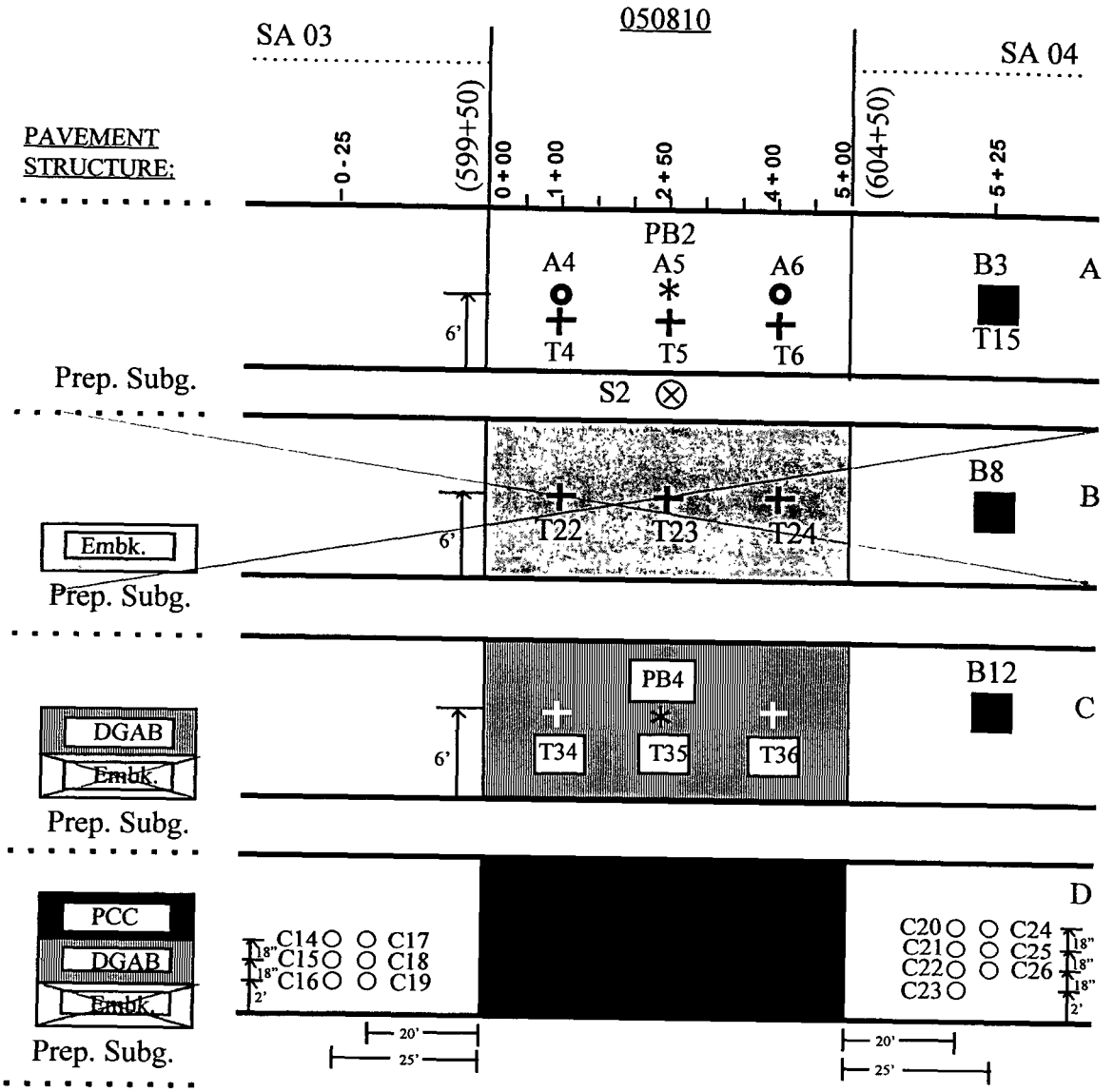
C Testing on compacted DGAB (T31 - T33, PB3, B11)

D 4 in (0.102 m) Coring of PCC surface (C1 - C13)

14 day	- C1, C5, C10
28 day	- C2, C3, C6, C9, C11, C12
1 year	- C4, C7, C8, C13

* Plate Bearing tests (PB1, PB3) (at same locations and before In Situ Density test (T35) or Shelby Tube Sampling (A2))

FIGURE B-7. SAMPLING AND TESTING PLAN FOR TEST SECTION 050809



A Testing on Prepared Subgrade (T4-T6, T15, A4-A6, PB2, B3, S2)

~~B Testing on compacted Embankment (T22 - T24, B8)~~

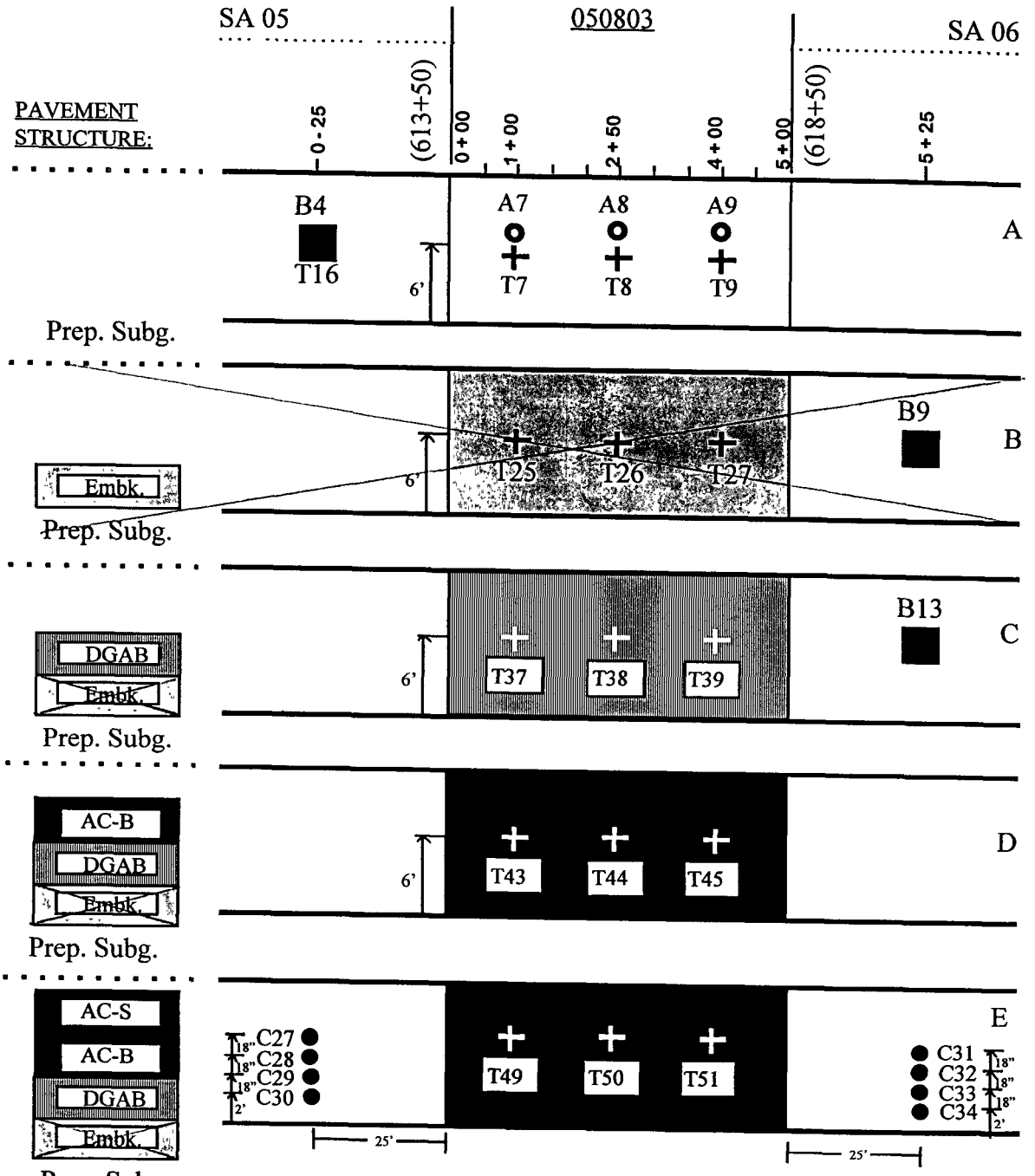
C Testing on compacted DGAB (T34 - T36, PB4, B12)

D 4 in (0.102 m) Coring of PCC surface (C14 - C26)

14 day	- C14, C20, C23
28 day	- C15, C18, C21, C24, C26
1 year	- C16, C17, C19, C22, C25

* Plate Bearing (PB2, PB4) tests (at same locations and before In Situ Density (T5, T32) test and Shelby Tube Sampling (A5))

FIGURE B-8. SAMPLING AND TESTING PLAN FOR TEST SECTION 050810



A Testing on Prepared Subgrade (T7 - T9, T16, A7 - A9, B4)

~~B Testing on compacted Embankment (T25 - T27, B9)~~

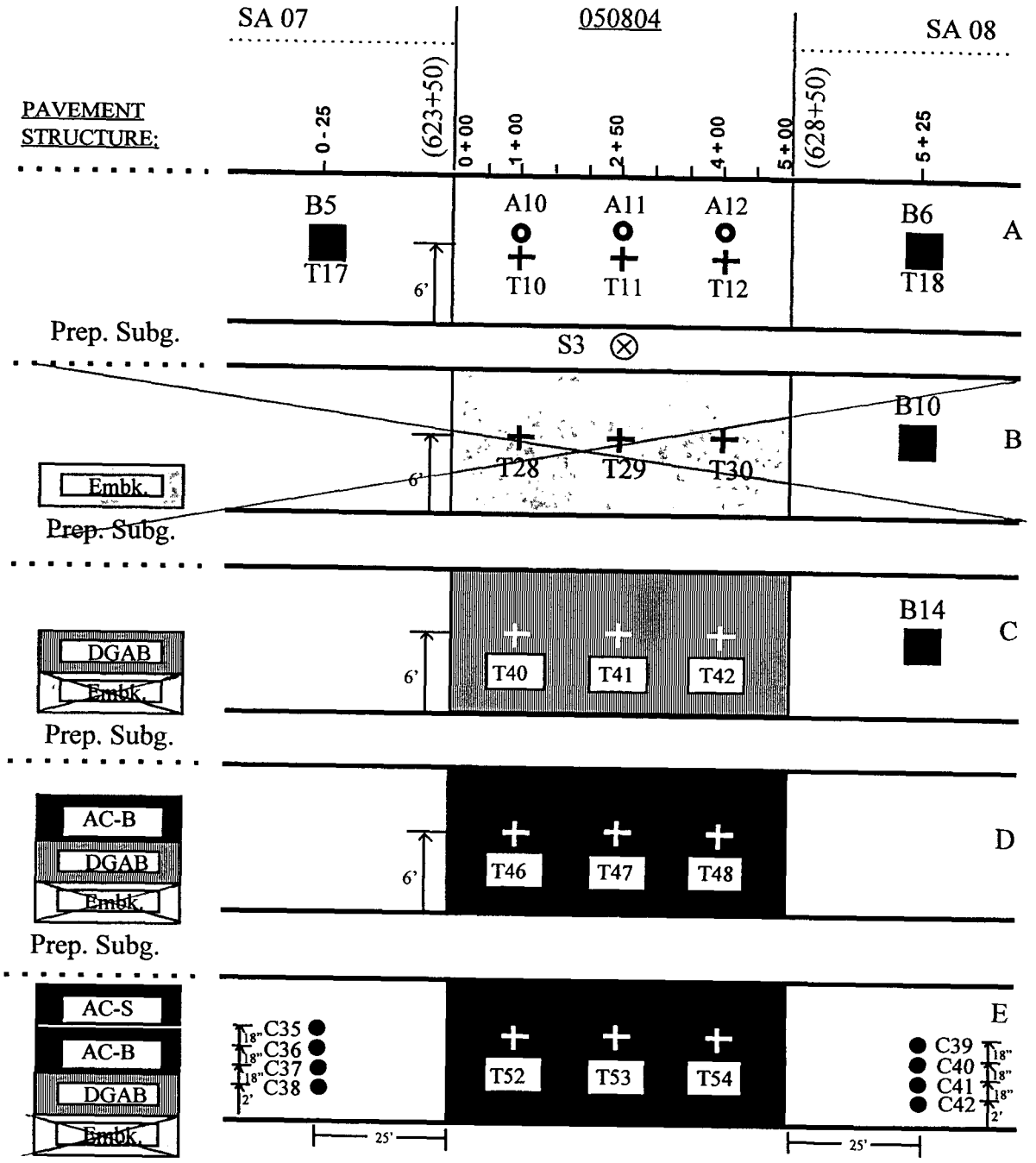
C Testing on compacted DGAB (T37 - T39, B13)

D Testing on AC Binder (T43 - T45)

E Testing on AC Surface (T49 - T51)

4 in (0.102 m) Coring of AC Surface and Binder (C27 - C34)

FIGURE B-9. SAMPLING AND TESTING PLAN FOR TEST SECTION 050803



A Testing on Prepared Subgrade (T10-T12, T17-T18, A10-A12, B5-B6, S3)

~~B Testing on compacted Embankment (T28 - T30, B10)~~

C Testing on compacted DGAB (T40 - T42, B14)

D Testing on AC Binder (T46 - T48)

E Testing on AC Surface (T52 - T54)

4 in (0.102 m) Coring of AC Surface and Binder (C35 - C42)

FIGURE B-10. SAMPLING AND TESTING PLAN FOR TEST SECTION 050804

TABLE B-4. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Number	Lab Test Number	Type of Sample
Portland Cement Concrete			
C1	CP01	1	102 mm (4 in.) Core
C2	CP02	1	102 mm (4 in.) Core
C3	CP03	1	102 mm (4 in.) Core
C4	CP04	1	102 mm (4 in.) Core
C5	CP05	1	102 mm (4 in.) Core
C6	CP06	1	102 mm (4 in.) Core
C7	CP07	1	102 mm (4 in.) Core
C8	CP08	2	102 mm (4 in.) Core
C9	CP09	2	102 mm (4 in.) Core
C10	CP10	2	102 mm (4 in.) Core
C11	CP11	2	102 mm (4 in.) Core
C12	CP12	2	102 mm (4 in.) Core
C13	CP13	2	102 mm (4 in.) Core
C14	CP14	1	102 mm (4 in.) Core
C15	CP15	1	102 mm (4 in.) Core
C16	CP16	1	102 mm (4 in.) Core
C17	CP17	1	102 mm (4 in.) Core
C18	CP18	1	102 mm (4 in.) Core
C19	CP19	1	102 mm (4 in.) Core
C20	CP20	2	102 mm (4 in.) Core
C21	CP21	2	102 mm (4 in.) Core
C22	CP22	2	102 mm (4 in.) Core
C23	CP23	2	102 mm (4 in.) Core
C24	CP24	2	102 mm (4 in.) Core
C25	CP25	2	102 mm (4 in.) Core
C26	CP26	2	102 mm (4 in.) Core

TABLE B-4. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location	Sample Number	Lab Test Number	Type of Sample
FC1	GX01	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GX02	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY01	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY02	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ01	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ02	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	FX01	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FY01	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FZ01	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
FC2	GX03	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GX04	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY03	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY04	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ03	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ04	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	FX02	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FY02	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FY02	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
FC3	GX05	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GX06	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY05	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GY06	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ05	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	GZ06	3	152 mm × 305 mm (6 in. × 12 in.) cylinder
	FX03	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FY03	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam
	FZ03	3	152 mm × 152 mm × 508 mm (6 in. × 6 in. × 20 in.) beam

TABLE B-4. SAMPLES TO BE SHIPPED TO THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location	Sample Number	Lab Test Number	Type of Sample
Asphalt Concrete Surface			
BV21	BA04	3	91 kg (200 lb) bulk sample
BV22	BA05	3	91 kg (200 lb) bulk sample
BV23	BA06	3	91 kg (200 lb) bulk sample
BC1	BC01	3	19 l (5 gal) bulk sample of asphalt cement
BC2	BC02	3	19 l (5 gal) bulk sample of asphalt cement
BC3	BC03	3	19 l (5 gal) bulk sample of asphalt cement
Asphalt Concrete Binder			
BV1	BA01	3	91 kg (200 lb) bulk sample
BV2	BA02	3	91 kg (200 lb) bulk sample
BV3	BA03	3	91 kg (200 lb) bulk sample
Dense-Graded Aggregate Base			
B11	BG05	2	45 kg (100 lb) bulk sample
B12	BG06	2	45 kg (100 lb) bulk sample
B13	BG07	2	45 kg (100 lb) bulk sample
B14	BG08	2	45 kg (100 lb) bulk sample
~~**Embankment**~~			
~~B7~~	~~BG01~~	~~2~~	~~45 kg (100 lb) bulk sample~~
~~B8~~	~~BG02~~	~~2~~	~~45 kg (100 lb) bulk sample~~
~~B9~~	~~BG03~~	~~2~~	~~45 kg (100 lb) bulk sample~~
~~B10~~	~~BG04~~	~~2~~	~~45 kg (100 lb) bulk sample~~
Subgrade			
B1	BS01	1	45 kg (100 lb) bulk sample
B2	BS02	1	45 kg (100 lb) bulk sample
B3	BS03	2	45 kg (100 lb) bulk sample
B4	BS04	1	45 kg (100 lb) bulk sample
B5	BS05	1	45 kg (100 lb) bulk sample
B6	BS06	2	45 kg (100 lb) bulk sample
A2	TS03, TS04	3	Thin-Wall Tube
A4	TS07, TS08	3	Thin-Wall Tube
A6	TS11, TS12	3	Thin-Wall Tube

TABLE B-5. SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Number	Lab Test Number	Type of Sample
Portland Cement Concrete			
No Portland Cement Concrete Samples are sent to the FHWA-LTPP Testing Laboratory.			
Asphalt Concrete (Surface and Binder)			
C27	CA01	1	102 mm (4 in.) Core
C28	CA02	1	102 mm (4 in.) Core
C29	CA03	1	102 mm (4 in.) Core
C30	CA04	1	102 mm (4 in.) Core
C31	CA05	2	102 mm (4 in.) Core
C32	CA06	2	102 mm (4 in.) Core
C33	CA07	2	102 mm (4 in.) Core
C34	CA08	2	102 mm (4 in.) Core
C35	CA09	1	102 mm (4 in.) Core
C36	CA10	1	102 mm (4 in.) Core
C37	CA11	1	102 mm (4 in.) Core
C38	CA12	1	102 mm (4 in.) Core
C39	CA13	2	102 mm (4 in.) Core
C40	CA14	2	102 mm (4 in.) Core
C41	CA15	2	102 mm (4 in.) Core
C42	CA16	2	102 mm (4 in.) Core
Dense-Graded Aggregate Base			
B11	BG05	2	136 kg (300 lb) Bulk Sample
B12	BG06	2	136 kg (300 lb) Bulk Sample
B13	BG07	2	136 kg (300 lb) Bulk Sample
B14	BG08	2	136 kg (300 lb) Bulk Sample
B11	MG05	2	Moisture Content Jar Sample
B12	MG06	2	Moisture Content Jar Sample
B13	MG07	2	Moisture Content Jar Sample
B14	MG08	2	Moisture Content Jar Sample

TABLE B-5. SAMPLES TO BE SHIPPED TO THE FHWA-LTPP TESTING CONTRACTOR LABORATORY (Continued)

Sample Location	Sample Number	Lab Test Number	Type of Sample
Embankment			
B7	BG01	2	136 kg (300 lb) Bulk Sample
B8	BG02	2	136 kg (300 lb) Bulk Sample
B9	BG03	2	136 kg (300 lb) Bulk Sample
B10	BG04	2	136 kg (300 lb) Bulk Sample
B7	MG01	2	Moisture Content Jar Sample
B8	MG02	2	Moisture Content Jar Sample
B9	MG03	2	Moisture Content Jar Sample
B10	MG04	2	Moisture Content Jar Sample
Subgrade			
B1	BS01	1	136 kg (300 lb) Bulk Sample
B2	BS02	2	136 kg (300 lb) Bulk Sample
B3	BS03	2	136 kg (300 lb) Bulk Sample
B4	BS04	1	136 kg (300 lb) Bulk Sample
B5	BS05	2	136 kg (300 lb) Bulk Sample
B6	BS06	2	136 kg (300 lb) Bulk Sample
A1	TS01	3	Thin wall Tube Sample
A1	TS02	3	Thin wall Tube Sample
A3	TS05	3	Thin wall Tube Sample
A3	TS06	3	Thin wall Tube Sample
A5	TS09	3	Thin wall Tube Sample
A5	TS10	3	Thin wall Tube Sample
B1	MS01	1	Moisture Content Jar Sample
B2	MS02	2	Moisture Content Jar Sample
B3	MS03	2	Moisture Content Jar Sample
B4	MS04	1	Moisture Content Jar Sample
B5	MS05	2	Moisture Content Jar Sample
B6	MS06	2	Moisture Content Jar Sample

SECTION C

LABORATORY MATERIAL TESTING

SECTION C

LABORATORY MATERIAL TESTING

It is the intent of this section of the sampling and testing plan to provide an outline for the laboratory testing that is planned for the Arkansas SPS-8 project. The previous section ended with lists of samples to be shipped to each of two laboratories; the state designated laboratory and the FHWA/LTPP contracted laboratory. In this section, the tests to be performed on each sample are listed.

Table C-1 provides a reference project layer numbering scheme. It is important that the two laboratories reference the same layer by number to ensure meaningful results.

Table C-2 provides a listing of the tests to be performed for each material type and pavement layer, and the associated laboratory testing protocol. It is imperative that the protocols listed be strictly followed during testing.

Tables C-3 through C-6 provide tracking tables for the state designated laboratory for each material type. These tables itemize the testing to occur on each sample and provide an indication of whether the sample is to be disposed of. Tables C-7 through C-10 provide similar information for the FHWA/LTPP contracted laboratory.

TABLE C-1. PROJECT LAYER NUMBERING

Layer №.	LTPP Description	Arkansas Description
1	Subgrade	Subgrade
~~2~~	~~Embankment~~	~~Select Fill Material~~
3	Dense Graded Aggregate Base (DGAB)	Aggregate Base Course, Class 7
4*	Portland Cement Concrete Surface	Portland Cement Concrete Surface
4*	Hot Mix Asphalt Concrete Binder Course	ACHM Binder Course, Type 2
5	Hot Mix Asphalt Concrete Surface Course	ACHM Surface Course, Type 2

* **Note:** Layers are numbered sequentially from the subgrade to the finished surface. On Sections 050809 and 050810, the finished surface (Layer 4) will be PCC. On Sections 050803 and 050804, the HMAC Binder will be Layer 4 and the HMAC Surface will be Layer 5.

TABLE C-2. SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum Nº. of Tests per Layer	Sample Location	Test Conducted by: State	FHWA
SUBGRADE						
Sieve Analysis	SS01	P51	6	B1-B6		X
Hydrometer to 0.001 mm	SS02	P42	6	B1-B6		X
Atterberg Limits	SS03	P43	6	B1-B6		X
Classification	SS04	P52	6	B1-B6		X
(Visual-manual only on thin-wall tubes)			12	A1-A12	X	X
Moisture-Density Relations	SS05	P55	6	B1-B6		X
Resilient Modulus	SS07	P46	6	A1,A3,A5,A7,A9,A11		X
Unit Weight (If thin-wall tube is not available, test is not conducted)	SS08	P56	6	A2,A4,A6,A8,A10,A12	X	
Natural Moisture Content	SS09	P49	6	B1-B6		X
Unconfined Comp. Strength (If thin-wall tube is not available, test is not conducted)	SS10	P54	2	A2,A4	X	
Permeability	SS11	P57	1	A2	X	
In-Place Density and Moisture Content		SHRP-LTPP Method	8	B1-B6,T1-T18	X	
Depth to Rigid Layer		SHRP-LTPP Method	3	S1-S3	X	
Expansion Index	SS12	P60	6	B1-B6		?
Plate-Bearing Test (Rigid Sections Only)	SS06	P58	2	PB1,PB2	X	
EMBANKMENT						
Sieve Analysis	SS01	P51	4	B7-B10		X
Hydrometer to 0 001 mm	SS02	P42	4	B7-B10		X
Atterberg Limits	SS03	P43	4	B7-B10		X
Classification	SS04	P52	4	B7-B10		X
Moisture-Density Relations	SS05	P55	4	B7-B10		X
Resilient Modulus	SS07	P46	4	B7-B10		X
Natural Moisture Content	SS09	P49	4	B7-B10		X
Permeability	UG09	P48	4	B7-B10	X	
In-Place Density and Moisture Content		SHRP-LTPP Method	12	T19-T30	X	

TABLE C-2. SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING (Continued)

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum Nº. of Tests per Layer	Sample Location	Test Conducted by: State	FHWA
DENSE GRADED AGGREGATE BASE						
Particle Size Analysis	UG01	P41	4	B11-B14		X
Sieve Analysis (Washed)	UG02	P41	4	B11-B14		X
Atterberg Limits	UG04	P43	4	B11-B14		X
Moisture-Density Relations	UG05	P44	4	B11-B14		X
Resilient Modulus	UG07	P46	4	B11-B14		X
Classification	UG08	P47	4	B11-B14		X
Permeability	UG09	P48	4	B11-B14	X	
Natural Moisture Content	UG10	P49	4	B11-B14		X
In-Place Density and Moisture Content		SHRP-LTPP Method	12	T31-T42	X	
Plate-Bearing Test (Rigid Sections Only)	SS06	P58	2	PB3,PB4	X	
ASPHALTIC CONCRETE BINDER						
Core Examination/Thickness	AC01	P01	16	All Cores (C27-C42)		X
Bulk Specific Gravity	AC02	P02	16	All Cores (C27-C42)		X
Maximum Specific Gravity	AC03	P03	3	BV1-BV3 - From Paver	X	
Asphalt Content (Extraction)	AC04	P04	3	BV1-BV3 - From Paver	X	
Moisture Susceptibility	AC05	P05	3	BV1-BV3 - From Paver	X	
Creep Compliance	AC06	P06	1	C35		X
Resilient Modulus	AC07	P07	3	C27-C29,C31-C33,C39-C41		X
Tensile Strength	AC07	P07	3	C30,C34,C42		X
In-Place Density		SHRP-LTPP Method	6	T43-T48	X	
Extracted Aggregate:						
Specific Gravity:						
Coarse Aggregate	AG01	P11	3	BV1-BV3 - From Paver	X	
Fine Aggregate	AG02	P12	3	BV1-BV3 - From Paver	X	
Gradation of Aggregate	AG04	P14	3	BV1-BV3 - From Paver	X	
NAA Test for Fine Aggregate	AG05	P14A	3	BV1-BV3 - From Paver	X	
Asphalt Cement (Abson Recovery):						
Abson Recovery	AE01	P21	3	BV1-BV3 - From Paver	X	
Penetration at 4°C, 25°C, 32°C (50°F, 77°F, 90°F)	AE02	P22	3	BV1-BV3 - From Paver	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	BV1-BV3 - From Paver	X	
Viscosity at 25°C (77°F)	AE04	P24	3	BV1-BV3 - From Paver	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	BV1-BV3 - From Paver	X	

TABLE C-2. SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING (Continued)

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum Nº. of Tests per Layer	Sample Location	Test Conducted by: State	FHWA
ASPHALTIC CONCRETE SURFACE						
Core Examination/Thickness	AC01	P01	16	All Cores (C27-C42)		X
Bulk Specific Gravity	AC02	P02	16	All Cores (C27-C42)		X
Maximum Specific Gravity	AC03	P03	3	BV21-BV23 - From Paver	X	
Asphalt Content (Extraction)	AC04	P04	3	BV21-BV23 - From Paver	X	
Moisture Susceptibility	AC05	P05	3	BV21-BV23 - From Paver	X	
Creep Compliance	AC06	P06	1	C35		X
Resilient Modulus	AC07	P07	3	C27-C29,C31-C33,C39-C41		X
Tensile Strength	AC07	P07	3	C30,C34,C42		X
In-Place Density		SHRP-LTPP Method	6	T49-T54	X	
Extracted Aggregate:						
Specific Gravity:						
Coarse Aggregate	AG01	P11	3	BV21-BV23 - From Paver	X	
Fine Aggregate	AG02	P12	3	BV21-BV23 - From Paver	X	
Gradation of Aggregate	AG04	P14	3	BV21-BV23 - From Paver	X	
NAA Test for Fine Aggregate	AG05	P14A	3	BV21-BV23 - From Paver	X	
Asphalt Cement (Abson Recovery):						
Abson Recovery	AE01	P21	3	BV21-BV23 - From Paver	X	
Penetration at 4°C, 25°C, 32°C (50°F, 77°F, 90°F)	AE02	P22	3	BV21-BV23 - From Paver	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	BV21-BV23 - From Paver	X	
Viscosity at 25°C (77°F)	AE04	P24	3	BV21-BV23 - From Paver	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	BV21-BV23 - From Paver	X	
Asphalt Cement: (From Tanker or Plant)						
Penetration at 4°C, 25°C, 32°C (50°F, 77°F, 90°F)	AE02	P22	3	BC1-BC3 - From Plant	X	
Specific Gravity 16°C (60°F)	AE03	P23	3	BC1-BC3 - From Plant	X	
Viscosity at 25°C (77°F)	AE04	P24	3	BC1-BC3 - From Plant	X	
Viscosity at 60°C, 135°C (140°F, 275°F)	AE05	P25	3	BC1-BC3 - From Plant	X	

TABLE C-2. SAMPLES TO BE USED FOR LABORATORY MATERIALS TESTING (Continued)

Material Type and Properties	LTPP Designation	LTPP Protocol	Minimum Nº. of Tests per Layer	Sample Location	Test Conducted by: State	FHWA
PORTLAND CEMENT CONCRETE - AS DELIVERED (Note 1)						
Compressive Strength	PC01	P61				
14 day			3	FC1,FC2,FC3	X	
28 day			3	FC1,FC2,FC3	X	
1 year			3	FC1,FC2,FC3	X	
Splitting Tensile Strength	PC02	P62				
14 day			3	FC1,FC2,FC3	X	
28 day			3	FC1,FC2,FC3	X	
1 year			3	FC1,FC2,FC3	X	
Flexural Strength	PC09	P69				
14 day			3	FC1,FC2,FC3	X	
28 day			3	FC1,FC2,FC3	X	
1 year			3	FC1,FC2,FC3	X	
Air Content		ASTM C231	3	FC1,FC2,FC3	X	
Slump		ASTM C143	3	FC1,FC2,FC3	X	
Temperature		ASTM C1064	3	FC1,FC2,FC3	X	
PORTLAND CEMENT CONCRETE - AS PLACED						
Visual Examination & Length Measurement	PC06	P66	26	All Cores (C1-C26)	X	
Compressive Strength	PC01	P61				
14 day			3	C1,C10,C20	X	
28 day			3	C2,C11,C21	X	
1 year			3	C4,C13,C22	X	
Splitting Tensile Strength	PC02	P62				
14 day			3	C5,C14,C23	X	
28 day			3	C6,C15,C24	X	
1 year			3	C8,C16,C25	X	
PCC Unit Weight	PC05	P65	9	Cores for Compressive Strength Testing	X	
Static Modulus of Elasticity	PC04	P64				
28 day			3	C3,C12,C26	X	
1 year			3	C7,C17,C19	X	
Air Content	PC08	P68				
28 day			1	C9	X	
Coefficient of Thermal Expansion	PC03	P63	1	C18	X	

Note 1: Each set of tes[illegible] made [illegible] of sp[illegible]ens m[illegible]ed fro[illegible] [illegible] of the three [illegible] concrete samples (FC1-[illegible]

FOOTNOTE (1) REFERENCE SHEET FOR TABLES C-3 THROUGH C-12

Note: All of the core specimens noted herein shall be stored for possible future use. In the future, these specimens may be used to evaluate test procedures for the SUPERPAVE program.

(1) Sample Storage

a. Environmentally protected and controlled storeroom at 5-21°C (40-70°F).

b. Environmentally protected and controlled storeroom at 5-38°C (40-100°F).

c. Thin-walled tube samples of the subgrade that should be stored in a fully supported condition and at temperatures between 5°C (40°F) and 21°C (70°F) in an environmentally protected storeroom. They shall be stored on their ends and shall always be stored in a vertical position with respect to the longitudinal axis of the tube in the same orientation as that retrieved from the field.

d. Moist room at 23 ± 1.7°C (73.4 ± 3°F). Specimens shall have free water maintained on the entire surface at all times. The moist room shall meet the requirements of AASHTO Specification M201. specimens shall not be exposed to dripping or running water.

TABLE C-3. TRACKING TABLE OF PORTLAND CEMENT CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Nº.	Lab Test Nº.	Steps Involved in Laboratory Handling and Testing Sequence					
			Required Laboratory Tests Per Layer			Extra Sample	Sample Storage (1)	Sample Disposed ?
			First	Second	Third			
C1	CP01	1	PC06/P66	PC05/P65	PC01/P61 (14 day)	No	(b)	Yes
C2	CP02	1	PC06/P66	PC05/P65	PC01/P61 (28 day)	No	(b)	Yes
C3	CP03	1	PC06/P66	PC04/P64 (28 day)		No	(b)	Yes
C4	CP04	1	PC06/P66	PC05/P65	PC01/P61 (1 year)	No	(b)	Yes
C5	CP05	1	PC06/P66	PC02/P62 (14 day)		No	(b)	Yes
C6	CP06	1	PC06/P66	PC02/P62 (28 day)		No	(b)	Yes
C7	CP07	1	PC06/P66	PC04/P64 (1 year)		No	(b)	Yes
C8	CP08	2	PC06/P66	PC02/P62 (1 year)		No	(b)	Yes
C9	CP09	2	PC06/P66	PC08/P68		No	(b)	Yes
C10	CP10	2	PC06/P66	PC05/P65	PC01/P61 (14 day)	No	(b)	Yes
C11	CP11	2	PC06/P66	PC05/P65	PC01/P61 (28 day)	No	(b)	Yes
C12	CP12	2	PC06/P66	PC04/P64 (28 day)		No	(b)	Yes
C13	CP13	2	PC06/P66	PC05/P65	PC01/P61 (1 year)	No	(b)	Yes
C14	CP14	1	PC06/P66	PC02/P62 (14 day)		No	(b)	Yes
C15	CP15	1	PC06/P66	PC02/P62 (28 day)		No	(b)	Yes
C16	CP16	1	PC06/P66	PC02/P62 (1 year)		No	(b)	Yes
C17	CP17	1	PC06/P66	PC04/P64 (1 year)		No	(b)	Yes
C18	CP18	1	PC06/P66	PC03/P63		No	(b)	Yes
C19	CP19	1	PC06/P66	PC04/P64 (1 year)		No	(b)	Yes
C20	CP20	2	PC06/P66	PC05/P65	PC01/P61 (14 day)	No	(b)	Yes
C21	CP21	2	PC06/P66	PC05/P65	PC01/P61 (28 day)	No	(b)	Yes
C22	CP22	2	PC06/P66	PC05/P65	PC01/P61 (1 year)	No	(b)	Yes
C23	CP23	2	PC06/P66	PC02/P62 (14 day)		No	(b)	Yes
C24	CP24	2	PC06/P66	PC02/P62 (28 day)		No	(b)	Yes
C25	CP25	2	PC06/P66	PC02/P62 (1 year)		No	(b)	Yes
C26	CP26	2	PC06/P66	PC04/P64 (28 day)		No	(b)	Yes

TABLE C-3. TRACKING TABLE OF PORTLAND CEMENT CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE) (Continued)

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence					
			Required Laboratory Tests Per Layer			Extra Sample	Sample Storage (1)	Sample Disposed ?
			First	Second	Third			
FC1	GX01	3	PC01/P61 (14 day)			No	(d)	Yes
	GX02	3	PC02/P62 (14 day)			No	(d)	Yes
	GY01	3	PC01/P61 (28 day)			No	(d)	Yes
	GY02	3	PC02/P62 (28 day)			No	(d)	Yes
	GZ01	3	PC01/P61 (1 year)			No	(d)	Yes
	GZ02	3	PC02/P62 (1 year)			No	(d)	Yes
	FX01	3	PC09/P69 (14 day)			No	(d)	Yes
	FY01	3	PC09/P69 (28 day)			No	(d)	Yes
	FZ01	3	PC09/P69 (1 year)			No	(d)	Yes
FC2	GX03	3	PC01/P61 (14 day)			No	(d)	Yes
	GX04	3	PC02/P62 (14 day)			No	(d)	Yes
	GY03	3	PC01/P61 (28 day)			No	(d)	Yes
	GY04	3	PC02/P62 (28 day)			No	(d)	Yes
	GZ03	3	PC01/P61 (1 year)			No	(d)	Yes
	GZ04	3	PC02/P62 (1 year)			No	(d)	Yes
	FX02	3	PC09/P69 (14 day)			No	(d)	Yes
	FY02	3	PC09/P69 (28 day)			No	(d)	Yes
	FZ02	3	PC09/P69 (1 year)			No	(d)	Yes
FC3	GX05	3	PC01/P61 (14 day)			No	(d)	Yes
	GX06	3	PC02/P62 (14 day)			No	(d)	Yes
	GY05	3	PC01/P61 (28 day)			No	(d)	Yes
	GY06	3	PC02/P62 (28 day)			No	(d)	Yes
	GZ05	3	PC01/P61 (1 year)			No	(d)	Yes
	GZ06	3	PC02/P62 (1 year)			No	(d)	Yes
	FX03	3	PC09/P69 (14 day)			No	(d)	Yes
	FY03	3	PC09/P69 (28 day)			No	(d)	Yes
	FZ03	3	PC09/P69 (1 year)			No	(d)	Yes

TABLE C.4. TRACKING TABLE OF ASPHALT CONCRETE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Nº.	Lab Test Nº.	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			
BV1	BA01	3	See Figure C.1				No	(a)	Yes
BV2	BA02	3	See Figure C.1				No	(a)	Yes
BV3	BA03	3	See Figure C.1				No	(a)	Yes
BV21	BA04	3	See Figure C.1				No	(a)	Yes
BV22	BA05	3	See Figure C.1				No	(a)	Yes
BV23	BA06	3	See Figure C.1				No	(a)	Yes
BC1	BC01	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
BC2	BC02	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes
BC3	BC03	3	AE02/P22	AE03/P23	AE04/P24	AE05/P25	No	(a)	Yes

TABLE C-5. TRACKING TABLE OF DENSE GRADED AGGREGATE BASE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			
B11	BG05	2	UG09/P48				No	(b)	Yes
B12	BG06	2	UG09/P48				No	(b)	Yes
B13	BG07	2	UG09/P48				No	(b)	Yes
B14	BG08	2	UG09/P48				No	(b)	Yes

TABLE C-6. TRACKING TABLE OF EMBANKMENT TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample Nº.	Lab Test Nº	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			
B7	BG01	2	UG09/P48				No	(b)	Yes
B8	BG02	2	UG09/P48				No	(b)	Yes
B9	BG03	2	UG09/P48				No	(b)	Yes
B10	BG04	2	UG09/P48				No	(b)	Yes

TABLE C-7. TRACKING TABLE OF SUBGRADE TESTING IN THE STATE LABORATORY (OR THEIR DESIGNEE)

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			
B1	BS01	1	No testing - samples stored				Yes	(b)	No
B2	BS02	2	No testing - samples stored				Yes	(b)	No
B3	BS03	2	No testing - samples stored				Yes	(b)	No
B4	BS04	1	No testing - samples stored				Yes	(b)	No
B5	BS05	1	No testing - samples stored				Yes	(b)	No
B6	BS06	2	No testing - samples stored				Yes	(b)	No
A2	TS03	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A4	TS07	3	SS04/P52	SS08/P56	SS10/P54		No	(c)	Yes
A6	TS11	3	SS04/P52				No	(c)	Yes
A2	TS04	3					Yes	(c)	No
A4	TS08	3					Yes	(c)	No
A6	TS12	3					Yes	(c)	No
A8	TS15,TS16	3	SS08/P56				No	(c)	Yes
A10	TS17,TS18	3	SS08/P56				No	(c)	Yes
A12	TS19,TS20	3	SS08/P56				No	(c)	Yes

TABLE C-8. TRACKING TABLE OF PORTLAND CEMENT CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Nº.	Lab Test Nº.	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			

No Portland Cement Concrete Testing Will be Conducted by the FHWA-LTPP Testing Contractor

TABLE C-9. TRACKING TABLE OF ASPHALT CONCRETE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence						
			Required Laboratory Tests Per Layer				Extra Sample	Sample Storage (1)	Sample Disposed?
			First	Second	Third	Fourth			
C27	CA01	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C28	CA02	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C29	CA03	1	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C30	CA04	1	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C31	CA05	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C32	CA06	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C33	CA07	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C34	CA08	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes
C35	CA09	1	AC01/P01	AC02/P02	AC06/P06		No	(a)	Yes
C36	CA10	1	AC01/P01	AC02/P02			No	(a)	Yes
C37	CA11	1	AC01/P01	AC02/P02			No	(a)	Yes
C38	CA12	1	AC01/P01	AC02/P02			No	(a)	Yes
C39	CA13	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C40	CA14	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C41	CA15	2	AC01/P01	AC02/P02	AC07/P07		No	(a)	Yes
C42	CA16	2	AC01/P01	AC02/P02		AC07/P07 (ITS)	No	(a)	Yes

TABLE C-10. TRACKING TABLE OF DENSE GRADED AGGREGATE BASE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage (1)	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B11	BG05	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B12	BG06	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B13	BG07	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B14	BG08	2	UG01/P41	UG02/P41	UG04/P43	UG08/P47	UG05/P44	UG07/P46	No	(b)	Yes
B11	MG05	2	UG10/P49						No	(b)	Yes
B12	MG06	2	UG10/P49						No	(b)	Yes
B13	MG07	2	UG10/P49						No	(b)	Yes
B14	MG08	2	UG10/P49						No	(b)	Yes

TABLE C-11. TRACKING TABLE OF EMBANKMENT TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample Nº.	Lab Test Nº.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage (1)	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B7	BG01	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B8	BG02	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B9	BG03	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B10	BG04	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55	SS07/P46	No	(b)	Yes
B7	MG01	2	SS09/P49						No	(b)	Yes
B8	MG02	2	SS09/P49						No	(b)	Yes
B9	MG03	2	SS09/P49						No	(b)	Yes
B10	MG04	2	SS09/P49						No	(b)	Yes

TABLE C-12. TRACKING TABLE OF SUBGRADE TESTING IN THE FHWA-LTPP TESTING CONTRACTOR LABORATORY

Sample Location	Sample №.	Lab Test №.	Steps Involved in Laboratory Handling and Testing Sequence								
			Required Laboratory Tests Per Layer						Extra Sample	Sample Storage (1)	Sample Disposed ?
			First	Second	Third	Fourth	Fifth	Sixth			
B1	BS01	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B2	BS02	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B3	BS03	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B4	BS04	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B5	BS05	1	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
B6	BS06	2	SS01/P51	SS02/P42	SS03/P43	SS04/P52	SS05/P55		No	(b)	Yes
A1	TS01	3	SS04/P52	SS07/P46					No	(c)	Yes
A3	TS05	3	SS04/P52	SS07/P46					No	(c)	Yes
A5	TS09	3	SS04/P52	SS07/P46					No	(c)	Yes
A7	TS13	3	SS04/P52	SS07/P46					No	(c)	Yes
A9	TS17	3	SS04/P52	SS07/P46					No	(c)	Yes
A11	TS21	3	SS04/P52	SS07/P46					No	(c)	Yes
B1	MS01	1	SS09/P49						No	(b)	Yes
B2	MS02	2	SS09/P49						No	(b)	Yes
B3	MS03	2	SS09/P49						No	(b)	Yes
B4	MS04	1	SS09/P49						No	(b)	Yes
B5	MS05	1	SS09/P49						No	(b)	Yes
B6	MS06	2	SS09/P49						No	(b)	Yes
A1	TS02	3							Yes	(c)	No
A3	TS06	3							Yes	(c)	No
A5	TS10	3							Yes	(c)	No
A7	TS14	3							Yes	(c)	No
A9	TS18	3							Yes	(c)	No
A11	TS22	3							Yes	(c)	No

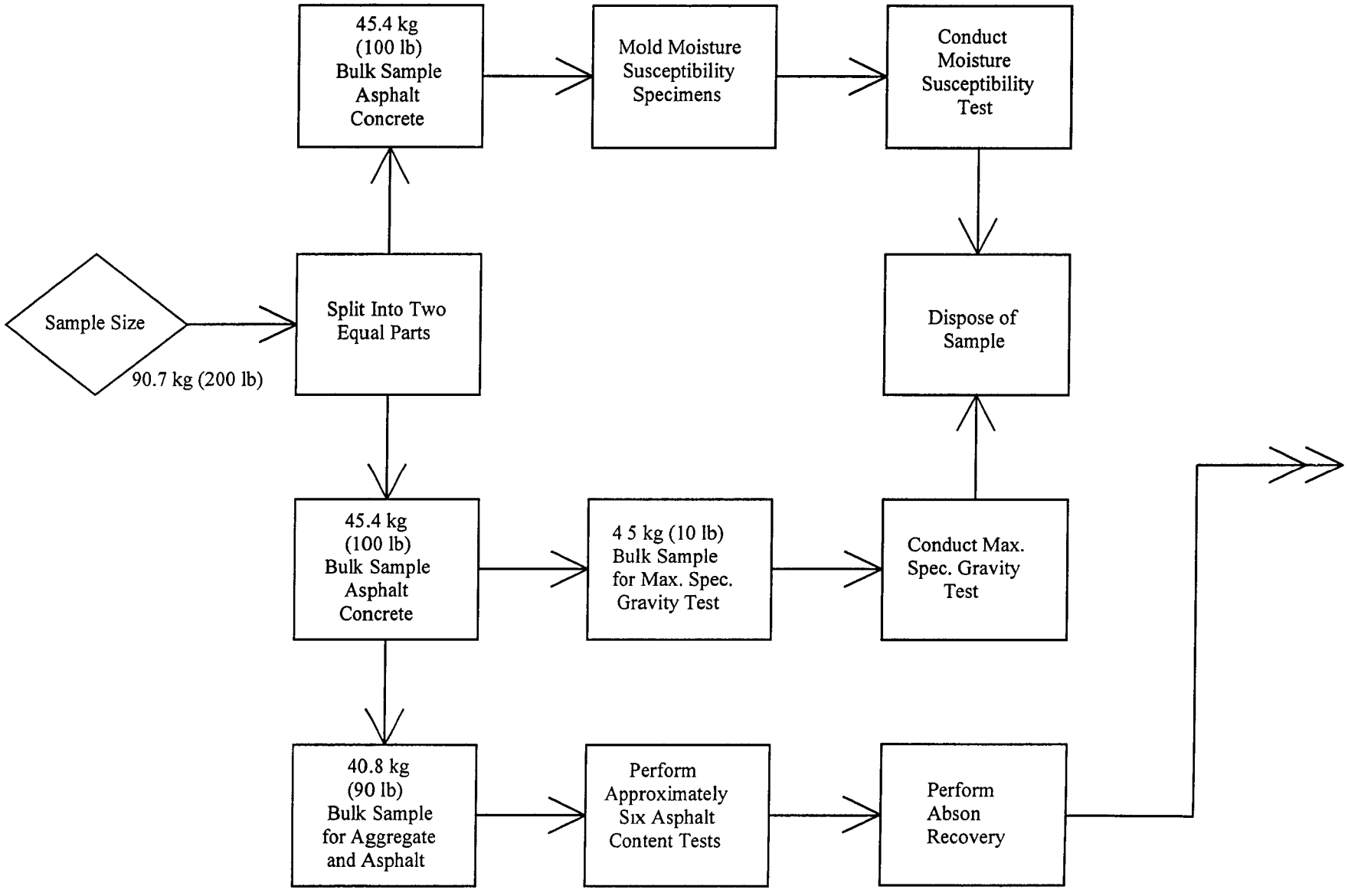


FIGURE C-1. FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES

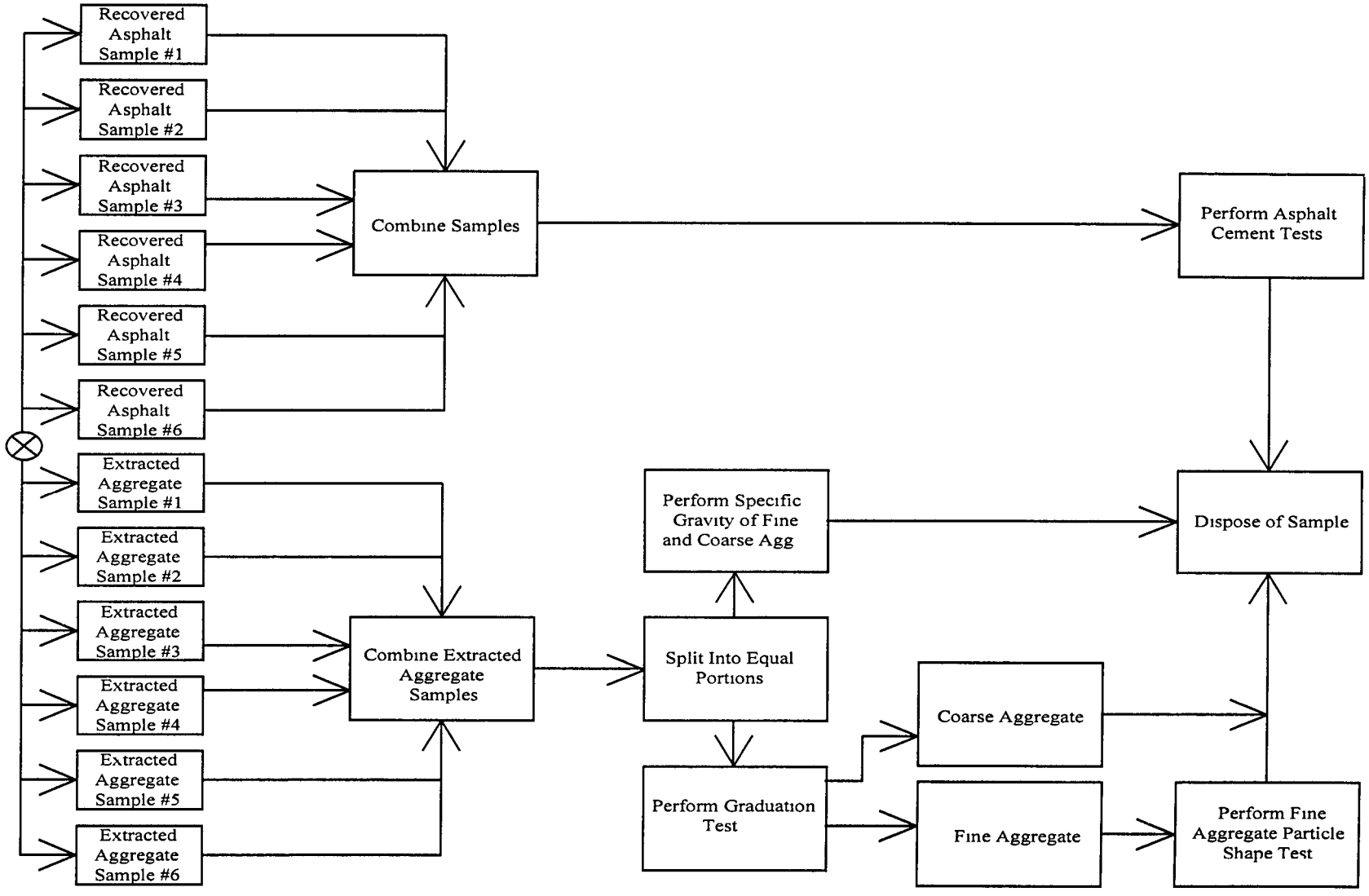


FIGURE C-1. FLOWCHART FOR ASPHALT CONCRETE BULK SAMPLES (Continued)

APPENDIX D

CONSTRUCTION DATA

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 1 PROJECT IDENTIFICATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 0]

*1. DATE OF DATA COLLECTION OR UPDATE (Month/Year) [1 1 / 9 7]

*2. STATE HIGHWAY AGENCY (SHA) DISTRICT NUMBER [0 2.]

*3. COUNTY OR PARISH [0 6 9.]

4. FUNCTIONAL CLASS (SEE TABLE A.2, APPENDIX A) [1 7.]

*5. ROUTE SIGNING (NUMERIC CODE) [2.]
Interstate... 1 U.S.... 2 State... 3
Other... 4

*6. ROUTE NUMBER [_ _ _ 6 5.]

7. TYPE OF PAVEMENT (01 for Granular Base, 02 for Treated Base) [0 1.]

8. NUMBER OF THROUGH LANES (ONE DIRECTION) 1[.]

*9. DATE OF CONSTRUCTION COMPLETION (Month/Year) [1 1 / 9 7]

*10. DATE OPENED TO TRAFFIC (Month/Year) [1 1 / 9 7]

11. CONSTRUCTION COSTS PER LANE MILE (In $1000) [_ _ _ _ _.]

12. DIRECTION OF TRAVEL [1.]
East Bound... 1 West Bound... 2 North Bound... 3
South Bound... 4

PROJECT STARTING POINT LOCATION

*13. MILEPOINT [_ _ _._ _]

*14. ELEVATION [_ _ 2 0 8]

*15. LATITUDE [3 4° 1 1' 3 9 . 7 _"]

*16. LONGITUDE [_ 9 1° 5 5' 2 5 .4 _"]

17. ADDITIONAL LOCATION INFORMATION (SIGNIFICANT LANDMARKS): [_____]

18. HPMS SAMPLE NUMBER (HPMS ITEM 28) [_ _ _ _ _ _ _ _ _ _ _ _]

19. HPMS SECTION SUBDIVISION (HPMS ITEM 29) [_.]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 11/24/97

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 3 REFERENCE PROJECT STATION TABLE	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 0]

ENTERED JUL 2 2 1997 J B

ORDER	*1 TEST SECTION ID NO	REFERENCE PROJECT STATION NUMBER *2 START	*3 END	*4 CUT-FILL[1] TYPE
1	050809	0 + 00	5 + 00	#2 JB
2	050810	7 + 00	12 + 00	#2 7-22-97
3	050803	15 + 91	20 + 91	#2
4	050804	25 + 91	30 + 91	#2
5		+	+	
6	*Note: Equation between Sections 050810 and 050803 -			
7	605+25.70 = 610+35.03		+	
8		+	+	
9		+	+	
10		+	+	
11		+	+	
12		+	+	
13		+	+	
14		+	+	
15		+	+	
16		+	+	
17		+	+	
18		+	+	
19		+	+	
20		+	+	

*5 INTERSECTIONS BETWEEN TEST SECTION ON THE PROJECT

ROUTE	PROJECT STATION NO.	RAMPS EXIT	RAMPS ENT	INTERSECTION STOP	INTERSECTION SIGNAL	INTERSECTION UNSIG
	+					
	+					
	+					

Note 1. Indicate the type of subgrade construction the test section is located on.
Cut... 1 Fill... 2 At-Grade.. 3 Cut, Fill, and At-Grade Combo... 4

If a section contains any combination of cut, fill and at-grade portions (code 4 above), enter the specific details of the cut, fill and at-grade locations on SPS-8 Construction Data Sheet 15.

PREPARER MPG EMPLOYER BLE DATE 7/21/97

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 2 GEOMETRIC, SHOULDER AND DRAINAGE INFORMATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LANE WIDTH (FEET) [1 0.]

2. MONITORING SITE LANE NUMBER [1.]
(LANE 1 IS OUTSIDE LANE, NEXT TO SHOULDER
LANE 2 IS NEXT TO LANE 1, ETC.)

*3. SUBSURFACE DRAINAGE LOCATION [3.]
Continuous Along Test Section... 1 Intermittent... 2 None... 3

*4. SUBSURFACE DRAINAGE TYPE [1.]
No Subsurface Drainage... 1 Longitudinal Drains... 2
Transverse Drains... 3 Drainage Blanket... 4 Well System... 5
Drainage Blanket with Longitudinal Drains... 6
Other (Specify)... 7 _____

SHOULDER DATA	INSIDE SHOULDER	OUTSIDE SHOULDER
*5. SURFACE TYPE Turf... 1 Granular.... 2 Asphalt Concrete... 3 Concrete... 4 Surface Treatment... 5 Other (Specify)... 6 _____	[3.]	[3.]
*6. TOTAL WIDTH (FEET)	[4.]	[4.]
*7. PAVED WIDTH (FEET)	[4.]	[4.]
8. SHOULDER BASE TYPE (CODES-TABLE A.6)	[2 3.]	[2 3.]
9. SURFACE THICKNESS (INCHES)	[4. 0]	[4. 0]
10. SHOULDER BASE THICKNESS (INCHES)	[8. 0]	[8. 0]
11. DIAMETER OF LONGITUDINAL DRAINPIPES (INCHES)	Not Applicable	[.]
12. SPACING OF LATERALS (FEET)		[.]

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 4 LAYER DESCRIPTIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1 LAYER NUMBER	*2 LAYER DESCRIPTION	*3 MATERIAL TYPE CLASS	*4 LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[5 2]				
2	[0 5]	[2 3]	[_ _ 8.3]	_ _ 7.3	_ _ 9.5	_ _ 0.6
3	[0 4]	[2 8]	[_ _ 1.9]	_ _ 0.4	_ _ 2.8	_ _ 0.6
4	[0 3]	[0 1]	[_ _ 1.3]	_ _ 0.4	_ _ 2.2	_ _ 0.4
5	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
6	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
7	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
8	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
9	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
10	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
11	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
12	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
13	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
14	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._
15	[_ _]	[_ _]	[_ _ _._]	_ _ _._	_ _ _._	_ _ _._

*5 DEPTH BELOW SURFACE TO "RIGID" LAYER (FEET) [_ _ . _]
(Rock, Stone, Dense Shale)

ENTERED OCT 07 1998
G.W.L. OCT 07 1998

NOTES:

1. Layer 1 is the subgrade soil, the highest numbered layer is the pavement surface.

2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade 07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

3. The material type classification codes are presented in Tables A.5, A.6, A.7 and A.8 of the Data Collection Guide for Long Term Pavement Performance Studies, dated January 17, 1990.

4. Enter the average thickness of each layer and the minimum, maximum and standard deviation of the thickness measurements, if known.

PREPARER Timothy J. Kelly EMPLOYER BRE DATE 12/17/97

SPS-8 CONSTRUCTION DATA SHEET 5 PLANT-MIXED ASPHALT BOUND LAYERS AGGREGATE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

		TYPE	PERCENT
	COMPOSITION OF COARSE AGGREGATE		
*2.	Crushed Stone... 1 Gravel... 2 Crushed Gravel... 3	[1]	[1 0 0.]
*3.	Crushed Slag... 4 Manufactured Lightweight... 5	[__]	[__ __ __.]
*4.	Other (Specify)... 6 _____	[__]	[__ __ __.]
	COMPOSITION OF FINE AGGREGATE	TYPE	PERCENT
*5.	Natural Sand... 1	[1]	[1 0 0.]
*6.	Crushed or Manufactured Sand (From Crushed Gravel or	[__]	[__ __ __.]
*7.	Stone... 2 Recycled Concrete... 3 Other (Specify)... 4 _____	[__]	[__ __ __.]

*8. TYPE OF MINERAL FILLER [__]
Stone Dust... 1 Hydrated Lime... 2 Portland Cement... 3
Fly Ash... 4
Other (Specify)... 5 _____

BULK SPECIFIC GRAVITIES:

*9. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

*10. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

*11. Mineral Filler (AASHTO T100 or ASTM D854) [__ __ __ __]

*12. Aggregate Combination (Calculated) [__.__ __ __]

13. Effective Specific Gravity of Aggregate Combination (Calculated) [2.6 2 5]

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
14.	Coarse	[__ 1]	[__ 1 8.6 __ __]
15.	Coarse	[__ 3]	[__ __ 0.0 6 __]
16.	Coarse	[__ __]	[__ __ __.__ __ __]
17.	Coarse and Fine - Combined	[__ __]	[__ __ __.__ __ __]

18. POLISH VALUE OF COARSE AGGREGATES __ __.
SURFACE LAYER ONLY (AASHTO T279, ASTM D3319)

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 6 PLANT-MIXED ASPHALT BOUND LAYERS ASPHALT CEMENT PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

*2. ASPHALT GRADE (SEE ASPHALT CODE SHEET, TABLE A.16) [1 7]
(IF OTHER, SPECIFY) PG 64-22

*3. SOURCE (SEE SUPPLY CODE SHEET, TABLE A.14) [0 7]
(IF OTHER, SPECIFY) Lion

4. SPECIFIC GRAVITY OF ASPHALT CEMENT [1.0 3 5]
(AASHTO T228)

GENERAL ASPHALT CEMENT PROPERTIES (If available from supplier)

5. VISCOSITY OF ASPHALT AT 140°F (POISES) [_ _ _ _ _ _.]
(AASHTO T202)

6. VISCOSITY OF ASPHALT AT 275°F (CENTISTOKES) [_ _ _ _._ _]
(AASHTO T202)

7. PENETRATION AT 77°F (AASHTO T49) (TENTHS OF A MM) [_ _ _ _.]
(100 g., 5 sec.)

ASPHALT MODIFIERS (SEE TYPE CODE, A.15)

		TYPE	QUANTITY (%)
8.	MODIFIER #1	[_ _]	[_ _.]
9.	MODIFIER #2 (IF OTHER, SPECIFY)	[_ _]	[_ _.]

10. DUCTILITY AT 77°F (CM) [_ _ _.]
(AASHTO T51)

11. DUCTILITY AT 39.2°F (CM) [_ _ _.]
(AASHTO T51)

12. TEST RATE FOR DUCTILITY MEASUREMENT AT 39.2°f (CM/MIN) [_ _ _.]

13. PENETRATION AT 39.2°F (AASHTO T49) (TENTHS OF A MM) [_ _ _.]
(200 g., 60 sec.)

14. RING AND BALL SOFTENING POINT (AASHTO T53) (°F) [_ _ _.]

NOTE: If emulsified or cutback asphalt was used, enter "N" in the spaces for "Original Asphalt Cement Properties".

G.W. ENTERED OCT 07 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 7 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. MAXIMUM SPECIFIC GRAVITY (NO AIR VOIDS) (AASHTO T209 OR ASTM D2041) [2.445]

BULK SPECIFIC GRAVITY (ASTM D1188)

*4. MEAN [2.375] NUMBER OF TESTS [__ __.]

5. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

6. STD. DEV. [__.__ __ __]

ASPHALT CONTENT (PERCENT WEIGHT OF TOTAL MIX) (AASHTO T164 OR ASTM D2172)

*7. MEAN [4.7 __ __] NUMBER OF SAMPLES [__ __.]

8. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

9. STD. DEV. [__.__ __ __]

PERCENT AIR VOIDS

*10. MEAN [2.982] NUMBER OF SAMPLES [__ __.]

11. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

12. STD. DEV. [__.__ __ __]

*13. VOIDS IN MINERAL AGGREGATE (PERCENT) [14.8]

*14. EFFECTIVE ASPHALT CONTENT (PERCENT) [__ __.__]

*15. MARSHALL STABILITY (LBS) (AASHTO T245 OR ASTM D1559) [2,37x2]

*16. NUMBER OF BLOWS [__ __]

*17. MARSHALL FLOW (HUNDREDTHS OF AN INCH) (AASHTO T245 OR ASTM D1559) [__ __ __ 9.]

*18. HVEEM STABILITY (AASHTO T246 OR ASTM D1561) [__ __ __.]

*19. HVEEM COHESIOMETER VALUE (GRAMS/25 MM OF WIDTH) (AASHTO T246 OR ASTM 1561) [__ __ __ __.]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 8 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. TYPE ASPHALT PLANT [1]

BATCH PLANT... 1 DRUM MIX PLANT... 2

OTHER (SPECIFY)... 3 _____

*4. TYPE OF ANTISTRIPPING AGENT USED [7 0]
(SEE TYPE CODES, TABLE A.21)
OTHER (SPECIFY) MORLIFE 300

*5. AMOUNT OF ANTISTRIPPING AGENT USED LIQUID OR SOLID CODE [2]

*6. (If liquid, enter code 1, and amount as percent of asphalt cement weight. If solid, enter code 2 and amount as percent of aggregate weight.) [0.5]

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 5 PLANT-MIXED ASPHALT BOUND LAYERS AGGREGATE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

G.W. ENTERED OCT 07 1998

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

	COMPOSITION OF COARSE AGGREGATE	TYPE	PERCENT
*2.	Crushed Stone... 1 Gravel... 2 Crushed Gravel... 3	[1]	[1 0 0.]
*3.	Crushed Slag... 4 Manufactured Lightweight... 5	[__]	[__ __ __.]
*4.	Other (Specify)... 6 _____	[__]	[__ __ __.]

	COMPOSITION OF FINE AGGREGATE	TYPE	PERCENT
*5.	Natural Sand... 1	[1]	[1 0 0.]
*6.	Crushed or Manufactured Sand (From Crushed Gravel or	[__]	[__ __ __.]
*7.	Stone... 2 Recycled Concrete... 3 Other (Specify)... 4 _____	[__]	[__ __ __.]

*8. TYPE OF MINERAL FILLER [__]
Stone Dust... 1 Hydrated Lime... 2 Portland Cement... 3
Fly Ash... 4
Other (Specify)... 5 _____

BULK SPECIFIC GRAVITIES:

*9. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

*10. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

*11. Mineral Filler (AASHTO T100 or ASTM D854) [__.__ __ __]

*12. Aggregate Combination (Calculated) [__.__ __ __]

13. Effective Specific Gravity of Aggregate Combination (Calculated) [2.6 1 9]

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
14.	Coarse	[__ 1]	[__ 1 8.6 __ __]
15.	Coarse	[__ 3]	[__ __ 0.0 6 __]
16.	Coarse	[__ __]	[__ __ __.__ __ __]
17.	Coarse and Fine - Combined	[__ __]	[__ __ __.__ __ __]

18. POLISH VALUE OF COARSE AGGREGATES __ __.
SURFACE LAYER ONLY (AASHTO T279, ASTM D3319)

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 6 PLANT-MIXED ASPHALT BOUND LAYERS ASPHALT CEMENT PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

*2. ASPHALT GRADE (SEE ASPHALT CODE SHEET, TABLE A.16) [1 7]
(IF OTHER, SPECIFY) PG 64-22

*3. SOURCE (SEE SUPPLY CODE SHEET, TABLE A.14) [0 7]
(IF OTHER, SPECIFY) Lion

4. SPECIFIC GRAVITY OF ASPHALT CEMENT [1.0 3 5]
(AASHTO T228)

GENERAL ASPHALT CEMENT PROPERTIES (If available from supplier)

5. VISCOSITY OF ASPHALT AT 140°F (POISES) [_ _ _ _ _ _.]
(AASHTO T202)

6. VISCOSITY OF ASPHALT AT 275°F (CENTISTOKES) [_ _ _ _._ _]
(AASHTO T202)

7. PENETRATION AT 77°F (AASHTO T49) (TENTHS OF A MM) [_ _ _ _.]
(100 g., 5 sec.)

ASPHALT MODIFIERS (SEE TYPE CODE, A.15)

		TYPE	QUANTITY (%)
8.	MODIFIER #1	[_ _]	[_ _.]
9.	MODIFIER #2 (IF OTHER, SPECIFY) _____	[_ _]	[_ _.]

10. DUCTILITY AT 77°F (CM) [_ _ _.]
(AASHTO T51)

11. DUCTILITY AT 39.2°F (CM) [_ _ _.]
(AASHTO T51)

12. TEST RATE FOR DUCTILITY MEASUREMENT [_ _ _.]
AT 39.2°f (CM/MIN)

13. PENETRATION AT 39.2°F (AASHTO T49) (TENTHS OF A MM) [_ _ _.]
(200 g., 60 sec.)

14. RING AND BALL SOFTENING POINT (AASHTO T53) (°F) [_ _ _.]

NOTE: If emulsified or cutback asphalt was used, enter "N" in the spaces for "Original Asphalt Cement Properties".

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

December 1995

SPS-8 CONSTRUCTION DATA SHEET 7 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. MAXIMUM SPECIFIC GRAVITY (NO AIR VOIDS) (AASHTO T209 OR ASTM D2041) [2.4 1 2]

BULK SPECIFIC GRAVITY (ASTM D1188)

*4. MEAN [2.2 8 9] NUMBER OF TESTS [_ _.]

5. MINIMUM [_._ _ _] MAXIMUM [_._ _ _]

6. STD. DEV. [_._ _ _]

ASPHALT CONTENT (PERCENT WEIGHT OF TOTAL MIX) (AASHTO T164 OR ASTM D2172)

*7. MEAN [5.6 _ _] NUMBER OF SAMPLES [_ _.]

8. MINIMUM [_._ _ _] MAXIMUM [_._ _ _]

9. STD. DEV. [_._ _ _]

PERCENT AIR VOIDS

*10. MEAN [5.2 1 7] NUMBER OF SAMPLES [_ _.]

11. MINIMUM [_._ _ _] MAXIMUM [_._ _ _]

12. STD. DEV. [_._ _ _]

*13. VOIDS IN MINERAL AGGREGATE (PERCENT) [1 6.3]

*14. EFFECTIVE ASPHALT CONTENT (PERCENT) [_ _.]

*15. MARSHALL STABILITY (LBS) (AASHTO T245 OR ASTM D1559) [2 3 7x0]

*16. NUMBER OF BLOWS [_ _]

*17. MARSHALL FLOW (HUNDREDTHS OF AN INCH) (AASHTO T245 OR ASTM D1559) [_ _ _ 9.]

*18. HVEEM STABILITY (AASHTO T246 OR ASTM D1561) [_ _ _.]

*19. HVEEM COHESIOMETER VALUE (GRAMS/25 MM OF WIDTH) (AASHTO T246 OR ASTM 1561) [_ _ _ _.]

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 8 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. TYPE ASPHALT PLANT [1]

BATCH PLANT... 1 DRUM MIX PLANT... 2

OTHER (SPECIFY)... 3 _____

*4. TYPE OF ANTISTRIPPING AGENT USED [7 0]
(SEE TYPE CODES, TABLE A.21)
OTHER (SPECIFY) MORLIFE 300

*5. AMOUNT OF ANTISTRIPPING AGENT USED LIQUID OR SOLID CODE [2]

*6. (If liquid, enter code 1, and amount as percent of asphalt cement weight. If solid, enter code 2 and amount as percent of aggregate weight.) [0.5]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Masta EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 9 PLANT-MIXED ASPHALT BOUND LAYERS PLACEMENT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

G.W. ENTERED OCT 07 1998

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 0-0 8-9 7]

*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 1-2 6-9 7]

*3 ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers		
Plant 1	[1]	Standard Havens	[1.5]	[10]	[3]	[4]	[ ]
Plant 2	[ ]		[ ]	[ ]	[ ]	[ ]	[ ]
Plant 3	[ ]		[ ]	[ ]	[ ]	[ ]	[ ]

Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify _____

4. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-Knox

5. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER PF-510, PF 400A

6. SINGLE PASS LAYDOWN WIDTH (Feet) [1 4.0]

7. AC BINDER COURSE LIFT
   Layer Number [0 3]
   Nominal First Lift Placement Thickness (Inches) [3.0]
   Nominal Second Lift Placement Thickness (Inches) [.]

8. AC SURFACE COURSE LIFT
   Layer Number [0 4]
   Nominal First Lift Placement Thickness (Inches) [1.8]
   Nominal Second Lift Placement Thickness (Inches) [.]

9. SURFACE FRICTION COURSE (If Placed)
   Layer Number [ ]
   Nominal Placement Thickness (Inches) [.]

10. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [+]
    Surface Course [+]
    Surface Friction Course [+]

11. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2
    (specify offset from O/S feet) [1 0.0]

12. SIGNIFICANT EVENTS DURING CONSTRUCTION (disruptions, rain, equip. problems, etc.) _____

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 10 PLANT-MIXED ASPHALT BOUND LAYERS COMPACTION DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 0-0 8-9 7]
*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 0-0 8-9 7]
*3. LAYER NUMBER [3]

Binder

*4. MIXING TEMPERATURE (°F) [3 1 0.]

5. LAYDOWN TEMPERATURES (°F)
Mean..... 2 9 0.
Minimum..... _ _ _.
Standard Deviation... _ _.
Number of Tests ..... _ _.
Maximum..... _ _ _.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	1 0.1				
7	B	Steel-Whl Tandem	_ _._				
8	C	Steel-Whl Tandem	_ _._				
9	D	Steel-Whl Tandem	_ _._				
10	E	Pneumatic-Tired	_ 8.0	_ _ 9 0.			
11	F	Pneumatic-Tired	_ _._	_ _ _ _.			
12	G	Pneumatic-Tired	_ _._	_ _ _ _.			
13	H	Pneumatic-Tired	_ _._	_ _ _ _.			
14	I	Single-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
15	J	Single-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
16	K	Single-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
17	L	Single-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
18	M	Double-Drum Vibr.	1 0.1		2 8 0 0.	_ _ _	_ _._
19	N	Double-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
20	O	Double-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
21	P	Double-Drum Vibr.	_ _._		_ _ _ _.	_ _ _	_ _._
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN				
23	Roller Code (A-Q)	M	_	_	_
24	Coverages	_ 2.	_ _.	_ _.	_ _.
	INTERMEDIATE				
25	Roller Code (A-Q)	E	_	_	_
26	Coverages	_ 3.	_ _.	_ _.	_ _.
	FINAL				
27	Roller Code (A-Q)	A	_	_	_
28	Coverages	_ 1.	_ _.	_ _.	_ _.
29	Air Temperature (°F)	_ 6 5.	_ _ _.	_ _ _.	_ _ _.
30	Compacted Thickness (In)	2.5	_._	_._	_ _
31	Curing Period (Days)	_ _._	_ _._	_ _._	_ _._

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 10 PLANT-MIXED ASPHALT BOUND LAYERS COMPACTION DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 1-2 5-9 7]
*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 1-2 5-9 7]
*3. LAYER NUMBER Surface [4]
*4. MIXING TEMPERATURE (°F) [3 1 0.]

5. LAYDOWN TEMPERATURES (°F)
Mean..... 2 9 0.
Minimum..... _ _ _.
Standard Deviation... _ _.__
Number of Tests ..... _ _.
Maximum..... _ _ _.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	1 0.1				
7	B	Steel-Whl Tandem	_ _.__				
8	C	Steel-Whl Tandem	_ _.__				
9	D	Steel-Whl Tandem	_ _.__				
10	E	Pneumatic-Tired	_ 8.0	_ _ 9 0.			
11	F	Pneumatic-Tired	_ _.__	_ _ _ _.			
12	G	Pneumatic-Tired	_ _.__	_ _ _ _.			
13	H	Pneumatic-Tired	_ _.__	_ _ _ _.			
14	I	Single-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
15	J	Single-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
16	K	Single-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
17	L	Single-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
18	M	Double-Drum Vibr.	1 0.1		2 8 0 0.	_ _ _	_ _.__
19	N	Double-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
20	O	Double-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
21	P	Double-Drum Vibr.	_ _.__		_ _ _ _.	_ _ _	_ _.__
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN				
23	Roller Code (A-Q)	M	_	_	_
24	Coverages	_ 1.	_ _.	_ _.	_ _.
	INTERMEDIATE				
25	Roller Code (A-Q)	E	_	_	_
26	Coverages	_ 3.	_ _.	_ _.	_ _.
	FINAL				
27	Roller Code (A-Q)	A	_	_	_
28	Coverages	_ 1.	_ _	_ _.	_ _.
29	Air Temperature (°F)	_ 5 0.	_ _ _.	_ _ _.	_ _ _.
30	Compacted Thickness (In)	1.5	_.__	_.__	_.__
31	Curing Period (Days)	_ _.__	_ _.__	_ _ _	_ _ _

DATA ENTERED OCT 26

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 11 PLANT-MIXED ASPHALT BOUND LAYERS DENSITY AND PROFILE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Binder Course	Surface Course	Surface Friction Layer
Measurement Method (A, B, C)[1]	A	A	
Number of Measurement	1 2	1 2	
Average (pcf)	129.7	134.3	
Maximum (pcf)	131.7	136.4	
Minimum (pcf)	127.3	132.0	
Standard Deviation (pcf)	1.2	1.3	
Layer Number	0 3	0 4	

[1] Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACTURER OF NUCLEAR DENSITY GAUGE Troxler
3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3430
4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 20430
5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION
6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2
Profile Index (Inches/Mile)
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3
Height of Blanking Band (Inches)
Cutoff Height (Inches)

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, (NO)) NO

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

G.W. ENTERED OCT 07 1998

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
0+00 613+50	0	8.8		1.1	
	30	8.2		1.6	
	60	7.8		1.8	
	90	7.9		2.3	
	120	8.2		2.4	
0+50	0	8.4		2.3	
	30	8.6		2.0	
	60	8.4		2.6	
	90	8.9		2.6	
	120	8.6		3.1	
1+00	0	8.4		2.6	
	30	8.9		2.4	
	60	9.0		2.5	
	90	9.1		2.5	
	120	8.6		2.8	
1+50	0			3.1	
	30			2.5	
	60			2.5	
	90			2.2	
	120			2.3	
2+00	0			2.9	
	30			3.1	
	60			3.2	
	90			2.6	
	120			3.4	
2+50	0	8.5		2.9	
	30	8.5		3.4	
	60	8.8		3.6	
	90	9.0		4.0	
	120	9.2		4.1	
3+00	0	7.7		2.8	
	30	7.8		3.1	
	60	7.6		3.8	
	90	7.7		4.1	
	120	7.8		4.4	
LAYER NUMBER		02		8 3 4+	

G.W. ENTERED OCT 07 [redacted]

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
3+50	0	7.3		2.5	
	30	7.3		3.2	
	60	7.4		3.7	
	90	7.9		4.0	
	120	8.2		4.1	
4+00	0	7.3		2.9	
	30	7.7		3.5	
	60	7.8		4.1	
	90	8.4		4.1	
	120	8.4		4.6	
4+50	0	7.8		3.4	
	30	8.3		3.6	
	60	9.0		3.7	
	90	9.2		4.2	
	120	9.5		4.2	
5+00 618+50	0	8.0		3.7	
	30	8.4		4.0	
	60	8.6		4.3	
	90	9.2		4.3	
	120	9.1		4.7	
+					
+					
+					
LAYER NUMBER		02		0 0 3 4+	

G.W. ENTERED OCT 07 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 13 UNBOUND AGGREGATE BASE MATERIAL PLACEMENT	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. UNBOUND BASE MATERIAL PLACEMENT BEGAN (Month-Day-Year) [08-25-97]

*2. UNBOUND BASE MATERIAL PLACEMENT COMPLETED (Month-Day-Year) [10-01-97]

*3. LAYER NUMBER (From Sheet 4) [2]

PRIMARY COMPACTION EQUIPMENT

*4. CODE TYPE 1+3 [__]

COMPACTION TYPE CODES
Pneumatic - Tired... (1) Steel Wheel Tandem... 2 Single Drum Vibr.... (3)
Double Drum Vibr.... 4
Other (Specify)... 5 _____

*5. GROSS WEIGHT (TONS) [12.5]

*6. LIFT THICKNESSES
Nominal First Lift Placement Thickness (inches) [08]
Nominal Second Lift Placement Thickness (inches) [__]
Nominal Third Lift Placement Thickness (inches) [__]
Nominal Fourth Lift Placement Thickness (inches) [__]

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

7. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 14 SUBGRADE PREPARATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

*1. SUBGRADE PREPARATION BEGAN (Month-Day-Year) [0 6-1 0-9 7]

*2. SUBGRADE PREPARATION COMPLETED (Month-Day-Year) [0 8-1 1-9 7]

PRIMARY COMPACTION EQUIPMENT

*3. CODE TYPE [4]

COMPACTION EQUIPMENT TYPE CODES
Sheepsfoot... 1 Pneumatic Tired... 2 Steel Wheel Tandem... 3
Single Drum Vibr... 4 Double Drum Vibr.... 5
Other (Specify)... 6 _____

*4. GROSS WEIGHT (TONS) [1 2.5]

	TYPE	PERCENT
*5. STABILIZING AGENT 1	None [__]	[__ __.__]
*6. STABILIZING AGENT 2	[__]	[__ __.__]

STABILIZING AGENT TYPE CODES
Portland Cement... 1 Lime... 2 Fly Ash, Class C... 3
Fly Ash, Class N... 4
Other (Specify)... 5 _____

*7. TYPICAL LIFT THICKNESS (INCHES) Not Applicable [__']
(For Fill Sections Only)

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

8. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

PREPARER [signature] EMPLOYER BRE/SRCO DATE 8/11/97

G.W. ENTERED OCT 07 1998

SPS-8 CONSTRUCTION DATA SHEET 15 CUT-FILL SECTION LOCATIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

ORDER	*1 CUT-FILL TYPE[1]	TEST SECTION STATION NUMBER	
		*2 START	*3 END
1	2	0 + 0 0	5 + 0 0
2		+	+
3		+	+
4		+	+
5		+	+
6		+	+
7		+	+
8		+	+
9		+	+
10		+	+

NOTES:

1. Indicate the type of subgrade construction with one of the following:

   Cut... 1 Fill... 2 At-Grade... 3

2. Use one line for each cut, fill or at-grade zone present within the section boundaries.

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Parks EMPLOYER BRE/SRCD DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 16 SUBGRADE EXCAVATION AND BACKFILLING SKETCH	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

Not applicable

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 28 MISCELLANEOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 3]

Provide any miscellaneous comments and notes concerning construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indication of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

State Coring for State QC was conducted @ Sta. 2+55 w/ 2, 6" cores.

GIMMENTERED OCT 07 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 2 GEOMETRIC, SHOULDER AND DRAINAGE INFORMATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LANE WIDTH (FEET) [1 0.]

2. MONITORING SITE LANE NUMBER [1.]
(LANE 1 IS OUTSIDE LANE, NEXT TO SHOULDER
LANE 2 IS NEXT TO LANE 1, ETC.)

*3. SUBSURFACE DRAINAGE LOCATION [3.]
Continuous Along Test Section... 1 Intermittent... 2 None... 3

*4. SUBSURFACE DRAINAGE TYPE [1.]
No Subsurface Drainage... 1 Longitudinal Drains... 2
Transverse Drains... 3 Drainage Blanket... 4 Well System... 5
Drainage Blanket with Longitudinal Drains... 6
Other (Specify)... 7 _____

SHOULDER DATA	INSIDE SHOULDER	OUTSIDE SHOULDER
*5. SURFACE TYPE Turf... 1 Granular.... 2 Asphalt Concrete... 3 Concrete... 4 Surface Treatment... 5 Other (Specify)... 6 _____	[3.]	[3.]
*6. TOTAL WIDTH (FEET)	[4.]	[4.]
*7. PAVED WIDTH (FEET)	[4.]	[4.]
8. SHOULDER BASE TYPE (CODES-TABLE A.6)	[23.]	[23.]
9. SURFACE THICKNESS (INCHES)	[7.0]	[7.0]
10. SHOULDER BASE THICKNESS (INCHES)	[12.0]	[12.0]
11. DIAMETER OF LONGITUDINAL DRAINPIPES (INCHES)	Not Applicable	[—.—]
12. SPACING OF LATERALS (FEET)		[———.]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 4 LAYER DESCRIPTIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1 LAYER NUMBER	*2 LAYER DESCRIPTION	*3 MATERIAL TYPE CLASS	*4 LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[5 2]				
2	[0 5]	[2 3]	[1 2.0]	10.3	14.3	0.7
3	[0 4]	[2 8]	[5.4]	4.8	6.2	0.6
4	[0 3]	[0 1]	[1.3]	1.0	1.9	0.6
5	[ ]	[ ]	[.]	.	.	.
6	[ ]	[ ]	[.]	.	.	.
7	[ ]	[ ]	[.]	.	.	.
8	[ ]	[ ]	[.]	.	.	.
9	[ ]	[ ]	[.]	.	.	.
10	[ ]	[ ]	[.]	.	.	.
11	[ ]	[ ]	[.]	.	.	.
12	[ ]	[ ]	[.]	.	.	.
13	[ ]	[ ]	[.]	.	.	.
14	[ ]	[ ]	[.]	.	.	.
15	[ ]	[ ]	[.]	.	.	.

*5 DEPTH BELOW SURFACE TO "RIGID" LAYER (FEET) [.]
(Rock, Stone, Dense Shale)

G.W. ENTERED OCT 07 1998

NOTES:

1. Layer 1 is the subgrade soil, the highest numbered layer is the pavement surface.

2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

3. The material type classification codes are presented in Tables A.5, A.6, A.7 and A.8 of the Data Collection Guide for Long Term Pavement Performance Studies, dated January 17, 1990.

4. Enter the average thickness of each layer and the minimum, maximum and standard deviation of the thickness measurements, if known.

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/18/97

SPS-8 CONSTRUCTION DATA SHEET 5 PLANT-MIXED ASPHALT BOUND LAYERS AGGREGATE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

		TYPE	PERCENT
	COMPOSITION OF COARSE AGGREGATE		
*2.	Crushed Stone... 1 Gravel... 2 Crushed Gravel... 3	[1]	[1 0 0.]
*3.	Crushed Slag... 4 Manufactured Lightweight... 5	[__]	[__ __ __.]
*4.	Other (Specify)... 6 _____	[__]	[__ __ __.]
	COMPOSITION OF FINE AGGREGATE	TYPE	PERCENT
*5.	Natural Sand... 1	[1]	[1 0 0.]
*6.	Crushed or Manufactured Sand (From Crushed Gravel or	[__]	[__ __ __.]
*7.	Stone... 2 Recycled Concrete... 3 Other (Specify)... 4 _____	[__]	[__ __ __.]

*8. TYPE OF MINERAL FILLER [__]
Stone Dust... 1 Hydrated Lime... 2 Portland Cement... 3
Fly Ash... 4
Other (Specify)... 5 _____

BULK SPECIFIC GRAVITIES:

*9. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

*10. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

*11. Mineral Filler (AASHTO T100 or ASTM D854) [__.__ __ __]

*12. Aggregate Combination (Calculated) [__.__ __ __]

13. Effective Specific Gravity of Aggregate Combination (Calculated) [2.6 2 5]

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
14.	Coarse	[__ 1]	[__ 1 8.6 __ __]
15.	Coarse	[__ 3]	[__ __ 0.0 6 __]
16.	Coarse	[__ __]	[__ __ __.__ __ __]
17.	Coarse and Fine - Combined	[__ __]	[__ __ __.__ __ __]

18. POLISH VALUE OF COARSE AGGREGATES
SURFACE LAYER ONLY (AASHTO T279, ASTM D3319) __ __.

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

G.W. ENTERED OCT 07 1998

SPS-8 CONSTRUCTION DATA SHEET 6 PLANT-MIXED ASPHALT BOUND LAYERS ASPHALT CEMENT PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

*2. ASPHALT GRADE (SEE ASPHALT CODE SHEET, TABLE A.16) [1 7]
(IF OTHER, SPECIFY) PG 64-22

*3. SOURCE (SEE SUPPLY CODE SHEET, TABLE A.14) [0 7]
(IF OTHER, SPECIFY) _____

4. SPECIFIC GRAVITY OF ASPHALT CEMENT [1.0 3 5]
(AASHTO T228)

GENERAL ASPHALT CEMENT PROPERTIES (If available from supplier)

5. VISCOSITY OF ASPHALT AT 140°F (POISES) [_ _ _ _ _ _.]
(AASHTO T202)

6. VISCOSITY OF ASPHALT AT 275°F (CENTISTOKES) [_ _ _ _._ _]
(AASHTO T202)

7. PENETRATION AT 77°F (AASHTO T49) (TENTHS OF A MM) [_ _ _ _.]
(100 g., 5 sec.)

ASPHALT MODIFIERS (SEE TYPE CODE, A.15)

		TYPE	QUANTITY (%)
8.	MODIFIER #1	[_ _]	[_ _.]
9.	MODIFIER #2 (IF OTHER, SPECIFY) _____	[_ _]	[_ _.]

10. DUCTILITY AT 77°F (CM) [_ _ _.]
(AASHTO T51)

11. DUCTILITY AT 39.2°F (CM) [_ _ _.]
(AASHTO T51)

12. TEST RATE FOR DUCTILITY MEASUREMENT [_ _ _.]
AT 39.2°f (CM/MIN)

13. PENETRATION AT 39.2°F (AASHTO T49) (TENTHS OF A MM) [_ _ _.]
(200 g., 60 sec.)

14. RING AND BALL SOFTENING POINT (AASHTO T53) (°F) [_ _ _.]

NOTE: If emulsified or cutback asphalt was used, enter "N" in the spaces for "Original Asphalt Cement Properties".

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 7 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

Binder

*1. LAYER NUMBER (FROM SHEET 4) [3]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. MAXIMUM SPECIFIC GRAVITY (NO AIR VOIDS) (AASHTO T209 OR ASTM D2041) [2.445]

BULK SPECIFIC GRAVITY (ASTM D1188)

*4. MEAN [2.375] NUMBER OF TESTS [__ __.]

5. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

6. STD. DEV. [__.__ __ __]

ASPHALT CONTENT (PERCENT WEIGHT OF TOTAL MIX) (AASHTO T164 OR ASTM D2172)

*7. MEAN [4.7 __ __] NUMBER OF SAMPLES [__ __.]

8. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

9. STD. DEV. [__.__ __ __]

PERCENT AIR VOIDS

*10. MEAN [2.982] NUMBER OF SAMPLES [__ __.]

11. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

12. STD. DEV. [__.__ __ __]

*13. VOIDS IN MINERAL AGGREGATE (PERCENT) [14.8]

*14. EFFECTIVE ASPHALT CONTENT (PERCENT) [__ __.__]

*15. MARSHALL STABILITY (LBS) (AASHTO T245 OR ASTM D1559) [2,372]

*16. NUMBER OF BLOWS [__ __]

*17. MARSHALL FLOW (HUNDREDTHS OF AN INCH) (AASHTO T245 OR ASTM D1559) [__ __ __ 9.]

*18. HVEEM STABILITY (AASHTO T246 OR ASTM D1561) [__ __ __.]

*19. HVEEM COHESIOMETER VALUE (GRAMS/25 MM OF WIDTH) (AASHTO T246 OR ASTM 1561) [__ __ __ __.]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 8 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Binder [3]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. TYPE ASPHALT PLANT [1]

BATCH PLANT... 1 DRUM MIX PLANT... 2

OTHER (SPECIFY)... 3 _____

*4. TYPE OF ANTISTRIPPING AGENT USED [7 0]
(SEE TYPE CODES, TABLE A.21)
OTHER (SPECIFY) MORLIFE 300

*5. AMOUNT OF ANTISTRIPPING AGENT USED LIQUID OR SOLID CODE [2]

*6. (If liquid, enter code 1, and amount as percent of asphalt cement weight. If solid, enter code 2 and amount as percent of aggregate weight.) [0.5]

GW ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 5 PLANT-MIXED ASPHALT BOUND LAYERS AGGREGATE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

	COMPOSITION OF COARSE AGGREGATE	TYPE	PERCENT
*2.	Crushed Stone... 1 Gravel... 2 Crushed Gravel... 3	[1]	[1 0 0.]
*3.	Crushed Slag... 4 Manufactured Lightweight... 5	[__]	[__ __ __.]
*4.	Other (Specify)... 6 _____	[__]	[__ __ __.]

	COMPOSITION OF FINE AGGREGATE	TYPE	PERCENT
*5.	Natural Sand... 1	[1]	[1 0 0.]
*6.	Crushed or Manufactured Sand (From Crushed Gravel or	[__]	[__ __ __.]
*7.	Stone... 2 Recycled Concrete... 3 Other (Specify)... 4 _____	[__]	[__ __ __.]

*8. TYPE OF MINERAL FILLER [__]
Stone Dust... 1 Hydrated Lime... 2 Portland Cement... 3
Fly Ash... 4
Other (Specify)... 5 _____

BULK SPECIFIC GRAVITIES:

*9. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

*10. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

*11. Mineral Filler (AASHTO T100 or ASTM D854) [__.__ __ __]

*12. Aggregate Combination (Calculated) [__.__ __ __]

13. Effective Specific Gravity of Aggregate Combination (Calculated) [2.6 1 9]

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
14.	Coarse	[__ 1]	[__ 1 8.6 __ __]
15.	Coarse	[__ 3]	[__ __ 0.0 6 __]
16.	Coarse	[__ __]	[__ __ __.__ __ __]
17.	Coarse and Fine - Combined	[__ __]	[__ __ __.__ __ __]

18. POLISH VALUE OF COARSE AGGREGATES __ __.
SURFACE LAYER ONLY (AASHTO T279, ASTM D3319)

ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 6 PLANT-MIXED ASPHALT BOUND LAYERS ASPHALT CEMENT PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

*2. ASPHALT GRADE (SEE ASPHALT CODE SHEET, TABLE A.16) [1 7]
(IF OTHER, SPECIFY) PG 64-22

*3. SOURCE (SEE SUPPLY CODE SHEET, TABLE A.14) [0 7]
(IF OTHER, SPECIFY) Lion

4. SPECIFIC GRAVITY OF ASPHALT CEMENT [1.0 3 5]
(AASHTO T228)

GENERAL ASPHALT CEMENT PROPERTIES **(If available from supplier)**

5. VISCOSITY OF ASPHALT AT 140°F (POISES) [_ _ _ _ _ _.]
(AASHTO T202)

6. VISCOSITY OF ASPHALT AT 275°F (CENTISTOKES) [_ _ _ _._ _]
(AASHTO T202)

7. PENETRATION AT 77°F (AASHTO T49) (TENTHS OF A MM) [_ _ _ _.]
(100 g., 5 sec.)

ASPHALT MODIFIERS (SEE TYPE CODE, A.15)

		TYPE	QUANTITY (%)
8.	MODIFIER #1	[_ _]	[_ _.]
9.	MODIFIER #2 (IF OTHER, SPECIFY)	[_ _]	[_ _.]

10. DUCTILITY AT 77°F (CM) [_ _ _.]
(AASHTO T51)

11. DUCTILITY AT 39.2°F (CM) [_ _ _.]
(AASHTO T51)

12. TEST RATE FOR DUCTILITY MEASUREMENT [_ _ _.]
AT 39.2°f (CM/MIN)

13. PENETRATION AT 39.2°F (AASHTO T49) (TENTHS OF A MM) [_ _ _.]
(200 g., 60 sec.)

14. RING AND BALL SOFTENING POINT (AASHTO T53) (°F) [_ _ _.]

NOTE: If emulsified or cutback asphalt was used, enter "N" in the spaces for "Original Asphalt Cement Properties".

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 7 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

Surface

*1. LAYER NUMBER (FROM SHEET 4) [4]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. MAXIMUM SPECIFIC GRAVITY (NO AIR VOIDS) (AASHTO T209 OR ASTM D2041) [2.412]

BULK SPECIFIC GRAVITY (ASTM D1188)

*4. MEAN [2.289] NUMBER OF TESTS [__ __.]

5. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

6. STD. DEV. [__.__ __ __]

ASPHALT CONTENT (PERCENT WEIGHT OF TOTAL MIX) (AASHTO T164 OR ASTM D2172)

*7. MEAN [5.6 __ __] NUMBER OF SAMPLES [__ __.]

8. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

9. STD. DEV. [__.__ __ __]

PERCENT AIR VOIDS

*10. MEAN [5.217] NUMBER OF SAMPLES [__ __.]

11. MINIMUM [__.__ __ __] MAXIMUM [__.__ __ __]

12. STD. DEV. [__.__ __ __]

*13. VOIDS IN MINERAL AGGREGATE (PERCENT) [16.3]

*14. EFFECTIVE ASPHALT CONTENT (PERCENT) [__ __.__]

*15. MARSHALL STABILITY (LBS) (AASHTO T245 OR ASTM D1559) [2,370]

*16. NUMBER OF BLOWS [__ __]

*17. MARSHALL FLOW (HUNDREDTHS OF AN INCH) (AASHTO T245 OR ASTM D1559) [__ __ __ 9.]

*18. HVEEM STABILITY (AASHTO T246 OR ASTM D1561) [__ __ __.]

*19. HVEEM COHESIOMETER VALUE (GRAMS/25 MM OF WIDTH) (AASHTO T246 OR ASTM 1561) [__ __ __ __.]

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 8 PLANT-MIXED ASPHALT BOUND LAYERS MIXTURE PROPERTIES (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. LAYER NUMBER (FROM SHEET 4) Surface [4]

*2. TYPE OF SAMPLES [1]
SAMPLES COMPACTED IN LABORATORY... 1
SAMPLES TAKEN FROM TEST SECTION... 2

*3. TYPE ASPHALT PLANT [1]

BATCH PLANT... 1 DRUM MIX PLANT... 2

OTHER (SPECIFY)... 3 _____

*4. TYPE OF ANTISTRIPPING AGENT USED [7 0]
(SEE TYPE CODES, TABLE A.21)
OTHER (SPECIFY) MORLIFE 300

*5. AMOUNT OF ANTISTRIPPING AGENT USED LIQUID OR SOLID CODE [2]

*6. (If liquid, enter code 1, and amount as percent of asphalt cement weight. If solid, enter code 2 and amount as percent of aggregate weight.) [0.5]

G.W. ENTERED OCT 07 1996

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 9 PLANT-MIXED ASPHALT BOUND LAYERS PLACEMENT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 0-0 8-9 7]

*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 1-2 6-9 7]

*3 ASPHALT CONCRETE PLANT AND HAUL

	Type	Name	Haul Distance (Mi)	Time (Min)	Layer Numbers		
Plant 1	[1]	Standard Havens	[1.5]	[10]	[3]	[4]	[ ]
Plant 2	[ ]		[ ]	[ ]	[ ]	[ ]	[ ]
Plant 3	[ ]		[ ]	[ ]	[ ]	[ ]	[ ]

Plant Type: Batch..... 1 Drum Mix.... 2 Other...3 Specify_____

4. MANUFACTURER OF ASPHALT CONCRETE PAVER Blaw-knox

5. MODEL DESIGNATION OF ASPHALT CONCRETE PAVER PF-510, PF 400A

6. SINGLE PASS LAYDOWN WIDTH (Feet) [1 4.0]

7. AC BINDER COURSE LIFT
   Layer Number [0 3]
   Nominal First Lift Placement Thickness (Inches) [3.5]
   Nominal Second Lift Placement Thickness (Inches) [3.0]

8. AC SURFACE COURSE LIFT
   Layer Number [0 4]
   Nominal First Lift Placement Thickness (Inches) [1.8]
   Nominal Second Lift Placement Thickness (Inches) [.]

9. SURFACE FRICTION COURSE (If Placed)
   Layer Number [ ]
   Nominal Placement Thickness (Inches) [.]

10. TEST SECTION STATION OF TRANSVERSE JOINTS (within test section)
    Binder Course [+]
    Surface Course [+]
    Surface Friction Course [+]

11. LOCATION OF LONGITUDINAL SURFACE JOINT [1]
    Between lanes.. 1 Within lane.. 2
    (specify offset from O/S feet) [10.0]

12. SIGNIFICANT EVENTS DURING CONSTRUCTION (disruptions, rain, equip. problems, etc.)_____

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 10 PLANT-MIXED ASPHALT BOUND LAYERS COMPACTION DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 0-0 8-9 7]
*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 0-1 0-9 7]
*3. LAYER NUMBER [3] Binder
*4. MIXING TEMPERATURE (°F) [3 1 0.]

5. LAYDOWN TEMPERATURES (°F)
Mean..... 2 9 0.
Minimum..... _ _ _.
Standard Deviation... _ _.__
Number of Tests ..... _ _.
Maximum..... _ _ _.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	1 0.1				
7	B	Steel-Whl Tandem	_ _.__				
8	C	Steel-Whl Tandem	_ _.__				
9	D	Steel-Whl Tandem	_ _.__				
10	E	Pneumatic-Tired	_ 8.0	_ _ 9 0.			
11	F	Pneumatic-Tired	_ _.__	_ _ _ _.			
12	G	Pneumatic-Tired	_ _.__	_ _ _ _.			
13	H	Pneumatic-Tired	_ _.__				
14	I	Single-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
15	J	Single-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
16	K	Single-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
17	L	Single-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
18	M	Double-Drum Vibr.	1 0.1		2 8 0 0.	. _ _ _	_ _.__
19	N	Double-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
20	O	Double-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
21	P	Double-Drum Vibr.	_ _.__		_ _ _ _.	. _ _ _	_ _.__
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN				
23	Roller Code (A-Q)	M	M	_	_
24	Coverages	_ 2.	_ 2.	_ _.	_ _.
	INTERMEDIATE				
25	Roller Code (A-Q)	E	E	_	_
26	Coverages	_ 3.	_ 3.	_ _.	_ _.
	FINAL				
27	Roller Code (A-Q)	A	A	_	_
28	Coverages	_ 1.	_ 1.	_ _.	_ _.
29	Air Temperature (°F)	_ 6 5.	_ 6 0.	_ _ _.	_ _ _.
30	Compacted Thickness (In)	3.0	2.5	_.__	_.__
31	Curing Period (Days)	_ _.__	_ _.__	_ _.__	_ _.__

PREPARER [signature] EMPLOYER BRF DATE 12/22/97

GIW: ENTERED OCT 07 1998

SPS-8 CONSTRUCTION DATA SHEET 10 PLANT-MIXED ASPHALT BOUND LAYERS COMPACTION DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [1 1-2 5-9 7]
*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [1 1-2 5-9 7]
*3. LAYER NUMBER Surface [4]
*4. MIXING TEMPERATURE (°F) [3 1 0.]

5. LAYDOWN TEMPERATURES (°F)
Mean..... 2 9 0.
Minimum..... _ _ _.
Standard Deviation... _ _.
Number of Tests ..... _ _.
Maximum..... _ _ _.

ROLLER DATA

	Roller Code #	Roller Description	Gross Wt (Tons)	Tire Press. (psi)	Frequency (Vibr./Min)	Amplitude (Inches)	Speed (mph)
6	A	Steel-Whl Tandem	1 0.1				
7	B	Steel-Whl Tandem	_ _._				
8	C	Steel-Whl Tandem	_ _._				
9	D	Steel-Whl Tandem	_ _._				
10	E	Pneumatic-Tired	_ 8.0	_ _ 9 0.			
11	F	Pneumatic-Tired	_ _._	_ _ _ _.			
12	G	Pneumatic-Tired	_ _._	_ _ _ _.			
13	H	Pneumatic-Tired	_ _._	_ _ _ _.			
14	I	Single-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
15	J	Single-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
16	K	Single-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
17	L	Single-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
18	M	Double-Drum Vibr.	1 0.1		2 8 0 0.	.__ __ __	__ __.__
19	N	Double-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
20	O	Double-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
21	P	Double-Drum Vibr.	_ _._		_ _ _ _.	.__ __ __	__ __.__
22	Q	Other					

	COMPACTION DATA	First Lift	Second Lift	Third Lift	Fourth Lift
	BREAKDOWN				
23	Roller Code (A-Q)	M	_	_	_
24	Coverages	_ 1.	_ _.	_ _.	_ _.
	INTERMEDIATE				
25	Roller Code (A-Q)	E	_	_	_
26	Coverages	_ 3.	_ _.	_ _.	_ _.
	FINAL				
27	Roller Code (A-Q)	A	_	_	_
28	Coverages	_ 1.	_ _.	_ _.	_ _.
29	Air Temperature (°F)	_ 5 0.	_ _ _.	_ _ _.	_ _ _.
30	Compacted Thickness (In)	1.5	_.__	_.__	_.__
31	Curing Period (Days)	_ _.__	_ _.__	_ _.__	_ _.__

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

G.W. ENTERED OCT 07 1998

SPS-8 CONSTRUCTION DATA SHEET 11 PLANT-MIXED ASPHALT BOUND LAYERS DENSITY AND PROFILE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

1. NUCLEAR DENSITY MEASUREMENTS

LAYER TYPE	Binder Course	Surface Course	Surface Friction Layer
Measurement Method (A, B, C)[1]	A	A	
Number of Measurement	12	12	
Average (pcf)	131.8	128.1	
Maximum (pcf)	136.7	133.3	
Minimum (pcf)	125.0	125.4	
Standard Deviation (pcf)	3.9	3.3	
Layer Number	03	04	

[1] Measurement Method Backscatter... A Direct Transmission... B Air Gap... C

2. MANUFACTURER OF NUCLEAR DENSITY GAUGE Troxler
3. NUCLEAR DENSITY GAUGE MODEL NUMBER 3430
4. NUCLEAR DENSITY GAUGE IDENTIFICATION NUMBER 20430
5. NUCLEAR GAUGE COUNT RATE FOR STANDARDIZATION
6. PROFILOGRAPH MEASUREMENTS

Profilograph Type California... 1 Rainhart... 2
Profile Index (Inches/Mile)
Interpretation Method Manual.. 1 Mechanical.. 2 Computer.. 3
Height of Blanking Band (Inches)
Cutoff Height (Inches)

7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) NO

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BAE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
0+00	0	12.0		6.1	
	30	11.9		6.1	
	60	12.0		6.2	
	90	11.8		6.4	
	120	11.2		6.6	
0+50	0	12.0		6.2	
	30	12.2		5.9	
	60	12.1		6.0	
	90	12.4		5.8	
	120	12.2		5.9	
1+00	0	14.3		5.6	
	30	13.3		6.1	
	60	13.1		6.4	
	90	12.5		6.5	
	120	11.8		7.0	
1+50	0	12.6		5.9	
	30	11.3		6.5	
	60	11.3		6.5	
	90	11.3		6.6	
	120	10.3		7.4	
2+00	0	12.2		6.7	
	30	11.5		6.7	
	60	11.3		7.1	
	90	11.6		7.0	
	120	11.6		7.3	
2+50	0	12.8		6.6	
	30	12.7		7.1	
	60	12.4		7.7	
	90	12.0		7.9	
	120	12.0		7.8	
3+00	0	11.8		7.2	
	30	12.0		7.2	
	60	12.5		7.2	
	90	12.1		7.3	
	120	12.0		7.8	
LAYER NUMBER		02		03 04	

G.W. ENTERED OCT 07 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
3+50	0	12.6		6.2	
	30	12.5		5.4	
	60	13.4		6.7	
	90	13.6		7.0	
	120	12.5		7.6	
4+00	0	11.6		5.6	
	30	11.6		5.5	
	60	11.0		6.1	
	90	10.8		6.6	
	120	10.4		7.3	
4+50	0	11.4		6.5	
	30	11.8		6.4	
	60	12.2		6.6	
	90	12.7		6.8	
	120	12.8		7.0	
5+00	0	11.8		6.4	
	30	11.5		7.1	
	60	11.5		7.2	
	90	12.1		7.6	
	120	12.2		7.8	
+					
+					
+					
LAYER NUMBER		02		03 04	

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 13 UNBOUND AGGREGATE BASE MATERIAL PLACEMENT	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. UNBOUND BASE MATERIAL PLACEMENT BEGAN (Month-Day-Year) [0 8-1 1-9 7]

*2. UNBOUND BASE MATERIAL PLACEMENT COMPLETED (Month-Day-Year) [1 0-0 1-9 7]

*3. LAYER NUMBER (From Sheet 4) [2]

PRIMARY COMPACTION EQUIPMENT

*4. CODE TYPE 1 + 3 [__]

COMPACTION TYPE CODES
Pneumatic - Tired... 1 Steel Wheel Tandem... 2 Single Drum Vibr.... 3
Double Drum Vibr.... 4
Other (Specify)... 5 _____

*5. GROSS WEIGHT (TONS) [1 2.5]

*6. LIFT THICKNESSES
Nominal First Lift Placement Thickness (inches) [1 2]
Nominal Second Lift Placement Thickness (inches) [__ __]
Nominal Third Lift Placement Thickness (inches) [__ __]
Nominal Fourth Lift Placement Thickness (inches) [__ __]

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

7. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

G.W. ENTERED OCT 07 1998

PREPARER [signature] EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 14 SUBGRADE PREPARATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

*1. SUBGRADE PREPARATION BEGAN (Month-Day-Year) [0 6-1 0-9 7]

*2. SUBGRADE PREPARATION COMPLETED (Month-Day-Year) [0 8-1 1-9 7]

PRIMARY COMPACTION EQUIPMENT

*3. CODE TYPE [4]

COMPACTION EQUIPMENT TYPE CODES
Sheepsfoot... 1 Pneumatic Tired... 2 Steel Wheel Tandem... 3
Single Drum Vibr.... 4 Double Drum Vibr.... 5
Other (Specify)... 6 _____

*4. GROSS WEIGHT (TONS) [1 2.5]

	TYPE	PERCENT
*5. STABILIZING AGENT 1	[__]	[__ __.__]
*6. STABILIZING AGENT 2	[__]	[__ __.__]

Not Applicable, None used.

STABILIZING AGENT TYPE CODES
Portland Cement... 1 Lime... 2 Fly Ash, Class C... 3
Fly Ash, Class N... 4
Other (Specify)... 5 _____

*7. TYPICAL LIFT THICKNESS (INCHES) [__ __]
(For Fill Sections Only)

Not Applicable

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

8. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

G.W. ENTERED OCT 08 1998

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 15 CUT-FILL SECTION LOCATIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

ORDER	*1 CUT-FILL TYPE[1]	TEST SECTION STATION NUMBER	
		*2 START	*3 END
1	2	0 + 0 0	5 + 0 0
2		+	+
3		+	+
4		+	+
5		+	+
6		+	+
7		+	+
8		+	+
9		+	+
10		+	+

G.W. ENTERED OCT 08 1998

NOTES:

1. Indicate the type of subgrade construction with one of the following:

   Cut... 1 Fill... 2 At-Grade... 3

2. Use one line for each cut, fill or at-grade zone present within the section boundaries.

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 16 SUBGRADE EXCAVATION AND BACKFILLING SKETCH	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

Not Applicable

PREPARER [signature] EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 28 MISCELLANEOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 4]

Provide any miscellaneous comments and notes concerning construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indication of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 2 GEOMETRIC, SHOULDER AND DRAINAGE INFORMATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

*1. LANE WIDTH (FEET) [1 0.]

2. MONITORING SITE LANE NUMBER [1.]
(LANE 1 IS OUTSIDE LANE, NEXT TO SHOULDER
LANE 2 IS NEXT TO LANE 1, ETC.)

*3. SUBSURFACE DRAINAGE LOCATION [3.]
Continuous Along Test Section... 1 Intermittent... 2 None... 3

*4. SUBSURFACE DRAINAGE TYPE [1.]
No Subsurface Drainage... 1 Longitudinal Drains... 2
Transverse Drains... 3 Drainage Blanket... 4 Well System... 5
Drainage Blanket with Longitudinal Drains... 6
Other (Specify)... 7 _____

SHOULDER DATA	INSIDE SHOULDER	OUTSIDE SHOULDER
*5. SURFACE TYPE Turf... 1 Granular.... 2 Asphalt Concrete... 3 Concrete... 4 Surface Treatment... 5 Other (Specify)... 6 _____	[3.]	[3.]
*6. TOTAL WIDTH (FEET)	[4.]	[4.]
*7. PAVED WIDTH (FEET)	[4.]	[4.]
8. SHOULDER BASE TYPE (CODES-TABLE A.6)	[2 3.]	[2 3.]
9. SURFACE THICKNESS (INCHES)	[4. 0]	[4. 0]
10. SHOULDER BASE THICKNESS (INCHES)	[1 0. 0]	[1 0. 0]
11. DIAMETER OF LONGITUDINAL DRAINPIPES (INCHES)	Not	[.]
12. SPACING OF LATERALS (FEET)	Applicable	[.]

G.W. ENTERED OCT 08 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 4 LAYER DESCRIPTIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

*1 LAYER NUMBER	*2 LAYER DESCRIPTION	*3 MATERIAL TYPE CLASS	*4 LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[5 1]				
2	[0 5]	[2 3]	[5.0]	3.5	6.8	0.7
3	[0 3]	[0 4]	[8.2]	7.2	9.2	0.5
4	[ ]	[ ]	[.]	.	.	.
5	[ ]	[ ]	[.]	.	.	.
6	[ ]	[ ]	[.]	.	.	.
7	[ ]	[ ]	[.]	.	.	.
8	[ ]	[ ]	[.]	.	.	.
9	[ ]	[ ]	[.]	.	.	.
10	[ ]	[ ]	[.]	.	.	.
11	[ ]	[ ]	[.]	.	.	.
12	[ ]	[ ]	[.]	.	.	.
13	[ ]	[ ]	[.]	.	.	.
14	[ ]	[ ]	[.]	.	.	.
15	[ ]	[ ]	[.]	.	.	.

*5 DEPTH BELOW SURFACE TO "RIGID" LAYER (FEET) [.]
(Rock, Stone, Dense Shale)

G.W. ENTERED OCT 08 1998

NOTES:

1. Layer 1 is the subgrade soil, the highest numbered layer is the pavement surface.

2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

3. The material type classification codes are presented in Tables A.5, A.6, A.7 and A.8 of the Data Collection Guide for Long Term Pavement Performance Studies, dated January 17, 1990.

4. Enter the average thickness of each layer and the minimum, maximum and standard deviation of the thickness measurements, if known.

PREPARER Timothy J. McCarthy EMPLOYER BRE DATE 7/22/98

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
0+00	0	3.5	8.4		
	30	4.2	8.2		
	60	4.6	8.4		
	90	5.6	7.8		
	120	5.0	7.9		
0+50	0	5.0	8.8		
	30	5.0	7.9		
	60	4.9	8.0		
	90	5.3	7.4		
	120	4.8	7.7		
1+00	0	4.2	8.3		
	30	4.2	7.8		
	60	4.6	7.8		
	90	4.3	8.2		
	120	4.6	8.0		
1+50	0	4.7	8.4		
	30	4.4	8.0		
	60	4.7	8.0		
	90	5.5	7.9		
	120	5.6	7.9		
2+00	0	5.0	8.4		
	30	4.7	8.2		
	60	5.2	7.9		
	90	5.0	8.0		
	120	5.2	8.2		
2+50	0	5.6	9.1		
	30	6.1	8.4		
	60	6.6	8.4		
	90	6.8	7.9		
	120	5.9	8.6		
3+00	0	5.6	8.5		
	30	5.3	8.3		
	60	5.4	8.6		
	90	5.2	9.0		
	120	5.4	9.2		
LAYER NUMBER		02	03		

G.W. ENTERED OCT 08 1998

PREPARER Timothy J. Nash EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

SHEET 2 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
3+50	0	4.6	7.8		
	30	5.2	7.9		
	60	5.6	8.4		
	90	5.8	8.9		
	120	6.1	9.2		
4+00	0	4.7	7.4		
	30	4.3	7.2		
	60	4.2	7.7		
	90	4.2	8.3		
	120	4.1	8.9		
4+50	0	5.0	7.8		
	30	4.7	7.9		
	60	4.4	7.8		
	90	4.3	8.4		
	120	3.6	8.6		
5+00	0	5.5			
	30	5.3			
	60	5.0			
	90	4.7			
	120	4.1			
+			Unknown		
+					
+					
LAYER NUMBER		02	03		

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

G.W. ENTERED OCT 08 1998

SPS-8 CONSTRUCTION DATA SHEET 13 UNBOUND AGGREGATE BASE MATERIAL PLACEMENT	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

*1. UNBOUND BASE MATERIAL PLACEMENT BEGAN (Month-Day-Year) [8-01-97]

*2. UNBOUND BASE MATERIAL PLACEMENT COMPLETED (Month-Day-Year) [8-28-97]

*3. LAYER NUMBER (From Sheet 4) [2]

PRIMARY COMPACTION EQUIPMENT

*4. CODE TYPE 1 3 [__]

COMPACTION TYPE CODES
Pneumatic - Tired... 1 Steel Wheel Tandem... 2 Single Drum Vibr.. 3
Double Drum Vibr.... 4
Other (Specify)... 5 _____

*5. GROSS WEIGHT (TONS) [12.5]

*6. LIFT THICKNESSES
Nominal First Lift Placement Thickness (inches) [6]
Nominal Second Lift Placement Thickness (inches) [__]
Nominal Third Lift Placement Thickness (inches) [__]
Nominal Fourth Lift Placement Thickness (inches) [__]

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

7. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

PREPARER [signature] EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 14 SUBGRADE PREPARATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

*1. SUBGRADE PREPARATION BEGAN (Month-Day-Year) [0 6-1 0-9 7]

*2. SUBGRADE PREPARATION COMPLETED (Month-Day-Year) [0 8-1 1-9 7]

PRIMARY COMPACTION EQUIPMENT

*3. CODE TYPE [1 and 4]

COMPACTION EQUIPMENT TYPE CODES
Sheepsfoot... (1) Pneumatic Tired... 2 Steel Wheel Tandem... 3
Single Drum Vibr.... (4) Double Drum Vibr.... 5
Other (Specify)... 6 _____

*4. GROSS WEIGHT (TONS) [1 2.5]

		TYPE	PERCENT
*5.	STABILIZING AGENT 1	[ ]	[.]
*6.	STABILIZING AGENT 2	[ ]	[.]

None Used

STABILIZING AGENT TYPE CODES
Portland Cement... 1 Lime... 2 Fly Ash, Class C... 3
Fly Ash, Class N... 4
Other (Specify)... 5 _____

*7. TYPICAL LIFT THICKNESS (INCHES) [1 0]
(For Fill Sections Only)

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

8. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 15 CUT-FILL SECTION LOCATIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

ORDER	*1 CUT-FILL TYPE[1]	TEST SECTION STATION NUMBER	
		*2 START	*3 END
1	2	0 + 0 0	5 + 0 0
2		+	+
3		+	+
4		+	+
5		+	+
6		+	+
7		+	+
8		+	+
9		+	+
10		+	+

NOTES:

1. Indicate the type of subgrade construction with one of the following:

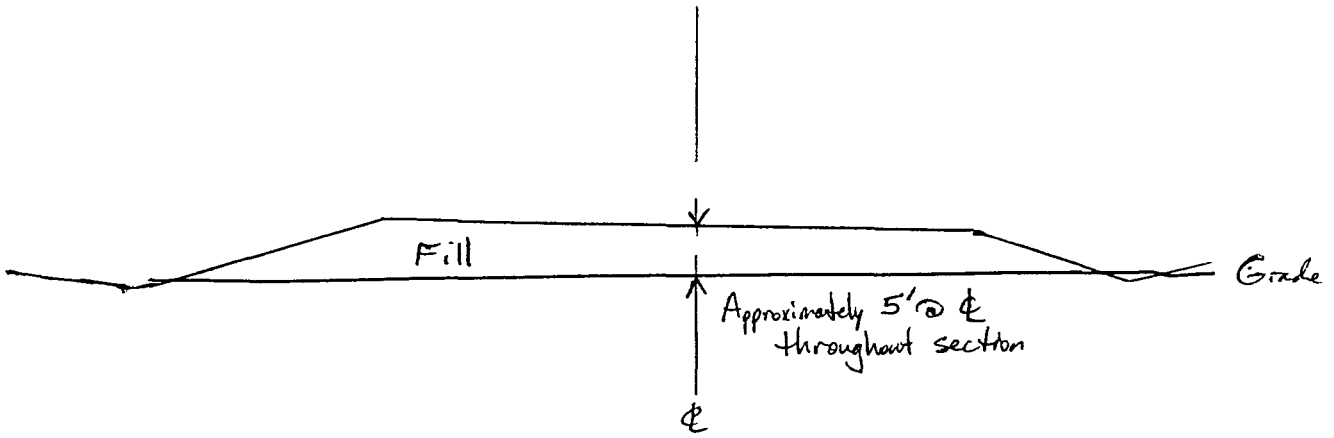
   Cut... 1 Fill... 2 At-Grade... 3

2. Use one line for each cut, fill or at-grade zone present within the section boundaries.

G.W. ENTERED OCT 08 1998

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 16 SUBGRADE EXCAVATION AND BACKFILLING SKETCH	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]



PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 17 PORTLAND CEMENT CONCRETE LAYERS-JOINT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [~~X~~ 3] 10/16/98

* 2. AVERAGE CONTRACTION JOINT SPACING (Feet) [15.0]

3. (RANDOM JOINT SPACING, IF ANY: _____)

* 4. SKEWNESS OF JOINTS (ft/lane) [N/A]

* 5. TRANSVERSE CONTRACTION JOINT LOAD TRANSFER SYSTEM [1]
   - Round Dowels..... 1
   - Aggregate Interlock..... 2
   - Other (Specify) Dowel Basket 3

* 6. ROUND DOWEL DIAMETER (Inches) [1.25]

* 7. DOWEL SPACING (Inches) [12.]

8. DISTANCE OF NEAREST DOWEL FROM OUTSIDE LANE-SHOULDER EDGE (Inches) [6.0]

9. DOWEL LENGTH (Inches) [18.]

10. DOWEL COATING [5]
   - Paint and/or Grease..... 1
   - Plastic..... 2 and Grease
   - Monel..... 3
   - Stainless Steel..... 4
   - Epoxy..... 5
   - Other (Specify) _____ 6

11. METHOD USED TO INSTALL MECHANICAL LOAD TRANSFER DEVICES [2]
   - Preplaced on Baskets..... 1
   - Mechanically Installed..... 2
   - Other (Specify) _____ 3

12. DOWEL ALIGNMENT CHECKED BEFORE PLACEMENT (Y/N) [Y]

13. DOWEL ALIGNMENT CHECKED AFTER PLACEMENT (Y/N) [N]

If Yes, describe method used _____
(e.g. Pachometer, Ground Penetrating Radar)

G.W. ENTERED NOV 22 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 18 PORTLAND CEMENT CONCRETE LAYERS-JOINT DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

G.W. ENTERED OCT 22 1998

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [4]

* 2. METHOD USED TO FORM TRANSVERSE JOINTS [1]
Sawed..... 1 Metal Insert.....3
Plastic Insert..... 2
Other (Specify) _____ 4

* 3. TYPE OF LONGITUDINAL JOINT (BETWEEN LANES) [2]
Butt..... 1 Insert Weakened Plane..... 3
Sawed Weakened Plane..... 2
Other (Specify) _____ 4

* 4. TYPE OF SHOULDER-TRAFFIC LANE JOINT [1]
Butt..... 1 Insert Weakened Plane..... 3
Sawed Weakened Plane..... 2
Other (Specify) _____ 4

*5. AVERAGE DEPTH OF SAWCUT, FROM MEASUREMENTS (Inches).....TD ÷ 3 ≈ [2.5"]

*6. TIME INTERVAL BETWEEN CONCRETE PLACEMENT AND SAWCUT (HOURS)..... [_ _ 7.]

7. TRANSVERSE JOINT SEALANT TYPE (AS BUILT) [4]
Preformed (Open Web)..... 1 Rubberized Asphalt..... 3
Asphalt..... 2 Low-Modulus Silicone..... 4
Other (Specify) _____ 5

TRANSVERSE JOINT SEALANT RESERVOIR (AS BUILT)

8. WIDTH, (Inches)..... [3/8" .37]

9. DEPTH, (Inches)..... [1.25]

LONGITUDINAL JOINT SEALANT RESERVOIR (AS BUILT)

10. WIDTH, (Inches)..... [3/8" .37]

11. DEPTH, (Inches)..... [1.25]

12. BETWEEN LANE TIE BAR DIAMETER (Inches) 5/8" [0.63]

13. BETWEEN LANE TIE BAR LENGTH (Inches) [30.]

14. BETWEEN LANE TIE BAR SPACING (Inches) [30._]

SHOULDER-TRAFFIC LANE JOINT SEALANT RESERVOIR (AS BUILT)

15. WIDTH, (Inches)..... [_._ _]

16. DEPTH, (Inches)..... [_._ _]

PREPARER Timothy J Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 19 PORTLAND CEMENT CONCRETE LAYERS - MIXTURE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

G.W. ENTERED ~~NOV~~ OCT 22 1998

*1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [3]

MIX DESIGN (OVEN DRIED WEIGHT - PER CUBIC YARD)

*2. Coarse Aggregate (Pounds) ..... [1 9 4 4.]

*3. Fine Aggregate (Pounds) ..... [1 1 0 8.]

*4. Cement (Pounds) ..... [_ 5 6 4.]

*5. Water (Pounds) ..... [_ 2 5 6.]

*6. TYPE CEMENT USED (See Cement Type Codes, Table A.11) [4 1]
(If Other, Specify Type I)

*7. ALKALI CONTENT OF CEMENT, (PERCENT BY WEIGHT OF CEMENT) [_ 0.3]

ADMIXTURES (PERCENT BY WEIGHT OF CEMENT) — None Used

		TYPE CODE	AMOUNT
*8.	ADMIXTURE #1	[_._]	[_ _ _._]
*9.	ADMIXTURE #2	[_._]	[_ _ _._]
*10.	ADMIXTURE #3	[_._]	[_ _ _._]

(See Cement Admixture Codes, Table A.12)
(If Other, Specify _____)

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
11.	Coarse	[0 1]	[_ 1 8.6]
12.	Coarse	[_ 3]	[_ _ 0.1]
13.	Coarse	[_ _]	[_ _ _._]
14.	Coarse and Fine	[_ _]	[_ _ _._]

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 20 PORTLAND CEMENT CONCRETE LAYERS MIXTURE DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [__]

COMPOSITION OF COARSE AGGREGATE

	TYPE	PERCENT
* 2.	[1]	[1 0 0.]
* 3.	[__]	[__ __ __.]
* 4.	[__]	[__ __ __.]

Crushed Stone.... 1 Manufactured gravel..... 2 Crushed Gravel..... 3
Crushed Slag..... 4 Lightweight..... 5 Recycled Concrete... 6
Other (Specify)_____ 7

* 5. GEOLOGIC CLASSIFICATION OF COARSE AGGREGATE [0 1.]
(SEE GEOLOGIC CLASSIFICATION CODES, TABLE A.9)

COMPOSITION OF FINE AGGREGATE

	TYPE	PERCENT
* 6.	[1]	[1 0 0.]
* 7.	[__]	[__ __ __.]
* 8.	[__]	[__ __ __.]

Natural Sand... 1
Crushed, Manufactured Sand (From Crushed Gravel or Stone)...2
Recycled Concrete... 3 Other (Specify)_____ 4

9. INSOLUBLE RESIDUE, PERCENT (ASTM D3042) [__ __ __.]

10. GRADATION OF COARSE AGGREGATE

Sieve Size	% Passing
2".....	
1 1/2"....	1 0 0
1".....	9 5
7/8".....	
3/4".....	6 8
5/8".....	
1/2".....	
3/8".....	1 7
No. 4.....	0 2

11. GRADATION OF FINE AGGREGATE

Sieve Size	% Passing
No. 4	98%
No. 8.....	9 4
No. 10....	
No. 16....	8 5
No. 30....	5 2
No. 40....	
No. 50....	0 4
No. 80....	
No. 100...	0.2
No. 200...	
FM	2.62

BULK SPECIFIC GRAVITIES:

12. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

13. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

G.W. ENTERED ~~APR~~ 22 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 21 PORTLAND CEMENT CONCRETE LAYERS PLACEMENT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [9-04-97]

*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [9-04-97]

*3. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [~~14~~ 13] AM 10/16/98

*4. CONCRETE MIX PLANT AND HAUL

	Name	Haul Distance (Mi)	Time (Min)
Plant 1	Pine Bluff Sand & Gravel	[1.5]	[13]
Plant 2		[ ]	[ ]
Plant 3		[ ]	[ ]

*5. PAVER TYPE [1]
Slip Form Paver.... 1 Side Form... 2
Other (Specify) _____ 3

6. PAVER MANUFACTURER AND MODEL NUMBER GOMACO GHP 2800

7. SPREADER TYPE (if applicable) N/A

8. SPREADER MANUFACTURER AND MODEL NUMBER _____

9. WIDTH PAVED IN ONE PASS (Feet) [20.9]

10. DOWEL PLACEMENT METHOD [2]
Dowel Bar Inserter (DBI)..... 1 Dowel Basket..... 2

11. NUMBER OF VIBRATORS [14]

12. VIBRATOR SPACING (Inches) [18]

13. DEPTH OF VIBRATORS BELOW SURFACE (Inches) [4.0]

14. ADDITIONAL VIBRATION APPLIED _____

PREPARER [signature] EMPLOYER BRE DATE 11/24/97

OCT 26 1998 S.W. ENTERED

SPS-8 CONSTRUCTION DATA SHEET 22 PORTLAND CEMENT CONCRETE LAYERS PLACEMENT DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

1. CONSOLIDATION OF MATERIALS [3]
   Internal Vibrators... 1 Vibrating Screeds... 2 Troweling... 3
   Rolling... 4 Tamping... 5
   Other (Specify)... 6 _____

2. FINISHING [3] 2 1 1
   Screeding... 1 Hand-Troweling... 2 Machine-Troweling... 3
   Other (Specify)... 4 _____

3. CURING [1]
   Membrane Curing Compound..... 1 Burlap-Polyethylene Blanket... 5
   Burlap Curing Blankets..... 2 Cotton Mat Curing..... 6
   Waterproof Paper Blankets..... 3 Hay..... 7
   White Polyethylene Sheeting... 4
   Other (Specify) _____ 8

4. TEXTURING [1] 1 3
   Tine..... 1 Grooved Float..... 4
   Broom..... 2 Astro Turf..... 5
   Burlap Drag..... 3 None..... 6
   Other (Specify) _____ 7

Burlap Drag followed by Tining

G.W. ENTERED ~~NOV~~ 22 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 11/24/97

SPS-8 CONSTRUCTION DATA SHEET 23 PORTLAND CEMENT CONCRETE SURFACE LAYER PROFILE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

1. DATE PROFILE MEASURED (Month-Day-Year) [__ __ - __ __ - __ __]
2. PROFILOGRAPH TYPE California... 1 Rainhart... 2 [1]
3. PROFILE INDEX (Inches/Mile) [___ ___]
4. INTERPRETATION METHOD Manual.. 1 Mechanical.. 2 Computer.. 3 [1]
5. HEIGHT OF BLANKING BAND (Inches) [___.___ ___]
6. CUTOFF HEIGHT (Inches) [___.___ ___]
7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) [NO]
8. WAS SURFACE PROFILE CORRECTED BY DIAMOND GRINDING? (YES, NO) [NO]

   IF YES COMPLETE THE FOLLOWING:

9. DATE DIAMOND GRINDING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __] Not Ground
10. DATE DIAMOND GRINDING OPERATIONS COMPLETED (Month-Day-Year) [__ __-__ __-__ __]

*11. REASON FOR GRINDING [__]
    Elimination of Faulting... 1 Elimination of Slab Warping... 2
    Improve Skid Resistance... 3
    Restoration of Transverse Drainage Slope... 4
    Correction of Construction Deficiencies...5
    Other (Specify)... 6 _____

12. AVERAGE DEPTH OF CUT (Inches) [__ .__ __]
13. CUTTING HEAD WIDTH (Inches) [__ __ __ .__ __]
14. AVERAGE GROOVE WIDTH (Inches) [__ .__]
15. AVERAGE SPACING BETWEEN BLADES (Inches) [__.__]

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 28 MISCELLANEOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [0 9]

Provide any miscellaneous comments and notes concerning construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indication of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

4' AC shoulders were paved on 11/24/97 w/ Blaw-Knox RW-195C.

G.W. ENTERED OCT 08 1998

PREPARER Timothy J Marks EMPLOYER BRE DATE 12/22/97

RECEIVED SEP 2 4 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 2 GEOMETRIC, SHOULDER AND DRAINAGE INFORMATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

*1. LANE WIDTH (FEET) [1 0.]

2. MONITORING SITE LANE NUMBER [1.]
(LANE 1 IS OUTSIDE LANE, NEXT TO SHOULDER
LANE 2 IS NEXT TO LANE 1, ETC.)

*3. SUBSURFACE DRAINAGE LOCATION [3.]
Continuous Along Test Section... 1 Intermittent... 2 None... 3

*4. SUBSURFACE DRAINAGE TYPE [1.]
No Subsurface Drainage... 1 Longitudinal Drains... 2
Transverse Drains... 3 Drainage Blanket... 4 Well System... 5
Drainage Blanket with Longitudinal Drains... 6
Other (Specify)... 7 _____

SHOULDER DATA	INSIDE SHOULDER	OUTSIDE SHOULDER
*5. SURFACE TYPE Turf... 1 Granular.... 2 Asphalt Concrete... 3 Concrete... 4 Surface Treatment... 5 Other (Specify)... 6 _____	[3.]	[3.]
*6. TOTAL WIDTH (FEET)	[4.]	[4.]
*7. PAVED WIDTH (FEET)	[4.]	[4.]
8. SHOULDER BASE TYPE (CODES-TABLE A.6)	[2 3.]	[2 3.]
9. SURFACE THICKNESS (INCHES)	[4. 0]	[4. 0]
10. SHOULDER BASE THICKNESS (INCHES)	[1 3. 0]	[1 3. 0]
11. DIAMETER OF LONGITUDINAL DRAINPIPES (INCHES)	Not	[—.—]
12. SPACING OF LATERALS (FEET)	Applicable.	[———]

G.W. ENTERED OCT 08 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 4 LAYER DESCRIPTIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

G.W. ENTERED OCT 08 1998

*1 LAYER NUMBER	*2 LAYER DESCRIPTION	*3 MATERIAL TYPE CLASS	*4 LAYER THICKNESSES (Inches)			
			AVERAGE	MINIMUM	MAXIMUM	STD. DEV.
1	SUBGRADE(7)	[5 5]				
2	[0 5]	[2 3]	[4.6]	2.3	7.1	1.1
3	[0 3]	[0 4]	[11.2]	10.3	13.0	0.6
4	[ ]	[ ]	[.]	.	.	.
5	[ ]	[ ]	[.]	.	.	.
6	[ ]	[ ]	[.]	.	.	.
7	[ ]	[ ]	[.]	.	.	.
8	[ ]	[ ]	[.]	.	.	.
9	[ ]	[ ]	[.]	.	.	.
10	[ ]	[ ]	[.]	.	.	.
11	[ ]	[ ]	[.]	.	.	.
12	[ ]	[ ]	[.]	.	.	.
13	[ ]	[ ]	[.]	.	.	.
14	[ ]	[ ]	[.]	.	.	.
15	[ ]	[ ]	[.]	.	.	.

*5 DEPTH BELOW SURFACE TO "RIGID" LAYER (FEET) [.]
(Rock, Stone, Dense Shale)

NOTES:

1. Layer 1 is the subgrade soil, the highest numbered layer is the pavement surface.

2. Layer description codes:

Overlay.....01	Base Layer.....05	Porous Friction Course..09
Seal/Tack Coat.....02	Subbase Layer.....06	Surface Treatment.....10
Original Surface.....03	Subgrade.....07	Embankment (Fill).....11
HMAC Layer (Subsurface).04	Interlayer.....08	

3. The material type classification codes are presented in Tables A.5, A.6, A.7 and A.8 of the Data Collection Guide for Long Term Pavement Performance Studies, dated January 17, 1990.

4. Enter the average thickness of each layer and the minimum, maximum and standard deviation of the thickness measurements, if known.

PREPARER [signature] EMPLOYER BRE DATE 7/22/98

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

SHEET 1 OF 2

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
0+00	0	4.9	11.5		
	30	4.9	11.8		
	60	4.6	11.8		
	90	3.7	11.5		
	120	2.3	12.1		
0+50	0	5.2	11.0		
	30	5.4	10.8		
	60	5.0	10.3		
	90	4.0	11.0		
	120	2.8	11.3		
1+00	0	5.5	10.9		
	30	6.7	10.4		
	60	7.1	10.4		
	90	6.8	10.7		
	120	6.4	10.8		
1+50	0	4.8	10.9		
	30	5.3	10.8		
	60	5.0	10.9		
	90	4.3	11.0		
	120	3.4	11.4		
2+00	0	4.3	10.3		
	30	4.4	10.1		
	60	5.0	10.3		
	90	6.0	10.4		
	120	5.6	11.3		
2+50	0	5.5	11.2		
	30	4.9	11.2		
	60	4.1	11.4		
	90	3.4	11.4		
	120	2.3	12.0		
3+00	0	4.2	12.1		
	30	3.7	12.4		
	60	3.5	12.6		
	90	3.1	12.8		
	120	2.8	13.0		
LAYER NUMBER		02	03		

G.W. ENTERED OCT 26 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 12 LAYER THICKNESS MEASUREMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

SHEET 2 OF 2

G.W. ENTERED OCT 08 1998

STATION NUMBER	OFFSET (Inches)	LAYER THICKNESS MEASUREMENTS (Inches)			
		DENSE GRADED AGGREGATE BASE	PORTLAND CEMENT CONCRETE SURFACE	ASPHALT SURFACE AND BINDER	SURFACE FRICTION LAYER
3+50	0	4.3	10.9		
	30	4.3	11.2		
	60	4.6	11.5		
	90	4.7	12.1		
	120	4.7	12.4		
4+00	0	4.2	10.9		
	30	4.4	10.9		
	60	5.2	11.2		
	90	6.0	10.9		
	120	6.5	10.7		
4+50	0	4.3	12.0		
	30	4.4	11.2		
	60	4.6	11.5		
	90	4.8	11.3		
	120	4.7	11.5		
5+00	0	3.4	11.2		
	30	3.8	10.8		
	60	4.0	10.8		
	90	4.0	10.9		
	120	4.2	10.9		
+__					
+__					
+__					
LAYER NUMBER		02	03		

PREPARER Timothy J. Marks EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 13 UNBOUND AGGREGATE BASE MATERIAL PLACEMENT	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

*1. UNBOUND BASE MATERIAL PLACEMENT BEGAN (Month-Day-Year) [08-01-97]

*2. UNBOUND BASE MATERIAL PLACEMENT COMPLETED (Month-Day-Year) [08-28-97]

*3. LAYER NUMBER (From Sheet 4) [3]

PRIMARY COMPACTION EQUIPMENT

*4. CODE TYPE 1 3 1 [3]

COMPACTION TYPE CODES
Pneumatic - Tired.. 1 Steel Wheel Tandem... 2 Single Drum Vibr... 3
Double Drum Vibr.... 4
Other (Specify)... 5 _____

*5. GROSS WEIGHT (TONS) [12.5]

*6. LIFT THICKNESSES
Nominal First Lift Placement Thickness (inches) [6]
Nominal Second Lift Placement Thickness (inches) [ ]
Nominal Third Lift Placement Thickness (inches) [ ]
Nominal Fourth Lift Placement Thickness (inches) [ ]

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

7. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

G.W. ENTERED OCT 08 1996

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 14 SUBGRADE PREPARATION	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

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*1. SUBGRADE PREPARATION BEGAN (Month-Day-Year) [0 6-1 0-9 7]

*2. SUBGRADE PREPARATION COMPLETED (Month-Day-Year) [0 8-1 1-9 7]

PRIMARY COMPACTION EQUIPMENT

*3. CODE TYPE 1 and 4 [__]

COMPACTION EQUIPMENT TYPE CODES
Sheepsfoot... 1 Pneumatic Tired... 2 Steel Wheel Tandem... 3
Single Drum Vibr.... 4 Double Drum Vibr.... 5
Other (Specify)... 6 _____

*4. GROSS WEIGHT (TONS) [1 2.5]

		TYPE	PERCENT
*5.	STABILIZING AGENT 1	Not Used. [__]	[__ __.__]
*6.	STABILIZING AGENT 2	[__]	[__ __.__]

STABILIZING AGENT TYPE CODES
Portland Cement... 1 Lime... 2 Fly Ash, Class C... 3
Fly Ash, Class N... 4
Other (Specify)... 5 _____

*7. TYPICAL LIFT THICKNESS (INCHES) [1 0]
(For Fill Sections Only)

DENSITY DATA IS RECORDED ON SAMPLING DATA SHEET 8-1

8. SIGNIFICANT EVENTS DURING CONSTRUCTION (DISRUPTIONS, RAIN, EQUIPMENT PROBLEMS, ETC.) _____

PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 15 CUT-FILL SECTION LOCATIONS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

ORDER	*1 CUT-FILL TYPE[1]	TEST SECTION STATION NUMBER	
		*2 START	*3 END
1	2	0 + 0 0	5 + 0 0
2		+	+
3		+	+
4		+	+
5		+	+
6		+	+
7		+	+
8		+	+
9		+	+
10		+	+

NOTES:

1. Indicate the type of subgrade construction with one of the following:

   Cut... 1 Fill... 2 At-Grade... 3

2. Use one line for each cut, fill or at-grade zone present within the section boundaries.

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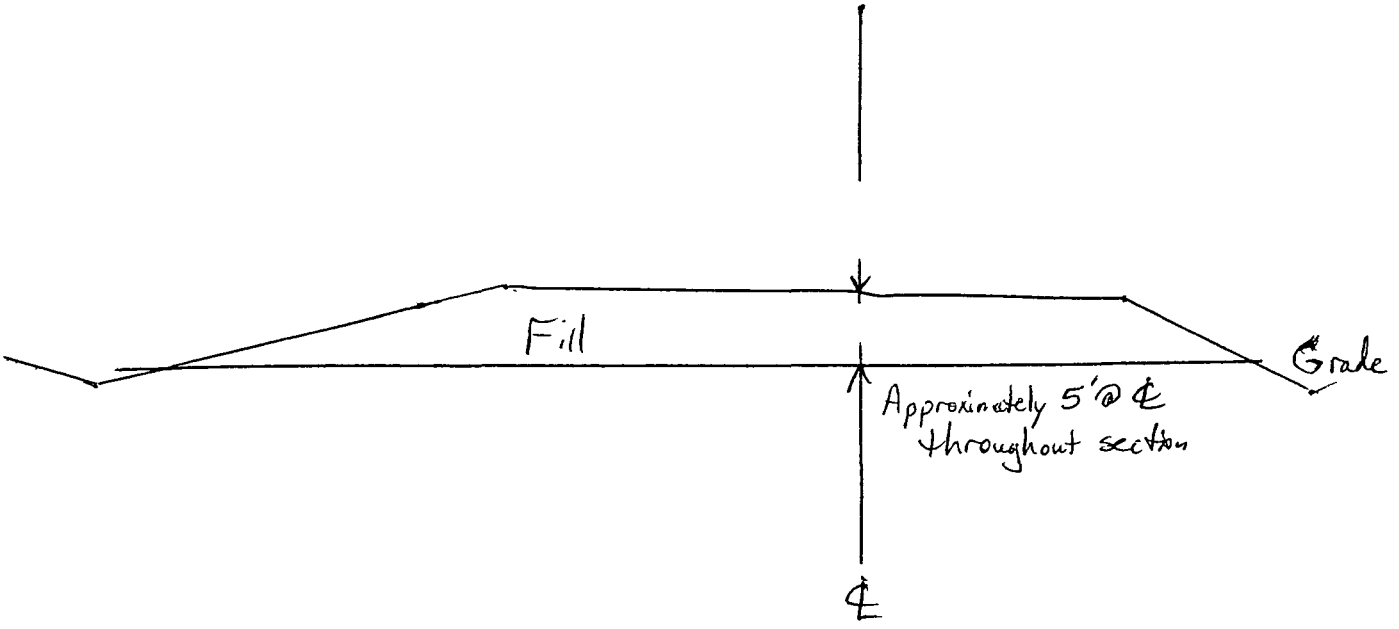
PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 16 SUBGRADE EXCAVATION AND BACKFILLING SKETCH	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]



PREPARER Timothy J. Martin EMPLOYER BRE/SRCO DATE 8/11/97

SPS-8 CONSTRUCTION DATA SHEET 17 PORTLAND CEMENT CONCRETE LAYERS-JOINT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [~~4~~ 3]

* 2. AVERAGE CONTRACTION JOINT SPACING (Feet) [15.0]

3. (RANDOM JOINT SPACING, IF ANY: _____)

* 4. SKEWNESS OF JOINTS (ft/lane) [N/A]

* 5. TRANSVERSE CONTRACTION JOINT LOAD TRANSFER SYSTEM [1]
   - Round Dowels..... 1
   - Aggregate Interlock..... 2
   - Other (Specify) _____ 3

* 6. ROUND DOWEL DIAMETER (Inches) [1.50]

* 7. DOWEL SPACING (Inches) [12.]

8. DISTANCE OF NEAREST DOWEL FROM OUTSIDE LANE-SHOULDER EDGE (Inches) [6.0]

9. DOWEL LENGTH (Inches) [18.]

10. DOWEL COATING [5]
   - Paint and/or Grease..... 1
   - Plastic..... 2
   - Monel..... 3
   - Stainless Steel..... 4
   - Epoxy..... 5
   - Other (Specify) _____ 6

11. METHOD USED TO INSTALL MECHANICAL LOAD TRANSFER DEVICES [2]
   - Preplaced on Baskets..... 1
   - Mechanically Installed..... 2
   - Other (Specify) _____ 3

12. DOWEL ALIGNMENT CHECKED BEFORE PLACEMENT (Y/N) [Y]

13. DOWEL ALIGNMENT CHECKED AFTER PLACEMENT (Y/N) [N]

If Yes, describe method used _____
(e.g. Pachometer, Ground Penetrating Radar)

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PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 18 PORTLAND CEMENT CONCRETE LAYERS-JOINT DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [~~4~~ 3]

* 2. METHOD USED TO FORM TRANSVERSE JOINTS [1]
   Sawed..... 1 Metal Insert.....3
   Plastic Insert..... 2
   Other (Specify) _____ 4

* 3. TYPE OF LONGITUDINAL JOINT (BETWEEN LANES) [2]
   Butt..... 1 Insert Weakened Plane..... 3
   Sawed Weakened Plane..... 2
   Other (Specify) _____ 4

* 4. TYPE OF SHOULDER-TRAFFIC LANE JOINT [1]
   Butt..... 1 Insert Weakened Plane..... 3
   Sawed Weakened Plane..... 2
   Other (Specify) _____ 4

*5. AVERAGE DEPTH OF SAWCUT, FROM MEASUREMENTS (Inches)...TD÷3.... [3.66]

*6. TIME INTERVAL BETWEEN CONCRETE PLACEMENT AND SAWCUT (HOURS)..... [__ 6.]

7. TRANSVERSE JOINT SEALANT TYPE (AS BUILT) [4]
   Preformed (Open Web)..... 1 Rubberized Asphalt..... 3
   Asphalt..... 2 Low-Modulus Silicone..... 4
   Other (Specify) _____ 5

TRANSVERSE JOINT SEALANT RESERVOIR (AS BUILT)

8. WIDTH, (Inches)..... [.38]

9. DEPTH, (Inches)..... [1.25]

LONGITUDINAL JOINT SEALANT RESERVOIR (AS BUILT)

10. WIDTH, (Inches)..... [.38]

11. DEPTH, (Inches)..... [1.25]

12. BETWEEN LANE TIE BAR DIAMETER (Inches) [.63]

13. BETWEEN LANE TIE BAR LENGTH (Inches) [30.]

14. BETWEEN LANE TIE BAR SPACING (Inches) [30.0]

SHOULDER-TRAFFIC LANE JOINT SEALANT RESERVOIR (AS BUILT)

15 WIDTH, (Inches)..... [N/A]

16. DEPTH, (Inches)..... [__.__]

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SPS-8 CONSTRUCTION DATA SHEET 19 PORTLAND CEMENT CONCRETE LAYERS - MIXTURE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

*1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [3]

MIX DESIGN (OVEN DRIED WEIGHT - PER CUBIC YARD)

*2. Coarse Aggregate (Pounds) ..... [1 9 4 4.]

*3. Fine Aggregate (Pounds) ..... [1 1 0 8.]

*4. Cement (Pounds) ..... [5 6 4.]

*5. Water (Pounds) ..... [2 5 6.]

*6. TYPE CEMENT USED (See Cement Type Codes, Table A.11) [4 1]
(If Other, Specify Type I)

*7. ALKALI CONTENT OF CEMENT, (PERCENT BY WEIGHT OF CEMENT) [0.3]

ADMIXTURES (PERCENT BY WEIGHT OF CEMENT)

		TYPE CODE	AMOUNT
*8.	ADMIXTURE #1	[__.__]	[__ __ __.__]
*9.	ADMIXTURE #2	[__.__]	[__ __ __.__]
*10.	ADMIXTURE #3	[__.__]	[__ __ __.__]

(See Cement Admixture Codes, Table A.12)
(If Other, Specify) _____)

AGGREGATE DURABILITY TEST RESULTS
(SEE DURABILITY TEST TYPE CODES, TABLE A.13)

	TYPE OF AGGREGATE	TYPE OF TEST	RESULTS
11.	Coarse	[0 1]	[1 8.6]
12.	Coarse	[3]	[0.1]
13.	Coarse	[__ __]	[__ __ __.__]
14.	Coarse and Fine	[__ __]	[__ __ __.__]

G.W. ENTERED ~~NOV~~ Oct. 22 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 20 PORTLAND CEMENT CONCRETE LAYERS MIXTURE DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

* 1. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [__]

COMPOSITION OF COARSE AGGREGATE	TYPE	PERCENT
* 2.	[1]	[1 0 0.]
* 3.	[__]	[__ __ __.]
* 4.	[__]	[__ __ __.]

Crushed Stone.... 1 Manufactured gravel..... 2 Crushed Gravel..... 3
Crushed Slag..... 4 Lightweight..... 5 Recycled Concrete... 6
Other (Specify)_____ 7

* 5. GEOLOGIC CLASSIFICATION OF COARSE AGGREGATE [0 1.]
(SEE GEOLOGIC CLASSIFICATION CODES, TABLE A.9)

COMPOSITION OF FINE AGGREGATE	TYPE	PERCENT
* 6.	[1]	[1 0 0.]
* 7.	[__]	[__ __ __.]
* 8.	[__]	[__ __ __.]

Natural Sand... 1
Crushed, Manufactured Sand (From Crushed Gravel or Stone)...2
Recycled Concrete... 3 Other (Specify)_____ 4

9. INSOLUBLE RESIDUE, PERCENT (ASTM D3042) [__ __ __.]

10. GRADATION OF COARSE AGGREGATE

Sieve Size	% Passing
2".....	__ __ __
1 1/2"....	__ __ __
1".....	__ __ __
7/8".....	__ __ __
3/4".....	__ __ __
5/8".....	__ __ __
1/2".....	__ __ __
3/8".....	__ __ __
No. 4.....	__ __ __

11. GRADATION OF FINE AGGREGATE

Sieve Size	% Passing
No. 4	9 8
No 8.....	9 4
No. 10....	__ __
No. 16....	8 5
No. 30....	5 2
No. 40....	__ __
No. 50....	0 4
No. 80....	__ __
No. 100...	0.2
No. 200...	__ __
FM	2.62

BULK SPECIFIC GRAVITIES:

12. Coarse Aggregate (AASHTO T85 or ASTM C127) [__.__ __ __]

13. Fine Aggregate (AASHTO T84 or ASTM C128) [__.__ __ __]

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

G.W. ENTERE NOV 02 1998

December 1995

SPS-8 CONSTRUCTION DATA SHEET 21 PORTLAND CEMENT CONCRETE LAYERS PLACEMENT DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

*1. DATE PAVING OPERATIONS BEGAN (Month-Day-Year) [09-04-97]

*2. DATE PAVING OPERATIONS COMPLETED (Month-Day-Year) [09-04-97]

*3. LAYER NUMBER (FROM CONSTRUCTION DATA SHEET 4) [~~4~~ 3]

*4. CONCRETE MIX PLANT AND HAUL

	Name	Haul Distance (Mi)	Time (Min)
Plant 1	Pine Bluff Sand & Gravel	[1.5]	[13]
Plant 2		[ ]	[ ]
Plant 3		[ ]	[ ]

*5. PAVER TYPE [1]
Slip Form Paver.... 1 Side Form... 2
Other (Specify) _____ 3

6. PAVER MANUFACTURER AND MODEL NUMBER Gomaco GHP 2800

7. SPREADER TYPE (if applicable) N/A

8. SPREADER MANUFACTURER AND MODEL NUMBER _____

9. WIDTH PAVED IN ONE PASS (Feet) [20.0]

10. DOWEL PLACEMENT METHOD [2]
Dowel Bar Inserter (DBI)..... 1 Dowel Basket..... 2

11. NUMBER OF VIBRATORS [14]

12. VIBRATOR SPACING (Inches) [18]

13. DEPTH OF VIBRATORS BELOW SURFACE (Inches) [4.0]

14. ADDITIONAL VIBRATION APPLIED _____

G.W. ENTERED NOV 22 1998

PREPARER Timothy J. Martin EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 22 PORTLAND CEMENT CONCRETE LAYERS PLACEMENT DATA (CONTINUED)	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

1. CONSOLIDATION OF MATERIALS [1]
   Internal Vibrators... 1 Vibrating Screeds... 2 Troweling... 3
   Rolling... 4 Tamping... 5
   Other (Specify)... 6 _____

2. FINISHING 2 & 3 [3]
   Screeding... 1 Hand-Troweling... 2 Machine-Troweling... 3
   Other (Specify)... 4 _____

3. CURING [1]
   Membrane Curing Compound..... 1 Burlap-Polyethylene Blanket... 5
   Burlap Curing Blankets..... 2 Cotton Mat Curing..... 6
   Waterproof Paper Blankets..... 3 Hay..... 7
   White Polyethylene Sheeting... 4
   Other (Specify)_____ 8

4. TEXTURING [1] & 3
   Tine..... 1 Grooved Float..... 4
   Broom..... 2 Astro Turf..... 5
   Burlap Drag..... 3 None..... 6
   Other (Specify)_____ 7

Burlap Drag followed by Tining

NOV 22 1998

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 23 PORTLAND CEMENT CONCRETE SURFACE LAYER PROFILE DATA	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

1. DATE PROFILE MEASURED (Month-Day-Year) [__ __ - __ __ - __ __]
2. PROFILOGRAPH TYPE California... 1 Rainhart... 2 [1]
3. PROFILE INDEX (Inches/Mile) [___ ___]
4. INTERPRETATION METHOD Manual.. 1 Mechanical.. 2 Computer.. 3 [1]
5. HEIGHT OF BLANKING BAND (Inches) [___.___ ___]
6. CUTOFF HEIGHT (Inches) [___.___ ___]
7. SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT? (YES, NO) [NO]
8. WAS SURFACE PROFILE CORRECTED BY DIAMOND GRINDING? (YES, NO) [NO]

   IF YES COMPLETE THE FOLLOWING:

9. DATE DIAMOND GRINDING OPERATIONS BEGAN (Month-Day-Year) [__ __-__ __-__ __] Not Ground
10. DATE DIAMOND GRINDING OPERATIONS COMPLETED (Month-Day-Year) [__ __-__ __-__ __]

*11. REASON FOR GRINDING [__]
Elimination of Faulting... 1 Elimination of Slab Warping... 2
Improve Skid Resistance... 3
Restoration of Transverse Drainage Slope... 4
Correction of Construction Deficiencies...5
Other (Specify)... 6 _____

12. AVERAGE DEPTH OF CUT (Inches) [__ .__ __]
13. CUTTING HEAD WIDTH (Inches) [__ __ __ .__ __]
14. AVERAGE GROOVE WIDTH (Inches) [__ .__]
15. AVERAGE SPACING BETWEEN BLADES (Inches) [__.__]

PREPARER [signature] EMPLOYER BRE DATE 12/22/97

SPS-8 CONSTRUCTION DATA SHEET 28 MISCELLANEOUS CONSTRUCTION NOTES AND COMMENTS	* STATE CODE [0 5] * SPS PROJECT CODE [0 8] * TEST SECTION NO. [1 0]

Provide any miscellaneous comments and notes concerning construction operations which may have an influence on the ultimate performance of the test sections or which may cause undesired performance differences to occur between test sections. Also include any quality control measurements or data for which space is not provided on other forms. Provide an indication of the basis for such measurements, such as an ASTM, AASHTO, or Agency standard test designation.

4' AC shoulders were paved on 11/24/97 w/ Blaw-Knox RW-195C.

G.W. ENTERED OCT 08 1998

PREPARER Timothy J Martin EMPLOYER BRE DATE 12/22/97

APPENDIX E

PHOTOGRAPHS

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Photo 1. Preconstruction Site Conditions

Photo 2. Subgrade Compaction

Photo 3. Subgrade Sampling and Field Testing

Photo 4. Subgrade Prior to Placement of DGAB

Photo 5. Finished Surface of DGAB Prior to Paving

Photo 6. Concrete Paving of Section 050809 and 050810

Photo 7. PCC Sampling and Testing During Construction

Photo 8. Saw Cutting of Transverse Joints

Photo 9. Transverse Joint Sealant and Backer Rod

Photo 10. Placement of HMAC

Photo 11. Bulk Sampling of HMAC During Construction

Photo 12. Compaction of HMAC with Pneumatic Roller

Photo 13. Compaction of HMAC with Steel-Wheeled Roller

Photo 14. Standard Havens Asphalt Plant

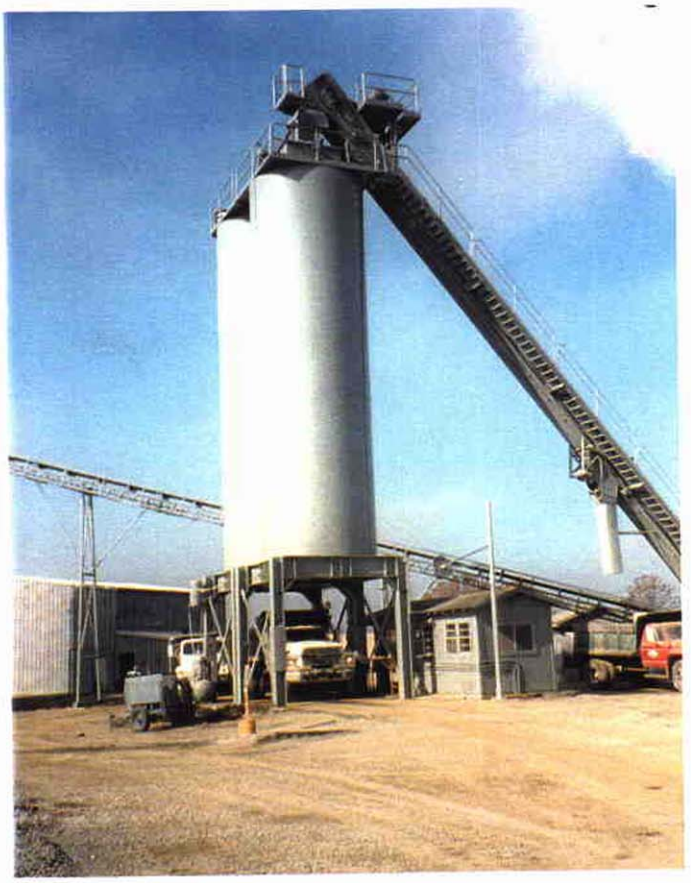

Photo 15. Silo at Asphalt Plant