U.S. Department
of Transportation
Federal Highway
Administration

LTPP Seasonal Monitoring Program

Site Monitoring Suspension
Status Report
Section 251002
Chicopee, Massachusetts

Report No. FHWA-TS-98-25-01

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SEASONAL MONITORING PROGRAM SUSPENSION STATUS REPORT MASSACHUSETTS SECTION 251002

I. INTRODUCTION

Seasonal monitoring equipment was initially installed at site 251002 on Highway I-391 in Chicopee, Massachusetts in August 1993 and was used to collect data continuously from October 15, 1993 to June 21, 1995 (Round 1) and from October 9, 1996 to October 15, 1997 (Round 2). On October 15, 1997, Round 2 site suspension activities were completed according to LTPP Directive SM-8 "Suspension of SMP Site Monitoring Activities". See Table 1 for a summary of the Round 2 seasonal data collected. The site will remain out of operation until a decision relative to further testing is reached.

This report entitled "SMP Site Monitoring Suspension Status Report" details the suspension preparation activities, site specific conditions, and provides information pertinent to seasonal site 251002.

II. SUSPENSION PREPARATION ACTIVITIES

The suspension preparation activities at site 251002 with the exception of a manual distress survey were conducted during the final site visit on October 15, 1997. A manual distress survey of the site was conducted on the September 10, 1997 site visit. The PK nails were reconfirmed. Replacement was not necessary. The site markings were in good condition and did not need to be refreshed. One complete set of FWD tests were completed. Transverse Dipstick surveys were completed. One set of elevations and a distress survey of the instrumentation area were obtained. The instrumentation area was considered to be in poor condition prior to the sealing of cracks around the instrument hole area. This site is scheduled for rehabilitation in the Summer of 1998. Water table measurements and manual resistivity measurements (2 and 4 point) were performed in the morning and afternoon. The onsite datalogger was downloaded before being dismantled. Two sets of TDR traces and resistance voltages were extracted by the mobile datalogger. The instrumentation area was cleaned and sealed as required.

The air temperature probe, tipping bucket, and the upper part of the support pole were dismantled. The lead wires from the air temperature probe and tipping bucket were removed from the cabinet and sprayed with an anti-corrosive compound. The above ground conduit from the pole to the equipment cabinet was removed and the resulting hole in the back of the cabinet sealed. The bottom part of the support pole was cleaned and lubricated prior to installing the end cap.

The solar panel was disconnected. After all wires to the control panel were disconnected, the panel was detached from the equipment cabinet along with the CR10 datalogger, terminal strip and battery pack. The TDR cables, resistivity cable and MRC lead wires were sprayed with an anti-corrosive compound and sealed with desiccant packs in air tight bags. All cables/wires were hung up high inside the equipment cabinet. After the last piezometer reading was recorded, the pipe was cleaned and sealed with grease. The access cover and seat were cleaned and lubricated before being covered and brought up to grade with native soil.

The Profilometer survey corresponding to the close out was conducted on October 29 1997.

All the necessary suspension activities were completed on October 15, 1997. The dismantled equipment was removed from the site. The suspended site contains all the underground instrumentation and equipment and an equipment cabinet with all the cables in it. The equipment cabinet was locked before leaving the site. The site was cleaned and left in a condition such that the instrumentation could be easily accessed when the need arises.

III. SPECIAL SITE CONDITIONS

The installation of site 251002 followed the "LTPP Seasonal Monitoring Program Installation and Data Collection Guidelines" closely. There were no irregularities associated with the installation of this site. Due to extensive slight cracking (sealed), this site has been included in the Massachusetts Pavement Management System overlay program. It is expected that this site will be overlaid in 1998. This overlay was originally planned for 1996 or 1997.

IV. SUPPLEMENTAL INFORMATION

Figure 1 shows the locations of the installed instrumentation at the site. The instrumentation hole is at Station 5+19 and the piezometer is at Station 4+00. Table 2 gives the elevations of the portion of test section 251002 that was used for elevation measurements. All offsets are from the PK nails found at the outside pavement edge.

At the time of suspension, MRC #1 sensor was not functioning. This sensor was not functioning at the time Round 2 data collection activities began in October 1996. A plot of the erroneous sensor is not provided because the temperature values are off a plottable scale. Other than MRC #1 sensor, there were no unresolved problems with any of the sensors at the time of site suspension activities. The plots from ONSFIELD, MOBFIELD and SMPCHECK follow expected trends and produce expected values.

TABLE 1:
SUMMARY OF ROUND TWO NORTHERN LOOP SMP DATA COLLECTION TO DATE

Agency Code [2 5]
LTPP Section I.D. [1 0 0 2]
Location Chicopee, Massachusetts

		ONSITE Data			MOBILE Data		Manual Data								FWD Data				Distress Data		Profile Data		
Test Date dd/mmm/yy	Visit Ident./ Code	Pav Temp.	Ambient Temp.	Rainfall	Moisture (TDR)	Frost Depth (Resist.)	Backup Pav. Temp.	Backup Moisture (TDR)	Frost Depth 2 - point	Frost Depth 4 - point	Water Table	Surface Elev.	Joint Open.	Joint Fault.	Surface Layer Temp.	No. of Cycles/Visit OWP	ML	PE	Manual	PASCO	Profiler	Dipstick	Comments
09-Oct-96	A	X	X	X	X	X			X	X	X	X			X	1	1		X			X	Re-commission
06-Nov-96	B	X	X	X	X	X					X				X	2	2				14-Nov-96		Solar Panel installed
04-Dec-96	C	X	X	X	X	X			X	X	X				X	2	2						
08-Jan-97	A	X	X	X	X	X			X	X	X	X			X	4	4				14-Jan-97		
05-Feb-97	B	X	X	X	X	X															11-Feb-97		no FWD Data due to rain
05-Mar-97	C	X	X	X	X	X					X				X	3	3						
19-Mar-97	D								X	X	X				X	3	3						no ONS/MOB data due to dual FWD mobilization
02-Apr-97	E	X	X	X	X	X					X				X	3	3				08-Apr-97		
16-Apr-97	F	X	X	X	X	X			X	X	X	X			X	3	3						
07-May-97	G	X	X	X	X	X			X	X	X				X	1	1		X			X	
04-Jun-97	H	X	X	X	X	X					X				X	3	3				05-Jun-97		
09-Jul-97	I	X	X	X	X	X			X	X	X	X			X	3	3						
06-Aug-97	J	X	X	X	X	X					X										22-Aug-97		no FWD data due to alternator malfunction
10-Sep-97	K	X	X	X	X	X					X				X	4	4		X				
15-Oct-97	L	X	X	X	X	X			X	X	X	X			X	1	1				29-Oct-97	X	De-commission

Table 2. Surface Elevation Measurements

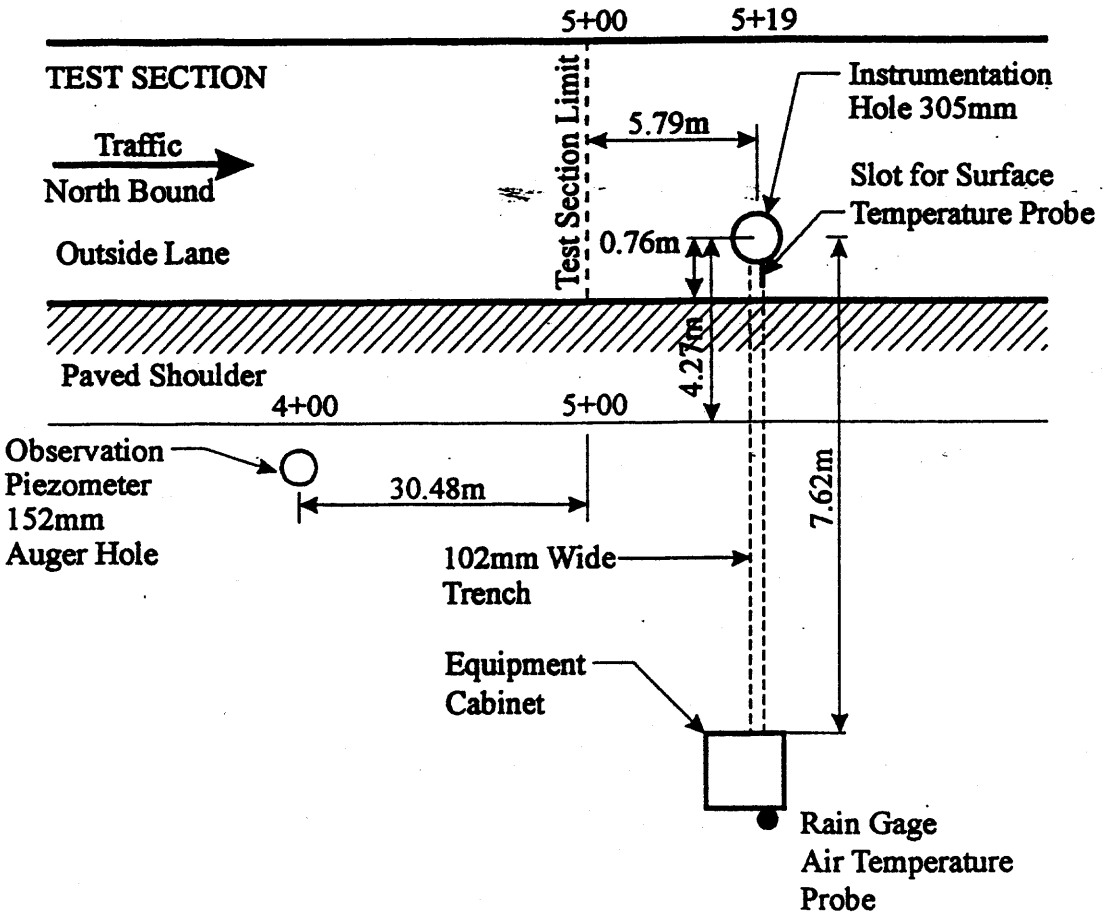
LTPP Seasonal Monitoring Study	State Code	[25]
Surface Elevation Measurements	Test Section Number	[1002]

Survey Date	October 15, 1997
Surveyed By	AL/DS
Surface Type	AC
Benchmark	Observation Piezometer - 1.000 meters - assumed

STATION	PE m offset 0.30m	OWP m offset 0.91m	ML m offset 1.83m	IWP m offset 2.74m	ILE m offset 3.35m
3+00	1.0925	1.1050	1.1300	1.1475	1.1625
3+25	1.1300	1.1400	1.1625	1.1750	1.1950
3+50	1.1525	1.1600	1.1850	1.2025	1.2175
3+75	1.1750	1.1900	1.2150	1.2400*	1.2500
4+00	1.2225	1.2325	1.2575*	1.2800	1.2925
4+25	1.2825	1.2900	1.3075	1.3400*	1.3500
4+50	1.3350	1.3475	1.3725	1.3900	1.4075
4+75	1.4000	1.4100	1.4375	1.4550	1.4700
5+00	1.4800	1.4925	1.5175	1.5350	1.5525
5+13	1.5250	1.5325	1.5600	1.5800	1.5950
5+18	1.5500	1.5550	1.5875	1.6050	1.6200
5+23	1.5700	1.5800	1.6075	1.6275*	1.6375

PE	Pavement Edge
OWP	Outer Wheel Path
ML	Mid Lane
IWP	Inner Wheel Path
ILE	Inner Lane Edge

Note: Offsets are measured from the PK nails at the outside of the pavement stripe at the pavement edge.
* Elevations were taken on AC patched surface.



- Height of Air Temperature Probe (center): 3.07m
- Height of Tipping Bucket Rain Gage (center): 3.00m
- Total Depth of Piezometer: 4.29m
- Distance of Piezometer Below Ground Level: 184mm

Figure 1. Location for Seasonal Monitoring Instrumentation Installed at GPS 251002

Inside Equipment Cabinet, Seasonal Site 251002 - Oct. 1997, after Suspension Activities

Equipment Cabinet, Lower portion of inst. pole, Seasonal Site 251002 - Oct. 1997, after Suspension Activities