



## Summary of Changes

Since the introduction of the 1993 Distress Identification Manual (DIM) there have been a number of minor changes and suggested work-arounds proposed and implemented in order to promote consistency among the LTPP raters. Many of these changes are well known to those raters as they were the ones who identified the situations where changes were needed.

Revisions to the appendices are also needed. Procedures for distress surveys provided in Appendix A remain in force except that some data sheets have been revised. Dipstick procedures have been revised and incorporated into the Guidelines for Profilometer Operations and therefore Appendix B is no longer applicable to LTPP Operations. The faultmeter guidelines in Appendix C remain in force.

## Specific Changes In this Directive

### *Asphalt Pavements*

- , Revised the Fatigue Cracking description to include all cracking in the wheelpaths. Any Longitudinal Cracking would be assigned a width of 0.1 m for purposes of consistency in measurement units. An added data element shall be recorded in the field - "Length of Affected Wheelpath." For each wheelpath total length affected by severity level of Fatigue Cracking.
- , Eliminated "Longitudinal Cracking in the Wheelpaths" distress AC-4a. Distress "4" supersedes "4a" and "4b"
- , Under transverse cracking description, added note on multiple distresses; e.g., transverse crack through area of fatigue cracking
- , Declared that a patched Patch is high severity. For a rutted patch, established the following rut depth criteria to assign patch severity: L < 6 mm; 6 # M < 12 mm; H 12+ mm
- , Described in note how to handle multiple distresses; e.g., potholes and fatigue cracking
- , Clarified Pothole description of minimum plan dimension
- , Eliminated severity levels for bleeding. (continue determination of extent)
- , Eliminated severity levels for raveling. (continue determination of extent)
- , Eliminated measurement and recording of lane to shoulder dropoff for AC pavements

### *Jointed Concrete Pavement*

- , For joint spalling (both longitudinal and transverse) changed the distance of cracking to < 0.3 m to eliminate conflict with corner break criterion
- , Incorporated errata from directive D-6 (joint seal damage)
- , Under spalling of transverse joints, clarified "How to Measure" section to conform to practice
- , Distress data Sheet 6 is revised to include ONLY faulting measurements for transverse joints and cracks and the point distance. Crack length, sealant and joint spalling data are no longer recorded on Sheet 6.

- , Set the minimum length of longitudinal spalling needed before it is counted - 0.1 m
- , Added comment for diamond grinding not being considered as polished aggregate
- , Eliminated recording popouts

*Continuously Reinforced*

- , Incorporated errata for transverse cracking (edited description for Low Severity Transverse Cracking - CRCP 3)
- , Under transverse cracking, 'Y' cracks can only extend from midlane; if longer, then count as 2 cracks
- , Eliminated recording popouts
- , Set the minimum length of longitudinal spalling needed before it is counted - 0.1 m

*Appendix B* - No longer applies. Refer to LTPP Manual for Profile Measurements Operational Field Guidelines, v3.0 or later.

**IMS Data**

The changes in distress data collection shall be applied to existing IMS data, both manually collected and provided from film, as appropriate and practicable. The following table outlines the specific data elements to be revised to conform to these changes. Further directives will provide details and authorize effort to make these corrections. These are presented for information purposes.

Distress	Action
<u>Asphalt Concrete</u>	
1. Fatigue Cracking	Review maps only for sections having fatigue cracking. Scale off and record length of affected left and right wheelpaths. (Also applies to PASCO maps and data)
4a. Longitudinal Cracking	Review maps for sections having 4a. Summarize using these revised distress descriptions and record length of affected left and right wheelpath in low severity fatigue cracking. Multiply lengths by 0.1 m to determine (additional) area of low severity fatigue cracking. (Also applies to PASCO maps and data)
11. Bleeding	-- to be done by TSSC directly in IMS--
13. Raveling	-- to be done by TSSC directly in IMS--

## **Implementation**

The following pages contain specific detailed change instructions to be applied to the DIM. It is strongly urged that each manual used in the RCOC operations have all of these changes permanently applied, either through pen changes or by use of adhesive label materials containing the new text. The form of the instructions in this directive precludes using it as an accompanying document.

Also attached are revised distress summary sheets, numbers 1 through 10. These are to replace those published in the DIM, when directed.



DIM Page	Change
13	<p><u>Replace “How to Measure” with:</u></p> <p style="text-align: center;"><b><i>How to Measure</i></b></p> <ul style="list-style-type: none"> <li>• Record the length in meters of longitudinal cracking not located in the defined wheel paths at each severity level.</li> <li>• Also record length in meters of longitudinal cracking with sealant in good condition at each severity level.</li> </ul> <p>NOTE: If a length of sealant considered to be in good condition is less than approximately 1 m then disregard.</p>
17	<p><u>ADD:</u></p> <p>Notes: If the transverse crack extends through an area of Fatigue cracking, the length of the crack within the fatigue area is not counted. The crack is treated as a single transverse crack, but at a reduced length.</p> <p>Cracks less than 0.3 m in length are not recorded.</p>
20	<p><u>Replace “Severity Levels” with:</u></p> <p style="text-align: center;"><b><i>Severity Levels</i></b></p> <p><b>Low</b> - Patch has at most low severity distress of any type including rutting less than 6 mm.</p> <p><b>Moderate</b> - Patch has moderate severity distress of any type including rutting from 6 mm to 12 mm.</p> <p><b>High</b> - Patch has high severity distress of any type including rutting greater than 12 mm or the patch has additional different patch material within it.</p> <p><u>ADD after “How to Measure”:</u></p> <p>Note: Any distress in the boundary of the patch is included in rating the patch. Rutting (settlement) may be at the perimeter or interior of the patch.</p>
21	<p>Replace Figure 24 caption with: “ACP7. High Severity Patch”</p>

DIM Page	Change
22	<p><u>ADD after "How to Measure":</u></p> <p>If pothole occurs within an area of fatigue cracking the area of fatigue cracking is reduced by the area of the pothole.</p>
30	<p>Replace Figure 36 caption with: "ACP 11. Discoloration"</p> <p>Replace Figure 37 caption with: "ACP 11. Loss of Texture"</p> <p>Replace Figure 38 caption with: "ACP 11. Aggregate Obscured"</p> <p><u>Replace "Description", "Severity Levels", "How to Measure" with:</u></p> <p style="text-align: center;"><b>Description</b></p> <p>Excess bituminous binder occurring on the pavement surface, usually found in the wheelpaths. May range from a surface that is losing surface texture due to excess asphalt, to a condition where the aggregate may be obscured by excess asphalt possibly with a shiny, glass-like, reflective surface that may be tacky to the touch.</p> <p style="text-align: center;"><b>Severity Levels</b></p> <p>Not applicable. The presence of bleeding indicates potential mixture related performance problems. Extent is sufficient to monitor any progression.</p> <p style="text-align: center;"><b>How to Measure</b></p> <p>Record square meters of surface area affected.</p>
32	<p>Replace Figure 40 caption with: "ACP 13. Loss of Fine Aggregate"</p> <p>Replace Figure 41 caption with: "ACP 13. Loss of Fine and Some Coarse Aggregate"</p> <p>Replace Figure 42 caption with: "ACP 13. Loss of Coarse Aggregate"</p> <p><u>Replace "Description", "Severity Levels", "How to Measure" with:</u></p> <p style="text-align: center;"><b>Description</b></p>

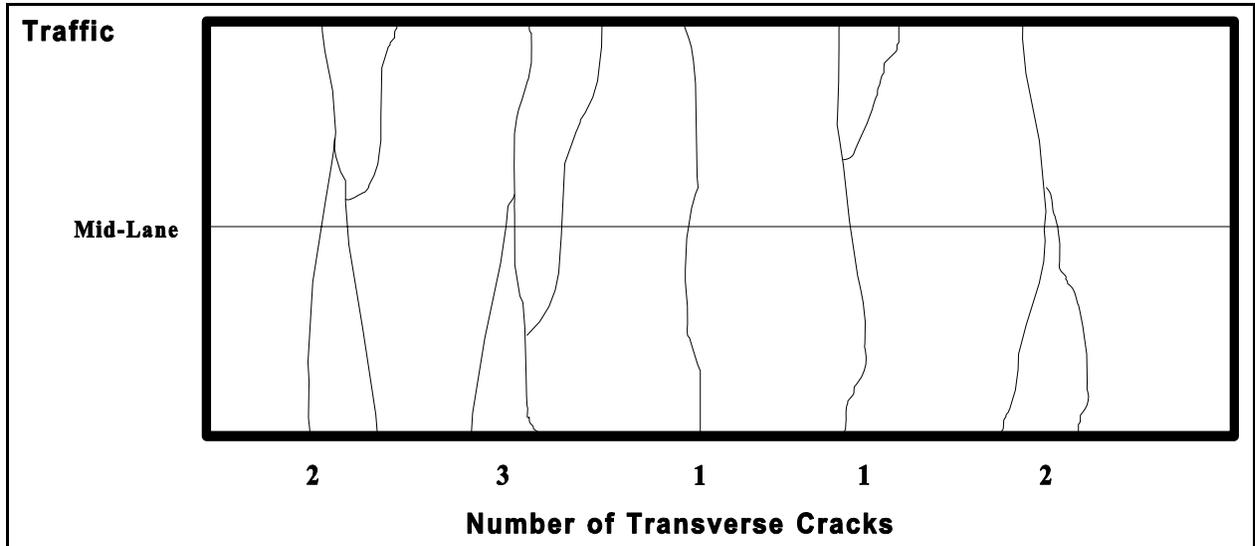


DIM Page	Change
50	<p><b>Moderate</b> - 75 mm to 150 mm wide spalls, measured to the face of the joint, with loss of material.</p> <p><b>High</b> - Greater than 150 mm wide spalls, measured to the face of the joint, with loss of material.</p> <p style="text-align: center;"><b><i>How to Measure</i></b></p> <p>Record length in meters of longitudinal joint affected at each severity level. Only record spalls having a length of 0.1 m or more.</p> <p>In Figure 66 change "&lt; 0.6 m" to "&lt; 0.3 m"</p> <p><u>Replace "Description", "Severity Levels", "How to Measure" with:</u></p> <p style="text-align: center;"><b><i>Description</i></b></p> <p>Cracking, breaking, chipping, or fraying of slab edges less than 0.3 meters from the face of the transverse joint.</p> <p style="text-align: center;"><b><i>Severity Levels</i></b></p> <p><b>Low</b> - Less than 75 mm wide spalls, measured to the face of the joint, with loss of material or spalls with no loss of material and no patching.</p> <p><b>Moderate</b> - 75 mm to 150 mm wide spalls, measured to the face of the joint, with loss of material.</p> <p><b>High</b> - Greater than 150 mm wide spalls, measured to the face of the joint, with loss of material.</p> <p style="text-align: center;"><b><i>How to Measure</i></b></p> <ul style="list-style-type: none"> <li>● Record number of affected transverse joints at each severity level. A joint is affected only if the total length of spalling is 10% or more of the length of the joint. Rate the entire transverse joint at the highest severity level present for at least 10% of the total length of the spalling.</li> <li>● Record length in meters of the spalled portion of the joint at the assigned severity level for the joint.</li> </ul>

DIM Page	Change
53	<p><u>ADD after "How to Measure":</u></p> <p>NOTE: Diamond grinding also removes the surface mortar and texturing. However, this condition should not be recorded as Polished Aggregate but instead should be noted by a comment.</p>
54  57	<p>Draw diagonal line through page, upper left to lower right. ADD: "Not Recorded in LTPP Surveys"</p> <p><u>Replace "How to Measure" with:</u></p> <ul style="list-style-type: none"> <li>● Record in millimeters to the nearest millimeter; 0.3 meters from the outside slab edge and 0.75 meters from the outside slab edge (approximately the outer wheelpath). For a widened lane the wheelpath location will be 0.75 m from the outside lane edge stripe.</li> <li>● If the "approach" slab is higher than the "departure" slab, record faulting as positive (+); if the approach slab is lower, record faulting as negative (-).</li> </ul>
68	<p>Replace Figure 96 with attached</p> <p><u>Replace "Description", "Severity Levels", "How to Measure" with:</u></p> <p style="text-align: center;"><b>Description</b></p> <p>Cracks that are predominantly perpendicular to the pavement centerline. This cracking is expected in a properly functioning Continuously Reinforced Concrete Pavement. All Transverse cracks that intersect an imaginary longitudinal line at midlane shall be counted as individual cracks, as illustrated below.</p> <p style="text-align: center;"><b>Severity Levels</b></p> <p><b>Low</b> - Cracks with spalling along # 10% of the crack length.</p> <p><b>Moderate</b> - Cracks with spalling along &gt; 10% and # 50% of the crack length.</p> <p><b>High</b> - Cracks with spalling along &gt; 50% of the crack length.</p> <p style="text-align: center;"><b>How to Measure</b></p>

DIM Page	Change
73	<p>Record separately the number and length in meters of transverse cracking at each severity level. Length recorded, in meters, is the total length of the crack and is assigned to the highest severity level present for at least 10% of the total length of the crack. The sum of all the individual crack lengths shall be recorded. Then record the total number of transverse cracks within the survey section.</p> <p><u>ADD after "How to Measure":</u></p> <p>NOTE: Diamond grinding also removes the surface mortar and texturing. However, this condition should not be recorded as Polished Aggregate but instead should be noted by a comment.</p>
74	<p>Draw diagonal line through page, upper left to lower right. ADD: "Not Recorded in LTPP Surveys"</p>
77	<p>DELETE Figure 113</p>
81	<p>DELETE Figure 122</p>
84	<p>In Figure 127 change "&lt; 0.6 m" to "&lt; 0.3 m"</p> <p><u>Replace "Description", Severity Levels", "How to Measure" with:</u></p> <p style="text-align: center;"><b>Description</b></p> <p>Cracking, breaking, chipping, or fraying of slab edges within 0.3 meters of the longitudinal joint.</p> <p style="text-align: center;"><b>Severity Levels</b></p> <p><b>Low</b> - Less than 75 mm wide spalls, measured to the center of the joint, with loss of material or spalls with no loss of material and no patching.</p> <p><b>Moderate</b> - 75 mm to 150 mm wide spalls, measured to the center of the joint, with loss of material.</p> <p><b>High</b> - Greater than 150 mm wide spalls, measured to the center of the joint, with loss of material.</p> <p style="text-align: center;"><b>How to Measure</b></p> <p>Record length in meters of longitudinal joint at each severity level. Only record spalls</p>

DIM Page	Change
Appendix A  92	having a length of 0.1 m or more.  In "Equipment for Field Surveys" DELETE first bullet "This field manual"  ADD: , Pavement thermometer , Copy of map for prior survey
95	In Figure 4 change "Alligator" to "Fatigue"; change "35. Reflection..." to "5. Reflection..."; change "11. Bleeding (Square Meters)L,M,H" to "11. Bleeding (Square Meters)"
97-98	<u>Replace "Description of Data Sheet 6" with:</u>  This data sheet provides space to record faulting information for each transverse joint and crack. Distance from the beginning of the section, and faulting measurements made at two transverse locations are recorded. The transverse locations are 0.3 m and 0.75 m from the outside edge of the slab. For widened lanes measure 0.3 m from the edge of the slab and 0.75 m from the outside edge of the lane edge stripe. At each location three measurements are made but only the approximate average of the readings is recorded to the nearest millimeter.
104-109	The example map and summary are not revised
111-126	Data Sheets 1-10 are superseded by the attached revised sheets
Appendix B	No longer current - refer to "LTPP Manual for Profile Measurements Operational Field Guidelines," v3.0 or later
Appendix C	
145	After first sentence in paragraph beginning "As indicated in..." ADD:  In cases of a widened lane measure 0.3 m from the edge of the slab and 0.75 m from the outside edge of the lane edge stripe.
146	After third paragraph under "Calibration" ADD:  Note: For newer model Faultmeters refer to operating instructions provided prior to attempting to make adjustments.



Replacement Figure 96:

**SHEET 1  
DISTRESS SURVEY  
LTPP PROGRAM**

DISTRESS SURVEY FOR PAVEMENTS WITH ASPHALT CONCRETE SURFACES

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_\_\_/\_\_\_\_\_/\_\_\_\_/

SURVEYORS: \_\_\_\_\_, \_\_\_\_\_ PHOTOS, VIDEO, OR BOTH WITH SURVEY (P, V, B)  
PAVEMENT SURFACE TEMP - BEFORE \_\_\_\_\_°C; AFTER \_\_\_\_\_°C

DISTRESS TYPE	SEVERITY LEVEL		
	LOW	MODERATE	HIGH
<b>CRACKING</b>			
1. FATIGUE CRACKING (Square Meters)	___ . ___	___ . ___	___ . ___
Length of Affected Wheelpath (Meters)			
Left WP	___ . ___	___ . ___	___ . ___
Right WP	___ . ___	___ . ___	___ . ___
2. BLOCK CRACKING (Square Meters)	___ . ___	___ . ___	___ . ___
3. EDGE CRACKING (Meters)	___ . ___	___ . ___	___ . ___
4. LONGITUDINAL CRACKING			
Non-Wheel Path (Meters)	___ . ___	___ . ___	___ . ___
Length Sealed (Meters)	___ . ___	___ . ___	___ . ___
5. REFLECTION CRACKING AT JOINTS			
Number of Transverse Cracks	___	___	___
Transverse Cracking (Meters)	___ . ___	___ . ___	___ . ___
Length Sealed (Meters)	___ . ___	___ . ___	___ . ___
Longitudinal Cracking (Meters)	___ . ___	___ . ___	___ . ___
Length Sealed (Meters)	___ . ___	___ . ___	___ . ___
6. TRANSVERSE CRACKING			
Number of Cracks	___	___	___
Length (Meters)	___ . ___	___ . ___	___ . ___
Length Sealed (Meters)	___ . ___	___ . ___	___ . ___
<b>PATCHING AND POTHOLES</b>			
7. PATCH/PATCH DETERIORATION (Number)	___	___	___
(Square Meters)	___ . ___	___ . ___	___ . ___
8. Potholes (Number)	___	___	___
(Square Meters)	___ . ___	___ . ___	___ . ___

SHEET 2  
DISTRESS SURVEY  
LTPP PROGRAM

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_ \_\_\_/\_\_\_ \_\_\_/

SURVEYORS: \_\_\_ \_\_\_ \_\_\_/

DISTRESS SURVEY FOR PAVEMENTS WITH ASPHALT CONCRETE SURFACES  
(CONTINUED)

DISTRESS TYPE	SEVERITY LEVEL		
	LOW	MODERATE	HIGH
<b>SURFACE DEFORMATION</b>			
9. RUTTING - REFER TO SHEET 3 FOR SPS-3 OR Form S1 from Dipstick Manual			
10. SHOIVING (Number) (Square Meters)			___ .
<b>SURFACE DEFECTS</b>			
11. BLEEDING (Square Meters)			___ .
12. POLISHED AGGREGATE (Square Meters)			___ .
13. RAVELING (Square Meters)			___ .
<b>MISCELLANEOUS DISTRESSES</b>			
14. LANE-TO-SHOULDER DROPOFF - Not Recorded			
15. WATER BLEEDING AND PUMPING (Number) Length of Affected Pavement (Meters)			___ .
16. OTHER (Describe)			

SHEET 3  
DISTRESS SURVEY  
LTPP PROGRAM

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_ \_\_\_/\_\_\_ \_\_\_/

SURVEYORS: \_\_\_ \_\_\_ \_\_\_/

DISTRESS SURVEY FOR PAVEMENTS WITH ASPHALT CONCRETE SURFACES  
(CONTINUED)

9. RUTTING (FOR SPS-3 SITE SURVEYS)

INNER WHEEL PATH			OUTER WHEEL PATH		
Point No.	Point Distance <sup>1</sup> (Meters)	Rut Depth (mm)	Point No.	Point Distance <sup>1</sup> (Meters)	Rut Depth (mm)
1	0.	— — —.	1	0.	— — —.
2	15.25	— — —.	2	15.25	— — —.
3	30.5	— — —.	3	30.5	— — —.
4	45.75	— — —.	4	45.75	— — —.
5	61.	— — —.	5	61.	— — —.
6	76.25	— — —.	6	76.25	— — —.
7	91.5	— — —.	7	91.5	— — —.
8	106.75	— — —.	8	106.75	— — —.
9	122.	— — —.	9	122.	— — —.
10	137.25	— — —.	10	137.25	— — —.
11	152.5	— — —.	11	152.5	— — —.

14. LANE-TO-SHOULDER DROPOFF -- Not Recorded

Note 1: "Point Distance" is the distance in meters from the start of the test section to the point where the measurement was made. The values shown are approximate SI equivalents of the 50 ft spacing used in previous surveys.

**SHEET 4  
DISTRESS SURVEY  
LTPP PROGRAM**

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED  
PORTLAND CEMENT CONCRETE SURFACES

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_ \_\_/ \_\_ \_\_/

SURVEYORS: \_\_ \_\_ \_\_', \_\_ \_\_ \_\_',  
PAVEMENT SURFACE TEMP - BEFORE \_\_ \_\_ \_\_ °C; AFTER \_\_ \_\_ \_\_ °C  
PHOTOS, VIDEO, OR BOTH WITH SURVEY (P, V, B)

DISTRESS TYPE	SEVERITY LEVEL		
	LOW	MODERATE	HIGH
<b>CRACKING</b>			
1. CORNER BREAKS (Number)	__ __ __	__ __ __	__ __ __
2. DURABILITY "D" CRACKING (Number of Affected Slabs) AREA AFFECTED (Square Meters)	__ __ __ __ __ __.	__ __ __ __ __ __.	__ __ __ __ __ __.
3. LONGITUDINAL CRACKING (Meters) Length Sealed (Meters)	__ __ __. __ __ __.	__ __ __. __ __ __.	__ __ __. __ __ __.
4. TRANSVERSE CRACKING (Number of Cracks)    __ __ __ (Meters)	__ __ __ __ __ __.	__ __ __ __ __ __.	__ __ __ __ __ __.
Length Sealed (Meters)	__ __ __.	__ __ __.	__ __ __.
<b>JOINT DEFICIENCIES</b>			
5a. TRANSVERSE JOINT SEAL DAMAGE Sealed? (Y, N)			
If "Y" Number of Joints	__ __	__ __	
5b. LONGITUDINAL JOINT SEAL DAMAGE Number of Longitudinal Joints that have been sealed (0, 1, or 2) Length of Damaged Sealant (Meters)			__ __ __.
6. SPALLING OF LONGITUDINAL JOINTS (Meters)	__ __ __.	__ __ __.	__ __ __.
7. SPALLING OF TRANSVERSE JOINTS Number of Affected Joints Length Spalled (Meters)	__ __ __ __ __.	__ __ __ __ __.	__ __ __.

SHEET 5  
DISTRESS SURVEY  
LTPP PROGRAM

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_/\_\_\_/\_\_\_  
SURVEYORS: \_\_\_ \_\_\_/\_\_\_ \_\_\_/\_\_\_

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED  
PORTLAND CEMENT CONCRETE SURFACES  
(CONTINUED)

DISTRESS TYPE	SEVERITY LEVEL		
	LOW	MODERATE	HIGH
<b>SURFACE DEFORMATION</b>			
8a. MAP CRACKING (Number) (Square Meters)			___ .
8b. SCALING (Number) (Square Meters)			___ .
9. POLISHED AGGREGATE (Square Meters)			___ .
10. POPOUTS	Not Recorded		
<b>MISCELLANEOUS DISTRESSES</b>			
11. BLOWUPS (Number)			
12. FAULTING OF TRANSVERSE JOINTS AND CRACKS - REFER TO SHEET 6			
13. LANE-TO-SHOULDER DROPOFF - REFER TO SHEET 7			
14. LANE-TO-SHOULDER SEPARATION - REFER TO SHEET 7			
15. PATCH/PATCH DETERIORATION			
Flexible			
(Number)			
(Square Meters)	___ .	___ .	___ .
Rigid			
(Number)			
(Square Meters)	___ .	___ .	___ .
16. WATER BLEEDING AND PUMPING (Number of Occurrences) Length Affected (Meters)			___ .
17. OTHER (Describe)			



SHEET 7  
 DISTRESS SURVEY  
 LTPP PROGRAM

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_ \_\_\_/\_\_\_ \_\_\_/  
 SURVEYORS: \_\_\_ \_\_\_ \_\_\_,

DISTRESS SURVEY FOR PAVEMENTS WITH JOINTED  
PORTLAND CEMENT CONCRETE SURFACES  
(CONTINUED)

13. LANE-TO-SHOULDER DROPOFF

14. LANE-TO-SHOULDER SEPARATION

Point No.	Point <sup>1</sup> Distance (meters)	Lane-to-shoulder <sup>2</sup> Dropoff (mm)	Lane-to-shoulder Separation (mm)	Well Sealed (Y/N)
1.	0.	- - -.	- - -.	-
2.	15.25	- - -.	- - -.	-
3.	30.5	- - -.	- - -.	-
4.	45.75	- - -.	- - -.	-
5.	61.	- - -.	- - -.	-
6.	76.25	- - -.	- - -.	-
7.	91.5	- - -.	- - -.	-
8.	106.75	- - -.	- - -.	-
9.	122.	- - -.	- - -.	-
10.	137.25	- - -.	- - -.	-
11.	152.5	- - -.	- - -.	-

Note 1. Point Distance is from the start of the test section to the measurement location. The values shown are SI equivalents of the 50 ft spacing used in previous surveys.

Note 2. If heave of the shoulder occurs (upward movement), record as a negative (-) value. Do not record (+) signs, positive values are assumed.

**SHEET 8  
DISTRESS SURVEY  
LTPP PROGRAM**

DISTRESS SURVEY FOR PAVEMENTS WITH CONTINUOUSLY  
REINFORCED PORTLAND CEMENT CONCRETE SURFACES

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_\_\_ / \_\_\_\_\_ / \_\_\_\_\_

SURVEYORS: \_\_\_\_\_, \_\_\_\_\_ PHOTOS, VIDEO, OR BOTH WITH SURVEY (P,V,B)  
PAVEMENT SURFACE TEMP - BEFORE \_\_\_\_\_ °C; AFTER \_\_\_\_\_ °C

DISTRESS TYPE	SEVERITY LEVEL		
	LOW	MODERATE	HIGH

**CRACKING**

1. DURABILITY "D" CRACKING (No. of Affected Trans Cracks) (Square Meters)	____ _	____ _	____ _
2. LONGITUDINAL CRACKING (Meters)	____ _	____ _	____ _
Length Well Sealed (Meters)	____ _	____ _	____ _
3. TRANSVERSE CRACKING (Total Number of Cracks) (Number of Cracks)	____ _	____ _	____ _
(Meters)	____ _	____ _	____ _

**SURFACE DEFECTS**

4a. MAP CRACKING (Number) (Square Meters)			____ _
4b. SCALING (Number) (Square Meters)			____ _
5. POLISHED AGGREGATE (Square Meters)			____ _
6. POPOUTS      Not Recorded			

**SHEET 9  
DISTRESS SURVEY  
LTPP PROGRAM**

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_ \_\_\_/\_\_\_ \_\_\_/\_\_\_ \_\_\_  
SURVEYORS: \_\_\_ \_\_\_ \_\_\_,

DISTRESS SURVEY FOR PAVEMENTS WITH CONTINUOUSLY  
REINFORCED PORTLAND CEMENT CONCRETE SURFACES  
(CONTINUED)

	SEVERITY LEVEL		
DISTRESS TYPE	LOW	MODERATE	HIGH

**MISCELLANEOUS DISTRESSES**

7. BLOWUPS (Number)			
8. TRANSVERSE CONSTRUCTION JOINT DETERIORATION (Number)	___ ___	___ ___	
9. LANE-TO-SHOULDER DROPOFF - REFER TO SHEET 10			
10. LANE-TO-SHOULDER SEPARATION - REFER TO SHEET 10			
11. PATCH/PATCH DETERIORATION			
Flexible (Number)			
(Square Meters)	___ ___ ___	___ ___ ___	___ ___ ___
Rigid (Number)	___ ___ ___	___ ___ ___	___ ___ ___
(Square Meters)	___ ___ ___	___ ___ ___	___ ___ ___
12. PUNCHOUTS (Number)	___ ___	___ ___	
13. SPALLING OF LONGITUDINAL JOINT (Meters)	___ ___ ___	___ ___ ___	___ ___ ___
14. WATER BLEEDING AND PUMPING (Number of Occurrences)			
Length Affected (Meters)			___ ___ ___
15. LONGITUDINAL JOINT SEAL DAMAGE Number of Longitudinal Joints that have been sealed (0, 1, or 2) If Sealed Length w/Damaged Sealant (Meters)			___ ___ ___
16. OTHER (Describe)			

SHEET 10  
 DISTRESS SURVEY  
 LTPP PROGRAM

DATE OF DISTRESS SURVEY (MONTH/DAY/YEAR) \_\_\_/\_\_\_/\_\_\_/  
 SURVEYORS: \_\_\_ \_\_\_ \_\_\_,

DISTRESS SURVEY FOR PAVEMENTS WITH CONTINUOUSLY  
 REINFORCED PORTLAND CEMENT CONCRETE SURFACES  
 (CONTINUED)

- 9. LANE-TO-SHOULDER DROPOFF
- 10. LANE-TO-SHOULDER SEPARATION

Point No.	Point <sup>1</sup> Distance (meters)	Lane-to-shoulder <sup>2</sup> Dropoff (mm)	Lane-to-shoulder Separation (mm)	Well Sealed (Y/N)
1.	0.	- - -.	- - -.	-
2.	15.25	- - -.	- - -.	-
3.	30.5	- - -.	- - -.	-
4.	45.75	- - -.	- - -.	-
5.	61.	- - -.	- - -.	-
6.	76.25	- - -.	- - -.	-
7.	91.5	- - -.	- - -.	-
8.	106.75	- - -.	- - -.	-
9.	122.	- - -.	- - -.	-
10.	137.25	- - -.	- - -.	-
11.	152.5	- - -.	- - -.	-

Note 1. Point Distance is from the start of the test section to the measurement location. The values shown are SI equivalents of the 50 ft spacing used in previous surveys.

Note 2. If heave of the shoulder occurs (upward movement), record as a negative (-) value. Do not record (+) signs, positive values are assumed.