U.S. Department
of Transportation
Federal Highway
Administration

LTPP Seasonal Monitoring Program

Site Monitoring Suspension
Status Report
Section 241634, Ocean City
Maryland

Report No. FHWA-TS-97-24-01

January 1997

SEASONAL MONITORING PROGRAM SUSPENSION STATUS REPORT MARYLAND SECTION 241634

I. INTRODUCTION

The seasonal site 241634 near Ocean City, Maryland was installed on May 11, 1995. Seasonal data was collected continuously from May 12, 1995 to October 30, 1996. See Table 1 for a summary of the data collected. On October 30, 1996, all site suspension activities were completed at this site according to LTPP directive SM-8 "Suspension of SMP Site Monitoring Activities." The site will remain out of operation until the next round of testing which is tentatively scheduled for October 1997.

This report entitled "SMP Site Monitoring Suspension Status Report" details the suspension preparation activities, site specific conditions, and provides information pertinent to seasonal site 241634.

II. SUSPENSION PREPARATION ACTIVITIES

The suspension preparation activities at site 241634 with the exception of a manual distress survey and transverse Dipstick surveys were conducted during the final site visit on October 30, 1996. A manual distress survey of the entire section and transverse Dipstick surveys were conducted on the August 14, 1996 site visit. PK nails were reconfirmed and replaced as necessary. The site paint markings did not need to be refreshed. On this day three sets of FWD tests, one set of elevations, and a distress survey of the instrumentation area were conducted. The water table measurements and the 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 instrument hole, trench and surface temperature probe slot areas were cleaned, patched and sealed as needed.

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.

After all the wires were disconnected from the control panel, the panel was detached from the equipment cabinet with the CR10 datalogger, terminal strip, and the battery pack attached to it. The TDR cables, resistivity cable, and the MRC lead wires were sprayed with anti-corrosion compounds and sealed with desiccant packs in airtight bags. All cables 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 close-out was conducted on December 5, 1996.

All the necessary suspension activities were completed on October 30, 1996. The dismantled equipment was removed from the site. The suspended site contains all the underground instrumentation and an equipment cabinet with all the cables. The equipment cabinet was locked before leaving the site. The site was cleaned and left in a condition such that the equipment could be easily accessed when site activities resume.

III. SPECIAL SITE CONDITIONS

The installation of site 241634 followed the "LTPP Seasonal Monitoring Program: Instrumentation Installation and Data Collection Guidelines" closely. During the installation of the piezometer/bench mark, the high water table and the liquid nature of the soil caused the hole to collapse as the augers were withdrawn from the hole. Hollow stem augers were then used to hold the soil in place once the desired depth was reached and the piezometer was placed through the centre of the augers. The piezometer's base plate was replaced with a cap such that the installation could be done with the augers in place. During the drilling of the instrumentation hole a significant amount of water was encountered. A wet vacuum and sponges were used to remove as much moisture as was possible. Due to these wet conditions, compaction of the bottom layers was made considerably more difficult. It was not possible to consolidate the sandy soil to its initial state at the depths of TDR probes 9 and 10. The compaction was much more efficient once the wet soils were passed. The site is scheduled to be widened to accommodate a centerline barrier in the fall of 1998. The existing pavement will be overlaid as there is extensive low severity cracking in both wheel paths. Due to the widening the outer wheel path will become the inner wheel path on the new pavement structure.

IV. SUPPLEMENTAL INFORMATION

Figure 1 shows the locations of the installed instrumentation at the site. The instrument hole is at Station 5+20 and the piezometer is at Station 4+00. Table 2 gives the elevations of the portion of test section 241634 that was used for elevation measurements. All offsets are measured from the PK nails found at the outside pavement edge.

At the time of suspension there were no unresolved problems with any of the sensors. The plots from ONSFIELD, MOBFIELD and SMPCHECK follow expected trends and produce expected values.

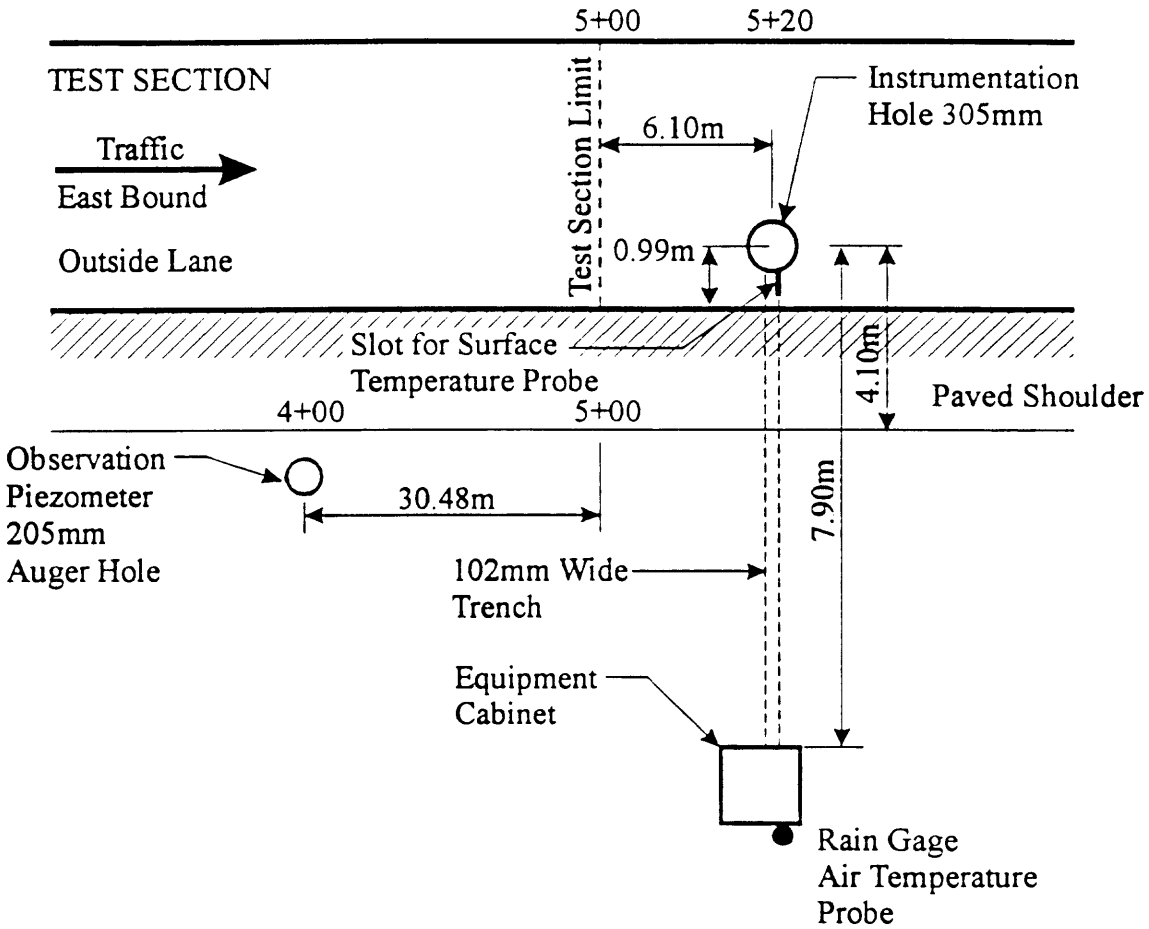
Table 1

Revised 12/16/96

SUMMARY OF ROUND TWO SMP DATA COLLECTION TO DATE

Agency Code | 2 4 |
LTPP Section I.D. | 1 6 3 4 |
Location Ocean City, MD

		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
11-May-95	A	X	X	X	X	X			X	X	X	X				2	2						
06-Jul-95	B	X	X	X	X	X			X	X	X	X			X	1	1						
19-Sep-95	C	X	X	X	X	X					X				X	2	2						
19-Oct-95	D	X	X	X	X	X			X	X	X	X											FWD out of service
15-Nov-95	E	X	X	X	X	X					X												
13-Dec-95	F	X	X	X	X	X					X				X	3	3						
17-Jan-96	A	X	X	X	X	X			X	X	X	X			X	3	3						
14-Feb-96	B	X	X	X	X	X			X	X	X	X			X	3	3						
28-Feb-96	C	X	X	X	X	X					X				X	3	3				24-Feb-96		
13-Mar-96	D	X	X	X	X	X					X				X	2	2						
17-Apr-96	E	X	X	X	X	X			X	X	X	X			X	3	3		X		17-Apr-96	X	
08-May-96	F	X	X	X	X	X					X				X	2	2						
17-Jul-96	G	X	X	X	X	X					X				X	1	1						
14-Aug-96	H	X	X	X	X	X			X	X	X	X			X	1	1		X		21-Aug-96	X	
25-Sep-96	I	X	X	X	X	X			X	X	X	X			X	1	1						
30-Oct-96	J	X	X	X	X	X			X	X	X	X			X	3	3				05-Dec-96		Close-out



- Height of Air Temperature Probe: 2.96m
- Height of Tipping Bucket Rain Gauge: 2.98m
- Depth of Piezometer: 4.27m

Figure 1. Location of Seasonal Monitoring Instrumentation Installed at GPS 241634

Table 2. Surface Elevation Measurements

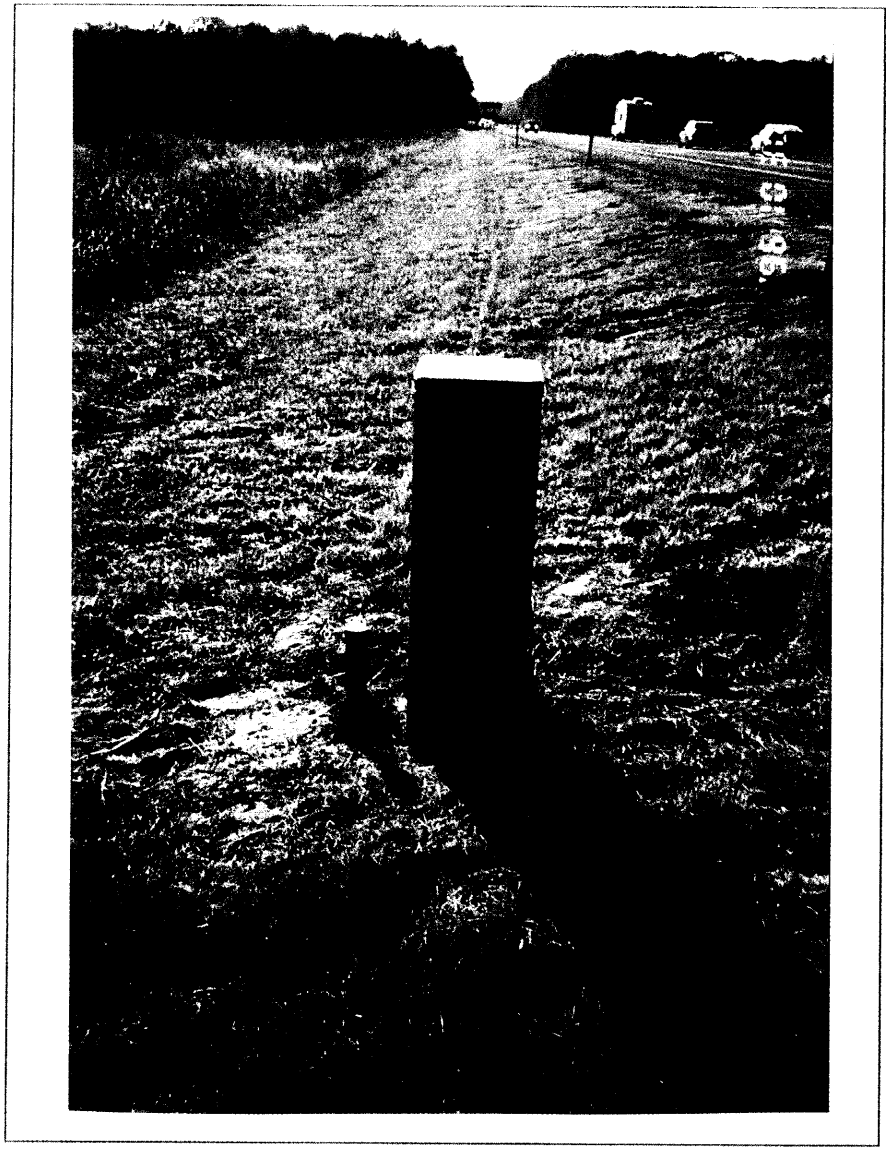
LTPP Seasonal Monitoring Study	State Code	[24]
Surface Elevation Measurements	Test Section Number	[1634]

Survey Date	October 30, 1996
Surveyed By	DS
Surface Type	AC
Benchmark	Observation Piezometer - 1.000 meters - assumed

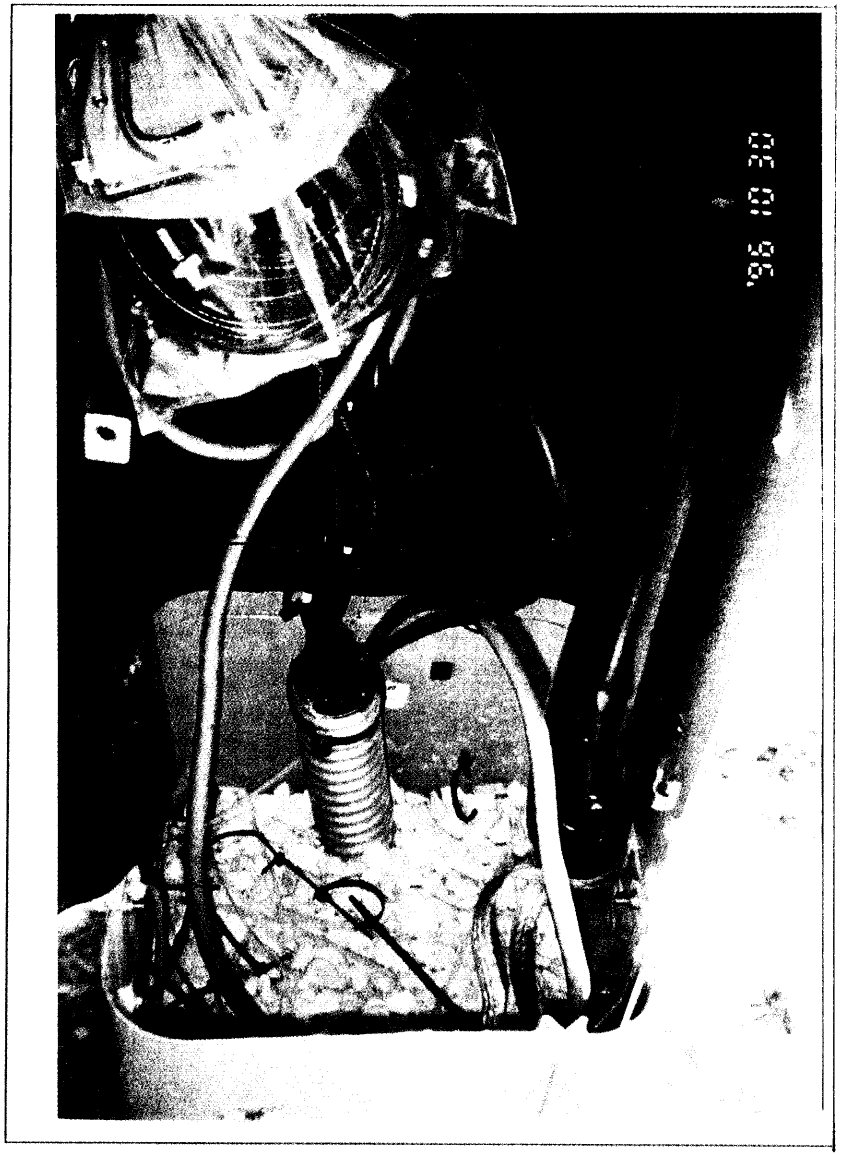
STATION	PE m offset 0.00m	OWP m offset 0.76m	ML m offset 1.83m	IWP m offset 2.74m	ILE m offset 3.66m
3+00	1.4125	1.4300	1.4550	1.4650	1.4725
3+25	1.4275	1.4400	1.4675	1.4800	1.4950
3+50	1.4400	1.4525	1.4775	1.4875	1.4900
3+75	1.4450	1.4600	1.4825	1.4950	1.5125
4+00	1.4500	1.4625	1.4900	1.5025	1.5025
4+25	1.4600	1.4725	1.4950	1.5075	1.5200
4+50	1.4700	1.4800	1.5025	1.5125	1.5200
4+75	1.4950	1.5025	1.5250	1.5375	1.5500
5+00	1.4975	1.5125	1.5375	1.5500	1.5500
5+15	1.5000	1.5150	1.5425	1.5500	1.5650
5+20	1.4875	1.5000	1.5425	1.5500	1.5525
5+25	1.5050	1.5150	1.5400	1.5500	1.5675

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.



Equipment Cabinet, Seasonal Site 241634,
October 1996, After Suspension Activities



Inside Equipment Cabinet, Seasonal Site 241634,
October 1996, After Suspension Activities