LONG TERM PAVEMENT PERFORMANCE PROGRAM DIRECTIVE

For The Technical Direction Of The LTPP Program

Program Area: **Specific Pavement Studies**
Directive Number: **S-I (2 Sheets)**
Supersedes: **Various SPS Documents**

Date: **November 27, 1992**

Subject: **Revisions of Existing SPS Documents**

The attached is the November 13, 1992 memorandum from PCS Law to Amir Hanna containing detailed revisions to SPS documentation. These revisions to the SPS documents shall be effective immediately. The following is a brief summary of the documents that are revised:

1. Guidelines for Nominations and Evaluation of Candidate Projects SPS-l. - Acceptable traffic variations.

2. Materials Sampling and Testing Requirements for SPS-l. - Revisions of Sampling Data Sheet 8-1.

3. Data collection Guidelines for SPS-l. - Revision of Sampling Data Sheet 8-1, definitions and instructions.

4. Guidelines for Nomination and Evaluation of Candidate Projects for SPS-2. - Acceptable traffic variations.

5. Construction Guidelines for SPS-2. - Stationing and concrete mix design.

6. Materials Sampling and Testing Requirements for SPS-2. - Layer number, Sampling Data Sheet 8-1, and Coring or PCC and LCB.

7. Data Collection Guidelines SPS-2. - Revision to Sampling Data Sheet 8-1.

8. Data Collection Guidelines SPS-5. - Revision of Construction Data Sheets 1 through 11.

9. Data Collection Guidelines SPS-6. - Revisions of Construction Data Sheets 1 through 27.

10. Data Collection Guidelines SPS- 7. - Revisions of Construction Data Sheets 1 through 27 and page 11 reference to core location.

S-1 Directive

Approved: Paul Teng

Date: 11/27/92

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MEMORANDUM

November 13, 1992

To: Amir Hanna

From: Shiraz D. Tayabji

Subject: Revision Notices for Existing SPS Documents
SHRP Contract No. SHRP-90-P-001B
PCS/LAW Project No. 1470001600

Distribution: R. Raab, N. Hawks, P. Teng

The notices of revisions to the following SPS documents are provided for distribution to the recipients of the SPS documents:

1. Guidelines for Nominations and Evaluation of Candidate Projects for SPS-1
2. Materials Sampling and Testing Requirements for SPS-1
3. Data Collection Guidelines for SPS-1
4. Guidelines for Nominations and Evaluation of Candidate Projects for SPS-2
5. Construction Guidelines for SPS-2
6. Materials Sampling and Testing Requirements for SPS-2
7. Data Collection Guidelines for SPS-2
8. Data Collection Guidelines for SPS-5
9. Data Collection Guidelines for SPS-6
10. Data Collection Guidelines for SPS-7

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.**:	Guidelines for Nominations and Evaluation of Candidate Projects for SPS-l February 1990 SHRP-LTPP-OM-008	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 1

The following change should be incorporated in the document:

Traffic

If a project contains an interchange or an intersection (in rural areas), traffic levels may vary along the length of the project. By a SHRP memorandum dated May 20, 1991 related to nomination for an SPS-2 project in Michigan, an allowance was made to allow varying traffic conditions. Variation in traffic along a project length would be considered acceptable if difference in traffic rate, as expressed in terms of the 18-kip Equivalent Single Axle Load and calculated for the same pavement structure, does not vary by more than 10% between the lowest and highest trafficked test sections. Additional traffic monitoring is required to obtain accurate traffic data for all test sections.

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.**:	Materials Sampling and Testing Requirements for SPS-1 February 1991 SHRP-LTPP-OM-021	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 1

The following change should be incorporated in the document:

Sampling Data Sheet 8-1

The data sheet was revised to eliminate reference to Sheet 5 which does not exist for SPS-1.

The revised sheet is attached.

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING SHEET NUMBER _____ OF _____

IN SITU DENSITY AND MOISTURE TESTS

SAMPLING DATA SHEET 8-1

SHRP REGION _____ STATE _____ *STATE CODE* ___ ___
SPS EXPERIMENT NO _____ *SPS PROJECT CODE* ___ ___
ROUTE/HIGHWAY _____ Lane _____ Direction _____ *TEST SECTION NO.* ___ ___
SAMPLE/TEST LOCATION: **9** Before Section **9** After Section *FIELD SET NO.* ___
9 Within Section
OPERATOR _____ *NUCLEAR DENSITY GAUGE I.D.* _____ *TEST DATE* ___-___-___
SAMPLING AREA NO: SA-_____ *LOCATION: STATION* _____ *OFFSET* _____ *feet from E/s*
LOCATION NO: _____ DATE OF LAST MAJOR CALIBRATION ___-___-___
Note: Use additional sheets if necessary

DEPTH FROM SURFACE TO THE TOP OF THE LAYER, INCHES (From Plans)							
LAYER NUMBER							
MATERIAL TYPE: (Unbound=G Other=T)							
	1						
IN SITU	**2**						
DENSITY, pcf	**3**						
(AASHTO T238-86)	**4**						
AVERAGE							
Method (A,B,or C)							
Rod Depth, inches							
	1						
IN SITU	**2**						
MOISTURE CONTENT, %	**3**						
(AASHTO T239-86)	**4**						
AVERAGE							

GENERAL REMARKS: _____
_____

CERTIFIED VERIFIED AND APPROVED DATE
_____ _____ ___ - ___ -19 __
Field Crew Chief SHRP Representative Month - Day - Year
Affiliation: _____ Affiliation: _____

NOTICE OF CHANGE(S) TO SHRP SPS REPORT		
Report Title: **Report Date:** **SHRP Operational Memo No.**:	Data Collection Guidelines for SPS-1 December 1991 SHRP-LTPP-OM-026	
Change Number: **Change Date:**	1 October 30, 1992	Page 1 of 1

The following change should be incorporated in the document:

Sampling Data Sheet 8-1

The data sheet was revised to eliminate reference to Sheet 5 which does not exist for SPS-1.

The revised sheet is attached.

Page 38

Text reference to CONSTRUCTION DATA SHEET 4 omitted section on "Depth Below Surface to Rigid Layer." This section has been added and the page header has a revision date of October 1992.

The revised sheet is attached.

Pages 54 and 55

Text references to the CONSTRUCTION DATA SHEET 13 were not in the same order as in the data sheet. Text has been changed to conform to the data sheet. The page header has a revision date of October 1992.

The revised sheet is attached.

Page 56

Text reference to CONSTRUCTION DATA SHEET 18 is in error. The correct reference is CONSTRUCTION DATA SHEET 17. The text has been corrected and the page header has a revision date of October 1992.

The revised sheet is attached.

LTPP-SPS MATERIAL SAMPLING AND FIELD TESTING SHEET NUMBER _____ OF _____

IN SITU DENSITY AND MOISTURE TESTS

SAMPLING DATA SHEET 8-1

SHRP REGION _____ STATE _____ *STATE CODE* ___ ___
SPS EXPERIMENT NO _____ *SPS PROJECT CODE* ___ ___
ROUTE/HIGHWAY _____ Lane _____ Direction _____ *TEST SECTION NO.* ___ ___
SAMPLE/TEST LOCATION: **9** Before Section **9** After Section *FIELD SET NO.* ___
9 Within Section
OPERATOR _____ *NUCLEAR DENSITY GAUGE I.D.* _____ *TEST DATE* ___-___-___
SAMPLING AREA NO: SA-_____ *LOCATION: STATION* _____ *OFFSET* _____ *feet from E/s*
LOCATION NO: _____ DATE OF LAST MAJOR CALIBRATION ___-___-___
Note: Use additional sheets if necessary

DEPTH FROM SURFACE TO THE TOP OF THE LAYER, INCHES (From Plans)							
LAYER NUMBER							
MATERIAL TYPE: (Unbound=G Other=T)							
	1						
IN SITU	**2**						
DENSITY, pcf	**3**						
(AASHTO T238-86)	**4**						
AVERAGE							
Method (A,B,or C)							
Rod Depth, inches							
	1						
IN SITU	**2**						
MOISTURE CONTENT, %	**3**						
(AASHTO T239-86)	**4**						
AVERAGE							

GENERAL REMARKS: _____
_____

CERTIFIED VERIFIED AND APPROVED DATE
_____ _____ ___ - ___ -19 __
Field Crew Chief SHRP Representative Month - Day - Year
Affiliation: _____ Affiliation: _____

CONSTRUCTION DATA SHEET 4: LAYER DESCRIPTIONS

This data sheet should be completed for each test section to describe the newly constructed pavement layers. The layer numbers shown on this form provide a key reference to the other detailed information sheets concerning the properties of the layer. In order to provide future analysts with information on the test section pavement structure and to avoid confusion with layer numbers, the complete layer structure of the test section must be described. This pavement layer structure should be the same as that provided on the Laboratory Material Handling and Testing Form LO5.

1. LAYER NUMBER. Enter the printed layer number on the form which is used to reference the pavement layers on other data sheets. The first layer is assigned to subgrade and all other layers assigned increasing numbers. The surface will be the highest numbered layer.

2. LAYER DESCRIPTION. Enter the layer description code, as shown in note 2 on the form, which describes the general type of layer. This code should be entered corresponding to its order within the layer structure.

3. MATERIAL TYPE CLASSIFICATION. Enter the code that identifies the type of material in each layer. These codes are listed in Tables A.5, A.6, A.7, and A.9, of Appendix A of the LTPP Data Collection Guide, for surfacing materials, base and subbase materials, subgrade soils, and thin seals and interlayers, respectively.

4. LAYER THICKNESS. Enter the average thickness of each material layer. If sufficient measurement information is available, enter the maximum, minimum, and standard deviation of the thickness measurements.

5. DEPTH BELOW SURFACE TO "RIGID" LAYER. Enter the depth below the surface where rigid layer is encountered, in feet.

counters located on some devices. Enter mechanical counter reading only if the profilograms are not interpreted either by manual or computer methods.

7 . SURFACE PROFILE USED AS BASIS OF INCENTIVE PAYMENT. Indicate if the surface profile is or is not used as a contractual basis for incentive payments to the construction contractor.

CONSTRUCTION DATA SHEET 12: LAYER THICKNESS MEASUREMENTS

This form is used to record the results of the layer thickness measurements within the test section from before and after elevation measurements. Results of these measurements should be provided for 5 offset points at every station along the project which was measured. The station number should be entered as the test section relative station number. Offset distance should be entered in inches and measured from the outside shoulder lane edge joint or edge stripe. Space is provided to enter elevation for up to five types of layers within the test section. If individual layer thicknesses are not measured, enter the layer thicknesses in the column corresponding to the layer whose after placement surface elevation was measured. For example, if surface elevation was only measured for the surface course, then the layer thickness should be entered on Construction Data Sheet 12 under the surface course column. Enter the layer number of any layer for which layer thickness is shown. Use more than one sheet as required.

CONSTRUCTION DATA SHEET 13: UNBOUND AGGREGATE BASE MATERIAL PLACEMENT

1. UNBOUND BASE MATERIAL PLACEMENT BEGAN. Enter the date on which the unbound base material placement on the test section began.

2. UNBOUND BASE MATERIAL PLACEMENT COMPLETED. Enter the date on which the unbound base material placement on the test section completed.

3. LAYER NUMBER. Enter the unbound aggregate base course layer number to be described on this sheet (from Sheet 4).

PRIMARY COMPACTION EQUIPMENT

4. CODE TYPE. Enter the code for primary compaction equipment used to compact the unbound aggregate base course material. The codes for the various types of equipment are given on the data sheet.

5. GROSS WEIGHT. Enter the gross weight (in tons) of the primary compaction equipment used to compact the unbound aggregate base course material.

6. LIFT THICKNESSES. Enter the nominal placement thickness of each lift of the dense graded base course material. The lift thickness is the thickness prior to compaction and should be based on field observations or measurements.

7. SIGNIFICANT EVENTS DURING CONSTRUCTION. Describe any significant events which occurred during construction and may influence the performance of the test section, e.g., disruptions due to equipment break down or the weather. Use Construction Data Sheet 17, Miscellaneous Construction Notes and Comments, if more space is required.

CONSTRUCTION DATA SHEET 14: SUBGRADE PREPARATION

1. SUBGRADE PREPARATION BEGAN. Enter the date on which subgrade preparation on the test section began.

2. SUBGRADE PREPARATION COMPLETED. Enter the date on which subgrade preparation on the test section was completed.

PRIMARY COMPACTION EQUIPMENT

3. CODE TYPE. Enter the code for the primary compaction equipment used in subgrade preparation. The codes are provided on the data sheet.

4. GROSS WEIGHT. Enter the gross weight (in tons) of the primary compaction equipment used to compact the subgrade.

5-6. TYPE AND PERCENT STABILIZING AGENT. Enter the type code and average percent based on dry weight of the subgrade soil for each type of stabilizing agent used. If only one stabilizing agent is used, leave the spaces for "Stabilizing Agent 2" blank. Stabilizing agents can be added to the subgrade to provide a stable working platform as part of the construction process but shall not be used as an additive to increase the strength of the subgrade in the pavement structure.

7. TYPICAL LIFT THICKNESS. Enter the nominal placement thickness of the subgrade fill material. The lift thickness is the thickness prior to compaction and should be based on field observations or measurements.

8. SIGNIFICANT EVENTS DURING SUBGRADE PREPARATION. Describe any significant events which occurred during construction and may influence the performance of the test section, e.g., disruptions due to equipment break downs or the weather. Use Construction Data Sheet 17 if more room is required.

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