Evaluating Roadway Subsurface Drainage Practices – Phase II

Final Report
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IOWA STATE UNIVERSITY
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16. Abstract

Well-performing subsurface drainage systems form an important aspect of pavement design by the Iowa Department of Transportation (DOT). The recently completed Iowa Highway Research Board (IHRB) project TR-643 provided extensive insights into Iowa subsurface drainage practices and pavement subdrain outlet performance. However, the project TR-643 (Phase I) forensic testing and evaluation were carried out in a drought year and during the fall season in 2012. Based on the findings of IHRB Project TR-643, the Iowa DOT requested an expanded Phase II study to address several additional research needs: evaluate the seasonal variation effects (dry fall 2012 versus wet spring/summer 2013, etc.) on subdrain outlet condition and performance; investigate the characteristics of tufa formation in Iowa subdrain outlets; investigate the condition of composite pavement subdrain outlets; examine the effect of resurfacing/widening/rehabilitation on subdrain outlets (e.g., the effects of patching on subdrain outlet performance); and identify a suitable drain outlet protection mechanism (like a headwall) and design for Iowa subdrain outlets based on a review of practices adopted by nearby states.

A detailed forensic test plan was developed and executed for inspecting the Iowa pavement subdrains in pursuit of fulfilling the Phase II study objectives. The observed outlets with blockage and the associated surface distresses in newly constructed jointed plain concrete pavements (JPCPs) were slightly higher during summer 2013 compared to fall 2012. However, these differences are not significant. Less tufa formation due to the recycled portland cement concrete (RPCC) base was observed with (a) the use of plastic outlet pipe without the gate screen–type rodent guard and (b) the use of blended RPCC and virgin aggregate materials. In hot-mix asphalt (HMA) over JPCP, moisture-related distress types (e.g., reflection cracking) were observed more near blocked drainage outlet locations than near "no blockage" outlet locations. This finding indicates that compromised drainage outlet performance could accelerate the development of moisture-related distresses in Iowa composite pavement systems.

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EVALUATING ROADWAY SUBSURFACE DRAINAGE PRACTICES - PHASE II

Final Report
April 2015

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EXECUTIVE SUMMARY

The presence of subsurface drainage systems (including granular bases, open-graded granular or treated layers, and longitudinal edgedrains and outlets) is generally believed to be beneficial to the performance of asphalt concrete (AC)/hot-mix asphalt (HMA), portland cement concrete (PCC), and composite pavements. Well-performing subsurface drainage systems form an important aspect of pavement design by the Iowa Department of Transportation (DOT). The recently completed Iowa Highway Research Board (IHRB) project TR-643 provided extensive insights into Iowa subsurface drainage practices and pavement subdrain outlet performance. However, the project TR-643 (Phase I) forensic testing and evaluation were carried out in a drought year and during the fall season in 2012.

Based on the findings of IHRB Project TR-643, the Iowa DOT requested an expanded Phase II study to address several additional research needs: evaluate the seasonal variation effects (dry fall 2012 versus wet spring/summer 2013, etc.) on subdrain outlet condition and performance; investigate the characteristics of tufa formation in Iowa subdrain outlets; investigate the condition of composite pavement subdrain outlets; examine the effect of resurfacing/ widening/ rehabilitation on subdrain outlets (e.g., the effects of patching on subdrain outlet performance); and identify a suitable drain outlet protection mechanism (like a headwall) and design for Iowa subdrain outlets based on a review of practices adopted by nearby states.

A detailed forensic test plan was developed and executed for inspecting Iowa pavement subdrains in pursuit of fulfilling the Phase II study objectives. Key findings from the forensic investigations include the following:

- Moisture-related pavement surface distresses were observed in sections where no drainage outlet could be located.

- Cracking or patching was more often observed near culverts than drainage outlets. This was the case whether or not any drain outlets were observed near culverts. These observations indicate that the observed pavement surface failures are caused by the culvert rather than the subdrain system.

- The observed outlets with blockage and the associated surface distresses in newly constructed jointed plain concrete pavements (JPCPs) were slightly higher during summer 2013 compared to fall 2012. However, these differences are not significant.

- Tufa formation resulting from the use of recycled PCC base was observed to be lesser in quantity at locations where a plastic outlet pipe was used without a gate screen rodent guard and where blended recycled PCC and virgin aggregate materials were used.

- Shoulder distresses in newly constructed JPCP were observed more in the vicinity of blocked drainage outlet locations than unblocked drain outlet locations.

- More than 50 percent of HMA over JPCP outlets were blocked by sediment and soil deposits.

- Surface distresses were observed near blocked drainage outlet locations in HMA over JPCP.

- In HMA over JPCP, moisture-related distress types (e.g., reflection cracking) were observed more near blocked drainage outlet locations than near "no blockage" outlet locations. This finding indicates that compromised drainage outlet performance could accelerate the development of moisture-related distresses in HMA over JPCP.

Several studies in the past have focused on investigating the conditions favorable for tufa formation when using recycled concrete aggregate (RCA) and/or slags in concrete pavement subbases, especially considering free lime (CaO) as a chemical component that produces tufa. Consistent with the findings reported in the literature, this study found that most of the calcareous tufa deposits seem to form near the drain outlets where the residence time of calcium-rich water is great. Based on a review of concrete headwall specifications adopted by nearby states, the Iowa DOT recently adopted a draft precast concrete headwall specification for subdrain outlets under Modified Standard Road Plan DR-306.

INTRODUCTION

Problem Statement

The presence of subsurface drainage systems (including granular bases, open-graded granular or treated layers, and longitudinal edgedrains and outlets) is generally believed to be beneficial to the performance of asphalt concrete (AC)/hot-mix asphalt (HMA), portland cement concrete (PCC), and composite pavements. Well-performing subsurface drainage systems form an important aspect of pavement design by the Iowa Department of Transportation (DOT).

Previous studies have reported that properly designed, constructed, and maintained pavements incorporating positive subsurface drainage features can greatly extend the life of a pavement. However, controversial findings are also reported in the literature regarding the benefits of subsurface drainage (Hassan et al. 1996). In addition, the use of recycled portland cement concrete (PCC) as a granular subbase is a prevalent pavement construction practice by the Iowa DOT. A previous study by Steffes (1999), who is also a member of this project's research team, has shown that excessive fines in recycled PCC can cause deposits to form on the subdrain rodent guards, blocking the outlet. Although recycled PCC material specifications were revised following this study to reduce the formation of these deposits and subsequent blockage, no follow-up studies have been conducted to verify the effectiveness of the revised specifications.

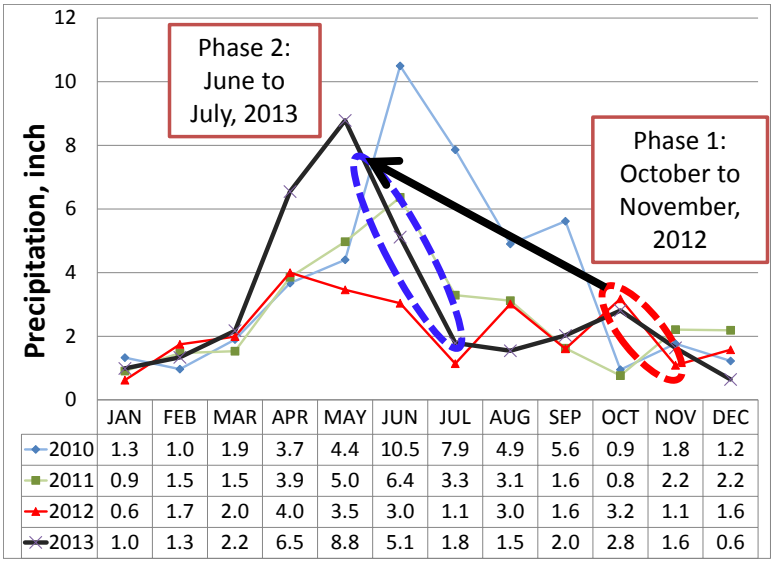
IHRB Project TR-643, *Evaluating Roadway Subsurface Drainage Practices*, reviewed Iowa roadway subdrain outlet performance and drainage practices, identified the cause of the problems where drains were not functioning properly, investigated the effect of poor subdrain performance on pavement surface distresses, and provided recommendations for improving Iowa subdrain performance. The study involved an extensive literature review as well as detailed field investigations.

The project team also met with the Iowa DOT engineers to understand the specific research needs relevant to the IHRB Project TR-643. According to the Iowa DOT's Office of Soils Design, the subdrains in Iowa have been performing well in general with some exceptions. There are a multitude of circumstances (soil regime, new or retrofits, etc.) which can govern the subdrain performance and its impact on pavement performance. For instance, the presence of subdrains has sometimes helped to correct faulting problems in PCC pavements, whereas in other cases it has not. Also, even if the edgedrains are crushed by construction mowers, the water can still find a way to drain out through the backfill material. However, the general experience has been that subdrains tend to prolong the service life of the pavement, and it is wise to include it in new projects. Although the Office of Soils Design is also interested in moving towards maintenance-free design, it is interested in cost-effective, feasible solutions such as the use of headwalls as a protection against the construction equipment, etc.

The Iowa DOT's Office of Pavement Design is mainly interested in evaluating the subsurface drainage performance and practices on Interstate highways and primary roads. A large portion of Iowa Interstates and primary roads are either PCC (especially the new ones) or composite pavements. It has been observed that if the pavement is already experiencing some form of

distress due to other factors, the lack of drains or non-functional drains tend to accentuate the problem in terms of freeze/thaw durability issues, PCC joint problems, etc. Tufa formation or calcium carbonate deposits (when recycled PCC is used in the subbase), vegetation formation, and forming of deposits/silts are some major causes of blockage of subdrain outlets. Most often, a solution as simple as shoveling near the outlets will remove some of the major obstacles. However, in other cases, issues like topology, soil type, etc. complicate the drainage issues.

The recently completed IHRB Project TR-643 provided extensive insights into Iowa subsurface drainage practices and pavement subdrain outlet performance. However, the Phase I forensic testing and evaluation were carried out in a drought year and during the fall season in 2012. Figure 1 illustrates the monthly precipitation records in Iowa from 2010 to 2013.

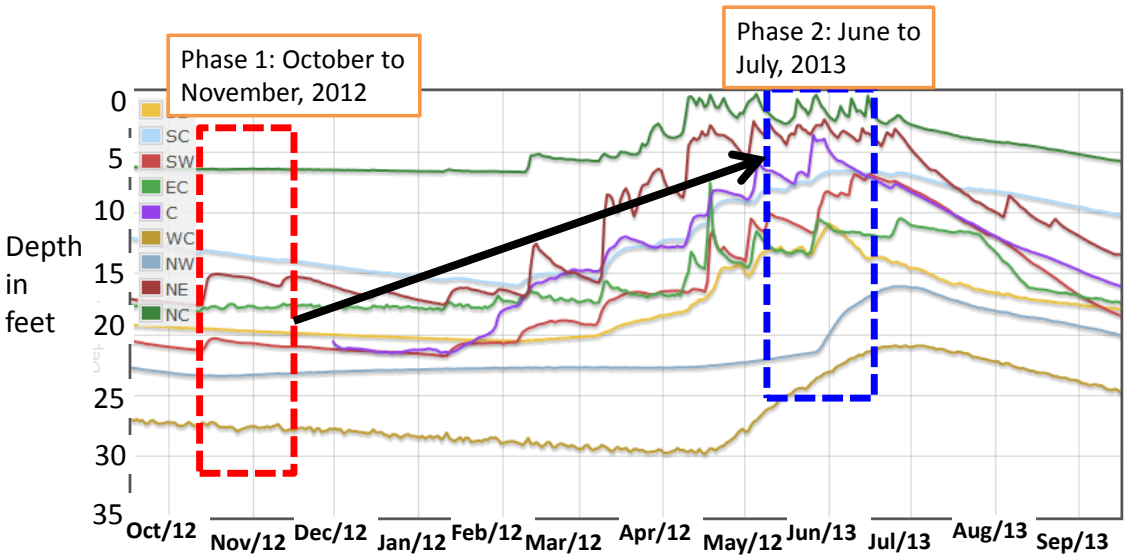


	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
2010	1.3	1.0	1.9	3.7	4.4	10.5	7.9	4.9	5.6	0.9	1.8	1.2
2011	0.9	1.5	1.5	3.9	5.0	6.4	3.3	3.1	1.6	0.8	2.2	2.2
2012	0.6	1.7	2.0	4.0	3.5	3.0	1.1	3.0	1.6	3.2	1.1	1.6
2013	1.0	1.3	2.2	6.5	8.8	5.1	1.8	1.5	2.0	2.8	1.6	0.6

Data Source: USGS 2013

Figure 1. Monthly precipitation records in Iowa from 2010 to 2013

The precipitation records in this figure indicate that (1) precipitation in 2012 (up to about 4 inches) was unusually lower than in 2010 (up to about 11 inches), 2011 (up to about 6 inches), and 2013 (up to about 9 inches); and (2) Iowa has a significant amount of precipitation (all of the above cases) during late spring/early summer. Especially note that the 6.3 inches of precipitation recorded in April 2013 is much higher than the approximately 1 to 3 inches of precipitation recorded in the fall season 2012 when Phase I forensic testing and evaluation were carried out. A similar finding is observed in Figure 2, which illustrates groundwater levels. Groundwater levels in most Iowa districts increased from the fall season 2012 to the summer season 2013.



SE (Southeast), SC (South Central), SW (Southwest), EC (East Central), C (Central), WC (West Central), NW (Northwest), NE (Northeast), NC (North Central)

Data Source: USGS 2013

Figure 2. Daily mean groundwater levels in Iowa from 2012 to 2013

A research need was identified in consultation with the project technical advisory committee (TAC) to evaluate drain outlet locations (similar to those left undisturbed during the Phase I forensic testing) after significant precipitation in late spring/early summer.

Background

In light of the recent Iowa DOT field maintenance staff reductions, budget cuts, and their implications for subdrain outlet maintenance, there was a need to determine the impacts of not maintaining subdrain outlets on pavement performance in Iowa. The goal of IHRB Project TR-643 was to conduct extensive performance evaluation of Iowa roadway subsurface drainage practices.

An extensive literature review was performed covering national-level and state-level research studies mainly focusing on the effects of subsurface drainage on performance of asphalt and concrete pavements. Several studies concerning the effects of recycled concrete aggregate (RCA) or recycled PCC (RPCC) subbase on PCC pavement drainage systems were also reviewed. Forensic testing and evaluation were conducted on a total of 64 selected (jointed plain concrete pavement (JPCP) and HMA) pavement sites with over 300 drainage outlet locations during the fall season of 2012. Based on an extensive literature review as well as field investigations, the conclusions and recommendations from the Phase I study are presented in terms of answers to the main questions raised by the research objectives:

Q.1. How are subdrains performing on Iowa pavements?

- Most Iowa subsurface drainage system outlet blockage is due to tufa, sediment, and soil.
- Over 80 percent of drainage outlets in JPCP were not damaged, while less than 20 percent were damaged. For HMA pavements, only less than 10 percent of drainage outlets were broken.
- About 35 percent of outlets in JPCP and 60 percent of outlets in HMA pavements were not blocked by any materials. About 35 percent of outlets in JPCP were blocked by tufa, about 17 percent were blocked by sediment, and about 14 percent were blocked by soil deposits. However, most of the blocked outlets in HMA pavements were blocked by soil deposits. Only 2 percent of outlets in HMA pavements were blocked by sediment.
- The higher blockage rate reduces the flow rate of water inside the outlet pipe. However, the higher blockage rate does not always stop water flowing from the inside outlet pipe to the outside outlet pipe unless the outlet is completely blocked (100 percent blockage).

Q.2. Are pavements in Iowa exhibiting moisture-related distress or failure that can be attributed to poor subdrain performance?

- Little pavement surface distress was observed near subsurface drainage systems showing poor performance.
- Both field observations and performance analysis indicate that drainage outlet conditions do not have significant effects on pavement performance.
- Rather than surface distresses, more shoulder distresses (shoulder drop or cracking) were observed near blocked drainage outlet locations. Over 10 percent of blocked drainage outlet locations have shoulder distresses, while only 2 percent of opened drainage outlet locations have shoulder distress.

Q.3. Is the poor subdrain performance due to improper design, construction or maintenance? Are there alternatives that will improve the performance, such as more maintenance free outlet designs, contract maintenance, etc.?

- Use of RPCC as a subbase material results in tufa formation, which is the primary cause of drainage outlet blockage in JPCP. However, those JPCP locations that utilized blended RPCC and virgin aggregate materials (10 locations in US 151/S/MP 67.57 to MP 67.57 and 9 locations in US 151/N/MP 62.55 to MP 67.48) as subbase materials experienced fewer outlet blockages due to tufa formation.
- The use of a gate/mesh screen–type rodent guard has the potential to cause outlet blockage. Considering that very little rodent evidence was observed in Iowa subdrainage outlets during field investigations, it is highly recommended that these rodent guards not be used to cover drainage outlets in Iowa.
- Although selective grading (to eliminate fines) or blending of RPCC with virgin aggregates will significantly reduce the precipitation potential, they will not completely eliminate it. However, the Iowa DOT engineers feel that the use of an RPCC/virgin aggregate blend is not cost-effective and has safety concerns associated with it.

In summary, IHRB Project TR-643 research efforts provided extensive insights into Iowa pavement subdrain performance. However, as mentioned previously, the project TAC requested an expanded Phase II study to address several additional research needs that were identified based on the research findings of IHRB Project TR-643.

Objectives and Scope

The present research is a follow-up investigation of IHRB Project TR-643, entitled *Evaluating Roadway Subsurface Drainage Practices*. The primary objectives of this Phase II research are listed below:

- Evaluate the seasonal variation effects (dry fall 2012 versus wet spring/summer 2013, etc.) on subdrain outlet condition and performance
- Investigate the condition of composite pavement subdrain outlets
- Examine the effect of resurfacing/widening/rehabilitation on subdrain outlets
- Investigate the characteristics of tufa formation in Iowa subdrain outlets
- Identify a suitable drain outlet protection mechanism (like a headwall) and design for Iowa subdrain outlets based on a review of practices adopted by nearby states

FORENSIC TESTING AND EVALUATION PROGRAM

A detailed forensic test plan was developed in consultation with the project TAC for inspecting and evaluating Iowa pavement subdrains in pursuit of fulfilling the Phase II study objectives. The forensic test plan included site selection for inspection of drain outlets, identification of drainage components for evaluation, and detailed inspection and evaluation methods.

Description of Sites Investigated

Representative pavement sites across Iowa were identified for forensic testing and evaluation in consultation with the Iowa TAC and district engineers based on the following considerations:

- Newer constructed pavement sites (designed and constructed after 1990)
- Composite pavement (HMA over JPCP) sites
- Pavement sites having problematic drainage outlet locations, high severity of distress, or patching
- Range of ages and traffic volumes
- Range of pavement thicknesses

Table 1 summarizes the number of sites and locations inspected in both Phase I and Phase II forensic testing, all of which were selected based on the aforementioned considerations.

Table 1. Summary information of pavement sites and subdrain outlet locations investigated

Type	New JPCP sites (Outlet locations)	New HMA sites (Outlet locations)	HMA over JPCP sites (Outlet locations)	Pavement sections with surface distress or patching
Phase I	56 (325 locations)	8 (46 locations)	N/A	N/A
Phase II	51 (231 locations)	8 (47 locations)	23 (120 locations)	34 locations from 25 of new JPCP sites and 18 locations from 11 of HMA over JPCP sites

Note: Each pavement site refers to a stretch of pavement section that includes several subdrain outlet locations.

Detailed information on the sites investigated in Phase II are organized and presented in Appendix A. Based on the developed forensic test plan, field investigations were conducted during the wet spring/summer 2013 for newly constructed pavement sites and late spring 2014 for most composite pavement sites.

Forensic testing and inspection of subdrain outlets was carried out on 51 newly constructed JPCP sites (among the 56 sites investigated previously in Phase I). Five sites among those 56 sites that were not included had been resurfaced with HMA sometime after the completion of Phase I forensic testing. All newly constructed HMA pavement sites investigated in Phase I were

available for Phase II forensic testing. Each pavement site refers to a stretch of pavement section that includes several subdrain outlet locations. Drain outlet locations inspected at newly constructed pavement sites in the Phase II study included similar ones left undisturbed during the Phase I study. Field investigations on newly constructed pavement sites in Phase II were conducted during the wet spring/summer 2013. During this time period, the recorded precipitation was about 5 inches, compared to 3 inches of precipitation during the fall season 2012 when Phase I forensic testing and evaluation were carried out.

A total of 23 HMA over JPCP composite pavement sites (with 120 drainage outlet locations) were also investigated during this Phase II study. Ten of the 23 investigated sites were recommended by the project TAC and district engineers because they have reported drainage problems in the past years. These sites include two sites on highway IA 9 in Howard County (District 2), two sites on US 63 in Davis County (District 5), five sites on IA 2 in Davis County (District 5), and one site in Woodbury County (District 3). The rest of the 23 sites (8 sites on I-29 in Mills County and 5 sites on US 63 in Fremont County) were the ones impacted by the Missouri River flooding in 2011. Field investigations at most composite pavement sites were conducted in late spring 2014. The maximum recorded precipitation during June 2014 was 9.9 inches, which ranks fourth among all the monthly precipitation records in the last 141 years of Iowa precipitation records (MISA 2014).

In addition to the pavement sites and drainage locations selected, pavement sections exhibiting high-severity moisture-related surface distress or patching were also inspected in Phase II forensic testing to see if these are related to drainage problems. These sections include 34 locations from 25 of the newly constructed JPCP sites and 18 locations from 11 of the HMA over JPCP sites.

Figure 3 presents the 2011 average annual daily truck traffic (AADTT) distributions for the selected Iowa pavement sites. As seen in this figure, JPCP and HMA over JPCP sites carry a higher AADTT, while the majority of HMA-surfaced pavements carry a lower AADTT.

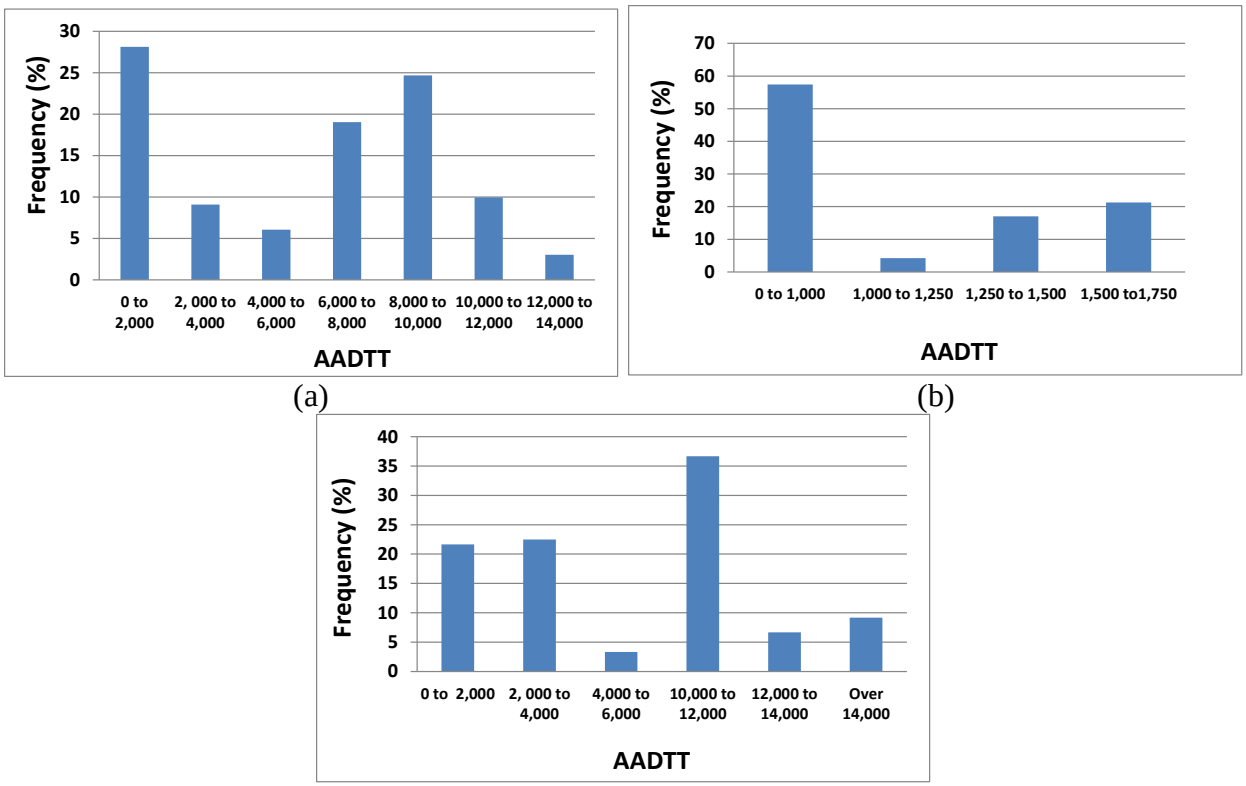


Figure 3. Traffic distribution in Iowa pavement sites investigated: (a) JPCPs, (b) HMA pavements, and (c) HMA over JPCPs

Figure 4 presents the construction year distribution for the selected Iowa pavement sites. All newly constructed pavement sites selected for this study were constructed after 1990. More than half of the JPCP sites were constructed before 2000 (about 10 to 20 years of pavement age), and more than half of the HMA pavement sites were constructed before 2005 (about 5 to 10 years of pavement age). All HMA-overlaid pavement sites selected were resurfaced after 1990. In more than half of the HMA-overlaid pavement sites, the exiting JPCPs were constructed during the 1970s (about 20 years of pavement age before being overlaid with the HMA layer).

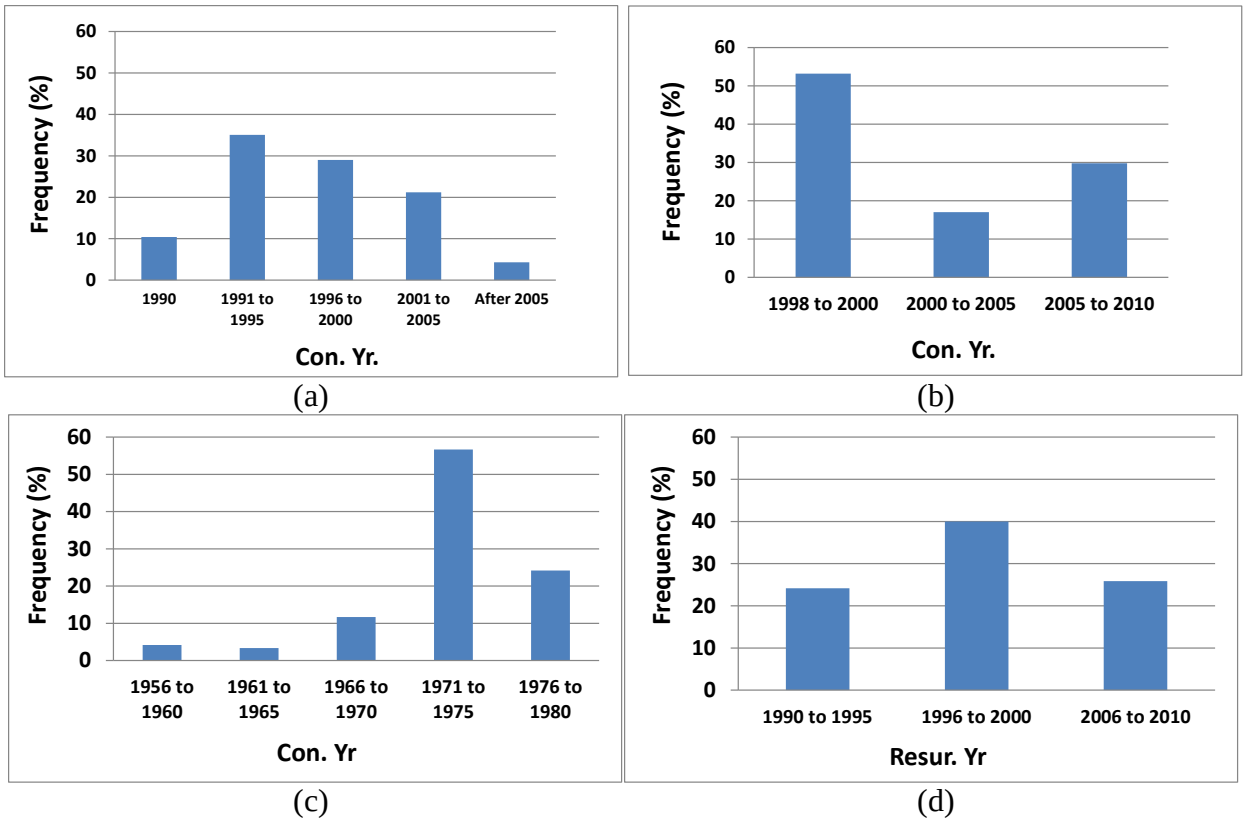


Figure 4. Construction year distribution of Iowa pavement sites investigated: (a) JPCPs, (b) HMA pavements, (c) HMA over JPCPs – construction year for existing JPCPs, and (d) HMA over JPCPs – HMA overlay year

Figure 5 illustrates pavement surface thickness distributions for the selected Iowa pavement sites. These figures indicate that the selected pavement sites cover a range of pavement conditions commonly encountered in Iowa.

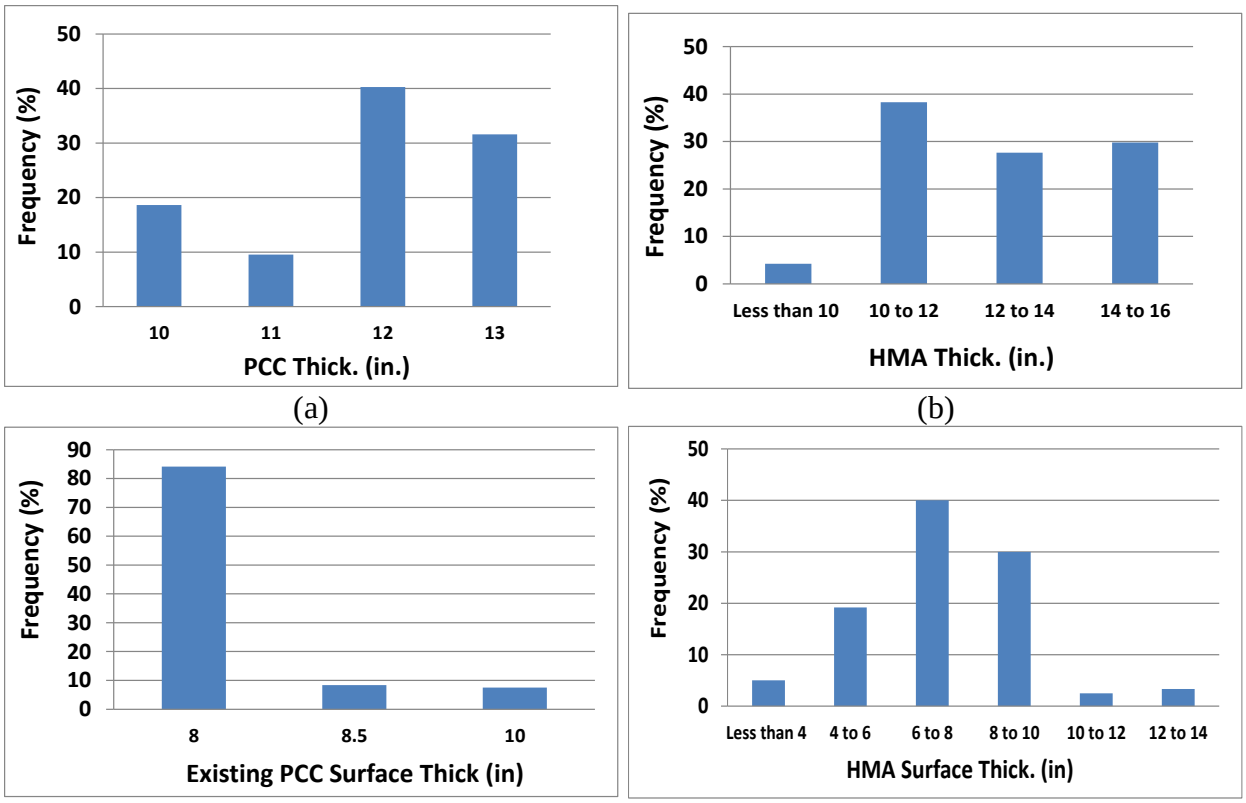


Figure 5. Surface thickness distribution of Iowa pavement sites investigated: (a) JPCPs, (b) HMA pavements, (c) HMA over JPCPs – existing JPCPs, and (d) HMA over JPCPs – HMA overlay

Description of Field Investigation

Field investigations focused on an assessment of drain outlet conditions (in concurrence with the project TAC) because the drain outlet visibly manifests the functionality of the entire drainage system and is related to most subdrainage problems. At least three drain outlet locations per selected pavement site, representing the start, middle, and end of the site, were investigated. Each location was selected based on considerations of vegetation condition near the drainage outlet, pavement distress condition, and ease of access to the outlet location (without traffic control). Note that poor vegetation condition surrounding the drain outlet was considered as evidence of poor drainage performance. Based on the recommendations from the project TAC and district maintenance engineers on problematic drainage sites, investigations were carried out every mile on some sites, such as IA 9 in Howard County and US 63 in Davis County. A total of 450 locations with respect to the selected pavement sites were investigated in Phase II, in addition to a total of 371 locations investigated in Phase I.

Most of the inspection took place on the right side of the roadway. The survey crew traveled in a car or a mini-truck with a beacon light and stopped on the shoulder when needed for drainage inspection and corresponding visual distress survey of pavements. Quite often, the outlets were covered by dirt, debris, soil, and other vegetation that was necessary to be cleaned out using hand

tools for inspection. A template drainage inspection report, incorporating the following items, was prepared and used during field inspections:

- Location of outlet inspected
- Type and size of outlet pipe
- Condition of outlet opening
- Screen presence and type
- Outlet marker presence
- Water presence and condition (staying/moving) inside drain
- Tufa/dead zone presence (Y/N)
- Embankment slope condition
- Slope condition of surface at end of outlet
- Pavement condition near drainage outlet
- Additional observations

Among these items, similar to the Phase I study, the inspected drainage outlet conditions were rated according to four categories, as seen in Figure 6:

- No blockage (open): when the inside of the outlet pipe was in clean condition
- Tufa blockage: when there was build-up of calcium carbonate observed either inside the outlet pipe or nearby rodent guard screens
- Sediment blockage: when dirt or debris materials were deposited inside the outlet pipe or nearby rodent guard screens
- Soil/aggregate blockage: when the outlet was not exposed outside but covered by soil or aggregate

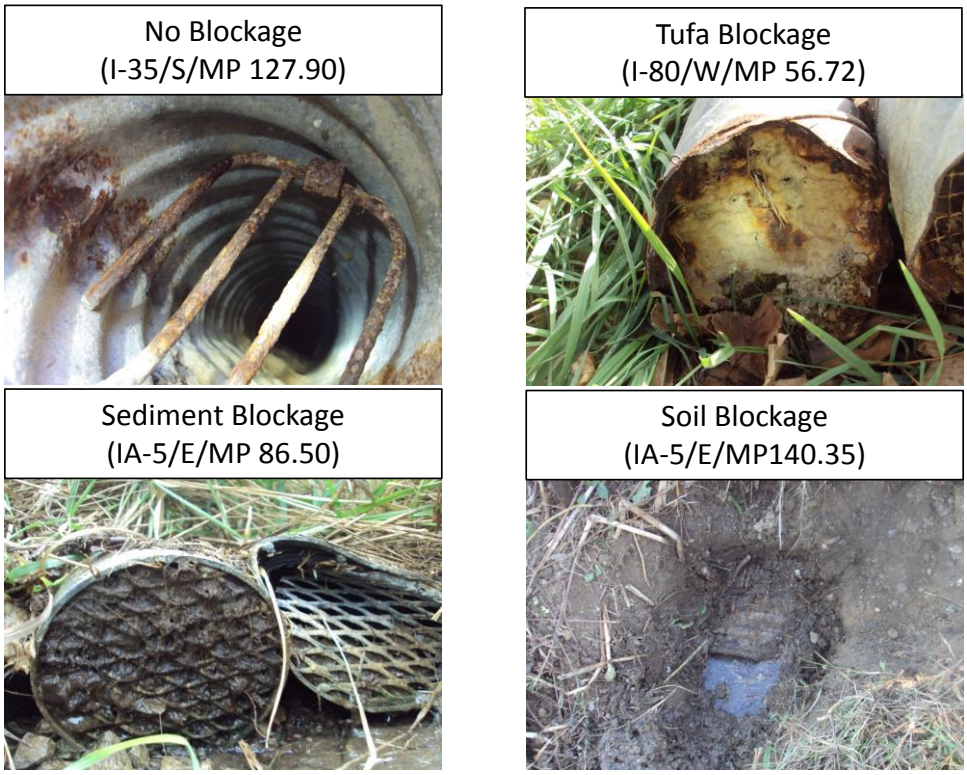
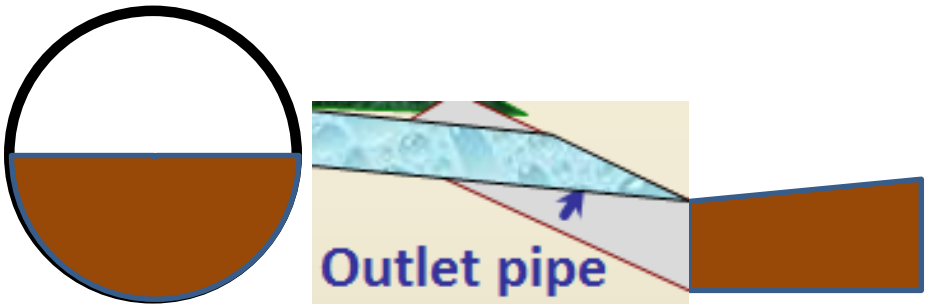


Figure 6. Drainage outlet conditions categorized by blockage

The functional condition of the outlet opening was rated in terms of percentage of blockage caused by coarse/fine materials accumulation. The slope condition of the surface at the outlet end was rated as "up-hill," "down-hill," and "parallel." For instance, Figure 7(a) illustrates a 50 percent outlet blockage rating and Figure 7 (b) illustrates an "up-hill" slope condition. Any pavement distresses observed near the inspected drainage outlet location were also recorded (images and videos).



(a) (b)

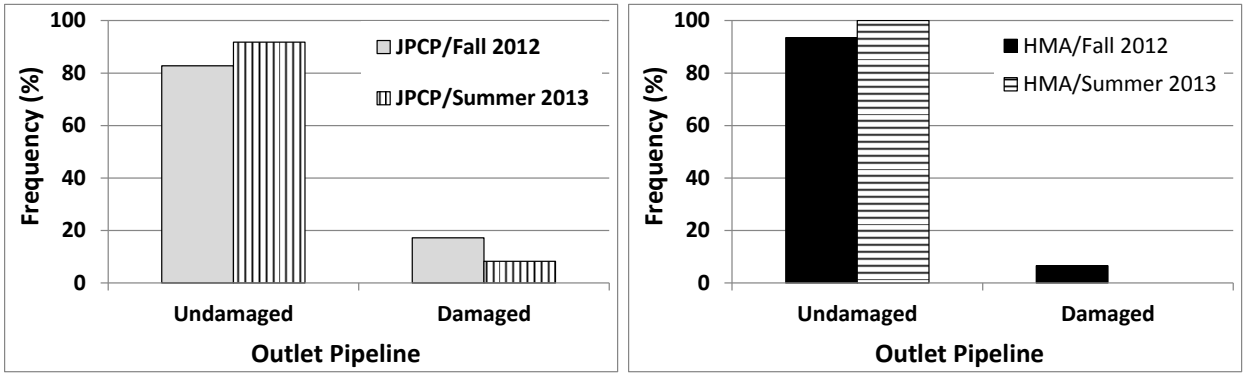
Figure 7. Subdrain outlet functional rating based on visual observation: (a) 50 percent blockage, and (b) up-hill condition of surface at the outlet end

FIELD INVESTIGATIONS: RESULTS AND DISCUSSION

Detailed field investigation records have been compiled and are presented in Appendix A. The findings and results from the field investigations are discussed here with the primary focus on subdrainage outlet conditions and pavement distress assessment near subdrainage outlet locations.

Newly Constructed Pavements

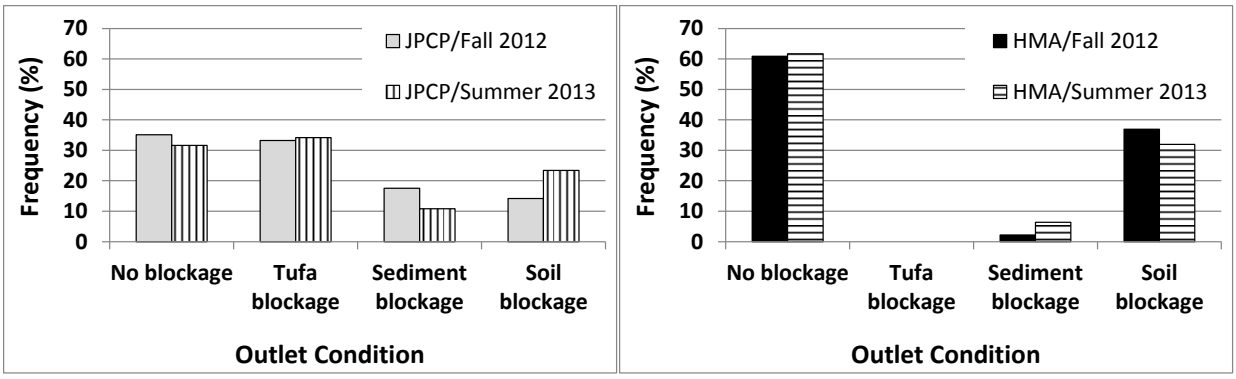
Figure 8 compares the frequency of undamaged and damaged (broken outlet pipeline) subsurface drainage outlets in the newly constructed pavement sites that were investigated in both the fall 2012 (Phase I) and the wet spring/summer 2013 (Phase II). Less than 20 percent of the investigated JPCP drainage outlets were damaged, while only less than 10 percent of HMA pavement drainage outlets were broken.



(a) (b)

Figure 8. Frequency of undamaged and damaged subsurface drainage outlets in newly constructed pavement sites investigated: (a) JPCP and (b) HMA

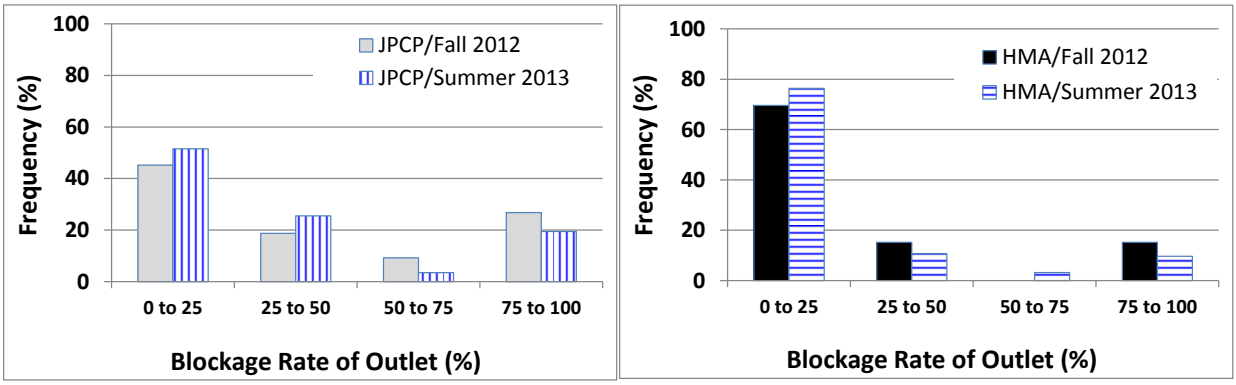
Figure 9 presents the distributions of drainage outlet conditions observed in the newly constructed pavement sites investigated in this study. During both the fall 2012 and the wet spring/ summer 2013 investigations, about 30 percent of the outlets in JPCPs and 60 percent of the outlets in HMA pavements were not blocked by any materials. About 30 percent of the outlets in JPCPs were blocked by tufa, about 15 percent were blocked by sediment, and about 15 to 20 percent were blocked by soil deposits. However, most of the blocked outlets in HMA pavements were blocked by soil deposits (see Figure 9(b)). Less than 5 percent of the outlets in HMA pavements were blocked by sediment. Figure 10 presents the blockage rate of drainage outlet conditions in the newly constructed pavement sites.



(a) (b)

Figure 9. Distribution of subsurface drainage outlet condition categories: (a) JPCP and (b) HMA

As seen in Figure 10, about 20 percent of the outlets in JPCPs and about 10 percent of the outlets in HMA pavements have a higher blockage rate (from 75 to 100 percent), causing slower flow of water from the inside outlet pipe to the outside outlet pipe.



(a) (b)

Figure 10. Blockage rate of subsurface drainage outlets surveyed: (a) JPCP and (b) HMA

As seen in Figure 11(a), vegetation kills, referred to as "dead zones," were observed in the vicinity of the drain outlet that carried tufa materials. The high-pH and high-alkalinity characteristics of tufa (see Figure 11(b)) could have possibly contributed to the observed vegetation kills. However, environmental assessment studies focusing on the impact of tufa on roadside vegetation are very limited, and none of them have reported it to be an environmental hazard (Snyder and Bruinsma 1996).

(a) (b)

Figure 11. Vegetation condition in the vicinity of drain outlets carrying tufa materials (I-35/N/MP141.30): (a) vegetation kill (dead zone), (b) water from the drainage outlet pipe showing a pH value of 10

Figure 12 presents the distributions of drainage outlet conditions with respect to JPCP subbase aggregate material types. As seen in this figure, tufa formation and drain outlet blockage were mainly observed in JPCP with RPCC subbase materials. Fewer drain outlets with tufa blockage were observed in JPCP with blended RPCC and virgin aggregate subbase materials during both the fall 2012 and summer 2013 investigations. These JPCP drain outlets are located on US 151/S/MP 62.57 to MP 67.57 and US 151/N/MP 62.57 to MP 67.48, both of which used blended virgin and RPCC aggregates as base materials.

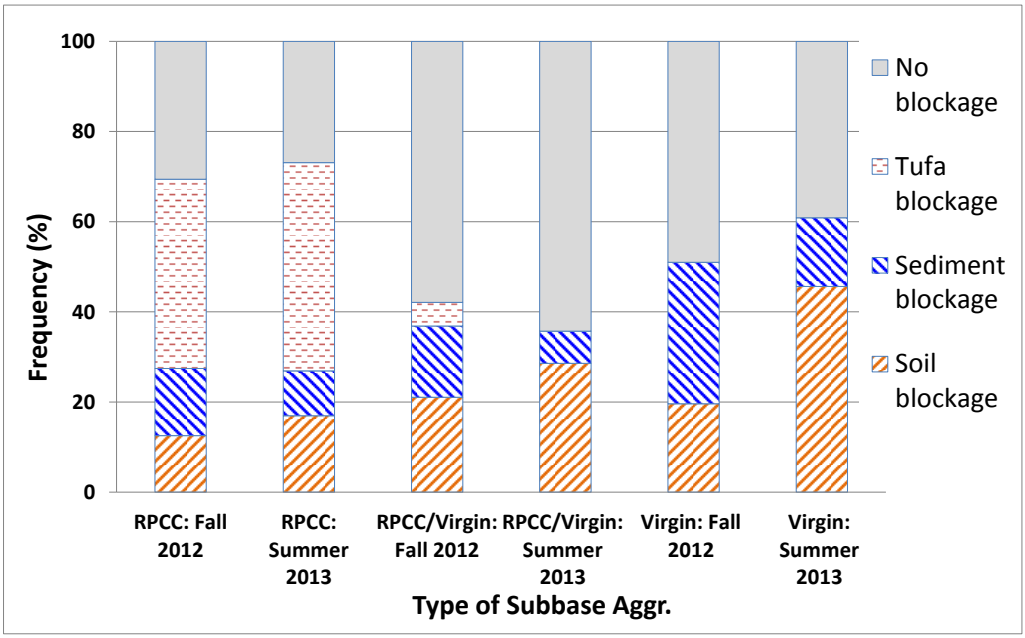


Figure 12. Distribution of subsurface drainage outlet conditions for newly constructed JPCP sites with respect to subbase aggregate type

Similarly, less tufa blockage was observed with the use of plastic outlet pipe in newly constructed JPCP sites containing RPCC base materials, as shown in Figure 13. Compared to about 50 percent of JPCP outlets blocked by tufa with the use of steel outlet pipe, only 10 percent of outlets were blocked by tufa with the use of plastic outlet pipes. Most of the tufa blockage in the plastic outlet pipe was observed near rodent guards.

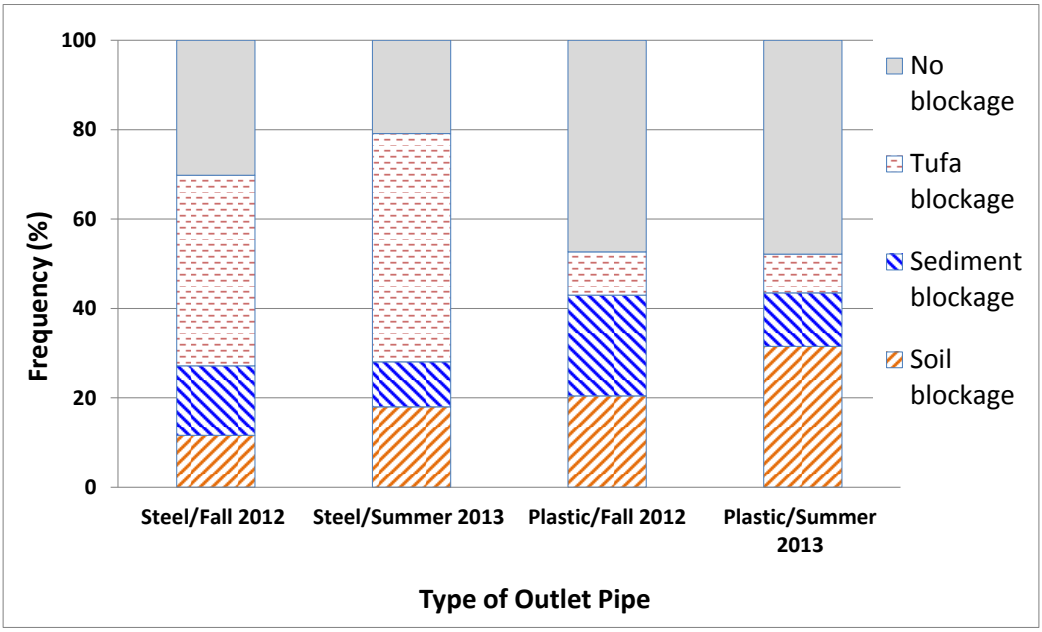
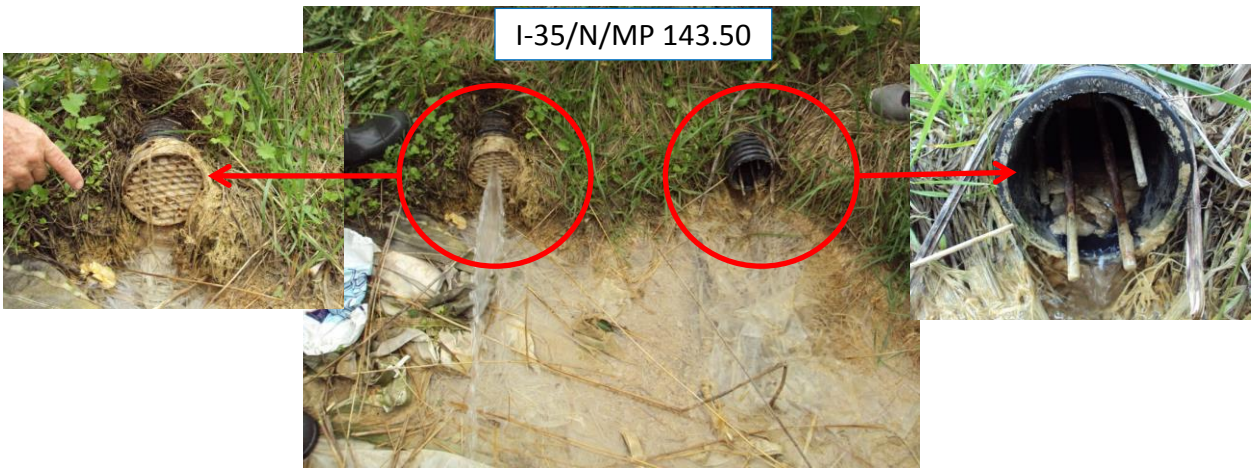
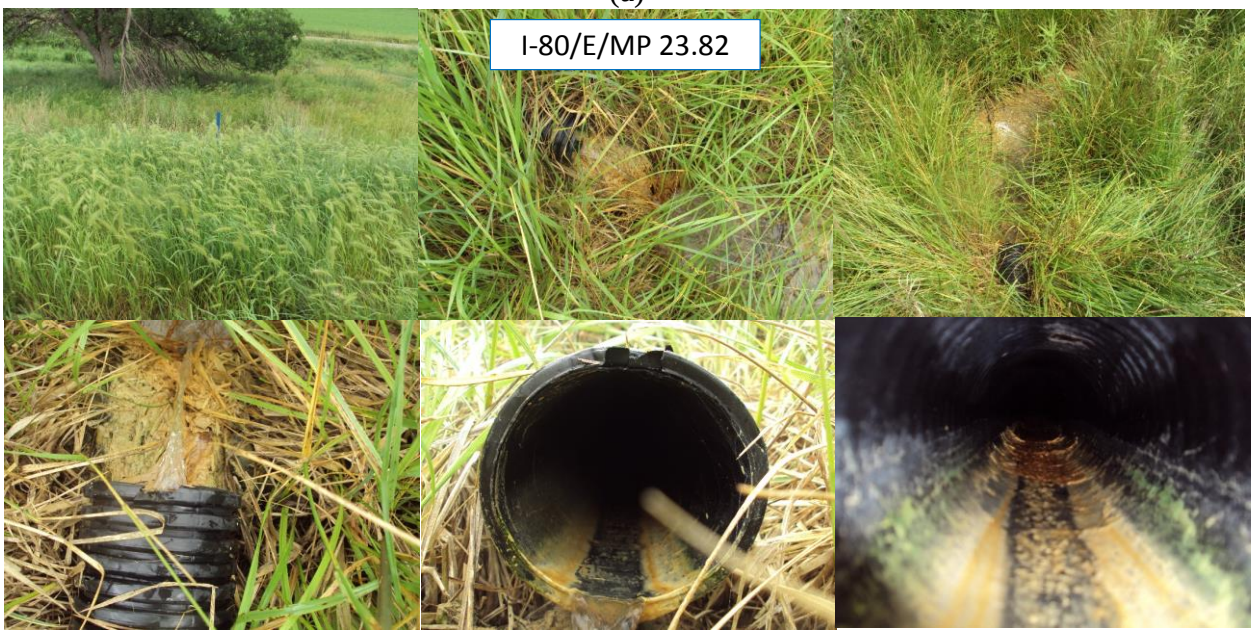


Figure 13. Distribution of subsurface drainage outlet conditions for newly constructed JPCP sites with respect to type of outlet pipe

As seen in Figure 14(a), the mesh screen–type rodent guard (even in plastic outlet pipe) exacerbates the clogging of the outlet by blocking the free flow of draining water. Although tufa is still observed in the plastic outlet pipe with fork-shaped rodent guards, the amount of tufa inside the pipe is not enough to be able to cause clogging. Removal of the rodent guards in plastic outlet pipe, as shown in Figure 14(b), often seems to prevent the tufa blockage problem.



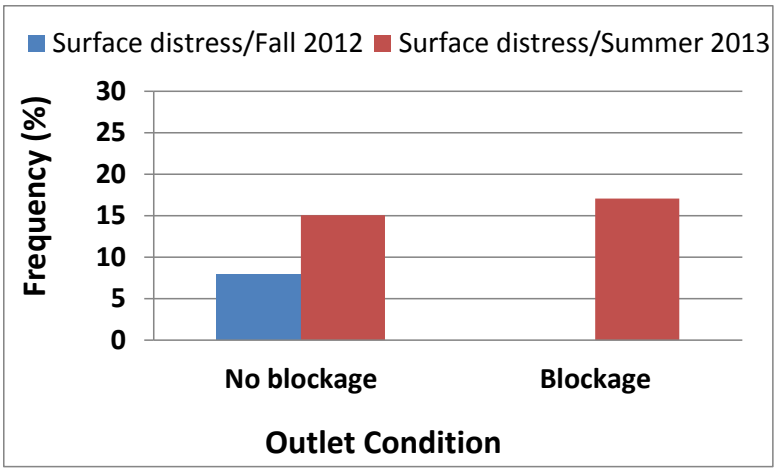
(a)



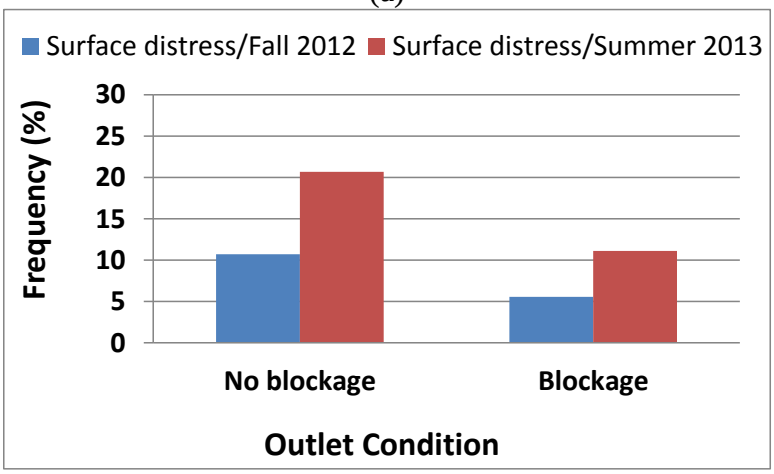
(b)

Figure 14. Smaller amount of tufa blockage issues observed with the use of plastic outlet pipe in newly constructed JPCP sites containing RPCC base materials: (a) I-35/N/MP143.50 and (b) I-80/E/MP23.8

Figure 15 presents the distribution of pavement surface distresses observed in the newly constructed pavement sites that were investigated in both fall 2012 and summer 2013. Relative to fall 2012, the observed pavement surface distresses were higher in summer 2013 for both JPCPs and HMA pavements. Especially note that the JPCP surface distress observations near blocked drainage outlet locations are slightly higher than the distress observations near non-blocked drainage outlet locations during summer 2013. Note that practically no surface distresses were observed near blocked drainage outlet locations during fall 2012.



(a)

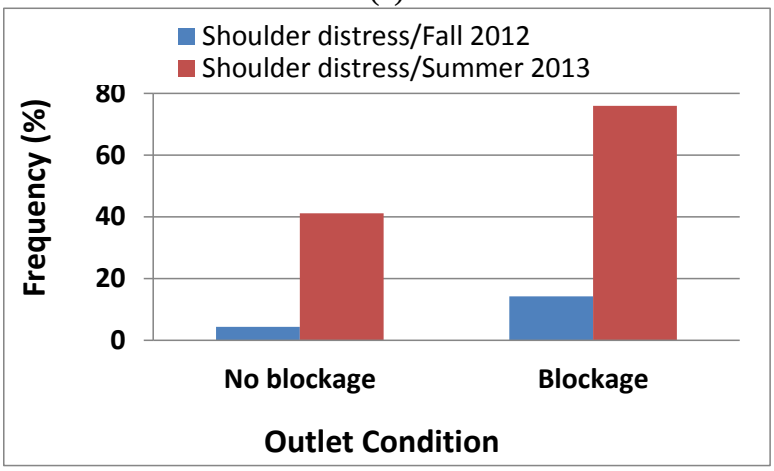


(b)

Figure 15. Pavements surface distress conditions in newly constructed pavement sites investigated with respect to subsurface drainage outlet conditions: (a) JPCP and (b) HMA

More instances of shoulder distresses (shoulder drop or cracking), as shown in Figure 16(a), were observed near blocked drainage outlet locations than near non-blocked locations at JPCP sites during both fall 2012 and summer 2013 (see Figure 16(b)). Especially note that shoulder distresses were observed near a majority (above 70 percent) of blocked drainage outlet locations during summer 2013. These results indicate that the blocked drainage outlet conditions in JPCPs have a significant impact on pavement shoulder distress development.

(a)



(b)

Figure 16. Outlet locations with shoulder drop/cracking in newly constructed JPCP sites: (a) an example on I-80/E/MP195.27 and (b) shoulder distress conditions with respect to subsurface drainage outlet condition

As described previously, pavement surface locations having a high severity of moisture-related distress or patching were also inspected in Phase II forensic testing to see if these are related to drainage problems. Transverse cracking or patching was more often observed where culverts only or culverts with drainage outlets (see Figure 17) were placed rather than just the drainage outlets. These observations indicate that these pavement surface failures are possibly caused by the culvert rather than the subdrain system.

Figure 17. Cracking/patching observed near culvert-only/culvert with drainage outlet locations in newly constructed JPCP sites

Fewer pavement surface distresses observed at blocked drain outlet sites in newly constructed pavements should not lead one to conclude that Iowa pavements do not need any subdrains or subdrain outlet maintenance. The presence of the subdrain system alone is sufficient for water to somehow find its way out of the pavement system unless the outlet is completely blocked. In contrast, in the absence of any subdrain system, water can stay inside the pavement system and can eventually lead to pavement surface distresses. For example, Figure 18 presents moisture-related damage observed on JPCP sites where no drainage outlet was found.

I-80/W/MP 35.10/Pottawattamie County

- Pavement type: JPCP (11.5 in PCC/10.0 in subbase)
- Subbase aggregate type: RPCC
- Construction year: 2005
- AADTT: 8,093
- Transverse cracking with water coming out

I-80/W/MP 34.70/Pottawattamie County

- Pavement type: JPCP (11.0 in PCC/8.0 in subbase)
- Subbase aggregate type: Virgin
- Construction year: 1986
- AADTT: 8,093
- Faulting with water coming out

Figure 18. Moisture-related damage observed on JPCP sites where no drainage outlet was found

Composite Pavements

Figure 19 compares undamaged and damaged (broken outlet pipeline) subsurface drainage outlets in the HMA over JPCP pavement sites that were investigated in summer 2014. Less than 10 percent of the investigated drainage outlets were damaged.

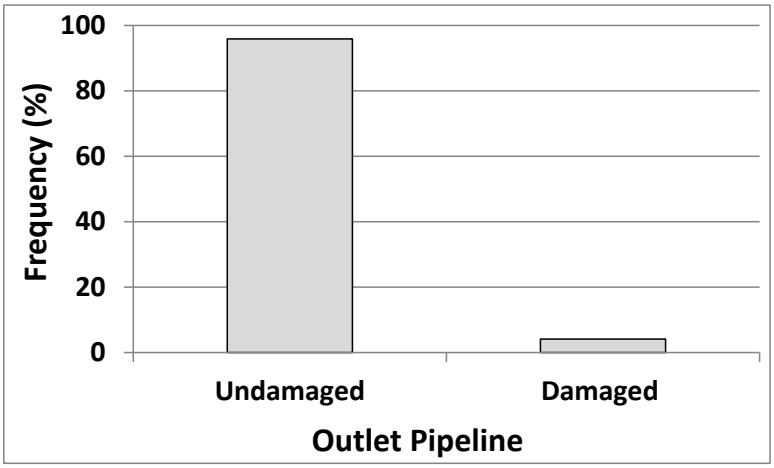


Figure 19. Distribution of undamaged and damaged subsurface drainage outlets in the HMA over JPCP sites investigated

Figure 20 presents the frequency distribution of drainage outlet conditions observed in HMA over JPCP pavement sites. About 45 percent of the outlets were not blocked by any materials, while more than 50 percent of the outlets were blocked by sediment and soil deposits.

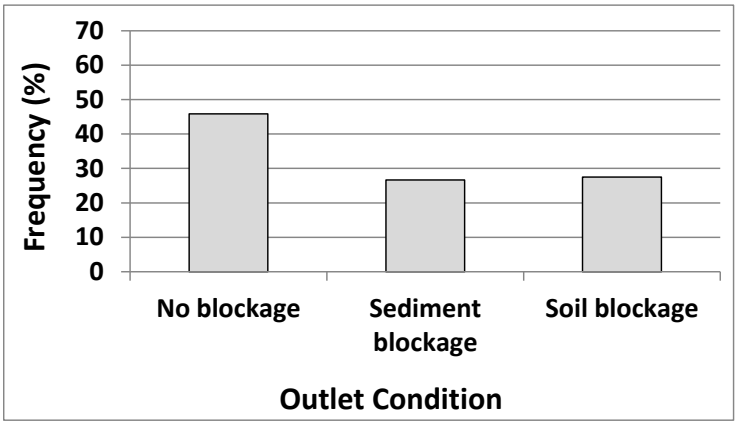


Figure 20. Distribution of subsurface drainage outlet condition categories for the HMA over JPCP sites investigated

As shown in Figure 21, about 60 percent of the outlets have a lower blockage rate (ranging from 0 to 25 percent). About 10 percent of the outlets have higher blockage rates (ranging from 75 to 100 percent) that hamper the free flow of water.

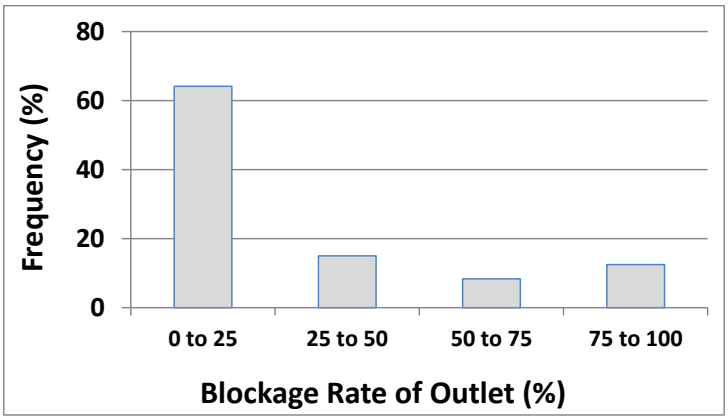


Figure 21. Distribution of subsurface drainage outlet blockage rates in the HMA over JPCP sites investigated

Figure 22 presents the distributions of pavement surface distress observed in the HMA over JPCP sites that were investigated in summer 2014. Various types of pavement surface distress were observed near more than 80 percent of blocked drainage outlet locations compared to the distresses observed near about 60 percent of non-blocked drainage outlet locations.

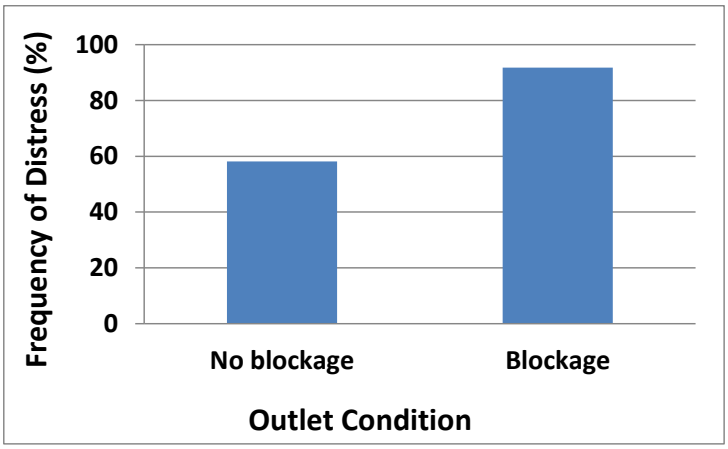


Figure 22. Pavement surface distress conditions in the HMA over JPCP sites investigated

As seen Figure 23, the various types of pavement surface distress observed in the HMA over JPCP sites investigated include longitudinal cracking (L-crack), transverse cracking (T-crack), alligator cracking (A-crack), reflection cracking (R-crack), and rutting. These distress types were observed near blocked as well as non-blocked drainage outlet locations at various frequencies.

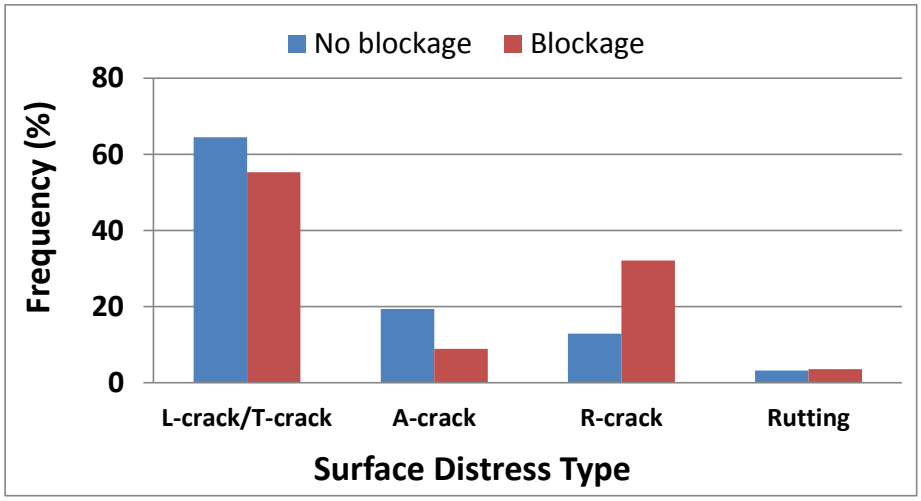


Figure 23. Distribution of pavement surface distress types in the HMA over JPCP sites investigated

Especially note that reflection cracking was observed at about 30 percent of blocked drainage outlet locations, which is twice that observed near non-blocked locations (about 15 percent). Because reflection cracking is more related to moisture ingress than any of other distresses commonly observed on HMA over JPCP, this finding indicates that the compromised performance of an HMA over JPCP drainage outlet could accentuate moisture-related distress development in such pavements. That is, a poorly functional HMA over JPCP drainage outlet can contribute more to the early development of moisture-related distresses than a well-functioning drainage outlet. Some shoulder distresses (shoulder drop or cracking), as shown in Figure 24, were observed near both blocked and non-blocked drainage outlet locations.

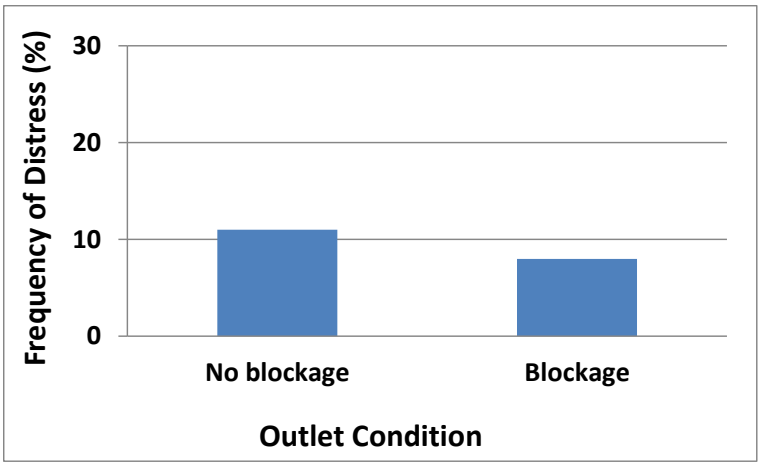


Figure 24. Shoulder distress conditions in HMA over JPCP sites with respect to subsurface drainage outlet condition

In a manner similar to the field investigations of newly constructed pavement sites, the HMA-overlaid surface locations having a high severity of moisture-related distress or patching were also inspected. Figure 25 presents moisture-related damage observed on HMA over JPCP sites where no drainage outlet was found. These findings demonstrate the importance of the subsurface drainage system for mitigating pavement surface failures in HMA over JPCPs.

I-29/N/MP3.05/Fremont County

- Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
- Construction year: 2007 (overlay)/1972 (existing pavement)
- AADTT: 12,000
- Raveling/patching

I-29/S/MP 28.45/Mills County

- Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
- Construction year: 1999(overlay)/1971 (existing pavement)
- AADTT: 12,000
- Rutting

Figure 25. Moisture-related damage observed on HMA over JPCP sites where no drainage outlet was found

REVIEW OF CHARACTERISTICS OF TUFA FORMATION ON SUBDRAIN OUTLETS

The use of RCA or crushed concrete as replacements for virgin aggregates in the unbound base/subbase layers of concrete pavements has been a common practice in the U.S. for many years. However, field investigations carried out by different state highway agencies have raised concerns regarding the deposit of RCA-associated fines and precipitate, more commonly referred to as tufa, and their role in reducing the capacity of subsurface drainage systems. Snyder and Bruinsma (1996) reviewed several published and unpublished field studies concerning the effects of RCA on PCC pavement drainage.

In Iowa, RCA has been used in concrete pavement subbase for about 30 years. Field investigations have revealed that this has led to the formation of tufa, which blocks subdrains, reduces subbase permeability, damages the vegetation near the drain outlets, and sometimes causes pavement shoulders to erode (Steffes 1999, White et al. 2008, Phan 2010). A survey conducted by Gupta and Kneller (1993) on the Ohio DOT's use of slag and/or RCA as subbase aggregates and related tufa problems revealed that not all RCA subbase aggregates produced tufa, and it was not clear why tufa precipitation did not occur at all sites using an RCA subbase. In addition, previous studies indicate that calcite precipitates do not form with the use of natural aggregates such as gravel and crushed limestone, but with the use of RCA in the base/subbase (Phan 2010, Steffes 1999).

Several studies in the past have focused on investigating the conditions favorable for tufa formation when RCA and/or slags are used in concrete pavement subbases, especially considering free lime (CaO) as a chemical component that produces tufa. A study by Narita et al. (1978) suggested that slags containing more than 1 percent CaO were likely to produce tufa. Another study by Gupta and Dollimore (2002) led to the recommendation that the use of RCA should be limited to coarse sizes to prevent the formation of tufa and that the RCA used in base/subbase layers should have a magnesium to calcium (Mg:Ca) ratio lower than 0.6. Bruinsma et al. (1997) reported the residence time of pore water in RCA subbase layers to be critical in controlling tufa precipitate formation. Previous study findings suggest that tufa deposits are produced primarily from reactions between calcium hydroxide (CH) and other calcium-based compounds in the portland cement paste of RCA, as well as carbon dioxide dissolved in water (Phan 2010).

Feldmann et al. (1982) investigated tufa precipitation and its effect on drainage of Interstate highways in northeastern Ohio. To identify the source and mode of origin of the material that hampers highway drainage performance, they employed regional geologic studies, hydrogeologic studies, and geochemical analyses. Their primary conclusion was that when slag is used as a subbase material, it elevates the pH of the drainage water to 10.3 and produces an environment conducive for $CaCO_3$ precipitation. They also noted that most of the calcareous tufa deposits seem to form near the drain outlets where the residence time of calcium-rich water is great.

Feldmann et al. (1982) observed that the reaction pertaining to water in contact with the solid calcite at drain outlets is as follows:

$$CaCO_{3(s)} \underset{\rightarrow}{\overset{\leftarrow}{}} Ca^{++} + CO_3^{--} \quad (1)$$

They further stated that if the activity product of Ca^{++} and CO_3^{--} is less than $10^{-8.3}$ (which is the equilibrium constant for this reaction at 25^oC), calcite should dissolve, and if it is greater than this number, then calcite should precipitate. In fact, the pertinent carbonate equilibria for this problem are as follows:

$$CO_2 + H_2O \underset{\rightarrow}{\overset{\leftarrow}{}} H_2CO_3 \quad (2)$$

$$H_2CO_3 \underset{\rightarrow}{\overset{\leftarrow}{}} H^+ + HCO_3^- \quad (3)$$

$$HCO_3^- \underset{\rightarrow}{\overset{\leftarrow}{}} H^+ + CO_3^{--} \quad (4)$$

$$Ca^{++} + CO_3^{--} \underset{\rightarrow}{\overset{\leftarrow}{}} CaCO_{3(s)} \quad (5)$$

These reactions describe how solid calcite is formed. First, atmospheric carbon dioxide in contact with water forms carbonic acid, which ionizes in two steps (Equations 3 and 4). The CO_3 ion can then react with a Ca^{++} ion to form solid calcite. Note that the hydration of the calcium oxide (CaO) in cement during the setting process forms calcium hydroxide, which can even account for up to 20 to 30 percent of the weight of the dry cement paste. Highway drainage water in contact with an abundance of calcium hydroxide could become appreciably alkaline. Thus, tufa precipitation begins as the drainage water, supersaturated with calcite, exits the drainage system (Feldmann et al. 1982).

DRAIN OUTLET PROTECTION: STATE OF THE PRACTICE IN MIDWESTERN STATES

One of the secondary objectives of this study was to identify a suitable subdrain outlet protection mechanism (like a headwall) and design for Iowa subdrain outlets based on a review of practices adopted by Midwestern states. A meeting was held at the Iowa DOT offices on June 30, 2014 and was attended by all Iowa DOT personnel and county engineers interested in headwall implementation. The Iowa State University (ISU) research team made a comprehensive presentation regarding headwall and splash pad practices (current specifications and designs, pros and cons) in other states. Following this meeting, based on the interest expressed by the Iowa DOT the ISU research team carried out a review of the headwall design plans and specifications adopted by other states.

The presence of a headwall (Figure 26) can potentially prevent blockage of drainage outlet pipes from vegetation and debris, reduce erosion, and prevent damage to drainage outlet pipes from maintenance activities (i.e., grass mowing on roadside).

Baumgardner 2002

Figure 26. Headwall

In addition, a headwall enables DOT maintenance personnel to more easily spot the drain outlet. However, the use of a headwall does increase the initial construction cost, with each headwall unit costing around $2,200 to $4,100 depending on the size and installation location. Some alternative drain outlet protection mechanisms include the use of a rubber/plastic splash pad or an extended aggregate bed under the outlet. Several states, including Minnesota, Illinois, South Dakota, and North Dakota, have adopted the use of a precast or cast-in-place headwall for small-size drainage pipes. However, Missouri and California prefer the use of splash pad.

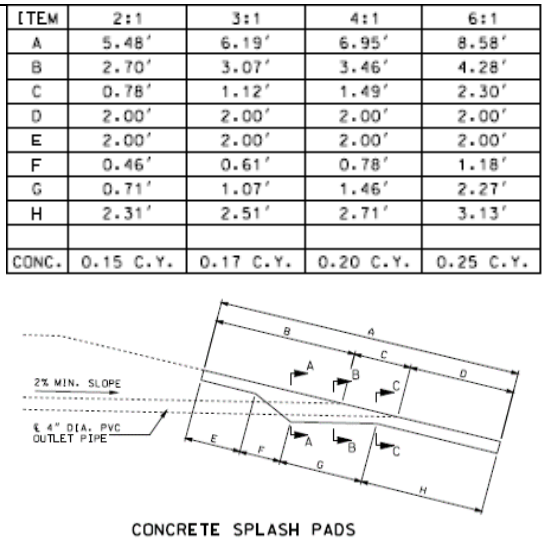
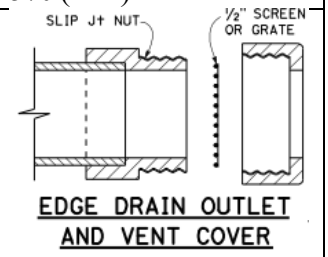
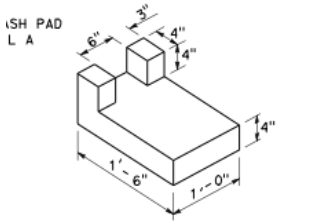
A summary of headwall specifications, including length, width, height, etc., adopted by the South Dakota DOT and North Dakota DOT (representative of most Midwestern states) is presented in Table 2.

Table 2. Summary of headwall specifications adopted by South Dakota and North Dakota

Item	South Dakota		North Dakota
Article	608.01	680.03	D-714-18
Date	03/28/2001	12/23/2010	10/27/2010
Pipe diameter	No description	No description	4 inch
Pipe slope	No description	No description	2% (min)
Head wall height	2 ft 8 inch	1 ft	1 ft
Head wall length	3 ft	3 ft	4 ft 6 inch
Head wall width	4 ft 6 inch(Bottom) 1 ft 6 inch (Top)	1 ft	1 ft
Rodent Shield size	8 inch by 8 inch	6.75 inch (Top), 5.75 inch (Bottom), 7 inch (Height)	6 inch by 9 inch
Reinforced bar size	No.4	No.4	Two C1 Bars, and one C2 Bar

Similarly, a summary of splash pad specifications adopted by the Missouri DOT (MoDOT) and California DOT (Caltrans) are presented in Table 3.

Table 3. Summary of splash pad specifications adopted by Missouri and California

Item	Missouri	California
Date	06/01/2013	2010
Pipe size	4 inch	3 inch
Pipe slope	2%	5% (min)
Dimension	 CONCRETE SPLASH PADS	 EDGE DRAIN OUTLET AND VENT COVER  DETAIL A CONCRETE SPLASH PAD

ITEM	2:1	3:1	4:1	6:1
A	5.48'	6.19'	6.95'	8.58'
B	2.70'	3.07'	3.46'	4.28'
C	0.78'	1.12'	1.49'	2.30'
D	2.00'	2.00'	2.00'	2.00'
E	2.00'	2.00'	2.00'	2.00'
F	0.46'	0.61'	0.78'	1.18'
G	0.71'	1.07'	1.46'	2.27'
H	2.31'	2.51'	2.71'	3.13'
CONC.	0.15 C.Y.	0.17 C.Y.	0.20 C.Y.	0.25 C.Y.

Design sketches courtesy of MoDOT and Caltrans

The Iowa DOT recently adopted a draft precast concrete headwall specification for subdrain outlets under Modified Standard Road Plan DR-306 (Figure 27).

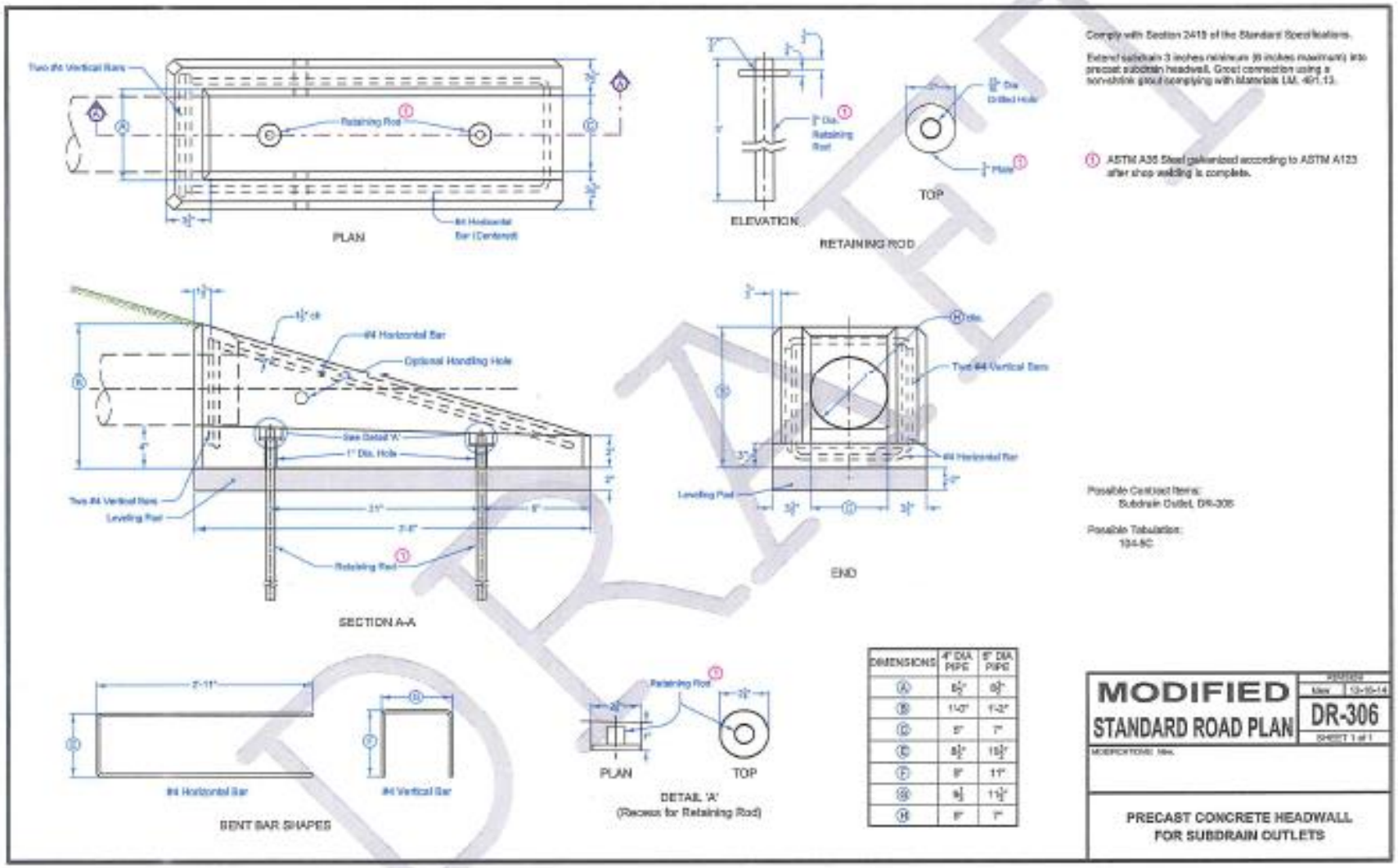


Figure 27. Draft precast concrete headwall specification adopted by Iowa DOT for subdrain outlets

CONCLUSIONS AND RECOMMENDATIONS

The major conclusions drawn from the study are as follows:

- Moisture-related pavement surface distresses were observed in sections where no drainage outlet could be located.
- Cracking or patching was more often observed near culverts than drainage outlets. This was the case whether or not any drain outlets were observed near culverts. These observations indicate that the observed pavement surface failures are caused by the culvert rather than the subdrain system.
- The observed outlets with blockage and associated surface distresses in newly constructed JPCPs were slightly higher during summer 2013 compared to fall 2012. However, these differences are not significant.
- Less tufa formation due to the RPCC base was observed with (a) the use of plastic outlet pipe without the gate screen–type rodent guard and (b) the use of blended RPCC and virgin aggregate materials.
- Shoulder distresses in newly constructed JPCP were observed more in the vicinity of blocked drainage outlet locations than unblocked drain outlet locations.
- More than 50 percent of HMA over JPCP pavement outlets were blocked by sediment and soil deposits.
- Surface distresses were observed near blocked drainage outlet locations in HMA over JPCP.
- In HMA over JPCP, moisture-related distress types (e.g., reflection cracking) were observed more near blocked drainage outlet locations than near "no blockage" outlet locations. This finding indicates that compromised drainage outlet performance could accelerate the development of moisture-related distresses in HMA over JPCP.
- Most of the calcareous tufa deposits seem to form near the drain outlets where the residence time of calcium-rich water is great.
- Based on a review of concrete headwall specifications adopted by nearby states, the Iowa DOT recently adopted a draft precast concrete headwall specification for subdrain outlets under Modified Standard Road Plan DR-306.

Based on a comprehensive literature review as well as detailed forensic investigations under IHRB Projects TR-643 (Phase I) and TR-662 (Phase II), the following general recommendations/guidelines are offered as best management practices for Iowa roadway subsurface drainage outlets:

- The use of a gate/mesh screen–type rodent guard has the potential to cause outlet blockage. Considering that very little rodent evidence was observed in Iowa subdrainage outlets during field investigations, it is highly recommended that these rodent guards not be used to cover drainage outlets in Iowa.
- Use of RPCC as base/subbase material results in tufa formation, which is the primary cause of drainage outlet blockage in JPCP. However, utilizing blended RPCC and virgin aggregate materials as subbase materials seems to mitigate this problem at least partially.

- Less tufa formation due to the RPCC base is observed with the use of plastic outlet pipe without the gate screen–type rodent guard.
- Screening recycled PCC before using it in foundation layers can reduce the potential for fine material deposits to accumulate in pavement drainage systems. Studies have shown that selective grading or blending with virgin aggregates significantly reduces precipitation potential. Further research is recommended on this issue.
- Strategies to mitigate the occurrence of transverse cracking on pavements over culvert structures are needed. Further research is recommended on this topic.
- Blocked drainage outlets seem to contribute more to shoulder distresses (shoulder drop or cracking) than to pavement surface distresses. Further research is recommended to investigate this issue in detail.
- Rigid, slotted plastic drain pipe is more durable, offers better performance, and is better at resisting loads from construction and maintenance activities than other types of pipe. In contrast, flexible, lightweight subdrain pipe has been known to collapse under construction traffic or during maintenance activities (e.g., mowing of grass on the roadside).
- Retrofitted edge (pipe or geocomposite) drains are generally recommended on relatively young (i.e., less than 10 years old) concrete pavements that have begun to exhibit signs of early moisture-related distresses such as pumping and joint faulting but that are only exhibiting a minimal amount of cracking (less than 5 percent cracked slabs). However, because of the mixed historical field performance of retrofitted edgedrains as reported in the literature, a decision to install retrofitted edgedrains should be made in light of the local experience.
- Compromised drainage outlet performance could accelerate the development of moisture-related distresses in HMA over JPCP (composite pavement systems). Further research is recommended to investigate this issue in detail.
- Precast concrete headwalls are recommended for Iowa subdrain outlets to prevent clogging and damage from grass mowing operations.

REFERENCES

Baumgardner, R. H. 2002. *Maintenance of Highway Edgedrains*. Washington, DC: Federal Highway Administration, U.S. Department of Transportation.

Bruinsma, J. E., Peterson, K. R., and M. B. Snyder. 1997. Chemical approach to formation of calcite precipitate from recycled concrete aggregate base layers. *Trans. Research Record: J. Trans. Research Board* 1577: 10–17.

Feldmann, R. M., D. J. Biros, and D. L. Middleton. 1982. Tufa precipitation and its effect on drainage of interstate highways in northeastern Ohio. *Bulletin of the Association of Engineering Geologists*, 19 (4): 347–370.

Gupta, J. D. and D. Dollimore. 2002. *Magnitude Assessment of Free Lime and Hydrated Limes Present in RPCC Aggregates*. Final Report FHWA/OH-2002/014. Columbus, Ohio: Ohio Department of Transportation.

Gupta, J. D. and W. A. Kneller. 1993. *Precipitate Potential of Highway Subbase Aggregates*. Final Report FHWA/OH-94/004. Columbus, Ohio: Ohio Department of Transportation.

Hassan, H. F., T. D., White, R. McDaniel, and D. Andrewski. 1996. Indiana subdrainage experience and application. *Trans. Research Record: J. Trans. Research Board* 1519: 41–50.

MISA. 2014. *June 2014 Central Iowa Monthly Climate Summary*. Johnston, Iowa: The Mid-Iowa Skywarn Association (MISA). www.midiowaskywarn.org/2014/09/june-2014-central-iowa-monthly-climate-summary/. (Accessed September 23, 2014).

Narita, K., T. Onoye, and Z. Takata. 1978. *On the Weathering Mechanism of LD Converter Slag*. Japan: Kobe Steel, Ltd.

Phan, T. H. 2010. Laboratory and field investigations of recycled Portland cement concrete subbase aggregates. Ph.D. dissertation, Iowa State University.

Snyder, B, and J. E. Bruinsma. 1996. Review of studies concerning effects of unbound crushed concrete bases on PCC pavement drainage. *Trans. Research Record: J. Trans. Research Board* 1519: 51–57.

Steffes, R. 1999. *Laboratory Study of the Leachate from Crushed Portland Cement Concrete Base Material*. Materials Laboratory Research Project MLR-96-4 Final Report. Ames, Iowa: Iowa Department of Transportation.

USGS. 2013. *Iowa Water Resources Climate Data*. Iowa City, Iowa: Iowa Water Science Center, U.S. Geological Survey. ia.water.usgs.gov/climate/index.html. (Accessed September 23, 2014).

White, D. J., H. Ceylan, C. T. Jahren, T. H. Phan, S. Kim, K. Gopalakrishnan, and M. T. Suleiman. 2008. *Performance Evaluation of Concrete Pavement Granular Subbase – Pavement Surface Condition Evaluation*. Final Report of Iowa DOT Project TR-554 and CTRE Project 06-250. Ames, Iowa: Iowa Department of Transportation.

APPENDIX A: FIELD INVESTIGATION RESULTS

Table A.1. JPCP site information

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-35/N/MP140.22	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP140.35	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP140.60	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP140.80	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP141.30	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP143.30	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/N/MP143.45	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/N/MP143.65	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/S/MP 129.00	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 128.00	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 127.90	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 127.85	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 127.50	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 127.20	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 126.00	I-35	2 (South)	111.75	126.04	Story County	JPCP	HMA	RPCC	1999	IM-35-5(71)111-13-85	5,288	11.8	10.2	0.0
I-35/S/MP 123.70	I-35	2 (South)	111.75	126.04	Story County	JPCP	HMA	RPCC	1999	IM-35-5(71)111-13-85	5,288	11.8	10.2	0.0
US-30/W/MP 156.50_1	US-30	2 (West)	151.92	156.80	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 156.50_2	US-30	2 (West)	151.92	156.80	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 156.00	US-30	2 (West)	151.92	156.80	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 155.80	US-30	2 (West)	151.92	156.80	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 153.00	US-30	2 (West)	151.92	156.80	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
I-80/W/MP 132.86	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 132.20_1	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 132.20_2	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.85	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.80	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
US-6/E/MP 121.30	US-6	1 (East)	121.27	123.38	Dallas County	JPCP	PCC	Vigin Agg	1999	STP-6-3(48)--2C-25	538	10.6	9.8	0.0
I-80/W/MP 104.80	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 103.95	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 103.90_1	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 103.90_2	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 103.40	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.35	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.25	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.07	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.00_1	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.00_2	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-35/N/MP140.78	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP140.80	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP141.28	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP141.25	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP140.50	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP141.60	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP141.30	I-35	1 (North)	140.19	142.07	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	4,945	11.5	10.2	0.0
I-35/N/MP143.45	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/N/MP143.50_1	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/N/MP143.50_2	I-35	1 (North)	143.28	143.91	Hamilton County	JPCP	HMA	RPCC	2003	IM-35-6(94)140--13-40	3,984	11.5	10.2	0.0
I-35/S/MP 130.80	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 128.93	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 127.35	I-35	2 (South)	126.04	131.03	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 125.17_1	I-35	2 (South)	111.75	126.04	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 125.17_2	I-35	2 (South)	111.75	126.04	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 122.00	I-35	2 (South)	111.75	126.04	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
I-35/S/MP 117.38	I-35	2 (South)	111.75	126.04	Hamilton County	JPCP	HMA	RPCC	1999	IM-35-5(71)111--13-85	5,033	11.8	10.2	0.0
US-30/W/MP 156.65	US-30	2 (West)	151.92	156.8	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 153.70	US-30	2 (West)	151.92	156.8	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
US-30/W/MP 152.45	US-30	2 (West)	151.92	156.8	Story County	JPCP	HMA	Vigin Agg	1992	F-30-5(80)--20-85	1,084	10.0	10.0	0.0
I-80/W/MP 132.15_1	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 132.15_2	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 132.05	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.85_1	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.85_2	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.65_1	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
I-80/W/MP 131.65_2	I-80	2 (West)	131.48	132.84	Polk County	JPCP	HMA	RPCC	1997	IM-35-3(69)82--13-77	13,264	12.5	12.0	0.0
US-6/E/MP 121.30	US-6	1 (East)	121.27	123.38	Dallas County	JPCP	PCC	Vigin Agg	1999	STP-6-3(48)--2C-25	538	10.6	9.8	0.0
I-80/W/MP 105.00	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 103.47	I-80	2 (West)	103.23	105.37	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.00_1	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 102.00_2	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0
I-80/W/MP 101.88	I-80	2 (West)	101.64	102.41	Dallas County	JPCP	HMA	RPCC	1991	IR-80-2(131)99	7,940	12.0	9.0	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/W/MP 59.90	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 59.60	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 59.50	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 58.75	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 58.25_1	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 58.25_2	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 57.65_1	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 57.65_2	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 57.10_1	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 57.10_2	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 56.72_1	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 56.72_2	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 56.00	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/E/MP 55.93	I-80	1 (East)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 56.53	I-80	1 (East)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 57.00	I-80	1 (East)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 73.45	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 74.00	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 79.04	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 79.27	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 82.27	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 84.45	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
IA-163/W/MP 20.67	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 19.63_1	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 19.63_2	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 18.82_1	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 18.82_2	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 17.60	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-5/E/MP 87.55_1	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 87.55_2	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 86.50_1	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 86.50_2	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 86.25	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
I-80/E/MP 151.60	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 152.15_1	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 152.15_2	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 153.80	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 154.55	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/W/MP 59.30_1	I-80	2 (West)	55.33	59.90	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 59.30_2	I-80	2 (West)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 56.63_1	I-80	2 (West)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 56.63_2	I-80	2 (West)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 55.90_1	I-80	2 (West)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/W/MP 55.90_2	I-80	2 (West)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1992	IR-80-1(186)43	7,682	12.0	9.0	0.0
I-80/E/MP 55.57	I-80	1 (East)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 56.30	I-80	1 (East)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 58.05	I-80	1 (East)	55.33	59.9	Cass County	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,682	12.0	9.0	0.0
I-80/E/MP 76.83	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 79.02	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 80.17	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 80.57	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
I-80/E/MP 81.80	I-80	1 (East)	73.32	85.75	Adair County	JPCP	HMA	RPCC	2000	IM-80-2(156)73--13-01	7,810	11.4	10.0	0.0
IA-163/W/MP 21.26	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 19.78_1	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 19.78_2	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-163/W/MP 17.70	IA-163	2 (West)	16.93	21.44	Jasper County	JPCP	HMA	Vigin Agg	1998	NHSN-163-2(15)--2R-50	1,262	10.0	10.0	0.0
IA-5/E/MP 87.87	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 87.43_1	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 87.43_2	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 86.16_1	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
IA-5/E/MP 86.16_2	IA-5	1(East)	85.24	88.09	Warren County	JPCP	Gravel	Vigin Agg	1999	STPN-5-4(40)--2J-91	579	10.0	10.0	0.0
I-80/E/MP 151.68	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 152.15_1	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 152.15_2	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0
I-80/E/MP 154.27	I-80	1 (East)	151.48	156.28	Jasper County	JPCP	HMA	RPCC	1993	IM-80-5(164)154--13-50	8,582	12.0	9.0	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 161.75_2	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 164.10	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 165.40	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 167.10	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 169.20_1	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 169.20_2	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 169.90	I-80	1 (East)	169.57	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	9,007	12.0	9.0	0.0
I-80/E/MP 171.90	I-80	1 (East)	169.57	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	9,007	12.0	9.0	0.0
I-80/E/MP 173.90	I-80	1 (East)	169.57	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	9,007	12.0	9.0	0.0
IA-330/W/MP 14.15	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.80_1	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.80_2	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.65	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.55_1	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.55_2	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
I-80/E/MP 193.07	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 193.20_1	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 193.20_2	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 195.10	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 198.05	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 202.35	I-80	1 (East)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 206.26	I-80	1 (East)	204.80	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 207.10	I-80	1 (East)	204.80	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 207.43	I-80	1 (East)	204.80	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 208.45	I-80	1 (East)	204.80	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 221.60	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 222.23	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 223.65	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 224.18	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 248.35	I-80	1 (East)	247.90	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 250.00	I-80	1 (East)	247.90	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 250.50	I-80	1 (East)	247.90	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 252.15	I-80	1 (East)	247.90	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 253.80	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0
I-80/E/MP 254.85	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0
I-80/E/MP 256.53	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 160.87	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 164.43_1	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 164.43_2	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 164.72	I-80	1 (East)	160.35	165.12	Jasper County	JPCP	HMA	RPCC	1996	IM-80-5(184)160--13-50	8,679	12.0	9.0	0.0
I-80/E/MP 165.65_1	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 165.65_2	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 167.67	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 168.58_1	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 168.58_2	I-80	1 (East)	165.12	169.57	Jasper County	JPCP	HMA	RPCC	1994	IM-80-5(169)165--13-50	8,847	12.0	9.0	0.0
I-80/E/MP 172.07	I-80	1 (East)	169.57	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	9,007	12.0	9.0	0.0
I-80/E/MP 172.97	I-80	1 (East)	169.57	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	9,007	12.0	9.0	0.0
IA-330/W/MP 14.15	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 14.07_1	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 14.07_2	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.55_1	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.55_2	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.38_1	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
IA-330/W/MP 13.38_2	IA-330	2 (West)	13.25	14.29	Marshall County	JPCP	HMA	Vigin Agg	2002	NHSX-330-2(39)--3H-64	698	10.2	10.2	0.0
I-80/E/MP 193.20_1	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 193.20_2	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 195.27_1	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 195.27_2	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 197.43_1	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 197.43_2	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 200.43	I-80	1 (East)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	8,994	11.5	9.0	0.0
I-80/E/MP 206.26	I-80	1 (East)	204.8	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 207.62	I-80	1 (East)	204.8	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 208.45	I-80	1 (East)	204.8	209.65	Iowa County	JPCP	HMA	RPCC	1990	IR-80-6(136)193	9,022	11.5	9.0	0.0
I-80/E/MP 221.72	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 225.10	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 225.20	I-80	1 (East)	221.35	225.93	Iowa County	JPCP	HMA	RPCC	1996	IM-80-6(187)221--13-48	9,431	12.0	10.0	0.0
I-80/E/MP 248.26	I-80	1 (East)	247.9	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 248.65	I-80	1 (East)	247.9	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 250.80	I-80	1 (East)	247.9	253.58	Johnson County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,755	12.0	9.0	0.0
I-80/E/MP 254.16	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0
I-80/E/MP 255.84	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0
I-80/E/MP 256.85	I-80	1 (East)	253.58	257.66	Cedar County	JPCP	HMA	RPCC	1993	IM-80-7(59)247--13-52	11,780	12.0	9.0	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 266.37	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 266.50	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 266.60	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 266.85	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 267.40	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 267.65	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 268.03	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 268.13	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 268.85	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 269.63	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 270.60	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 270.90	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 271.03	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 271.30	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 272.07	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 273.00	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 273.17	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 273.70	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 274.13	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 274.50	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 275.25	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 276.10	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 276.43_1	I-80	1 (East)	275.34	278.10	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 276.43_2	I-80	1 (East)	275.34	278.10	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 277.65	I-80	1 (East)	275.34	278.10	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 278.20	I-80	1 (East)	275.34	278.10	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 278.30	I-80	1 (East)	275.34	278.10	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 278.60	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 278.97	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 278.60	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
US-61/E/MP 107.50	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 108.40_1	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 108.40_2	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 109.00	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
I-80/E/MP 296.85	I-80	1 (East)	294.66	298.66	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(171)295--13-82	9,609	11.8	10.2	0.0
I-80/E/MP 297.60	I-80	1 (East)	294.66	298.66	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(171)295--13-82	9,609	11.8	10.2	0.0
I-80/E/MP 298.40	I-80	1 (East)	294.66	298.66	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(171)295--13-82	9,609	11.8	10.2	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 266.66	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 268.65	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 270.80	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 271.45	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 272.29	I-80	1 (East)	265.76	272.08	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,632	12.0	9.0	0.0
I-80/E/MP 273.35	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 273.75	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 274.86	I-80	1 (East)	272.08	275.34	Cedar County	JPCP	HMA	RPCC	1992	IR-80-7(57)265	11,457	12.0	9.0	0.0
I-80/E/MP 276.23	I-80	1 (East)	275.34	278.1	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 276.95	I-80	1 (East)	275.34	278.1	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 277.85	I-80	1 (East)	275.34	278.1	Cedar County	JPCP	HMA	RPCC	1991	IR-80-7(57)265	11,473	12.0	9.0	0.0
I-80/E/MP 279.14	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 279.85_1	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 279.85_2	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 279.85_3	I-80	1 (East)	278.10	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 280.30_1	I-80	1 (East)	278.1	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
I-80/E/MP 280.30_2	I-80	1 (East)	278.1	280.78	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(165)279--13-82	11,552	11.8	10.2	0.0
US-61/E/MP 107.67_1	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 107.67_2	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 108.24	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
US-61/E/MP 109.50	US-61	1 (East)	107.16	109.58	Scott County	JPCP	HMA	Vigin Agg	2001	NHSX-61-5(92)--3H-82	1,757	10.5	10.3	0.0
I-80/E/MP 295.75	I-80	1 (East)	294.66	298.66	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(171)295--13-82	9,609	11.8	10.2	0.0
I-80/E/MP 298.07	I-80	1 (East)	294.66	298.66	Scott County	JPCP	HMA	RPCC	1997	IM-80-8(171)295--13-82	9,609	11.8	10.2	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
US-151/S/MP 73.60_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 73.60_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 72.95_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 72.95_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 72.00_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 72.00_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.85_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.85_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.00_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.00_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 68.55	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 68.00_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 68.00_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 67.70	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 67.10_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 67.10_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 66.70	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 65.80_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 65.80_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 64.50	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 63.60_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 63.60_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 62.90_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 62.90_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/N/MP 64.05	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 65.05_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 65.05_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 65.95_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 65.95_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 66.90_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 66.90_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 67.25_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 67.25_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 44.80_1	US-151	1 (North)	40.04	45.14	Linn County	JPCP	Gravel	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP 44.80_2	US-151	1 (North)	40.04	45.14	Linn County	JPCP	Gravel	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP 43.20_1	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP 43.20_2	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP41.00_1	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP41.00_2	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
US-151/S/MP 71.60_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 71.60_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.65_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 70.65_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 68.81_1	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 68.81_2	US-151	2 (South)	67.57	73.78	Jones County	JPCP	Gravel	RPCC	2003	NHSX-151-4(85)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 65.57_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 65.57_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 63.80_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 63.80_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 62.99_1	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/S/MP 62.99_2	US-151	2 (South)	62.57	67.57	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--3H-53	1,101	9.5	10.0	0.0
US-151/N/MP 62.90_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 62.90_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 63.30_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 63.30_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 64.70_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 64.70_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 66.78_1	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 66.78_2	US-151	1 (North)	62.55	67.48	Jones County	JPCP	Gravel	RPCC/Vigin Agg	2003	NHSX-151-4(90)--2R-53	1,101	9.5	10.0	0.0
US-151/N/MP 44.50	US-151	1 (North)	40.04	45.14	Linn County	JPCP	Gravel	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP 43.72_1	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP 43.72_2	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP42.90_1	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0
US-151/N/MP42.90_2	US-151	1 (North)	40.04	45.14	Linn County	JPCP	HMA	RPCC	1992	F-RP-151-3(79)	997	9.5	10.0	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
US-30/W/MP 262.90_1	US-30	2 (West)	259.82	263.30	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 262.90_2	US-30	2 (West)	259.82	263.30	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 261.35	US-30	2 (West)	259.82	263.30	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 260.80	US-30	2 (West)	259.82	263.30	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 260.20	US-30	2 (West)	259.82	263.30	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
I-80/W/MP 203.50	I-80	2 (West)	192.82	204.80	Poweshiek County	JPCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 202.65	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 201.55	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 197.70	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 197.15_1	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 197.15_2	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 194.45_1	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 194.45_2	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.60_1	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.60_2	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.00_1	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.00_2	I-80	2 (west)	192.82	204.80	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 173.75	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 171.95	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 170.35	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 167.30	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 163.55	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 159.59	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 157.70-1	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 157.70-2	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 151.35	I-80	2 (west)	149.89	151.48	Jasper County	JPCP	HMA	RPCC	1990	IR-80-5(130)143	8,580	11.5	9.0	0.0
I-80/W/MP 150.85	I-80	2 (west)	149.89	151.48	Jasper County	JPCP	HMA	RPCC	1990	IR-80-5(130)144	8,580	11.5	9.0	0.0
I-80/W/MP 150.10	I-80	2 (west)	149.89	151.48	Jasper County	JPCP	HMA	RPCC	1990	IR-80-5(130)145	8,580	11.5	9.0	0.0
IA-60/E/MP 47.75	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 48.35_1	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 48.35_2	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 49.06_1	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 49.06_2	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 51.10	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 51.15	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 50.20_1	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 50.20_2	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 47.75	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HWA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
US-30/W/MP 262.39_1	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 262.39_2	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 261.87_1	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 261.87_2	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 260.58_1	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
US-30/W/MP 260.58_2	US-30	2 (West)	259.82	263.3	Linn County	JPCP	Gravel	Vigin Agg	2000	NHSX-30-7(94)--3H-57	918	10.0	10.3	0.0
I-80/W/MP 203.97	I-80	2 (West)	192.82	204.8	Poweshiek County	JPCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 198.53	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 197.78	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 196.60_1	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 196.60_2	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.80_1	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 193.80_2	I-80	2 (west)	192.82	204.8	Poweshiek County	JCCP	HMA	RPCC	1991	IR-80-6(145)191	8,994	11.5	9.0	0.0
I-80/W/MP 168.23	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 165.20	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 164.65	I-80	2 (west)	156.28	174.21	Jasper County	JPCP	HMA	RPCC	1995	IM-80-5(184)160--13-50	8,815	12.0	9.0	0.0
I-80/W/MP 151.40	I-80	2 (west)	149.89	151.48	Jasper County	JPCP	HMA	RPCC	1990	IR-80-5(130)143	8,580	11.5	9.0	0.0
I-80/W/MP 150.67	I-80	2 (west)	149.89	151.48	Jasper County	JPCP	HMA	RPCC	1990	IR-80-5(130)145	8,580	11.5	9.0	0.0
IA-60/E/MP 47.95_1	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 47.95_2	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 48.97	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 51.22_1	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/E/MP 51.22_2	IA-60	1(East)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 50.80_1	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 50.80_2	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 49.67_1	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 49.67_2	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0
IA-60/W/MP 47.75	IA-60	2(West)	47.69	51.27	Osceola County	JPCP	HMA	Vigin Agg	2007	NHSX-060-4(35)--3H-72	956	10.2	10.2	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/W/MP 49.30_1	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 49.30_2	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 49.03	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 48.50_1	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 48.50_2	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 48.30_1	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 48.30_2	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 47.70_1	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 47.70_2	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 46.70_1	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 46.70_2	I-80	2 (west)	45.14	49.71	ttawattamie Cour	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 38.20	I-80	2(west)	35.09	39.50	ttawattamie Cour	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 37.90	I-80	2(west)	35.09	39.50	ttawattamie Cour	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 37.35	I-80	2(west)	35.09	39.50	ttawattamie Cour	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 36.05	I-80	2(west)	35.09	39.50	ttawattamie Cour	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 34.70	I-80	2(west)	35.09	39.50	ttawattamie Cour	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 26.75	I-80	2(west)	21.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 24.90	I-80	2(west)	21.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 23.75	I-80	2(west)	21.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 21.75	I-80	2(west)	21.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 10.50	I-80	2(west)	5.21	10.80	ttawattamie Cour	JPCP	HMA	RPCC	1999	IM-80-1(249)6--13-78	6,825	11.8	10.2	0.0
I-80/W/MP 9.50	I-80	2(west)	5.21	10.80	ttawattamie Cour	JPCP	HMA	RPCC	1999	IM-80-1(249)6--13-78	6,825	11.8	10.2	0.0
I-29/N/MP 58.80	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 59.85	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 60.35	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 63.05	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 64.45	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 65.13_1	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/N/MP 65.13_2	I-29	1(north)	57.70	66.63	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	2,575	11.5	9.0	4.0
I-29/S/MP 65.20_1	I-29	2(south)	60.80	65.50	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 65.20_2	I-29	2(south)	60.80	65.50	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 63.35	I-29	2(south)	60.80	65.50	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 60.98	I-29	2(south)	60.80	65.50	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 60.35_1	I-29	2(south)	59.58	60.80	ttawattamie Cour	JPCP	HMA	RPCC	1994	IM-29-3(38)58--13-78	2,721	11.5	9.0	0.0
I-29/S/MP 60.35_2	I-29	2(south)	59.58	60.80	ttawattamie Cour	JPCP	HMA	RPCC	1994	IM-29-3(38)58--13-78	2,721	11.5	9.0	0.0
I-29/S/MP 60.20_1	I-29	2(south)	59.58	60.80	ttawattamie Cour	JPCP	HMA	RPCC	1994	IM-29-3(38)58--13-78	2,721	11.5	9.0	0.0
I-29/S/MP 60.20_2	I-29	2(south)	59.58	60.80	ttawattamie Cour	JPCP	HMA	RPCC	1994	IM-29-3(38)58--13-78	2,721	11.5	9.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/W/MP 48.58_1	I-80	2 (west)	45.14	49.71	ottawattamie Coun	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 48.58_2	I-80	2 (west)	45.14	49.71	ottawattamie Coun	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 47.60	I-80	2 (west)	45.14	49.71	ottawattamie Coun	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 46.10_1	I-80	2 (west)	45.14	49.71	ottawattamie Coun	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 46.10_2	I-80	2 (west)	45.14	49.71	ottawattamie Coun	JPCP	HMA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/W/MP 39.10	I-80	2(west)	35.09	39.5	ottawattamie Coun	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 38.20	I-80	2(west)	35.09	39.5	ottawattamie Coun	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 36.31	I-80	2(west)	35.09	39.5	ottawattamie Coun	JPCP	HMA	RPCC	2005	IM-80-1(286)35--13-78	8,093	11.5	12.3	0.0
I-80/W/MP 26.72	I-80	2(west)	21.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 26.70	I-80	2(west)	21.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 25.82	I-80	2(west)	21.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 24.05	I-80	2(west)	21.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 21.72	I-80	2(west)	21.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/W/MP 10.73	I-80	2(west)	5.21	10.8	ottawattamie Coun	JPCP	HMA	RPCC	1999	IM-80-1(249)6--13-78	6,825	11.8	10.2	0.0
I-80/W/MP 10.40	I-80	2(west)	5.21	10.8	ottawattamie Coun	JPCP	HMA	RPCC	1999	IM-80-1(249)6--13-78	6,825	11.8	10.2	0.0
I-80/W/MP 8.85	I-80	2(west)	5.21	10.8	ottawattamie Coun	JPCP	HMA	RPCC	1999	IM-80-1(249)6--13-78	6,825	11.8	10.2	0.0
I-29/S/MP 63.03_1	I-29	2(south)	60.8	65.5	ottawattamie Coun	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 65.03_2	I-29	2(south)	60.8	65.5	ottawattamie Coun	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 62.80	I-29	2(south)	60.8	65.5	ottawattamie Coun	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 62.70_1	I-29	2(south)	60.8	65.5	ottawattamie Coun	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0
I-29/S/MP 62.70_2	I-29	2(south)	60.8	65.5	ottawattamie Coun	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,241	11.5	9.0	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-29/N/MP 70.90_1	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 70.90_2	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 71.08_1	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 71.08_2	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 71.65_1	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 71.65_2	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 72.15_1	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 72.15_2	I-29	1(North)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,242	11.5	9.0	4.0
I-29/N/MP 72.90_1	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 72.90_2	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 74.25_1	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 74.25_2	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 74.60_1	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 74.60_2	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 76.25_1	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 76.25_2	I-29	1(North)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1992	IM-29-4(39)56	3,609	11.5	9.0	4.0
I-29/N/MP 77.30_1	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 77.30_2	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 79.05	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 82.90_1	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 82.90_2	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 85.35_1	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 85.35_2	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 87.15	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 90.15	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/S/MP 76.40_1	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 76.40_2	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 75.00_1	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 75.00_2	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 73.90	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 71.90	I-29	2(South)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,605	11.5	9.0	0.0
I-29/S/MP 71.15_1	I-29	2(South)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,605	11.5	9.0	0.0
I-29/S/MP 71.15_2	I-29	2(South)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,605	11.5	9.0	0.0
I-29/S/MP 70.80_1	I-29	2(South)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,605	11.5	9.0	0.0
I-29/S/MP 70.80_2	I-29	2(South)	70.84	72.45	ttawattamie Cour	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,605	11.5	9.0	0.0
I-80/E/MP 5.90	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 6.10	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 7.40	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 9.65	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 10.40	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 10.50	I-80	1(East)	5.10	10.80	ttawattamie Cour	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-29/N/MP 78.44	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 80.70	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 84.89_1	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 84.89_2	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 87.98	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/N/MP 90.26	I-29	1(North)	76.54	90.72	Harrison County	JPCP	HMA	Vigin Agg	1999	IM-29-4(52)72--13-43	3,185	11.8	3.9	0.0
I-29/S/MP 76.25_1	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 76.25_2	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 74.45_1	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 74.45_2	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 74.20_1	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 74.20_2	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-29/S/MP 73.03	I-29	2(South)	72.45	76.54	Harrison County	JPCP	HMA	RPCC	1995	IM-29-3(52)61--13-78	3,609	11.5	9.0	0.0
I-80/E/MP 6.72	I-80	1(East)	5.1	10.8	ottawattamie Coun	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 8.64	I-80	1(East)	5.1	10.8	ottawattamie Coun	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 9.28	I-80	1(East)	5.1	10.8	ottawattamie Coun	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 9.65	I-80	1(East)	5.1	10.8	ottawattamie Coun	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0
I-80/E/MP 10.80	I-80	1(East)	5.1	10.8	ottawattamie Coun	JPCP	HMA	RPCC	2003	IM-80-1(251)6--13-78	6,825	12.0	10.3	0.0

Table A.1. JPCP site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 22.40	I-80	1(East)	20.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 24.10	I-80	1(East)	20.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 25.85	I-80	1(East)	20.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 28.00	I-80	1(East)	20.70	28.04	ttawattamie Cour	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 35.10_1	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.10_2	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.25_1	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.25_2	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 36.20_1	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 36.20_2	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 37.23	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.05_1	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.05_2	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.37_1	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.37_2	I-80	1(East)	35.09	39.29	ttawattamie Cour	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 45.70	I-80	1(East)	45.14	49.71	ttawattamie Cour	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 46.35	I-80	1(East)	45.14	49.71	ttawattamie Cour	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 47.65	I-80	1(East)	45.14	49.71	ttawattamie Cour	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 48.40	I-80	1(East)	45.14	49.71	ttawattamie Cour	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 49.55	I-80	1(East)	45.14	49.71	ttawattamie Cour	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	PCC	Base	Subbase Thick
I-80/E/MP 23.82	I-80	1(East)	20.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 27.53	I-80	1(East)	20.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 27.59	I-80	1(East)	20.7	28.04	ottawattamie Coun	JPCP	HMA	RPCC	1998	IM-80-1(235)23--13-78	6,404	11.8	10.2	0.0
I-80/E/MP 35.10_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.10_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.93_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 35.93_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 37.33_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 37.33_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.05_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.05_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.37_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.37_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.68_1	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 38.68_2	I-80	1(East)	35.09	39.29	ottawattamie Coun	JPCP	HMA	RPCC	1990	IR-80-1(183)34	8,093	11.5	9.0	0.0
I-80/E/MP 45.32	I-80	1(East)	45.14	49.71	ottawattamie Coun	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 46.64	I-80	1(East)	45.14	49.71	ottawattamie Coun	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 47.72	I-80	1(East)	45.14	49.71	ottawattamie Coun	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0
I-80/E/MP 48.76	I-80	1(East)	45.14	49.71	ottawattamie Coun	JPCP	HWA	RPCC	1991	IR-80-1(178)40	7,793	12.0	9.0	0.0

Table A.2. JPCP drainage outlet inspection location information

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-35/N/MP140.22	1	Oct/10/2012	140.22	N42(D)24(M)53(S) and W93(D)34(M)12(S)
I-35/N/MP140.35	2	Oct/10/2012	140.35	N42(D)24(M)00(S) and W93(D)24(M)06(S)
I-35/N/MP140.60	3	Oct/10/2012	140.60	N42(D)25(M)13(S) and W93(D)34(M)12(S)
I-35/N/MP140.80	4	Oct/10/2012	140.80	N42(D)25(M)25(S) and W93(D)34(M)12(S)
I-35/N/MP141.30	5	Oct/10/2012	141.30	N42(D)25(M)50(S) and W93(D)34(M)12(S)
I-35/N/MP143.30	1	Oct/10/2012	143.30	N42(D)27(M)34(S) and W93(D)34(M)7(S)
I-35/N/MP143.45	2	Oct/10/2012	143.45	N42(D)27(M)39(S) and W93(D)34(M)7(S)
I-35/N/MP143.65	3	Oct/10/2012	143.65	N42(D)27(M)54(S) and W93(D)34(M)7(S)
I-35/S/MP 129.00	1	Oct/10/2012	129.00	N42(D)15(M)9(S) and W93(D)34(M) 14(S)
I-35/S/MP 128.00	2	Oct/10/2012	128.00	N42(D)14(M)24(S) and W93(D)34(M)14(S)
I-35/S/MP 127.90	3	Oct/10/2012	127.90	N42(D)14(M)12(S) and W93(D)34(M)16(S)
I-35/S/MP 127.85	4	Oct/10/2012	127.85	N42(D)14(M)9(S) and W93(D)34(M)16(S)
I-35/S/MP 127.50	5	Oct/10/2012	127.50	N42(D)13(M)11(S) and W93(D)34(M)17(S)
I-35/S/MP 127.20	6	Oct/10/2012	127.20	N42(D)13(M)35(S) and W93(D)34(M)18(S)
I-35/S/MP 126.00	1	Oct/10/2012	126.00	N42(D)12(M)3(S) and W93(D)34(M)14(S)
I-35/S/MP 123.70	2	Oct/10/2012	123.70	N42(D)10(M)33(S) and W93(D)34(M)15(S)
US-30/W/MP 156.50_1	1	Oct/10/2012	156.50	N42(D)0(M)31(S) and W93(D)29(M)3(S)
US-30/W/MP 156.50_2	1	Oct/10/2012	156.50	N42(D)0(M)31(S) and W93(D)29(M)3(S)
US-30/W/MP 156.00	2	Oct/10/2012	156.00	N42(D)0(M)32(S) and W93(D)29(M)17(S)
US-30/W/MP 155.80	3	Oct/10/2012	155.80	N42(D)0(M)32(S) and W93(D)29(M)50(S)
US-30/W/MP 153.00	4	Oct/10/2012	153.00	N42(D)0(M)32(S) and W93(D)32(M)22(S)
I-80/W/MP 132.86	1	Oct/17/2012	132.86	N41(D)39(M)5(S) and W93(D)41(M)0(S)
I-80/W/MP 132.20_1	2	Oct/17/2012	132.20	N41(D)39(M)6(S) and W93(D)41(M)5(S)
I-80/W/MP 132.20_2	2	Oct/17/2012	132.20	N41(D)39(M)6(S) and W93(D)41(M)5(S)
I-80/W/MP 131.85	3	Oct/17/2012	131.85	N41(D)39(M)6(S) and W93(D)41(M)17(S)
I-80/W/MP 131.80	4	Oct/17/2012	131.80	N41(D)39(M)6(S) and W93(D)41(M)18(S)
US-6/E/MP 121.30	1	Oct/17/2012	121.30	N41(D)36(M)53(S) and W93(D)53(M)36(S)
I-80/W/MP 104.80	1	Oct/17/2012	104.80	N41(D)31(M)4(S) and W94(D)6(M)30(S)
I-80/W/MP 103.95	2	Oct/17/2012	103.95	N41(D)31(M)4(S) and W94(D)7(M)30(S)
I-80/W/MP 103.90_1	3	Oct/17/2012	103.90	N41(D)31(M)4(S) and W94(D)7(M)32(S)
I-80/W/MP 103.90_2	3	Oct/17/2012	103.90	N41(D)31(M)4(S) and W94(D)7(M)32(S)
I-80/W/MP 103.40	4	Oct/17/2012	103.40	N41(D)31(M)4(S) and W94(D)8(M)8(S)
I-80/W/MP 102.35	1	Oct/17/2012	102.35	N41(D)31(M)4(S) and W94(D)9(M)21(S)
I-80/W/MP 102.25	2	Oct/17/2012	102.25	N41(D)31(M)4(S) and W94(D)9(M)21(S)
I-80/W/MP 102.07	3	Oct/17/2012	102.07	N41(D)37(M)4(S) and W94(D)9(M)40(S)
I-80/W/MP 102.00_1	4	Oct/17/2012	102.07	N41(D)31(M)4(S) and W94(D)9(M)47(S)
I-80/W/MP 102.00_2	4	Oct/17/2012	102.07	N41(D)31(M)4(S) and W94(D)9(M)47(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-35/N/MP140.78	1	June/5/2013	140.78	N42(D)25(M)23(S) and W93(D)34(M)13(S)
I-35/N/MP140.80	2	June/5/2013	140.8	N42(D)25(M)25(S) and W93(D)34(M)13(S)
I-35/N/MP141.28	3	June/5/2013	141.28	N42(D)25(M)49(S) and W93(D)34(M)12(S)
I-35/N/MP141.25	4	June/5/2013	141.25	N42(D)25(M)45(S) and W93(D)34(M)12(S)
I-35/N/MP140.50	5	June/5/2013	141.5	N42(D)26(M)1(S) and W93(D)34(M)11(S)
I-35/N/MP141.60	6	June/5/2013	141.60	N42(D)26(M)6(S) and W93(D)34(M)12(S)
I-35/N/MP141.30	7	June/5/2013	141.30	N42(D)25(M)50(S) and W93(D)34(M)12(S)
I-35/N/MP143.45	1	June/5/2013	143.45	N42(D)27(M)40(S) and W93(D)34(M)7(S)
I-35/N/MP143.50_1	2	June/5/2013	143.50	N42(D)27(M)45(S) and W93(D)34(M)7(S)
I-35/N/MP143.50_2	3	June/5/2013	143.50	N42(D)27(M)45(S) and W93(D)34(M)7(S)
I-35/S/MP 130.80	1	June/5/2013	130.80	N42(D)16(M)43(S) and W93(D)34(M) 14(S)
I-35/S/MP 128.93	2	June/5/2013	128.93	N42(D)15(M)5(S) and W93(D)34(M)14(S)
I-35/S/MP 127.35	3	June/5/2013	127.35	N42(D)13(M)43(S) and W93(D)34(M)16(S)
I-35/S/MP 125.17_1	1	June/5/2013	125.17	N42(D)11(M)50(S) and W93(D)34(M) 14(S)
I-35/S/MP 125.17_2	2	June/5/2013	125.17	N42(D)11(M)50(S) and W93(D)34(M)14(S)
I-35/S/MP 122.00	3	June/5/2013	122.00	N42(D)9(M)4(S) and W93(D)34(M) 12(S)
I-35/S/MP 117.38	4	June/5/2013	117.38	N42(D)5(M)20(S) and W93(D)34(M)12(S)
US-30/W/MP 156.65	1	June/5/2013	156.65	N42(D)0(M)24(S) and W93(D)28(M)7(S)
US-30/W/MP 153.70	2	June/5/2013	153.70	N42(D)0(M)33(S) and W93(D)31(M)33(S)
US-30/W/MP 152.45	3	June/5/2013	152.45	N42(D)0(M)32(S) and W93(D)33(M)0(S)
I-80/W/MP 132.15_1	1	June/13/2013	132.15	N41(D)39(M)6(S) and W93(D)41(M)4(S)
I-80/W/MP 132.15_2	1	June/13/2013	132.15	N41(D)39(M)6(S) and W93(D)41(M)4(S)
I-80/W/MP 132.05	2	June/13/2013	132.05	N41(D)39(M)7(S) and W93(D)41(M)10(S)
I-80/W/MP 131.85_1	3	June/13/2013	131.85	N41(D)39(M)7(S) and W93(D)41(M)18(S)
I-80/W/MP 131.85_2	3	June/13/2013	131.85	N41(D)39(M)7(S) and W93(D)41(M)18(S)
I-80/W/MP 131.65_1	4	June/13/2013	131.65	N41(D)39(M)7(S) and W93(D)41(M)24(S)
I-80/W/MP 131.65_2	4	June/13/2013	131.65	N41(D)39(M)7(S) and W93(D)41(M)24(S)
US-6/E/MP 121.30	1	June/13/2013	121.30	N41(D)36(M)53(S) and W93(D)53(M)36(S)
I-80/W/MP 105.00	1	June/13/2013	105.00	N41(D)31(M)4(S) and W94(D)6(M)17(S)
I-80/W/MP 103.47	2	June/13/2013	103.47	N41(D)31(M)4(S) and W94(D)8(M)4(S)
I-80/W/MP 102.00_1	1	June/13/2013	102.00	N41(D)31(M)4(S) and W94(D)9(M)47(S)
I-80/W/MP 102.00_2	1	June/13/2013	102.00	N41(D)31(M)4(S) and W94(D)9(M)47(S)
I-80/W/MP 101.88	2	June/13/2013	101.88	N41(D)31(M)5(S) and W94(D)9(M)54(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/W/MP 59.90	1	Oct/17/2012	59.90	N41(D)29(M)50(S) and W94(D)57(M)31(S)
I-80/W/MP 59.60	2	Oct/17/2012	59.60	N41(D)29(M)50(S) and W94(D)57(M)52(S)
I-80/W/MP 59.50	3	Oct/17/2012	59.50	N41(D)29(M)50(S) and W94(D)57(M)58(S)
I-80/W/MP 58.75	4	Oct/17/2012	58.75	N41(D)29(M)50(S) and W94(D)57(M)51(S)
I-80/W/MP 58.25_1	5	Oct/17/2012	58.25	N41(D)29(M)51(S) and W94(D)59(M)25(S)
I-80/W/MP 58.25_2	5	Oct/17/2012	58.25	N41(D)29(M)51(S) and W94(D)59(M)25(S)
I-80/W/MP 57.65_1	6	Oct/17/2012	57.65	N41(D)29(M)51(S) and W96(D)0(M)7(S)
I-80/W/MP 57.65_2	6	Oct/17/2012	57.65	N41(D)29(M)51(S) and W96(D)0(M)7(S)
I-80/W/MP 57.10_1	7	Oct/17/2012	57.10	N41(D)29(M)50(S) and W96(D)0(M)46(S)
I-80/W/MP 57.10_2	7	Oct/17/2012	57.10	N41(D)29(M)50(S) and W96(D)0(M)46(S)
I-80/W/MP 56.72_1	8	Oct/17/2012	56.72	N41(D)29(M)50(S) and W95(D)1(M)14(S)
I-80/W/MP 56.72_2	8	Oct/17/2012	56.72	N41(D)29(M)50(S) and W95(D)1(M)14(S)
I-80/W/MP 56.00	9	Oct/17/2012	56.00	N41(D)29(M)50(S) and W95(D)2(M)1(S)
I-80/E/MP 55.93	1	Oct/17/2012	55.93	N41(D)29(M)49(S) and W95(D)2(M)6(S)
I-80/E/MP 56.53	2	Oct/17/2012	56.53	N41(D)29(M)49(S) and W95(D)1(M)25(S)
I-80/E/MP 57.00	3	Oct/17/2012	57.00	N41(D)29(M)49(S) and W95(D)0(M)52(S)
I-80/E/MP 73.45	1	Oct/17/2012	73.45	N41(D)29(M)48(S) and W94(D)41(M)50(S)
I-80/E/MP 74.00	2	Oct/17/2012	74.00	N41(D)29(M)48(S) and W94(D)41(M)22(S)
I-80/E/MP 79.04	3	Oct/17/2012	79.04	N41(D)29(M)40(S) and W94(D)35(M)29(S)
I-80/E/MP 79.27	4	Oct/17/2012	79.27	N41(D)29(M)48(S) and W94(D)35(M)40(S)
I-80/E/MP 82.27	5	Oct/17/2012	82.27	N41(D)29(M)45(S) and W94(D)31(M)43(S)
I-80/E/MP 84.45	6	Oct/17/2012	84.45	N41(D)29(M)48(S) and W94(D)29(M)15(S)
IA-163/W/MP 20.67	1	Oct/24/2012	20.67	N41(D)35(M)18(S) and W93(D)12(M)23(S)
IA-163/W/MP 19.63_1	2	Oct/24/2012	19.63	N41(D)35(M)17(S) and W93(D)13(M)36(S)
IA-163/W/MP 19.63_2	2	Oct/24/2012	19.63	N41(D)35(M)17(S) and W93(D)13(M)36(S)
IA-163/W/MP 18.82_1	3	Oct/24/2012	18.82	N41(D)35(M)24(S) and W93(D)14(M)30(S)
IA-163/W/MP 18.82_2	3	Oct/24/2012	18.82	N41(D)35(M)24(S) and W93(D)14(M)30(S)
IA-163/W/MP 17.60	4	Oct/24/2012	17.60	N41(D)36(M)54(S) and W93(D)15(M)40(S)
IA-5/E/MP 87.55_1	1	Oct/24/2012	87.55	N41(D)29(M)26(S) and W93(D)28(M)25(S)
IA-5/E/MP 87.55_2	1	Oct/24/2012	87.55	N41(D)29(M)26(S) and W93(D)28(M)25(S)
IA-5/E/MP 86.50_1	2	Oct/24/2012	86.50	N41(D)29(M)26(S) and W93(D)28(M)25(S)
IA-5/E/MP 86.50_2	2	Oct/24/2012	86.50	N41(D)29(M)26(S) and W93(D)28(M)25(S)
IA-5/E/MP 86.25	3	Oct/24/2012	86.25	N41(D)28(M)59(S) and W93(D)26(M)57(S)
I-80/E/MP 151.60	1	Oct/24/2012	151.60	N41(D)40(M)53(S) and W93(D)18(M)54(S)
I-80/E/MP 152.15_1	2	Oct/24/2012	152.15	N41(D)40(M)54(S) and W93(D)18(M)15(S)
I-80/E/MP 152.15_2	2	Oct/24/2012	152.15	N41(D)40(M)54(S) and W93(D)18(M)15(S)
I-80/E/MP 153.80	3	Oct/24/2012	153.80	N41(D)40(M)11(S) and W93(D)16(M)22(S)
I-80/E/MP 154.55	4	Oct/24/2012	154.55	N41(D)41(M)21(S) and W93(D)15(M)33(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/W/MP 59.30_1	1	June/13/2013	59.30	N41(D)29(M)50(S) and W94(D)58(M)13(S)
I-80/W/MP 59.30_2	1	Oct/17/2012	59.30	N41(D)29(M)50(S) and W94(D)58(M)13(S)
I-80/W/MP 56.63_1	2	June/13/2013	56.63	N41(D)29(M)50(S) and W95(D)0(M)8(S)
I-80/W/MP 56.63_2	2	June/13/2013	56.63	N41(D)29(M)50(S) and W95(D)0(M)8(S)
I-80/W/MP 55.90_1	3	June/13/2013	55.90	N41(D)29(M)51(S) and W95(D)2(M)9(S)
I-80/W/MP 55.90_2	3	June/13/2013	55.90	N41(D)29(M)51(S) and W95(D)2(M)9(S)
I-80/E/MP 55.57	1	June/13/2013	55.57	N41(D)29(M)49(S) and W95(D)2(M)33(S)
I-80/E/MP 56.30	2	June/13/2013	56.30	N41(D)29(M)49(S) and W95(D)1(M)40(S)
I-80/E/MP 58.05	3	June/13/2013	58.05	N41(D)29(M)49(S) and W94(D)59(M)38(S)
I-80/E/MP 76.83	1	June/13/2013	76.83	N41(D)29(M)35(S) and W94(D)38(M)2(S)
I-80/E/MP 79.02	2	June/13/2013	79.02	N41(D)29(M)40(S) and W94(D)35(M)29(S)
I-80/E/MP 80.17	3	June/13/2013	80.17	N41(D)29(M)48(S) and W94(D)34(M)12(S)
I-80/E/MP 80.57	4	June/13/2013	80.57	N41(D)29(M)48(S) and W94(D)33(M)43(S)
I-80/E/MP 81.80	5	June/13/2013	81.80	N41(D)29(M)48(S) and W94(D)32(M)17(S)
IA-163/W/MP 21.26	1	June/11/2013	21.26	N41(D)35(M)15(S) and W93(D)11(M)40(S)
IA-163/W/MP 19.78_1	2	June/11/2013	19.78	N41(D)35(M)18(S) and W93(D)13(M)23(S)
IA-163/W/MP 19.78_2	2	June/11/2013	19.78	N41(D)35(M)18(S) and W93(D)13(M)23(S)
IA-163/W/MP 17.70	3	June/11/2013	17.70	N41(D)35(M)24(S) and W93(D)14(M)30(S)
IA-5/E/MP 87.87	1	June/11/2013	87.87	N41(D)29(M)30(S) and W93(D)28(M)46(S)
IA-5/E/MP 87.43_1	2	June/11/2013	87.43	N41(D)29(M)23(S) and W93(D)28(M)15(S)
IA-5/E/MP 87.43_2	2	June/11/2013	87.43	N41(D)29(M)23(S) and W93(D)28(M)15(S)
IA-5/E/MP 86.16_1	3	June/11/2013	86.16	N41(D)28(M)57(S) and W93(D)26(M)56(S)
IA-5/E/MP 86.16_2	3	June/11/2013	86.16	N41(D)28(M)57(S) and W93(D)26(M)56(S)
I-80/E/MP 151.68	1	June/19/2013	151.68	N41(D)40(M)53(S) and W93(D)18(M)47(S)
I-80/E/MP 152.15_1	2	June/19/2013	152.15	N41(D)40(M)54(S) and W93(D)18(M)15(S)
I-80/E/MP 152.15_2	2	June/19/2013	152.15	N41(D)40(M)54(S) and W93(D)18(M)15(S)
I-80/E/MP 154.27	3	June/19/2013	154.27	N41(D)41(M)17(S) and W93(D)15(M)52(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/E/MP 160.65	1	Oct/24/2012	160.65	N41(D)41(M)21(S) and W93(D)15(M)34(S)
I-80/E/MP 161.75_1	2	Oct/24/2012	161.75	N41(D)40(M)54(S) and W93(D)7(M)36(S)
I-80/E/MP 161.75_2	2	Oct/24/2012	161.75	N41(D)40(M)54(S) and W93(D)7(M)36(S)
I-80/E/MP 164.10	3	Oct/24/2012	164.10	N41(D)40(M)57(S) and W93(D)4(M)53(S)
I-80/E/MP 165.40	1	Oct/24/2012	165.40	N41(D)41(M)0(S) and W93(D)3(M)23(S)
I-80/E/MP 167.10	2	Oct/24/2012	167.10	N41(D)40(M)58(S) and W93(D)1(M)25(S)
I-80/E/MP 169.20_1	3	Oct/24/2012	169.20	N41(D)40(M)54(S) and W92(D)58(M)59(S)
I-80/E/MP 169.20_2	3	Oct/24/2012	169.20	N41(D)40(M)54(S) and W92(D)58(M)59(S)
I-80/E/MP 169.90	1	Oct/24/2012	169.90	N41(D)40(M)52(S) and W92(D)58(M)11(S)
I-80/E/MP 171.90	2	Oct/24/2012	171.90	N41(D)40(M)49(S) and W92(D)55(M)52(S)
I-80/E/MP 173.90	3	Oct/24/2012	173.90	N41(D)40(M)58(S) and W92(D)53(M)35(S)
IA-330/W/MP 14.15	1	Oct/24/2012	14.15	N41(D)56(M)52(S) and W93(D)6(M)29(S)
IA-330/W/MP 13.80_1	2	Oct/24/2012	13.80	N41(D)56(M)40(S) and W93(D)6(M)47(S)
IA-330/W/MP 13.80_2	2	Oct/24/2012	13.80	N41(D)56(M)40(S) and W93(D)6(M)47(S)
IA-330/W/MP 13.65	3	Oct/24/2012	13.65	N41(D)56(M)34(S) and W93(D)6(M)55(S)
IA-330/W/MP 13.55_1	4	Oct/24/2012	13.55	N41(D)58(M)30(S) and W93(D)7(M)0(S)
IA-330/W/MP 13.55_2	4	Oct/24/2012	13.55	N41(D)58(M)30(S) and W93(D)7(M)0(S)
I-80/E/MP 193.07	1	Oct/30/2012	193.07	N41(D)56(M)30(S) and W93(D)7(M)0(S)
I-80/E/MP 193.20_1	2	Oct/30/2012	193.20	N41(D)41(M)44(S) and W92(D)31(M)23(S)
I-80/E/MP 193.20_2	2	Oct/30/2012	193.20	N41(D)41(M)44(S) and W92(D)31(M)23(S)
I-80/E/MP 195.10	3	Oct/30/2012	195.10	N41(D)41(M)40(S) and W92(D)29(M)12(S)
I-80/E/MP 198.05	4	Oct/30/2012	198.05	N41(D)41(M)45(S) and W92(D)25(M)47(S)
I-80/E/MP 202.35	5	Oct/30/2012	202.35	N41(D)41(M)43(S) and W92(D)20(M)47(S)
I-80/E/MP 206.26	1	Oct/30/2012	206.26	N41(D)41(M)45(S) and W92(D)16(M)16(S)
I-80/E/MP 207.10	2	Oct/30/2012	207.10	N41(D)41(M)45(S) and W92(D)15(M)17(S)
I-80/E/MP 207.43	3	Oct/30/2012	207.43	N41(D)41(M)49(S) and W92(D)14(M)54(S)
I-80/E/MP 208.45	4	Oct/30/2012	208.45	N41(D)41(M)44(S) and W92(D)13(M)44(S)
I-80/E/MP 221.60	1	Oct/30/2012	221.60	N41(D)41(M)12(S) and W91(D)58(M)31(S)
I-80/E/MP 222.23	2	Oct/30/2012	222.23	N41(D)41(M)12(S) and W91(D)57(M)47(S)
I-80/E/MP 223.65	3	Oct/30/2012	223.65	N41(D)41(M)16(S) and W91(D)56(M)9(S)
I-80/E/MP 224.18	4	Oct/30/2012	224.18	N41(D)41(M)16(S) and W91(D)55(M)33(S)
I-80/E/MP 248.35	1	Oct/30/2012	248.35	N41(D)40(M)41(S) and W91(D)27(M)51(S)
I-80/E/MP 250.00	2	Oct/30/2012	250.00	N41(D)40(M)41(S) and W91(D)26(M)9(S)
I-80/E/MP 250.50	3	Oct/30/2012	250.50	N41(D)40(M)3(S) and W91(D)25(M)32(S)
I-80/E/MP 252.15	4	Oct/30/2012	252.15	N41(D)39(M)59(S) and W91(D)23(M)37(S)
I-80/E/MP 253.80	1	Oct/30/2012	253.80	N41(D)39(M)54(S) and W91(D)21(M)45(S)
I-80/E/MP 254.85	2	Oct/30/2012	254.85	N41(D)39(M)50(S) and W91(D)20(M)32(S)
I-80/E/MP 256.53	3	Oct/30/2012	256.53	N41(D)39(M)46(S) and W91(D)18(M)37(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/E/MP 160.87	1	June/19/2013	160.87	N41(D)40(M)59(S) and W93(D)8(M)37(S)
I-80/E/MP 164.43_1	2	June/19/2013	164.43	N41(D)41(M)1(S) and W93(D)4(M)31(S)
I-80/E/MP 164.43_2	2	June/19/2013	164.43	N41(D)41(M)1(S) and W93(D)4(M)31(S)
I-80/E/MP 164.72	3	June/19/2013	164.72	N41(D)41(M)1(S) and W93(D)4(M)10(S)
I-80/E/MP 165.65_1	1	June/19/2013	165.65	N41(D)41(M)0(S) and W93(D)3(M)6(S)
I-80/E/MP 165.65_2	1	June/19/2013	165.65	N41(D)41(M)0(S) and W93(D)3(M)6(S)
I-80/E/MP 167.67	2	June/19/2013	167.67	N41(D)40(M)58(S) and W93(D)0(M)44(S)
I-80/E/MP 168.58_1	3	June/19/2013	168.58	N41(D)40(M)56(S) and W92(D)59(M)42(S)
I-80/E/MP 168.58_2	3	June/19/2013	168.58	N41(D)40(M)56(S) and W92(D)59(M)42(S)
I-80/E/MP 172.07	1	June/19/2013	172.07	N41(D)40(M)50(S) and W92(D)55(M)41(S)
I-80/E/MP 172.97	2	June/19/2013	172.97	N41(D)40(M)54(S) and W92(D)54(M)40(S)
IA-330/W/MP 14.15	1	June/11/2013	14.15	N41(D)56(M)52(S) and W93(D)6(M)29(S)
IA-330/W/MP 14.07_1	2	June/11/2013	14.07	N41(D)56(M)49(S) and W93(D)6(M)34(S)
IA-330/W/MP 14.07_2	2	June/11/2013	14.07	N41(D)56(M)49(S) and W93(D)6(M)34(S)
IA-330/W/MP 13.55_1	3	June/11/2013	13.55	N41(D)58(M)30(S) and W93(D)7(M)0(S)
IA-330/W/MP 13.55_2	3	June/11/2013	13.55	N41(D)58(M)30(S) and W93(D)7(M)0(S)
IA-330/W/MP 13.38_1	4	June/11/2013	13.55	N41(D)58(M)30(S) and W93(D)7(M)6(S)
IA-330/W/MP 13.38_2	4	June/11/2013	13.55	N41(D)58(M)30(S) and W93(D)7(M)6(S)
I-80/E/MP 193.20_1	1	June/19/2013	193.20	N41(D)41(M)44(S) and W92(D)31(M)23(S)
I-80/E/MP 193.20_2	1	June/19/2013	193.20	N41(D)41(M)44(S) and W92(D)31(M)23(S)
I-80/E/MP 195.27_1	2	June/19/2013	195.27	N41(D)41(M)41(S) and W92(D)29(M)00(S)
I-80/E/MP 195.27_2	2	June/19/2013	195.27	N41(D)41(M)41(S) and W92(D)29(M)00(S)
I-80/E/MP 197.43_1	3	June/19/2013	197.43	N41(D)41(M)44(S) and W92(D)26(M)31(S)
I-80/E/MP 197.43_2	3	June/19/2013	197.43	N41(D)41(M)44(S) and W92(D)26(M)31(S)
I-80/E/MP 200.43	4	June/19/2013	200.43	N41(D)41(M)43(S) and W92(D)23(M)2(S)
I-80/E/MP 206.26	1	June/19/2013	206.26	N41(D)41(M)45(S) and W92(D)16(M)16(S)
I-80/E/MP 207.62	2	June/19/2013	207.62	N41(D)41(M)44(S) and W92(D)14(M)42(S)
I-80/E/MP 208.45	3	June/19/2013	208.45	N41(D)41(M)44(S) and W92(D)13(M)44(S)
I-80/E/MP 221.72	1	June/19/2013	221.72	N41(D)41(M)12(S) and W91(D)58(M)23(S)
I-80/E/MP 225.10	2	June/19/2013	225.10	N41(D)41(M)16(S) and W91(D)54(M)29(S)
I-80/E/MP 225.20	3	June/19/2013	225.20	N41(D)41(M)16(S) and W91(D)54(M)22(S)
I-80/E/MP 248.26	1	June/19/2013	248.26	N41(D)40(M)44(S) and W91(D)27(M)57(S)
I-80/E/MP 248.65	2	June/19/2013	248.65	N41(D)40(M)41(S) and W91(D)27(M)32(S)
I-80/E/MP 250.80	3	June/19/2013	250.80	N41(D)40(M)1(S) and W91(D)25(M)12(S)
I-80/E/MP 254.16	1	June/19/2013	254.16	N41(D)39(M)50(S) and W91(D)21(M)21(S)
I-80/E/MP 255.84	2	June/19/2013	255.84	N41(D)39(M)50(S) and W91(D)19(M)24(S)
I-80/E/MP 256.85	3	June/19/2013	256.85	N41(D)39(M)46(S) and W91(D)18(M)14(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
US-151/S/MP 73.60_1	1	Oct/31/2012	73.60	N42(D)17(M)35(S) and W91(D)3(M)18(S)
US-151/S/MP 73.60_1	1	Oct/31/2012	73.60	N42(D)17(M)35(S) and W91(D)3(M)18(S)
US-151/S/MP 72.95_1	2	Oct/31/2012	72.95	N42(D)17(M)31(S) and W91(D)3(M)51(S)
US-151/S/MP 72.95_2	2	Oct/31/2012	72.95	N42(D)17(M)31(S) and W91(D)3(M)51(S)
US-151/S/MP 72.00_1	3	Oct/31/2012	72.00	N42(D)17(M)12(S) and W91(D)4(M)50(S)
US-151/S/MP 72.00_2	3	Oct/31/2012	72.00	N42(D)17(M)12(S) and W91(D)4(M)50(S)
US-151/S/MP 70.85_1	4	Oct/31/2012	70.85	N42(D)17(M)1(S) and W91(D)6(M)13(S)
US-151/S/MP 70.85_2	4	Oct/31/2012	70.85	N42(D)17(M)1(S) and W91(D)6(M)13(S)
US-151/S/MP 70.00_1	5	Oct/31/2012	70.00	N42(D)16(M)58(S) and W91(D)7(M)9(S)
US-151/S/MP 70.00_2	5	Oct/31/2012	70.00	N42(D)16(M)58(S) and W91(D)7(M)9(S)
US-151/S/MP 68.55	6	Oct/31/2012	68.55	N42(D)16(M)17(S) and W91(D)8(M)29(S)
US-151/S/MP 68.00_1	7	Oct/31/2012	68.00	N42(D)15(M)53(S) and W91(D)8(M)48(S)
US-151/S/MP 68.00_2	7	Oct/31/2012	68.00	N42(D)15(M)53(S) and W91(D)8(M)48(S)
US-151/S/MP 67.70	8	Oct/31/2012	67.70	N42(D)15(M)41(S) and W91(D)5(M)5(S)
US-151/S/MP 67.10_1	1	Oct/31/2012	67.10	N42(D)15(M)21(S) and W91(D)9(M)27(S)
US-151/S/MP 67.10_2	1	Oct/31/2012	67.10	N42(D)15(M)21(S) and W91(D)9(M)27(S)
US-151/S/MP 66.70	2	Oct/31/2012	66.70	N42(D)14(M)57(S) and W91(D)9(M)43(S)
US-151/S/MP 65.80_1	3	Oct/31/2012	65.80	N42(D)14(M)15(S) and W91(D)10(M)9(S)
US-151/S/MP 65.80_2	3	Oct/31/2012	65.80	N42(D)14(M)15(S) and W91(D)10(M)9(S)
US-151/S/MP 64.50	4	Oct/31/2012	64.50	N42(D)13(M)9(S) and W91(D)10(M)24(S)
US-151/S/MP 63.60_1	5	Oct/31/2012	63.60	N42(D)12(M)31(S) and W91(D)10(M)47(S)
US-151/S/MP 63.60_2	5	Oct/31/2012	63.60	N42(D)12(M)31(S) and W91(D)10(M)47(S)
US-151/S/MP 62.90_1	6	Oct/31/2012	62.90	N42(D)12(M)26(S) and W91(D)11(M)34(S)
US-151/S/MP 62.90_2	6	Oct/31/2012	62.90	N42(D)12(M)26(S) and W91(D)11(M)34(S)
US-151/N/MP 64.05	1	Oct/31/2012	64.05	N42(D)12(M)46(S) and W91(D)10(M)25(S)
US-151/N/MP 65.05_1	2	Oct/31/2012	65.05	N42(D)13(M)39(S) and W91(D)10(M)16(S)
US-151/N/MP 65.05_2	2	Oct/31/2012	65.05	N42(D)13(M)39(S) and W91(D)10(M)16(S)
US-151/N/MP 65.95_1	3	Oct/31/2012	65.95	N42(D)14(M)23(S) and W91(D)10(M)3(S)
US-151/N/MP 65.95_2	3	Oct/31/2012	65.95	N42(D)14(M)23(S) and W91(D)10(M)3(S)
US-151/N/MP 66.90_1	4	Oct/31/2012	66.90	N42(D)15(M)7(S) and W91(D)9(M)33(S)
US-151/N/MP 66.90_2	4	Oct/31/2012	66.90	N42(D)15(M)7(S) and W91(D)9(M)33(S)
US-151/N/MP 67.25_1	5	Oct/31/2012	67.25	N42(D)15(M)23(S) and W91(D)9(M)21(S)
US-151/N/MP 67.25_2	5	Oct/31/2012	67.25	N42(D)15(M)23(S) and W91(D)9(M)21(S)
US-151/N/MP 44.80_1	1	Oct/31/2012	44.80	N42(D)3(M)30(S) and W91(D)25(M)14(S)
US-151/N/MP 44.80_2	1	Oct/31/2012	44.80	N42(D)3(M)30(S) and W91(D)25(M)14(S)
US-151/N/MP 43.20_1	2	Oct/31/2012	43.20	N42(D)2(M)57(S) and W91(D)26(M)54(S)
US-151/N/MP 43.20_2	2	Oct/31/2012	43.20	N42(D)2(M)57(S) and W91(D)26(M)54(S)
US-151/N/MP41.00_1	3	Oct/31/2012	41.00	N42(D)2(M)51(S) and W91(D)29(M)29(S)
US-151/N/MP41.00_2	3	Oct/31/2012	41.00	N42(D)2(M)51(S) and W91(D)29(M)29(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
US-151/S/MP 71.60_1	1	June/20/2013	71.60	N42(D)17(M)10(S) and W91(D)5(M)10(S)
US-151/S/MP 71.60_2	1	June/20/2013	71.60	N42(D)17(M)10(S) and W91(D)5(M)10(S)
US-151/S/MP 70.65_1	2	June/20/2013	70.65	N42(D)17(M)0(S) and W91(D)6(M)27(S)
US-151/S/MP 70.65_2	2	June/20/2013	70.65	N42(D)17(M)0(S) and W91(D)6(M)27(S)
US-151/S/MP 68.81_1	3	June/20/2013	68.81	N42(D)15(M)50(S) and W91(D)8(M)54(S)
US-151/S/MP 68.81_2	3	June/20/2013	68.81	N42(D)15(M)50(S) and W91(D)8(M)54(S)
US-151/S/MP 65.57_1	1	June/20/2013	65.57	N42(D)14(M)0(S) and W91(D)10(M)13(S)
US-151/S/MP 65.57_2	1	June/20/2013	65.57	N42(D)14(M)0(S) and W91(D)10(M)13(S)
US-151/S/MP 63.80_1	2	June/20/2013	63.80	N42(D)12(M)34(S) and W91(D)10(M)36(S)
US-151/S/MP 63.80_2	2	June/20/2013	63.80	N42(D)12(M)34(S) and W91(D)10(M)36(S)
US-151/S/MP 62.99_1	3	June/20/2013	62.99	N42(D)12(M)27(S) and W91(D)11(M)27(S)
US-151/S/MP 62.99_2	3	June/20/2013	62.99	N42(D)12(M)27(S) and W91(D)11(M)27(S)
US-151/N/MP 62.90_1	1	June/20/2013	62.90	N42(D)12(M)25(S) and W91(D)11(M)34(S)
US-151/N/MP 62.90_2	1	June/20/2013	62.90	N42(D)12(M)25(S) and W91(D)11(M)34(S)
US-151/N/MP 63.30_1	2	June/20/2013	63.30	N42(D)12(M)27(S) and W91(D)11(M)7(S)
US-151/N/MP 63.30_2	2	June/20/2013	63.30	N42(D)12(M)27(S) and W91(D)11(M)7(S)
US-151/N/MP 64.70_1	3	June/20/2013	64.70	N42(D)13(M)20(S) and W91(D)10(M)20(S)
US-151/N/MP 64.70_2	3	June/20/2013	64.70	N42(D)13(M)20(S) and W91(D)10(M)20(S)
US-151/N/MP 66.78_1	4	June/20/2013	66.78	N42(D)15(M)3(S) and W91(D)9(M)37(S)
US-151/N/MP 66.78_2	4	June/20/2013	66.78	N42(D)15(M)3(S) and W91(D)9(M)37(S)
US-151/N/MP 44.50	1	June/20/2013	44.50	N42(D)3(M)23(S) and W91(D)25(M)36(S)
US-151/N/MP 43.72_1	2	June/20/2013	43.72	N42(D)3(M)3(S) and W91(D)26(M)21(S)
US-151/N/MP 43.72_2	2	June/20/2013	43.72	N42(D)3(M)3(S) and W91(D)26(M)21(S)
US-151/N/MP42.90_1	3	June/20/2013	42.90	N42(D)2(M)59(S) and W91(D)27(M)13(S)
US-151/N/MP42.90_2	3	June/20/2013	42.90	N42(D)2(M)59(S) and W91(D)27(M)13(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
US-30/W/MP 262.90_1	1	Oct/31/2012	262.90	N42(D)55(M)5(S) and W91(D)28(M)32(S)
US-30/W/MP 262.90_2	1	Oct/31/2012	262.90	N42(D)55(M)5(S) and W91(D)28(M)32(S)
US-30/W/MP 261.35	2	Oct/31/2012	261.35	N41(D)56(M)23(S) and W91(D)30(M)15(S)
US-30/W/MP 260.80	3	Oct/31/2012	260.80	N41(D)55(M)33(S) and W91(D)31(M)3(S)
US-30/W/MP 260.20	4	Oct/31/2012	260.20	N41(D)55(M)33(S) and W91(D)31(M)31(S)
I-80/W/MP 203.50	1	Nov/1/2012	203.50	N41(D)41(M)44(S) and W92(D)19(M)28(S)
I-80/W/MP 202.65	2	Nov/1/2012	202.65	N41(D)41(M)44(S) and W92(D)20(M)27(S)
I-80/W/MP 201.55	3	Nov/1/2012	201.55	N41(D)41(M)45(S) and W92(D)21(M)43(S)
I-80/W/MP 197.70	4	Nov/1/2012	197.70	N41(D)41(M)45(S) and W92(D)26(M)11(S)
I-80/W/MP 197.15_1	5	Nov/1/2012	197.15	N41(D)41(M)45(S) and W92(D)26(M)50(S)
I-80/W/MP 197.15_2	5	Nov/1/2012	197.15	N41(D)41(M)45(S) and W92(D)26(M)50(S)
I-80/W/MP 194.45_1	6	Nov/1/2012	194.45	N41(D)41(M)41(S) and W92(D)29(M)55(S)
I-80/W/MP 194.45_2	6	Nov/1/2012	194.45	N41(D)41(M)41(S) and W92(D)29(M)55(S)
I-80/W/MP 193.60_1	7	Nov/1/2012	193.60	N41(D)41(M)43(S) and W92(D)30(M)55(S)
I-80/W/MP 193.60_2	7	Nov/1/2012	193.60	N41(D)41(M)43(S) and W92(D)30(M)55(S)
I-80/W/MP 193.00_1	8	Nov/1/2012	193.00	N41(D)41(M)46(S) and W92(D)31(M)38(S)
I-80/W/MP 193.00_2	8	Nov/1/2012	193.00	N41(D)41(M)46(S) and W92(D)31(M)38(S)
I-80/W/MP 173.75	1	Nov/1/2012	173.75	N41(D)40(M)59(S) and W92(D)53(M)44(S)
I-80/W/MP 171.95	2	Nov/1/2012	171.95	N41(D)40(M)51(S) and W92(D)55(M)48(S)
I-80/W/MP 170.35	3	Nov/1/2012	170.35	N41(D)40(M)52(S) and W92(D)57(M)41(S)
I-80/W/MP 167.30	4	Nov/1/2012	167.30	N41(D)40(M)58(S) and W93(D)01(M)10(S)
I-80/W/MP 163.55	5	Nov/1/2012	163.55	N41(D)40(M)53(S) and W93(D)05(M)03(S)
I-80/W/MP 159.59	6	Nov/1/2012	159.95	N41(D)41(M)07(S) and W93(D)09(M)40(S)
I-80/W/MP 157.70-1	7	Nov/1/2012	157.70	N41(D)41(M)56(S) and W93(D)12(M)03(S)
I-80/W/MP 157.70-2	7	Nov/1/2012	157.70	N41(D)41(M)56(S) and W93(D)12(M)03(S)
I-80/W/MP 151.35	1	Nov/1/2012	151.35	N41(D)40(M)54(S) and W93(D)19(M)13(S)
I-80/W/MP 150.85	2	Nov/1/2012	150.85	N41(D)40(M)53(S) and W93(D)19(M)46(S)
I-80/W/MP 150.10	3	Nov/1/2012	150.10	N41(D)40(M)52(S) and W93(D)20(M)39(S)
IA-60/E/MP 47.75	1	Nov/7/2012	47.75	N43(D)22(M)10(S) and W95(D)45(M)47(S)
IA-60/E/MP 48.35_1	2	Nov/7/2012	48.35	N43(D)22(M)38(S) and W95(D)45(M)29(S)
IA-60/E/MP 48.35_2	2	Nov/7/2012	48.35	N43(D)22(M)38(S) and W95(D)45(M)29(S)
IA-60/E/MP 49.06_1	3	Nov/7/2012	49.06	N43(D)22(M)59(S) and W95(D)44(M)49(S)
IA-60/E/MP 49.06_2	3	Nov/7/2012	49.06	N43(D)22(M)59(S) and W95(D)44(M)49(S)
IA-60/E/MP 51.10	4	Nov/7/2012	51.10	N43(D)23(M)50(S) and W93(D)43(M)01(S)
IA-60/W/MP 51.15	1	Nov/7/2012	51.15	N43(D)23(M)51(S) and W95(D)43(M)03(S)
IA-60/W/MP 50.20_1	2	Nov/7/2012	50.20	N43(D)23(M)09(S) and W95(D)43(M)32(S)
IA-60/W/MP 50.20_2	2	Nov/7/2012	50.20	N43(D)23(M)09(S) and W95(D)43(M)32(S)
IA-60/W/MP 47.75	3	Nov/7/2012	47.75	N43(D)23(M)09(S) and W95(D)43(M)31(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
US-30/W/MP 262.39_1	1	June/20/2013	262.39	N41(D)55(M)5(S) and W91(D)29(M)8(S)
US-30/W/MP 262.39_2	1	June/20/2013	262.39	N41(D)55(M)5(S) and W91(D)29(M)8(S)
US-30/W/MP 261.87_1	2	June/20/2013	261.87	N41(D)55(M)11(S) and W91(D)29(M)44(S)
US-30/W/MP 261.87_2	2	June/20/2013	261.87	N41(D)55(M)11(S) and W91(D)29(M)44(S)
US-30/W/MP 260.58_1	3	June/20/2013	260.58	N41(D)55(M)33(S) and W91(D)31(M)10(S)
US-30/W/MP 260.58_2	3	June/20/2013	260.58	N41(D)55(M)33(S) and W91(D)31(M)10(S)
I-80/W/MP 203.97	1	June/21/2013	203.97	N41(D)41(M)45(S) and W92(D)18(M)54(S)
I-80/W/MP 198.53	2	June/21/2013	198.53	N41(D)41(M)44(S) and W92(D)25(M)16(S)
I-80/W/MP 197.78	3	June/21/2013	197.78	N41(D)41(M)45(S) and W92(D)26(M)7(S)
I-80/W/MP 196.60_1	4	June/21/2013	196.60	N41(D)41(M)45(S) and W92(D)27(M)30(S)
I-80/W/MP 196.60_2	4	June/21/2013	196.60	N41(D)41(M)45(S) and W92(D)27(M)30(S)
I-80/W/MP 193.80_1	5	June/21/2013	193.80	N41(D)41(M)46(S) and W92(D)30(M)43(S)
I-80/W/MP 193.80_2	5	June/21/2013	193.80	N41(D)41(M)46(S) and W92(D)30(M)43(S)
I-80/W/MP 168.23	1	June/21/2013	168.23	N41(D)40(M)59(S) and W93(D)0(M)8(S)
I-80/W/MP 165.20	2	June/21/2013	165.20	N41(D)41(M)2(S) and W93(D)3(M)54(S)
I-80/W/MP 164.65	3	June/21/2013	164.65	N41(D)41(M)3(S) and W93(D)4(M)11(S)
I-80/W/MP 151.40	1	June/21/2013	151.40	N41(D)40(M)54(S) and W93(D)19(M)9(S)
I-80/W/MP 150.67	2	June/21/2013	150.67	N41(D)40(M)53(S) and W93(D)20(M)0(S)
IA-60/E/MP 47.95_1	1	July/19/2013	47.95	N43(D)22(M)20(S) and W95(D)45(M)43(S)
IA-60/E/MP 47.95_2	1	July/19/2013	47.95	N43(D)22(M)20(S) and W95(D)45(M)43(S)
IA-60/E/MP 48.97	2	July/19/2013	48.97	N43(D)22(M)58(S) and W95(D)44(M)55(S)
IA-60/E/MP 51.22_1	3	July/19/2013	51.22	N/A
IA-60/E/MP 51.22_2	3	July/19/2013	52.22	N/A
IA-60/W/MP 50.80_1	1	July/19/2013	50.80	N43(D)23(M)34(S) and W95(D)43(M)06(S)
IA-60/W/MP 50.80_2	1	July/19/2013	50.80	N43(D)23(M)34(S) and W95(D)43(M)06(S)
IA-60/W/MP 49.67_1	2	July/19/2013	49.67	N43(D)23(M)05(S) and W95(D)44(M)8(S)
IA-60/W/MP 49.67_2	2	July/19/2013	49.67	N43(D)23(M)05(S) and W95(D)44(M)8(S)
IA-60/W/MP 47.75	3	July/19/2013	47.75	N43(D)22(M)09(S) and W95(D)45(M)51(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/W/MP 49.30_1	1	Nov/19/2012	49.30	N41(D)29(M)54(S) and W95(D)09(M)47(S)
I-80/W/MP 49.30_2	2	Nov/19/2012	49.30	N41(D)29(M)54(S) and W95(D)09(M)47(S)
I-80/W/MP 49.03	3	Nov/19/2012	49.03	N41(D)29(M)53(S) and W95(D)10(M)04(S)
I-80/W/MP 48.50_1	4	Nov/19/2012	48.50	N41(D)29(M)53(S) and W95(D)10(M)40(S)
I-80/W/MP 48.50_2	4	Nov/19/2012	48.50	N41(D)29(M)53(S) and W95(D)10(M)40(S)
I-80/W/MP 48.30_1	5	Nov/19/2012	48.30	N/A
I-80/W/MP 48.30_2	5	Nov/19/2012	48.30	N/A
I-80/W/MP 47.70_1	6	Nov/19/2012	47.70	N41(D)29(M)51(S) and W95(D)11(M)36(S)
I-80/W/MP 47.70_2	6	Nov/19/2012	47.70	N41(D)29(M)51(S) and W95(D)11(M)36(S)
I-80/W/MP 46.70_1	7	Nov/19/2012	46.70	N41(D)29(M)50(S) and W95(D)12(M)45(S)
I-80/W/MP 46.70_2	7	Nov/19/2012	46.70	N41(D)29(M)50(S) and W95(D)12(M)45(S)
I-80/W/MP 38.20	1	Nov/19/2012	38.20	N41(D)29(M)51(S) and W95(D)22(M)34(S)
I-80/W/MP 37.90	2	Nov/19/2012	37.90	N41(D)25(M)52(S) and W95(D)22(M)55(S)
I-80/W/MP 37.35	3	Nov/19/2012	37.35	N41(D)29(M)52(S) and W95(D)23(M)37(S)
I-80/W/MP 36.05	4	Nov/19/2012	36.05	N41(D)29(M)52(S) and W95(D)23(M)03(S)
I-80/W/MP 34.70	5	Nov/19/2012	34.70	N41(D)29(M)55(S) and W95(D)26(M)35(S)
I-80/W/MP 26.75	1	Nov/19/2012	26.75	N41(D)29(M)13(S) and W95(D)35(M)14(S)
I-80/W/MP 24.90	2	Nov/19/2012	24.90	N41(D)27(M)41(S) and W95(D)35(M)49(S)
I-80/W/MP 23.75	3	Nov/19/2012	23.75	N41(D)26(M)45(S) and W95(D)36(M)16(S)
I-80/W/MP 21.75	4	Nov/19/2012	21.75	N41(D)25(M)37(S) and W95(D)38(M)00(S)
I-80/W/MP 10.50	1	Nov/19/2012	10.50	N41(D)18(M)18(S) and W95(D)46(M)02(S)
I-80/W/MP 9.50	2	Nov/19/2012	9.50	N41(D)17(M)36(S) and W95(D)46(M)32(S)
I-29/N/MP 58.80	1	Nov/19/2012	58.80	N41(D)18(M)51(S) and W95(D)52(M)27(S)
I-29/N/MP 59.85	2	Nov/19/2012	59.85	N41(D)19(M)38(S) and W95(D)53(M)02(S)
I-29/N/MP 60.35	3	Nov/19/2012	60.35	N41(D)20(M)02(S) and W95(D)53(M)13(S)
I-29/N/MP 63.05	4	Nov/19/2012	63.05	N41(D)22(M)14(S) and W95(D)53(M)57(S)
I-29/N/MP 64.45	5	Nov/19/2012	64.45	N41(D)23(M)26(S) and W95(D)53(M)57(S)
I-29/N/MP 65.13_1	6	Nov/19/2012	65.13	N41(D)24(M)02(S) and W95(D)53(M)57(S)
I-29/N/MP 65.13_2	6	Nov/19/2012	65.13	N41(D)24(M)02(S) and W95(D)53(M)57(S)
I-29/S/MP 65.20_1	1	Nov/19/2012	65.20	N41(D)24(M)05(S) and W95(D)53(M)59(S)
I-29/S/MP 65.20_2	1	Nov/19/2012	65.20	N41(D)22(M)05(S) and W95(D)53(M)59(S)
I-29/S/MP 63.35	2	Nov/19/2012	63.35	N41(D)22(M)28(S) and W95(D)53(M)58(S)
I-29/S/MP 60.98	3	Nov/19/2012	60.98	N41(D)20(M)31(S) and W95(D)53(M)30(S)
I-29/S/MP 60.35_1	1	Nov/19/2012	60.80	N41(D)20(M)02(S) and W95(D)53(M)14(S)
I-29/S/MP 60.35_2	1	Nov/19/2012	60.80	N41(D)20(M)02(S) and W95(D)53(M)14(S)
I-29/S/MP 60.20_1	2	Nov/19/2012	60.20	N41(D)19(M)53(S) and W95(D)53(M)10(S)
I-29/S/MP 60.20_2	2	Nov/19/2012	60.20	N41(D)19(M)53(S) and W95(D)53(M)10(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/W/MP 48.58_1	1	June/27/2013	48.58	N41(D)29(M)53(S) and W95(D)10(M)35(S)
I-80/W/MP 48.58_2	1	June/27/2013	48.58	N41(D)29(M)53(S) and W95(D)10(M)35(S)
I-80/W/MP 47.60	2	June/27/2013	47.60	N41(D)29(M)51(S) and W95(D)11(M)44(S)
I-80/W/MP 46.10_1	3	June/27/2013	46.10	N41(D)29(M)50(S) and W95(D)13(M)28(S)
I-80/W/MP 46.10_2	3	June/27/2013	46.10	N41(D)29(M)50(S) and W95(D)13(M)28(S)
I-80/W/MP 39.10	1	June/26/2013	39.10	N41(D)29(M)51(S) and W95(D)21(M)32(S)
I-80/W/MP 38.20	2	June/26/2013	38.20	N41(D)29(M)51(S) and W95(D)22(M)34(S)
I-80/W/MP 36.31	3	June/26/2013	36.31	N41(D)29(M)52(S) and W95(D)24(M)46(S)
I-80/W/MP 26.72	1	June/26/2013	26.72	N41(D)29(M)12(S) and W95(D)35(M)15(S)
I-80/W/MP 26.70	2	June/26/2013	26.70	N41(D)29(M)12(S) and W95(D)35(M)15(S)
I-80/W/MP 25.82	3	June/26/2013	25.82	N41(D)28(M)26(S) and W95(D)35(M)29(S)
I-80/W/MP 24.05	4	June/26/2013	24.05	N41(D)26(M)59(S) and W95(D)36(M)10(S)
I-80/W/MP 21.72	5	June/26/2013	21.72	N41(D)25(M)37(S) and W95(D)38(M)1(S)
I-80/W/MP 10.73	1	June/26/2013	10.73	N41(D)18(M)30(S) and W95(D)45(M)55(S)
I-80/W/MP 10.40	2	June/26/2013	10.40	N41(D)18(M)16(S) and W95(D)46(M)7(S)
I-80/W/MP 8.85	3	June/26/2013	8.85	N41(D)17(M)4(S) and W95(D)46(M)55(S)
I-29/S/MP 63.03_1	1	June/26/2013	63.03	N41(D)22(M)14(S) and W95(D)53(M)59(S)
I-29/S/MP 65.03_2	1	June/26/2013	63.03	N41(D)22(M)14(S) and W95(D)53(M)59(S)
I-29/S/MP 62.80	2	June/26/2013	62.80	N41(D)22(M)1(S) and W95(D)53(M)58(S)
I-29/S/MP 62.70_1	3	June/26/2013	62.70	N41(D)21(M)56(S) and W95(D)53(M)58(S)
I-29/S/MP 62.70_2	3	June/26/2013	62.70	N41(D)21(M)56(S) and W95(D)53(M)58(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-29/N/MP 70.90_1	1	Nov/20/2012	70.90	N41(D)28(M)58(S) and W95(D)54(M)00(S)
I-29/N/MP 70.90_2	1	Nov/20/2012	70.90	N41(D)28(M)58(S) and W95(D)54(M)00(S)
I-29/N/MP 71.08_1	2	Nov/20/2012	71.08	N41(D)29(M)14(S) and W95(D)54(M)01(S)
I-29/N/MP 71.08_2	2	Nov/20/2012	71.08	N41(D)29(M)14(S) and W95(D)54(M)01(S)
I-29/N/MP 71.65_1	3	Nov/20/2012	71.65	N41(D)29(M)46(S) and W95(D)54(M)03(S)
I-29/N/MP 71.65_2	3	Nov/20/2012	71.65	N41(D)29(M)46(S) and W95(D)54(M)03(S)
I-29/N/MP 72.15_1	4	Nov/20/2012	72.15	N41(D)30(M)07(S) and W95(D)54(M)05(S)
I-29/N/MP 72.15_2	4	Nov/20/2012	72.15	N41(D)30(M)07(S) and W95(D)54(M)05(S)
I-29/N/MP 72.90_1	1	Nov/20/2012	72.90	N41(D)30(M)41(S) and W95(D)54(M)34(S)
I-29/N/MP 72.90_2	1	Nov/20/2012	72.90	N41(D)30(M)41(S) and W95(D)54(M)34(S)
I-29/N/MP 74.25_1	2	Nov/20/2012	74.25	N41(D)31(M)43(S) and W95(D)55(M)02(S)
I-29/N/MP 74.25_2	2	Nov/20/2012	74.25	N41(D)31(M)43(S) and W95(D)55(M)02(S)
I-29/N/MP 74.60_1	3	Nov/20/2012	74.60	N41(D)32(M)00(S) and W95(D)55(M)02(S)
I-29/N/MP 74.60_2	3	Nov/20/2012	74.60	N41(D)32(M)00(S) and W95(D)55(M)02(S)
I-29/N/MP 76.25_1	4	Nov/20/2012	76.25	N41(D)33(M)30(S) and W95(D)55(M)01(S)
I-29/N/MP 76.25_2	4	Nov/20/2012	76.25	N41(D)33(M)30(S) and W95(D)55(M)01(S)
I-29/N/MP 77.30_1	1	Nov/20/2012	77.30	N41(D)34(M)16(S) and W95(D)55(M)25(S)
I-29/N/MP 77.30_2	1	Nov/20/2012	77.30	N41(D)34(M)16(S) and W95(D)55(M)25(S)
I-29/N/MP 79.05	2	Nov/20/2012	79.05	N/A
I-29/N/MP 82.90_1	3	Nov/20/2012	82.90	N41(D)37(M)44(S) and W95(D)59(M)57(S)
I-29/N/MP 82.90_2	3	Nov/20/2012	82.90	N41(D)37(M)44(S) and W95(D)59(M)57(S)
I-29/N/MP 85.35_1	4	Nov/20/2012	85.35	N41(D)39(M)22(S) and W96(D)01(M)43(S)
I-29/N/MP 85.35_2	4	Nov/20/2012	85.35	N41(D)39(M)22(S) and W96(D)01(M)43(S)
I-29/N/MP 87.15	5	Nov/20/2012	87.15	N41(D)40(M)50(S) and W96(D)02(M)25(S)
I-29/N/MP 90.15	6	Nov/20/2012	90.15	N/A
I-29/S/MP 76.40_1	1	Nov/20/2012	76.54	N41(D)33(M)34(S) and W95(D)55(M)03(S)
I-29/S/MP 76.40_2	1	Nov/20/2012	76.54	N41(D)33(M)34(S) and W95(D)55(M)03(S)
I-29/S/MP 75.00_1	2	Nov/20/2012	75.00	N41(D)32(M)21(S) and W95(D)55(M)04(S)
I-29/S/MP 75.00_2	2	Nov/20/2012	75.00	N41(D)32(M)21(S) and W95(D)55(M)04(S)
I-29/S/MP 73.90	3	Nov/20/2012	73.90	N41(D)31(M)24(S) and W95(D)55(M)04(S)
I-29/S/MP 71.90	1	Nov/20/2012	71.09	N41(D)29(M)54(S) and W95(D)54(M)06(S)
I-29/S/MP 71.15_1	2	Nov/20/2012	71.15	N41(D)29(M)16(S) and W95(D)54(M)03(S)
I-29/S/MP 71.15_2	2	Nov/20/2012	71.15	N41(D)29(M)16(S) and W95(D)54(M)03(S)
I-29/S/MP 70.80_1	3	Nov/20/2012	70.80	N41(D)28(M)58(S) and W95(D)54(M)01(S)
I-29/S/MP 70.80_2	3	Nov/20/2012	70.80	N41(D)28(M)58(S) and W95(D)54(M)01(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-29/N/MP 78.44	1	June/27/2013	78.44	N41(D)34(M)56(S) and W95(D)56(M)24(S)
I-29/N/MP 80.70	2	June/27/2013	80.70	N41(D)36(M)22(S) and W95(D)58(M)10(S)
I-29/N/MP 84.89_1	3	June/27/2013	84.89	N41(D)39(M)0(S) and W96(D)1(M)32(S)
I-29/N/MP 84.89_2	3	June/27/2013	84.89	N41(D)39(M)0(S) and W96(D)1(M)32(S)
I-29/N/MP 87.98	4	June/27/2013	87.98	N41(D)41(M)34(S) and W96(D)02(M)31(S)
I-29/N/MP 90.26	5	June/27/2013	90.26	N41(D)43(M)32(S) and W96(D)02(M)48(S)
I-29/S/MP 76.25_1	1	June/27/2013	76.25	N41(D)33(M)27(S) and W95(D)55(M)03(S)
I-29/S/MP 76.25_2	1	June/27/2013	76.25	N41(D)33(M)27(S) and W95(D)55(M)03(S)
I-29/S/MP 74.45_1	2	June/27/2013	74.45	N41(D)31(M)52(S) and W95(D)55(M)04(S)
I-29/S/MP 74.45_2	2	June/27/2013	74.45	N41(D)31(M)52(S) and W95(D)55(M)04(S)
I-29/S/MP 74.20_1	3	June/27/2013	74.20	N41(D)31(M)40(S) and W95(D)55(M)04(S)
I-29/S/MP 74.20_2	3	June/27/2013	74.20	N41(D)31(M)40(S) and W95(D)55(M)04(S)
I-29/S/MP 73.03	4	June/27/2013	73.03	N41(D)30(M)46(S) and W95(D)54(M)43(S)

Table A.2. JPCP drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/E/MP 5.90	1	Nov/20/2012	5.90	N41(D)14(M)53(S) and W95(D)48(M)48(S)
I-80/E/MP 6.10	2	Nov/20/2012	6.10	N41(D)15(M)04(S) and W95(D)48(M)37(S)
I-80/E/MP 7.40	3	Nov/20/2012	7.40	N41(D)16(M)00(S) and W95(D)47(M)49(S)
I-80/E/MP 9.65	4	Nov/20/2012	9.65	N41(D)17(M)43(S) and W95(D)46(M)28(S)
I-80/E/MP 10.40	5	Nov/20/2012	10.40	N41(D)18(M)15(S) and W95(D)46(M)05(S)
I-80/E/MP 10.50	6	Nov/20/2012	10.50	N41(D)18(M)19(S) and W95(D)46(M)01(S)
I-80/E/MP 22.40	1	Nov/20/2012	22.40	N41(D)26(M)03(S) and W95(D)37(M)28(S)
I-80/E/MP 24.10	2	Nov/20/2012	24.10	N41(D)27(M)02(S) and W95(D)36(M)07(S)
I-80/E/MP 25.85	3	Nov/20/2012	25.85	N41(D)28(M)28(S) and W95(D)35(M)25(S)
I-80/E/MP 28.00	4	Nov/20/2012	28.00	N41(D)29(M)55(S) and W95(D)34(M)17(S)
I-80/E/MP 35.10_1	1	Nov/21/2012	35.10	N41(D)29(M)53(S) and W95(D)26(M)09(S)
I-80/E/MP 35.10_2	1	Nov/21/2012	35.10	N41(D)29(M)53(S) and W95(D)26(M)09(S)
I-80/E/MP 35.25_1	2	Nov/21/2012	35.10	N41(D)29(M)53(S) and W95(D)25(M)59(S)
I-80/E/MP 35.25_2	2	Nov/21/2012	35.10	N41(D)29(M)53(S) and W95(D)25(M)59(S)
I-80/E/MP 36.20_1	3	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)24(M)52(S)
I-80/E/MP 36.20_2	3	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)24(M)52(S)
I-80/E/MP 37.23	4	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)23(M)41(S)
I-80/E/MP 38.05_1	5	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)23(M)43(S)
I-80/E/MP 38.05_2	5	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)23(M)43(S)
I-80/E/MP 38.37_1	6	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)22(M)22(S)
I-80/E/MP 38.37_2	6	Nov/21/2012	35.10	N41(D)29(M)51(S) and W95(D)22(M)22(S)
I-80/E/MP 45.70	1	Nov/21/2012	45.70	N41(D)29(M)49(S) and W95(D)13(M)54(S)
I-80/E/MP 46.35	2	Nov/21/2012	46.35	N41(D)29(M)49(S) and W95(D)13(M)08(S)
I-80/E/MP 47.65	3	Nov/21/2012	47.65	N41(D)29(M)50(S) and W95(D)11(M)39(S)
I-80/E/MP 48.40	4	Nov/21/2012	48.40	N41(D)29(M)51(S) and W95(D)10(M)45(S)
I-80/E/MP 49.55	5	Nov/21/2012	49.55	N41(D)29(M)53(S) and W95(D)09(M)28(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
I-80/E/MP 6.72	1	June/27/2013	6.72	N41(D)15(M)33(S) and W95(D)48(M)15(S)
I-80/E/MP 8.64	2	June/27/2013	8.64	N41(D)16(M)54(S) and W95(D)46(M)59(S)
I-80/E/MP 9.28	3	June/27/2013	9.28	N41(D)17(M)24(S) and W95(D)47(M)40(S)
I-80/E/MP 9.65	4	June/27/2013	9.65	N41(D)17(M)43(S) and W95(D)46(M)28(S)
I-80/E/MP 10.80	5	June/27/2013	10.80	N41(D)18(M)33(S) and W95(D)45(M)50(S)
I-80/E/MP 23.82	1	June/27/2013	23.82	N41(D)26(M)48(S) and W95(D)36(M)14(S)
I-80/E/MP 27.53	2	June/27/2013	27.53	N41(D)29(M)50(S) and W95(D)34(M)50(S)
I-80/E/MP 27.59	3	June/27/2013	27.59	N41(D)29(M)51(S) and W95(D)34(M)50(S)
I-80/E/MP 35.10_1	1	June/27/2013	35.10	N41(D)29(M)53(S) and W95(D)26(M)09(S)
I-80/E/MP 35.10_2	1	June/27/2013	35.10	N41(D)29(M)53(S) and W95(D)26(M)09(S)
I-80/E/MP 35.93_1	2	June/27/2013	35.93	N41(D)29(M)53(S) and W95(D)25(M)11(S)
I-80/E/MP 35.93_2	2	June/27/2013	35.93	N41(D)29(M)53(S) and W95(D)25(M)11(S)
I-80/E/MP 37.33_1	3	June/27/2013	37.33	N41(D)29(M)51(S) and W95(D)23(M)35(S)
I-80/E/MP 37.33_2	3	June/27/2013	37.33	N41(D)29(M)51(S) and W95(D)23(M)35(S)
I-80/E/MP 38.05_1	4	June/27/2013	38.05	N41(D)29(M)51(S) and W95(D)23(M)43(S)
I-80/E/MP 38.05_2	4	June/27/2013	38.05	N41(D)29(M)51(S) and W95(D)23(M)43(S)
I-80/E/MP 38.37_1	5	June/27/2013	38.37	N41(D)29(M)51(S) and W95(D)22(M)22(S)
I-80/E/MP 38.37_2	5	June/27/2013	38.37	N41(D)29(M)51(S) and W95(D)22(M)22(S)
I-80/E/MP 38.68_1	6	June/27/2013	38.68	N41(D)29(M)51(S) and W95(D)22(M)0(S)
I-80/E/MP 38.68_2	6	June/27/2013	38.68	N41(D)29(M)51(S) and W95(D)22(M)0(S)
I-80/E/MP 45.32	1	June/28/2013	45.32	N41(D)29(M)49(S) and W95(D)14(M)21(S)
I-80/E/MP 46.64	2	June/28/2013	46.64	N41(D)29(M)49(S) and W95(D)12(M)49(S)
I-80/E/MP 47.72	3	June/28/2013	47.72	N41(D)29(M)50(S) and W95(D)11(M)34(S)
I-80/E/MP 48.76	4	June/28/2013	48.76	N41(D)29(M)50(S) and W95(D)10(M)22(S)

Table A.3. JPCP drainage outlet inspection results

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-35/N/MP140.22	Corrugated steel	6	50	Tufa block/Damaged	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP140.35	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-35/N/MP140.60	Corrugated steel	6	20	Tufa block	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-35/N/MP140.80	Corrugated steel	6	40	Tufa block	No	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP141.30	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-35/N/MP143.30	Corrugated plastic	4	60	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP143.45	Corrugated steel	6	100	Tufa block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-35/N/MP143.65	Corrugated steel	6	0	No block	No	Fork	No	More than 30 degree	No distress
I-35/S/MP 129.00	Corrugated steel	6	0	No block	No	Fork	Yes	More than 30 degree	No distress
I-35/S/MP 128.00	Corrugated steel	6	5	Tufa block	No	Fork	Yes	More than 30 degree	No distress
I-35/S/MP 127.90	Corrugated steel	6	0	No block	No	Fork	Yes	Less than 30 degree	No distress
I-35/S/MP 127.85	Corrugated steel	6	70	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-35/S/MP 127.50	Corrugated steel	6	20	Soil block/Damaged	No	Fork	No	Less than 30 degree	No distress
I-35/S/MP 127.20	Corrugated steel	6	0	No block/Damaged	No	Fork	No	Less than 30 degree	No distress
I-35/S/MP 126.00	Corrugated steel	6	0	No block/Damaged	No	Fork	Yes	Less than 30 degree	No distress
I-35/S/MP 123.70	Corrugated steel	6	50	diment block/Damag	No	Fork	Yes	Less than 30 degree	No distress
US-30/W/MP 156.50_1	Corrugated steel	6	0	No block	No	N/A	No	More than 30 degree	Transverse crack
US-30/W/MP 156.50_2	Corrugated steel	6	0	No block	No	Gate screen	No	More than 30 degree	Transverse crack
US-30/W/MP 156.00	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 155.80	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 153.00	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 132.86	Corrugated plastic	4	80	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 132.20_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 132.20_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.85	Corrugated plastic	4	80	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.80	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-6/E/MP 121.30	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 104.80	Corrugated steel	6	0	No block/Damaged	Yes (free flowing)	N/A	No	More than 30 degree	No distress
I-80/W/MP 103.95	Corrugated steel	6	30	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 103.90_1	Corrugated steel	6	20	Sediment block	No	N/A	No	More than 30 degree	No distress
I-80/W/MP 103.90_2	Corrugated steel	6	20	Sediment block	No	Fork	No	More than 30 degree	No distress
I-80/W/MP 103.40	Corrugated steel	6	0	No block	Yes (standing)	N/A	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-35/N/MP140.78	Corrugated plastic	4	0	No blockage	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-35/N/MP140.80	Corrugated steel	6	90	Soil block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP141.28	Corrugated plastic	4	0	No blockage	No	Fork	Yes	More than 30 degree	No distress
I-35/N/MP141.25	Corrugated steel	6	40	Tufa block	No	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP140.50	Corrugated steel	6	50	Soil block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-35/N/MP141.60	Corrugated steel	6	70	Soil block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-35/N/MP141.30	Corrugated steel	6	70	Tufa block/Damaged	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	No distress
I-35/N/MP143.45	Corrugated steel	6	90	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-35/N/MP143.50_1	Corrugated plastic	4	100	Tufa block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-35/N/MP143.50_2	Corrugated plastic	4	0	No block	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-35/S/MP 130.80	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	No distress
I-35/S/MP 128.93	Corrugated steel	6	50	Tufa block/Damaged	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-35/S/MP 127.35	Corrugated steel	6	0	No block	Yes (standing)	Fork	No	More than 30 degree	No distress
I-35/S/MP 125.17_1	Corrugated steel	6	100	Soil block/Damaged	No	Fork	No	More than 30 degree	No distress
I-35/S/MP 125.17_2	Corrugated steel	6	20	Soil block	Yes (free flowing)	N/A	No	More than 30 degree	No distress
I-35/S/MP 122.00	Corrugated steel	6	0	No block	Yes (standing)	Fork	No	More than 30 degree	No distress
I-35/S/MP 117.38	Corrugated steel	6	10	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
US-30/W/MP 156.65	Corrugated steel	6	20	Soil block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
US-30/W/MP 153.70	Corrugated steel	6	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	Cracking due to culvert
US-30/W/MP 152.45	Corrugated steel	6	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 132.15_1	Corrugated plastic	4	0	No block/Damaged	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 132.15_2	Corrugated plastic	4	0	No block/Damaged	No	N/A	No	More than 30 degree	Corner crack
I-80/W/MP 132.05	Corrugated plastic	4	100	Soil block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.85_1	Corrugated plastic	4	80	Sediment block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.85_2	Corrugated plastic	4	50	Sediment block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.65_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 131.65_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-6/E/MP 121.30	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 105.00	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	No distress
I-80/W/MP 103.47	Corrugated steel	6	10	Tufa block	Yes (standing)	N/A	No	Less than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 102.35	Corrugated steel	6	20	Sediment block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-80/W/MP 102.25	Corrugated steel	6	0	No block	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 102.07	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	No distress
I-80/W/MP 102.00_1	Corrugated steel	6	100	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 102.00_2	Corrugated steel	6	50	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 59.90	Corrugated steel	6	0	No block/Damaged	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 59.60	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 59.50	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 58.75	Corrugated steel	6	0	No block/Damaged	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 58.25_1	Corrugated steel	6	0	No block	No	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 58.25_2	Corrugated steel	6	100	Tufa block/Damaged	No	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 57.65_1	Corrugated steel	6	0	No block/Damaged	No	Gate screen	Yes	More than 30 degree	No distress
I-80/W/MP 57.65_2	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 57.10_1	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 57.10_2	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 56.72_1	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	Gate screen	Yes	More than 30 degree	No distress
I-80/W/MP 56.72_2	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	Gate screen	Yes	More than 30 degree	No distress
I-80/W/MP 56.00	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 55.93	Corrugated steel	6	50	Tufa block/Damaged	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 56.53	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 57.00	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 73.45	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-80/E/MP 74.00	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	More than 30 degree	No distress
I-80/E/MP 79.04	Corrugated steel	6	30	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 79.27	Corrugated steel	6	100	Soil block/Damaged	Yes (standing)	N/A	No	More than 30 degree	No distress
I-80/E/MP 82.27	Corrugated steel	6	0	No block	No	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 84.45	Corrugated steel	6	0	No block/Damaged	Yes (free flowing)	N/A	No	Less than 30 degree	No distress
IA-163/W/MP 20.67	Corrugated plastic	4	0	No block	No	N/A	No	Less than 30 degree	No distress
IA-163/W/MP 19.63_1	Corrugated plastic	4	60	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-163/W/MP 19.63_2	Corrugated plastic	4	60	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-163/W/MP 18.82_1	Corrugated plastic	4	70	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-163/W/MP 18.82_2	Corrugated plastic	4	70	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-163/W/MP 17.60	Corrugated plastic	4	90	Sediment block	Yes (standing)	N/A	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 102.00_1	Corrugated steel	6	10	Tufa block/Damaged	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-80/W/MP 102.00_2	Corrugated steel	6	80	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 101.88	Corrugated steel	6	10	Tufa block	Yes (free flowing)	N/A	No	More than 30 degree	Cracking due to culvert
I-80/W/MP 59.30_1	Corrugated steel	6	10	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 59.30_2	Corrugated steel	6	0	No block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 56.63_1	Corrugated steel	6	30	Soil block/Damaged	No	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 56.63_2	Corrugated steel	6	95	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 55.90_1	Corrugated steel	6	10	Sediment block	No	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 55.90_2	Corrugated steel	6	95	Tufa block/Damaged	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 55.57	Corrugated steel	6	50	Tufa block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 56.30	Corrugated steel	6	50	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	Longitudinal crack
I-80/E/MP 58.05	Corrugated steel	6	10	Tufa block	No	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 76.83	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	Cracking due to culvert
I-80/E/MP 79.02	Corrugated steel	6	0	No block	No	N/A	No	More than 30 degree	No distress
I-80/E/MP 80.17	Corrugated steel	6	100	Soil block	Yes (standing)	N/A	No	More than 30 degree	Cracking due to culvert
I-80/E/MP 80.57	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	Transverse crack
I-80/E/MP 81.80	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	Transverse crack
IA-163/W/MP 21.26	Corrugated plastic	4	100	Soil block	No	Gate screen	No	More than 30 degree	No distress
IA-163/W/MP 19.78_1	Corrugated plastic	4	100	Sediment block	No	Gate screen	No	More than 30 degree	No distress
IA-163/W/MP 19.78_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-163/W/MP 17.70	Corrugated plastic	4	80	Soil block	No	Gate screen	No	More than 30 degree	Corner crack

Table A.3. JPCP drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
IA-5/E/MP 87.55_1	Corrugated plastic	4	0	No block	Yes (standing)	N/A	No	Less than 30 degree	No distress
IA-5/E/MP 87.55_2	Corrugated plastic	4	0	No block	Yes (standing)	N/A	No	Less than 30 degree	No distress
IA-5/E/MP 86.50_1	Corrugated plastic	4	80	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-5/E/MP 86.50_2	Corrugated plastic	4	50	diment block/Damag	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-5/E/MP 86.25	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 151.60	Corrugated steel	6	20	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 152.15_1	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	More than 30 degree	gitudinal crack patc
I-80/E/MP 152.15_2	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	More than 30 degree	gitudinal crack patc
I-80/E/MP 153.80	Corrugated steel	6	40	Soil block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 154.55	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	gitudinal crack patc
I-80/E/MP 160.65	Corrugated plastic	4	100	Tufa block	Yes (standing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 161.75_1	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 161.75_2	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 164.10	Corrugated steel	6	40	diment block/Damag	No	Fork	No	More than 30 degree	No distress
I-80/E/MP 165.40	Corrugated steel	6	40	Sediment block	Yes (standing)	N/A	No	More than 30 degree	No distress
I-80/E/MP 167.10	Corrugated steel	6	0	No block	Yes (standing)	N/A	No	More than 30 degree	No distress
I-80/E/MP 169.20_1	Corrugated steel	6	50	Tufa block	Yes (standing)	N/A	No	More than 30 degree	No distress
I-80/E/MP 169.20_2	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	More than 30 degree	No distress
I-80/E/MP 169.90	Corrugated steel	6	70	Tufa block	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 171.90	Corrugated steel	6	80	Sediment block	No	Fork	No	More than 30 degree	No distress
I-80/E/MP 173.90	Corrugated steel	6	30	Sediment block	Yes (standing)	Fork	No	More than 30 degree	No distress
IA-330/W/MP 14.15	Corrugated plastic	4	100	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-330/W/MP 13.80_1	Corrugated plastic	4	20	Sediment block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 13.80_2	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 13.65	Corrugated plastic	4	100	Sediment block	No	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 13.55_1	Corrugated plastic	4	30	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-330/W/MP 13.55_2	Corrugated plastic	4	30	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 193.07	Corrugated steel	6	100	Sediment block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 193.20_1	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 193.20_2	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 195.10	Corrugated steel	6	60	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 198.05	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 202.35	Corrugated steel	6	80	Tufa block	Yes (standing)	N/A	Yes	More than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
IA-5/E/MP 87.87	Corrugated steel	6	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-5/E/MP 87.43_1	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
IA-5/E/MP 87.43_2	Corrugated plastic	4	5	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
IA-5/E/MP 86.16_1	Corrugated plastic	4	50	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
IA-5/E/MP 86.16_2	Corrugated plastic	4	50	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 151.68	Corrugated steel	6	50	Soil block	No	Fork	No	More than 30 degree	ngitudinal crack patchi
I-80/E/MP 152.15_1	Corrugated steel	6	0	No block	No	Fork	No	More than 30 degree	ngitudinal crack patchi
I-80/E/MP 152.15_2	Corrugated steel	6	0	No block	No	Fork	No	More than 30 degree	ngitudinal crack patchi
I-80/E/MP 154.27	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	ransverse crack patchir
I-80/E/MP 160.87	Corrugated steel	6	100	Soil block/Damaged	No	N/A	No	Less than 30 degree	Longitudinal crack
I-80/E/MP 164.43_1	Corrugated steel	6	100	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 164.43_2	Corrugated plastic	4	50	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 164.72	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
I-80/E/MP 165.65_1	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	No distress
I-80/E/MP 165.65_2	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 167.67	Corrugated steel	6	0	No block	No	Gate screen	No	More than 30 degree	No distress
I-80/E/MP 168.58_1	Corrugated steel	6	100	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 168.58_2	Corrugated steel	6	5	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 172.07	Corrugated plastic	4	80	Soil block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 172.97	Corrugated plastic	4	50	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
IA-330/W/MP 14.15	Corrugated plastic	4	10	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-330/W/MP 14.07_1	Corrugated plastic	4	20	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 14.07_2	Corrugated plastic	4	20	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 13.55_1	Corrugated plastic	4	50	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-330/W/MP 13.55_2	Corrugated plastic	4	70	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-330/W/MP 13.38_1	Corrugated plastic	4	10	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
IA-330/W/MP 13.38_2	Corrugated plastic	4	50	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
I-80/E/MP 193.20_1	Corrugated steel	6	100	Tufa block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 193.20_2	Corrugated steel	6	100	Tufa block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 195.27_1	Corrugated steel	6	95	Tufa block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 195.27_2	Corrugated steel	6	95	Tufa block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 197.43_1	Corrugated steel	6	30	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 197.43_2	Corrugated steel	6	20	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 200.43	Corrugated steel	6	70	Tufa block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 206.26	Corrugated steel	6	0	No block	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 207.10	Corrugated steel	6	0	No block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 207.43	Corrugated steel	6	60	Tufa block	Yes (standing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 208.45	Corrugated steel	6	100	Tufa block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 221.60	Corrugated steel	6	70	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 222.23	Corrugated steel	6	100	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 223.65	Corrugated steel	6	10	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 224.18	Corrugated steel	6	80	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 248.35	Corrugated steel	6	60	Tufa block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 250.00	Corrugated steel	6	0	No block	No	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 250.50	Corrugated steel	6	100	Tufa block/Damaged	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 252.15	Corrugated steel	6	100	Tufa block/Damaged	No	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 253.80	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 254.85	Corrugated steel	6	60	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 256.53	Corrugated steel	6	70	Tufa block/Damaged	Yes (standing)	N/A	No	Less than 30 degree	No distress
I-80/E/MP 266.37	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 266.50	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 266.60	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 266.85	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	No distress
I-80/E/MP 267.40	Corrugated steel	6	90	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 267.65	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 268.03	Corrugated steel	6	100	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 268.13	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 268.85	Corrugated steel	6	20	Sediment block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 269.63	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 270.60	Corrugated steel	6	80	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 270.90	Corrugated steel	6	80	Sediment block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 271.03	Corrugated steel	6	80	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 271.30	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 272.07	Corrugated steel	6	90	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 273.00	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 273.17	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 273.70	Corrugated steel	6	90	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 274.13	Corrugated steel	6	0	No block/Damaged	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 274.50	Corrugated steel	6	100	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 275.25	Corrugated steel	6	40	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 276.10	Corrugated steel	6	100	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 206.26	Corrugated steel	6	5	Tufa block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 207.62	Corrugated steel	6	5	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 208.45	Corrugated steel	6	5	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 221.72	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 225.10	Corrugated steel	6	50	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 225.20	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 248.26	Corrugated steel	6	50	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 248.65	Corrugated steel	6	90	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 250.80	Corrugated steel	6	40	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 254.16	Corrugated steel	6	50	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 255.84	Corrugated steel	6	10	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 256.85	Corrugated steel	6	30	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 266.66	Corrugated steel	6	30	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 268.65	Corrugated steel	6	70	Tufa block	No	Fork	Yes	Less than 30 degree	Pavement patch
I-80/E/MP 270.80	Corrugated steel	6	50	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 271.45	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 272.29	Corrugated steel	6	30	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 273.35	Corrugated steel	6	10	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 273.75	Corrugated steel	6	10	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 274.86	Corrugated steel	6	40	Tufa block	No	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 276.23	Corrugated steel	6	95	Tufa block/Damaged	No	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 276.95	Corrugated steel	6	50	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 277.85	Corrugated steel	6	95	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 276.43_1	Corrugated steel	6	40	Tufa block/Damaged	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 276.43_2	Corrugated steel	6	40	Tufa block/Damaged	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 277.65	Corrugated steel	6	100	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 278.20	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 278.30	Corrugated steel	6	70	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 278.60	Corrugated steel	6	30	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 278.97	Corrugated steel	6	100	Tufa block/Damaged	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 278.60	Corrugated steel	6	60	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
US-61/E/MP 107.50	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	Corner crack
US-61/E/MP 108.40_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-61/E/MP 108.40_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-61/E/MP 109.00	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	Longitudinal crack
I-80/E/MP 296.85	Corrugated steel	6	80	Tufa block	Yes (free flowing)	Fork	Yes	More than 30 degree	No distress
I-80/E/MP 297.60	Corrugated steel	6	100	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 298.40	Corrugated steel	6	100	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
US-151/S/MP 73.60_1	Corrugated plastic	4	70	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 73.60_1	Corrugated plastic	4	70	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 72.95_1	Corrugated plastic	4	50	Soil block	No	Gate screen	No	More than 30 degree	No distress
US-151/S/MP 72.95_2	Corrugated plastic	4	50	Soil block	No	Gate screen	No	More than 30 degree	No distress
US-151/S/MP 72.00_1	Corrugated plastic	4	30	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 72.00_2	Corrugated plastic	4	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
US-151/S/MP 70.85_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 70.85_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 70.00_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 70.00_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 68.55	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 68.00_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 68.00_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 67.70	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 67.10_1	Corrugated plastic	4	10	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 67.10_2	Corrugated plastic	4	10	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 66.70	Corrugated plastic	4	100	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 65.80_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/S/MP 65.80_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/S/MP 64.50	Corrugated plastic	4	100	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 63.60_1	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 63.60_2	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 62.90_1	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 62.90_2	Corrugated plastic	4	0	No block	Yes (standing)	N/A	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 279.14	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 279.85_1	Corrugated steel	6	50	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 279.85_2	Corrugated steel	6	20	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 279.85_3	Corrugated steel	6	30	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 280.30_1	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 280.30_2	Corrugated steel	6	50	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
US-61/E/MP 107.67_1	Corrugated plastic	4	95	Soil block	No	Gate screen	No	Less than 30 degree	Corner crack
US-61/E/MP 107.67_2	Corrugated plastic	4	80	Soil block	No	Gate screen	No	Less than 30 degree	Corner crack
US-61/E/MP 108.24	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Corner crack
US-61/E/MP 109.50	Corrugated plastic	4	20	Soil block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 295.75	Corrugated steel	6	50	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 298.07	Corrugated steel	6	95	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
US-151/S/MP 71.60_1	Corrugated plastic	4	95	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
US-151/S/MP 71.60_2	Corrugated plastic	4	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 70.65_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 70.65_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 68.81_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 68.81_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 65.57_1	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 65.57_2	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 63.80_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 63.80_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/S/MP 62.99_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/S/MP 62.99_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 62.90_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 62.90_2	Corrugated plastic	4	0	No block	No	Gate screen	Yes	More than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
US-151/N/MP 64.05	Corrugated plastic	4	20	Sediment block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 65.05_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 65.05_2	Corrugated plastic	4	20	Tufa block	No	Gate screen	Yes	More than 30 degree	No distress
US-151/N/MP 65.95_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 65.95_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 66.90_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 66.90_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 67.25_1	Corrugated plastic	4	80	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 67.25_2	Corrugated plastic	4	80	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 44.80_1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 44.80_2	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	No distress
US-151/N/MP 43.20_1	Corrugated steel	6	20	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 43.20_2	Corrugated steel	6	20	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP41.00_1	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	No distress
US-151/N/MP41.00_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 262.90_1	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 262.90_2	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 261.35	Corrugated plastic	4	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 260.80	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse crack
US-30/W/MP 260.20	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 203.50	Corrugated steel	6	10	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 202.65	Corrugated steel	6	100	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 201.55	Corrugated steel	6	40	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-80/W/MP 197.70	Corrugated steel	6	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 197.15_1	Corrugated steel	6	10	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 197.15_2	Corrugated steel	6	20	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 194.45_1	Corrugated steel	6	50	Soil block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 194.45_2	Corrugated steel	6	50	Soil block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 193.60_1	Corrugated steel	6	40	Sediment block	No	Fork	No	More than 30 degree	No distress
I-80/W/MP 193.60_2	Corrugated steel	6	30	Sediment block	No	Fork	No	More than 30 degree	No distress
I-80/W/MP 193.00_1	Corrugated steel	6	20	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 193.00_2	Corrugated steel	6	30	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 173.75	Corrugated steel	6	30	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 171.95	Corrugated steel	6	10	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-80/W/MP 170.35	Corrugated steel	6	40	Tufa block	No	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 167.30	Corrugated steel	6	30	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 163.55	Corrugated steel	6	50	Soil block	No	Fork	No	More than 30 degree	No distress
I-80/W/MP 159.59	Corrugated steel	6	0	No block/Damaged	No	Fork	No	More than 30 degree	No distress
I-80/W/MP 157.70-1	Corrugated steel	6	90	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 157.70-2	Corrugated steel	6	70	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
US-151/N/MP 63.30_1	Corrugated plastic	4	65	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 63.30_2	Corrugated plastic	4	65	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 64.70_1	Corrugated plastic	4	5	Sediment block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 64.70_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-151/N/MP 66.78_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 66.78_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 44.50	Corrugated steel	6	50	Soil block/Damaged	No	Gate screen	No	Less than 30 degree	ement patch due to cul
US-151/N/MP 43.72_1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP 43.72_2	Corrugated steel	6	0	No block/Damaged	Yes (standing)	N/A	No	Less than 30 degree	No distress
US-151/N/MP42.90_1	Corrugated steel	6	10	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-151/N/MP42.90_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 262.39_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 262.39_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP 261.87_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-30/W/MP 261.87_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-30/W/MP 260.58_1	Corrugated plastic	4	70	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	ement patch due to cul
US-30/W/MP 260.58_2	Corrugated plastic	4	40	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	ement patch due to cul
I-80/W/MP 203.97	Corrugated steel	6	5	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 198.53	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 197.78	Corrugated steel	6	30	Soil block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 196.60_1	Corrugated steel	6	10	Soil block	No	Gate screen	No	Less than 30 degree	nsverse crack due to cul
I-80/W/MP 196.60_2	Corrugated steel	6	30	Sediment block	No	Gate screen	No	Less than 30 degree	nsverse crack due to cul
I-80/W/MP 193.80_1	Corrugated steel	6	50	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 193.80_2	Corrugated steel	6	10	Sediment block	No	Gate screen	No	More than 30 degree	No distress
I-80/W/MP 168.23	Corrugated steel	6	0	No block	Yes (free flowing)	Gate screen	Yes	More than 30 degree	No distress
I-80/W/MP 165.20	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	itudinal crack due to cu
I-80/W/MP 164.65	Corrugated steel	6	80	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)
(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 151.35	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 150.85	Corrugated steel	6	10	Sediment block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 150.10	Corrugated steel	6	80	Soil block	No	N/A	No	Less than 30 degree	No distress
IA-60/E/MP 47.75	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 48.35_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 48.35_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 49.06_1	Corrugated plastic	4	80	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 49.06_2	Corrugated plastic	4	50	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 51.10	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 51.15	Corrugated plastic	4	100	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 50.20_1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 50.20_2	Corrugated plastic	4	30	Soil block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 47.75	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 49.30_1	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 49.30_2	Corrugated steel	6	0	No block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 49.03	Corrugated steel	6	100	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 48.50_1	Corrugated steel	6	60	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 48.50_2	Corrugated steel	6	5	Tufa block	No	Gate Screen	Yes	Less than 30 degree	No distress
I-80/W/MP 48.30_1	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate Screen	Yes	More than 30 degree	No distress
I-80/W/MP 48.30_2	Corrugated steel	6	20	Tufa block	Yes (standing)	Gate Screen	Yes	More than 30 degree	No distress
I-80/W/MP 47.70_1	Corrugated steel	6	35	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 47.70_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 46.70_1	Corrugated steel	6	100	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 46.70_2	Corrugated steel	6	0	No block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 38.20	Corrugated steel	6	30	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 37.90	Corrugated steel	6	90	Tufa block	No	Fork	Yes	More than 30 degree	No distress
I-80/W/MP 37.35	Corrugated steel	6	0	No block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 36.05	Corrugated steel	6	100	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 34.70	Corrugated plastic	4	20	Tufa block/Damaged	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 26.75	Corrugated steel	6	80	Soil block	No	N/A	No	Less than 30 degree	No distress
I-80/W/MP 24.90	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	No distress
I-80/W/MP 23.75	Corrugated plastic	4	0	No block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 21.75	Corrugated plastic	4	0	No block	Yes (standing)	N/A	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 151.40	Corrugated steel	6	10	Sediment block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-80/W/MP 150.67	Corrugated plastic	4	10	Sediment block	No	Fork	No	Less than 30 degree	No distress
IA-60/E/MP 47.95_1	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 47.95_2	Corrugated plastic	4	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 48.97	Corrugated plastic	4	40	Soil block	No	Gate screen	No	More than 30 degree	sverse crack due to cu
IA-60/E/MP 51.22_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 51.22_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 50.80_1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 50.80_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP 49.67_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP 49.67_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP 47.75	Corrugated plastic	4	30	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-80/W/MP 48.58_1	Corrugated steel	6	5	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 48.58_2	Corrugated steel	6	10	Tufa block	No	Gate Screen	Yes	Less than 30 degree	No distress
I-80/W/MP 47.60	Corrugated steel	6	100	Tufa block/Damaged	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/W/MP 46.10_1	Corrugated steel	6	80	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 46.10_2	Corrugated steel	6	50	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 39.10	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/W/MP 38.20	Corrugated steel	6	30	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 36.31	Corrugated steel	6	20	Sediment block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/W/MP 26.72	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 26.70	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 25.82	Corrugated plastic	4	50	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 24.05	Corrugated steel	6	20	Tufa block	Yes (free flowing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 21.72	Corrugated steel	6	50	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)
(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 10.50	Corrugated plastic	4	10	Tufa block	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/W/MP 9.50	Corrugated plastic	4	60	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-29/N/MP 58.80	Corrugated steel	6	70	Soil block/Damaged	No	N/A	No	Less than 30 degree	No distress
I-29/N/MP 59.85	Corrugated steel	6	100	Soil block/Damaged	No	N/A	No	Less than 30 degree	No distress
I-29/N/MP 60.35	Corrugated steel	6	0	No block	No	N/A	No	More than 30 degree	No distress
I-29/N/MP 63.05	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 64.45	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-29/N/MP 65.13_1	Corrugated steel	6	20	Sediment block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/N/MP 65.13_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 65.20_1	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 65.20_2	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 63.35	Corrugated steel	6	60	Soil block/Damaged	No	N/A	No	Less than 30 degree	No distress
I-29/S/MP 60.98	Corrugated steel	6	40	Soil Block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 60.35_1	Corrugated plastic	4	35	Soil block	No	N/A	No	More than 30 degree	No distress
I-29/S/MP 60.35_2	Corrugated plastic	4	75	Soil block	No	Gate screen	No	More than 30 degree	No distress
I-29/S/MP 60.20_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 60.20_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 70.90_1	Corrugated steel	6	40	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/N/MP 70.90_2	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/N/MP 71.08_1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 71.08_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 71.65_1	Corrugated steel	6	25	liment block/Damag	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 71.65_2	Corrugated steel	6	50	liment block/Damag	No	N/A	No	Less than 30 degree	No distress
I-29/N/MP 72.15_1	Corrugated steel	6	100	Tufa block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-29/N/MP 72.15_2	Corrugated steel	6	100	Tufa block/Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-29/N/MP 72.90_1	Corrugated steel	6	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 72.90_2	Corrugated steel	6	25	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 74.25_1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 74.25_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 74.60_1	Corrugated steel	6	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 74.60_2	Corrugated steel	6	80	Soil block/Damaged	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 76.25_1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/W/MP 10.73	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/W/MP 10.40	Corrugated plastic	4	0	No block	No	N/A	No	Less than 30 degree	Transverse crack
I-80/W/MP 8.85	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-29/S/MP 63.03_1	Corrugated steel	6	50	Sediment block	No	Fork	No	Less than 30 degree	Longitudinal crack
I-29/S/MP 65.03_2	Corrugated steel	6	30	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	Longitudinal crack
I-29/S/MP 62.80	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP 62.70_1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 62.70_2	Corrugated plastic	4	10	Sediment block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)
(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-29/N/MP 77.30_1	Corrugated steel	6	100	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 77.30_2	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 79.05	Corrugated steel	6	100	liment block/Damag	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 82.90_1	Corrugated steel	6	100	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 82.90_2	Corrugated steel	6	80	Soil block/Damaged	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 85.35_1	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-29/N/MP 85.35_2	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-29/N/MP 87.15	Corrugated steel	6	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP 90.15	Corrugated steel	6	50	liment block/Damag	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 76.40_1	Corrugated steel	6	50	liment block/Damag	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 76.40_2	Corrugated steel	6	40	liment block/Damag	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 75.00_1	Corrugated plastic	4	60	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-29/S/MP 75.00_2	Corrugated steel	6	30	diment block/Damg	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 73.90	Corrugated plastic	4	0	No block	No	N/A	No	Less than 30 degree	No distress
I-29/S/MP 71.90	Corrugated steel	6	30	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 71.15_1	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 71.15_2	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 70.80_1	Corrugated plastic	4	50	Soil block	No	N/A	Yes	Less than 30 degree	No distress
I-29/S/MP 70.80_2	Corrugated steel	6	100	Tufa block/Damaged	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 5.90	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 6.10	Corrugated plastic	4	40	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 7.40	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 9.65	Corrugated plastic	4	0	No block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 10.40	Corrugated plastic	4	0	No block	Yes (standing)	N/A	Yes	Less than 30 degree	Transverse crack
I-80/E/MP 10.50	Corrugated plastic	4	50	Tufa block	Yes (standing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 22.40	Corrugated steel	6	50	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 24.10	Corrugated steel	6	40	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 25.85	Corrugated steel	6	10	Tufa block	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 28.00	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-29/N/MP 78.44	Corrugated steel	6	50	Sediment block	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	Longitudinal crack
I-29/N/MP 80.70	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-29/N/MP 84.89_1	Corrugated steel	6	10	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-29/N/MP 84.89_2	Corrugated steel	6	10	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-29/N/MP 87.98	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-29/N/MP 90.26	Corrugated steel	6	50	Soil block	No	Fork	No	Less than 30 degree	No distress
I-29/S/MP 76.25_1	Corrugated steel	6	50	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 76.25_2	Corrugated steel	6	80	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP 74.45_1	Corrugated plastic	4	30	Soil block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 74.45_2	Corrugated plastic	4	30	Soil block	No	Gate screen	Yes	Less than 30 degree	No distress
I-29/S/MP 74.20_1	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	Pavement patch
I-29/S/MP 74.20_2	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	Pavement patch
I-29/S/MP 73.03	Corrugated plastic	4	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 6.72	Corrugated plastic	4	40	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 8.64	Corrugated plastic	4	90	Tufa block	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 9.28	Corrugated plastic	4	20	Tufa block	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 9.65	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 10.80	Corrugated plastic	4	10	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 23.82	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 27.53	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	Yes	Less than 30 degree	gitudinal/Transverse cr
I-80/E/MP 27.59	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	No distress

Table A.3. JPCP drainage outlet inspection results (continued)
(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Presence inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 35.10_1	Corrugated steel	6	100	Tufa block	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 35.10_2	Corrugated steel	6	0	No block/Damaged	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 35.25_1	Corrugated steel	6	100	Tufa block /Damaged	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 35.25_2	Corrugated steel	6	50	Tufa block/Damaged	Yes (free flowing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 36.20_1	Corrugated steel	6	90	Soil block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 36.20_2	Corrugated steel	6	90	Soil block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 37.23	Corrugated steel	6	95	Tufa block /Damaged	No	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 38.05_1	Corrugated steel	6	100	Tufa block /Damaged	No	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 38.05_2	Corrugated steel	6	85	Tufa block /Damaged	No	Gata screen	Yes	Less than 30 degree	No distress
I-80/E/MP 38.37_1	Corrugated steel	6	90	Soil block /Damaged	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 38.37_2	Corrugated steel	6	90	Soil block /Damaged	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 45.70	Corrugated steel	6	40	Tufa block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 46.35	Corrugated steel	6	60	Tufa block /Damaged	Yes (free flowing)	N/A	Yes	Less than 30 degree	No distress
I-80/E/MP 47.65	Corrugated steel	6	100	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 48.40	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	No distress
I-80/E/MP 49.55	Corrugated steel	6	90	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Presence	Embankment Slop Condition	Pavement Distress Condition
I-80/E/MP 35.10_1	Corrugated steel	6	50	Tufa block	Yes (free flowing)	N/A	Yes	Less than 30 degree	Corner crack
I-80/E/MP 35.10_2	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	Corner crack
I-80/E/MP 35.93_1	Corrugated steel	6	20	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
I-80/E/MP 35.93_2	Corrugated steel	6	20	Soil block	Yes (standing)	N/A	No	Less than 30 degree	No distress
I-80/E/MP 37.33_1	Corrugated steel	6	50	Tufa block	Yes (standing)	N/A	Yes	More than 30 degree	No distress
I-80/E/MP 37.33_2	Corrugated steel	6	50	Tufa block	No	Gate screen	Yes	More than 30 degree	No distress
I-80/E/MP 38.05_1	Corrugated steel	6	100	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 38.05_2	Corrugated steel	6	85	Tufa block	Yes (standing)	Gate screen	Yes	Less than 30 degree	No distress
I-80/E/MP 38.37_1	Corrugated steel	6	90	Soil block	No	Fork	Yes	Less than 30 degree	Corner crack
I-80/E/MP 38.37_2	Corrugated steel	6	90	Soil block	No	Fork	Yes	Less than 30 degree	Corner crack
I-80/E/MP 38.68_1	Corrugated steel	6	5	Tufa block	Yes (free flowing)	N/A	No	Less than 30 degree	Corner crack
I-80/E/MP 38.68_2	Corrugated steel	6	10	Tufa block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Corner crack
I-80/E/MP 45.32	Corrugated steel	6	50	Soil block	No	Fork	No	Less than 30 degree	No distress
I-80/E/MP 46.64	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 47.72	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	Yes	Less than 30 degree	No distress
I-80/E/MP 48.76	Corrugated steel	6	50	Tufa block	Yes (free flowing)	Fork	Yes	Less than 30 degree	No distress

Table A.4. Pavement distress records for JPCP sites in PMIS

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-35/N/MP140.22	90.0	91.0	0.3	8.0	2
I-35/N/MP140.35	90.0	91.0	0.3	8.0	2
I-35/N/MP140.60	90.0	91.0	0.3	8.0	2
I-35/N/MP140.80	90.0	91.0	0.3	8.0	2
I-35/N/MP141.30	90.0	91.0	0.3	8.0	2
I-35/N/MP143.30	114.0	92.0	0.2	42.2	62
I-35/N/MP143.45	114.0	92.0	0.2	42.2	62
I-35/N/MP143.65	114.0	92.0	0.2	42.2	62
I-35/S/MP 129.00	81.7	86.0	0.2	0.0	0
I-35/S/MP 128.00	81.7	86.0	0.2	0.0	0
I-35/S/MP 127.90	81.7	86.0	0.2	0.0	0
I-35/S/MP 127.85	81.7	86.0	0.2	0.0	0
I-35/S/MP 127.50	81.7	86.0	0.2	0.0	0
I-35/S/MP 127.20	81.7	86.0	0.2	0.0	0
I-35/S/MP 126.00	92.5	86.0	0.2	0.0	0
I-35/S/MP 123.70	92.5	86.0	0.2	0.0	0
US-30/W/MP 156.50_1	93.8	89.0	0.2	0.0	12
US-30/W/MP 156.50_2	93.8	89.0	0.2	0.0	12
US-30/W/MP 156.00	93.8	89.0	0.2	0.0	12
US-30/W/MP 155.80	93.8	89.0	0.2	0.0	12
US-30/W/MP 153.00	93.8	89.0	0.2	0.0	12
I-80/W/MP 132.86	103.3	76.0	0.2	0.0	2
I-80/W/MP 132.20_1	103.3	76.0	0.2	0.0	2
I-80/W/MP 132.20_2	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.85	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.80	103.3	76.0	0.2	0.0	2
US-6/E/MP 121.30	96.3	67.0	0.3	81.8	22
I-80/W/MP 104.80	93.1	67.0	0.3	23.8	4
I-80/W/MP 103.95	93.1	67.0	0.3	23.8	4
I-80/W/MP 103.90_1	93.1	67.0	0.3	23.8	4
I-80/W/MP 103.90_2	93.1	67.0	0.3	23.8	4
I-80/W/MP 103.40	93.1	67.0	0.3	23.8	4
I-80/W/MP 102.35	98.8	68.0	0.4	0.0	0
I-80/W/MP 102.25	98.8	68.0	0.4	0.0	0
I-80/W/MP 102.07	98.8	68.0	0.4	0.0	0
I-80/W/MP 102.00_1	98.8	68.0	0.4	0.0	0
I-80/W/MP 102.00_2	98.8	68.0	0.4	0.0	0

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-35/N/MP140.78	90.0	91.0	0.3	8.0	2
I-35/N/MP140.80	90.0	91.0	0.3	8.0	2
I-35/N/MP141.28	90.0	91.0	0.3	8.0	2
I-35/N/MP141.25	90.0	91.0	0.3	8.0	2
I-35/N/MP140.50	90.0	91.0	0.3	8.0	2
I-35/N/MP141.60	90.0	91.0	0.3	8.0	2
I-35/N/MP141.30	90.0	91.0	0.3	8.0	2
I-35/N/MP143.45	114.0	92.0	0.2	42.2	62
I-35/N/MP143.50_1	114.0	92.0	0.2	42.2	62
I-35/N/MP143.50_2	114.0	92.0	0.2	42.2	62
I-35/S/MP 130.80	81.7	86.0	0.2	0.0	0
I-35/S/MP 128.93	81.7	86.0	0.2	0.0	0
I-35/S/MP 127.35	81.7	86.0	0.2	0.0	0
I-35/S/MP 125.17_1	81.7	86.0	0.2	0.0	0
I-35/S/MP 125.17_2	81.7	86.0	0.2	0.0	0
I-35/S/MP 122.00	81.7	86.0	0.2	0.0	0
I-35/S/MP 117.38	81.7	86.0	0.2	0.0	0
US-30/W/MP 156.65	93.8	89.0	0.2	0.0	12
US-30/W/MP 153.70	93.8	89.0	0.2	0.0	12
US-30/W/MP 152.45	93.8	89.0	0.2	0.0	12
I-80/W/MP 132.15_1	103.3	76.0	0.2	0.0	2
I-80/W/MP 132.15_2	103.3	76.0	0.2	0.0	2
I-80/W/MP 132.05	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.85_1	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.85_2	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.65_1	103.3	76.0	0.2	0.0	2
I-80/W/MP 131.65_2	103.3	76.0	0.2	0.0	2
US-6/E/MP 121.30	96.3	67.0	0.3	81.8	22
I-80/W/MP 105.00	93.1	67.0	0.3	23.8	4
I-80/W/MP 103.47	93.1	67.0	0.3	23.8	4
I-80/W/MP 102.00_1	98.8	68.0	0.4	0.0	0
I-80/W/MP 102.00_2	98.8	68.0	0.4	0.0	0
I-80/W/MP 101.88	98.8	68.0	0.4	0.0	0

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/W/MP 59.90	84.3	71.0	0.2	0.0	0
I-80/W/MP 59.60	84.3	71.0	0.2	0.0	0
I-80/W/MP 59.50	84.3	71.0	0.2	0.0	0
I-80/W/MP 58.75	84.3	71.0	0.2	0.0	0
I-80/W/MP 58.25_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 58.25_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 57.65_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 57.65_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 57.10_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 57.10_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 56.72_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 56.72_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 56.00	84.3	71.0	0.2	0.0	0
I-80/E/MP 55.93	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 56.53	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 57.00	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 73.45	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 74.00	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 79.04	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 79.27	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 82.27	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 84.45	102.0	82.0	0.2	18.5	96.6
IA-163/W/MP 20.67	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 19.63_1	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 19.63_2	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 18.82_1	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 18.82_2	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 17.60	83.6	95.0	0.0	29.0	12.9
IA-5/E/MP 87.55_1	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 87.55_2	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 86.50_1	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 86.50_2	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 86.25	86.8	95.0	0.0	10.6	23.3
I-80/E/MP 151.60	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 152.15_1	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 152.15_2	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 153.80	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 154.55	81.7	63.0	0.2	187.4	0.0

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/W/MP 59.30_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 59.30_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 56.63_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 56.63_2	84.3	71.0	0.2	0.0	0
I-80/W/MP 55.90_1	84.3	71.0	0.2	0.0	0
I-80/W/MP 55.90_2	84.3	71.0	0.2	0.0	0
I-80/E/MP 55.57	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 56.30	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 58.05	86.8	66.0	0.3	108.2	1.6
I-80/E/MP 76.83	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 79.02	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 80.17	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 80.57	102.0	82.0	0.2	18.5	96.6
I-80/E/MP 81.80	102.0	82.0	0.2	18.5	96.6
IA-163/W/MP 21.26	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 19.78_1	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 19.78_2	83.6	95.0	0.0	29.0	12.9
IA-163/W/MP 17.70	83.6	95.0	0.0	29.0	12.9
IA-5/E/MP 87.87	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 87.43_1	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 87.43_2	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 86.16_1	86.8	95.0	0.0	10.6	23.3
IA-5/E/MP 86.16_2	86.8	95.0	0.0	10.6	23.3
I-80/E/MP 151.68	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 152.15_1	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 152.15_2	81.7	63.0	0.2	187.4	0.0
I-80/E/MP 154.27	81.7	63.0	0.2	187.4	0.0

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 160.65	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 161.75_1	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 161.75_2	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 164.10	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 165.40	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 167.10	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 169.20_1	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 169.20_2	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 169.90	67.8	72.0	0.3	0.0	0.0
I-80/E/MP 171.90	67.8	72.0	0.3	0.0	0.0
I-80/E/MP 173.90	67.8	72.0	0.3	0.0	0.0
IA-330/W/MP 14.15	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.80_1	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.80_2	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.65	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.55_1	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.55_2	95.7	95.0	0.2	26.4	24.1
I-80/E/MP 193.07	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 193.20_1	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 193.20_2	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 195.10	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 198.05	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 202.35	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 206.26	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 207.10	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 207.43	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 208.45	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 221.60	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 222.23	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 223.65	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 224.18	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 248.35	103.9	65.0	0.3	5.3	0.0
I-80/E/MP 250.00	103.9	65.0	0.3	5.3	0.0
I-80/E/MP 250.50	103.9	65.0	0.3	5.3	0.0
I-80/E/MP 252.15	103.9	65.0	0.3	5.3	0.0

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 160.87	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 164.43_1	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 164.43_2	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 164.72	69.7	73.0	0.3	21.1	3.2
I-80/E/MP 165.65_1	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 165.65_2	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 167.67	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 168.58_1	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 168.58_2	49.4	69.0	0.3	13.2	0.0
I-80/E/MP 172.07	67.8	72.0	0.3	0.0	0.0
I-80/E/MP 172.97	67.8	72.0	0.3	0.0	0.0
IA-330/W/MP 14.15	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 14.07_1	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 14.07_2	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.55_1	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.55_2	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.38_1	95.7	95.0	0.2	26.4	24.1
IA-330/W/MP 13.38_2	95.7	95.0	0.2	26.4	24.1
I-80/E/MP 193.20_1	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 193.20_2	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 195.27_1	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 195.27_2	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 197.43_1	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 197.43_2	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 200.43	86.8	55.0	0.3	44.9	1.6
I-80/E/MP 206.26	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 207.62	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 208.45	81.1	56.0	0.3	2.6	0.0
I-80/E/MP 221.72	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 225.10	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 225.20	81.7	72.0	0.3	34.3	2.4
I-80/E/MP 248.26	103.9	65.0	0.3	5.3	0.0
I-80/E/MP 248.65	103.9	65.0	0.3	5.3	0.0
I-80/E/MP 250.80	103.9	65.0	0.3	5.3	0.0

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 253.80	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 254.85	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 256.53	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 266.37	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 266.50	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 266.60	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 266.85	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 267.40	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 267.65	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 268.03	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 268.13	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 268.85	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 269.63	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 270.60	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 270.90	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 271.03	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 271.30	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 272.07	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 273.00	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 273.17	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 273.70	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 274.13	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 274.50	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 275.25	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 276.10	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 276.43_1	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 276.43_2	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 277.65	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 278.20	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 278.30	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 278.60	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 278.97	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 278.60	69.7	73.0	0.3	18.5	0.8
US-61/E/MP 107.50	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 108.40_1	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 108.40_2	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 109.00	84.3	90.0	0.0	134.6	3.2

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 254.16	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 255.84	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 256.85	95.0	65.0	0.3	0.0	0.0
I-80/E/MP 266.66	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 268.65	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 270.80	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 271.45	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 272.29	97.6	61.0	0.3	2.6	3.2
I-80/E/MP 273.35	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 273.75	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 274.86	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 276.23	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 276.95	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 277.85	86.8	63.0	0.2	26.4	2.4
I-80/E/MP 279.14	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 279.85_1	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 279.85_2	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 279.85_3	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 280.30_1	69.7	73.0	0.3	18.5	0.8
I-80/E/MP 280.30_2	69.7	73.0	0.3	18.5	0.8
US-61/E/MP 107.67_1	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 107.67_2	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 108.24	84.3	90.0	0.0	134.6	3.2
US-61/E/MP 109.50	84.3	90.0	0.0	134.6	3.2

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 296.85	72.2	75.0	0.2	10.6	0.0
I-80/E/MP 297.60	72.2	75.0	0.2	10.6	0.0
I-80/E/MP 298.40	72.2	75.0	0.2	10.6	0.0
US-151/S/MP 73.60_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 73.60_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 72.95_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 72.95_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 72.00_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 72.00_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.85_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.85_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.00_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.00_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 68.55	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 68.00_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 68.00_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 67.70	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 67.10_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 67.10_2	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 66.70	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 65.80_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 65.80_2	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 64.50	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 63.60_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 63.60_2	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 62.90_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 62.90_2	95.7	96.0	0.0	5.3	0.8
US-151/N/MP 64.05	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 65.05_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 65.05_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 65.95_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 65.95_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 66.90_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 66.90_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 67.25_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 67.25_2	92.5	96.0	0.0	0.0	0.8

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 295.75	72.2	75.0	0.2	10.6	0.0
I-80/E/MP 298.07	72.2	75.0	0.2	10.6	0.0
US-151/S/MP 71.60_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 71.60_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.65_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 70.65_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 68.81_1	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 68.81_2	101.4	95.0	0.0	37.0	0.0
US-151/S/MP 65.57_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 65.57_2	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 63.80_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 63.80_2	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 62.99_1	95.7	96.0	0.0	5.3	0.8
US-151/S/MP 62.99_2	95.7	96.0	0.0	5.3	0.8
US-151/N/MP 62.90_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 62.90_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 63.30_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 63.30_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 64.70_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 64.70_2	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 66.78_1	92.5	96.0	0.0	0.0	0.8
US-151/N/MP 66.78_2	92.5	96.0	0.0	0.0	0.8

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
US-151/N/MP 44.80_1	110.2	80.0	0.0	81.8	33.0
US-151/N/MP 44.80_2	110.2	80.0	0.0	81.8	33.0
US-151/N/MP 43.20_1	110.2	80.0	0.0	81.8	33.0
US-151/N/MP 43.20_2	110.2	80.0	0.0	81.8	33.0
US-151/N/MP41.00_1	110.2	80.0	0.0	81.8	33.0
US-151/N/MP41.00_2	110.2	80.0	0.0	81.8	33.0
US-30/W/MP 262.90_1	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 262.90_2	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 261.35	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 260.80	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 260.20	126.7	89.0	0.0	66.0	12.1
I-80/W/MP 203.50	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 202.65	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 201.55	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 197.70	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 197.15_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 197.15_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 194.45_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 194.45_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.60_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.60_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.00_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.00_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 173.75	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 171.95	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 170.35	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 167.30	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 163.55	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 159.59	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 157.70-1	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 157.70-2	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 151.35	100.7	55.0	0.2	84.5	12.9
I-80/W/MP 150.85	100.7	55.0	0.2	84.5	12.9
I-80/W/MP 150.10	100.7	55.0	0.2	84.5	12.9
IA-60/E/MP 47.75	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 48.35_1	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 48.35_2	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 49.06_1	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 49.06_2	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 51.10	182.5	57.0	0.3	2616.2	166.6

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
US-151/N/MP 44.50	110.2	80.0	0.0	81.8	33.0
US-151/N/MP 43.72_1	110.2	80.0	0.0	81.8	33.0
US-151/N/MP 43.72_2	110.2	80.0	0.0	81.8	33.0
US-151/N/MP42.90_1	110.2	80.0	0.0	81.8	33.0
US-151/N/MP42.90_2	110.2	80.0	0.0	81.8	33.0
US-30/W/MP 262.39_1	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 262.39_2	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 261.87_1	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 261.87_2	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 260.58_1	126.7	89.0	0.0	66.0	12.1
US-30/W/MP 260.58_2	126.7	89.0	0.0	66.0	12.1
I-80/W/MP 203.97	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 198.53	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 197.78	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 196.60_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 196.60_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.80_1	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 193.80_2	84.3	58.0	0.3	7.9	0.0
I-80/W/MP 168.23	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 165.20	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 164.65	69.1	70.0	0.3	52.8	2.4
I-80/W/MP 151.40	100.7	55.0	0.2	84.5	12.9
I-80/W/MP 150.67	100.7	55.0	0.2	84.5	12.9
IA-60/E/MP 47.95_1	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 47.95_2	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 48.97	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 51.22_1	182.5	57.0	0.3	2616.2	166.6
IA-60/E/MP 51.22_2	182.5	57.0	0.3	2616.2	166.6

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
IA-60/W/MP 51.15	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 50.20_1	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 50.20_2	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 47.75	0.0	88.0	0.0	0.0	0.0
I-80/W/MP 49.30_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 49.30_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 49.03	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 48.50_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 48.50_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 48.30_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 48.30_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 47.70_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 47.70_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 46.70_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 46.70_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 38.20	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 37.90	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 37.35	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 36.05	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 34.70	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 26.75	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 24.90	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 23.75	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 21.75	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 10.50	119.8	84.0	0.3	26.4	15.3
I-80/W/MP 9.50	119.8	84.0	0.3	26.4	15.3
I-29/N/MP 58.80	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 59.85	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 60.35	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 63.05	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 64.45	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 65.13_1	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 65.13_2	0.0	65.0	0.0	0.0	0.0
I-29/S/MP 65.20_1	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 65.20_2	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 63.35	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 60.98	83.6	81.0	0.2	5.3	0.0

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
IA-60/W/MP 50.80_1	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 50.80_2	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 49.67_1	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 49.67_2	0.0	88.0	0.0	0.0	0.0
IA-60/W/MP 47.75	0.0	88.0	0.0	0.0	0.0
I-80/W/MP 48.58_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 48.58_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 47.60	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 46.10_1	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 46.10_2	93.8	67.0	0.3	216.5	10.5
I-80/W/MP 39.10	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 38.20	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 36.31	100.1	92.0	0.3	0.0	1.6
I-80/W/MP 26.72	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 26.70	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 25.82	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 24.05	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 21.72	87.4	84.0	0.2	0.0	1.6
I-80/W/MP 10.73	119.8	84.0	0.3	26.4	15.3
I-80/W/MP 10.40	119.8	84.0	0.3	26.4	15.3
I-80/W/MP 8.85	119.8	84.0	0.3	26.4	15.3
I-29/S/MP 63.03_1	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 65.03_2	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 62.80	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 62.70_1	83.6	81.0	0.2	5.3	0.0
I-29/S/MP 62.70_2	83.6	81.0	0.2	5.3	0.0

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-29/S/MP 60.35_1	0.0	69.0	0.0	0.0	0.0
I-29/S/MP 60.35_2	0.0	69.0	0.0	0.0	0.0
I-29/S/MP 60.20_1	0.0	69.0	0.0	0.0	0.0
I-29/S/MP 60.20_2	0.0	69.0	0.0	0.0	0.0
I-29/N/MP 70.90_1	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 70.90_2	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 71.08_1	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 71.08_2	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 71.65_1	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 71.65_2	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 72.15_1	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 72.15_2	87.4	75.0	0.2	73.9	0.0
I-29/N/MP 72.90_1	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 72.90_2	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 74.25_1	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 74.25_2	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 74.60_1	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 74.60_2	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 76.25_1	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 76.25_2	0.0	65.0	0.0	0.0	0.0
I-29/N/MP 77.30_1	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 77.30_2	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 79.05	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 82.90_1	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 82.90_2	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 85.35_1	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 85.35_2	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 87.15	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 90.15	74.8	80.0	0.3	345.8	15.3
I-29/S/MP 76.40_1	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 76.40_2	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 75.00_1	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 75.00_2	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 73.90	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 71.90	98.8	80.0	0.2	44.9	1.6
I-29/S/MP 71.15_1	98.8	80.0	0.2	44.9	1.6
I-29/S/MP 71.15_2	98.8	80.0	0.2	44.9	1.6
I-29/S/MP 70.80_1	98.8	80.0	0.2	44.9	1.6
I-29/S/MP 70.80_2	98.8	80.0	0.2	44.9	1.6

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-29/N/MP 78.44	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 80.70	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 84.89_1	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 84.89_2	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 87.98	74.8	80.0	0.3	345.8	15.3
I-29/N/MP 90.26	74.8	80.0	0.3	345.8	15.3
I-29/S/MP 76.25_1	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 76.25_2	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 74.45_1	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 74.45_2	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 74.20_1	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 74.20_2	83.0	81.0	0.3	2.6	0.0
I-29/S/MP 73.03	83.0	81.0	0.3	2.6	0.0

Table A.4. Pavement distress records for JPCP sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	Faulting (in)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 5.90	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 6.10	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 7.40	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 9.65	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 10.40	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 10.50	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 22.40	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 24.10	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 25.85	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 28.00	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 35.10_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.10_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.25_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.25_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 36.20_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 36.20_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 37.23	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.05_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.05_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.37_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.37_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 45.70	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 46.35	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 47.65	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 48.40	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 49.55	86.8	69.0	0.3	10.6	1.6

(b) Phase II

ID	IRI (in/mile)	PCI (%)	Faulting (inch)	Longitudinal crack (ft/mile)	Transverse crack (number/mile)
I-80/E/MP 6.72	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 8.64	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 9.28	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 9.65	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 10.80	87.4	91.0	0.3	34.3	4.0
I-80/E/MP 23.82	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 27.53	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 27.59	87.4	84.0	0.2	0.0	1.6
I-80/E/MP 35.10_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.10_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.93_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 35.93_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 37.33_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 37.33_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.05_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.05_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.37_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.37_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.68_1	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 38.68_2	99.5	62.0	0.2	23.8	0.0
I-80/E/MP 45.32	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 46.64	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 47.72	86.8	69.0	0.3	10.6	1.6
I-80/E/MP 48.76	86.8	69.0	0.3	10.6	1.6

Table A.5. HMA pavement site information

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	HMA Surface Thick	Base Thick	Subbase Thick
US-61/E/MP173.30	US-61	2 (South)	172.11	173.43	Jackson County	HMA	Gravel	Vigin Agg	1999	NHS-61-7(46)--19-49	1,211	12.0	0.0	0.0
US-61/E/MP173.00	US-61	2 (South)	172.11	173.43	Jackson County	HMA	Gravel	Vigin Agg	1999	NHS-61-7(46)--19-49	1,211	12.0	0.0	0.0
US-61/E/MP172.75	US-61	2 (South)	172.11	173.43	Jackson County	HMA	Gravel	Vigin Agg	1999	NHS-61-7(46)--19-49	1,211	12.0	0.0	0.0
IA-60/E/MP 40.17	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 41.70	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 42.13_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 42.13_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 40.00_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 40.00_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 46.40	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/W/MP44.30_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP44.30_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP44.30_3	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP44.30_4	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP44.30_5	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.80_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.80_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.60_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.60_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
US-30/W/MP57.00	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0
US-30/W/MP56.80	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0
US-30/W/MP56.50	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	HMA Surface Thick	Base Thick	Subbase Thick
US-61/E/MP172.56_1	US-61	2 (South)	172.11	173.43	Jackson County	HMA	Gravel	Vigin Agg	1999	NHS-61-7(46)--19-49	1,211	12.0	0.0	0.0
US-61/E/MP172.56_2	US-61	2 (South)	172.11	173.43	Jackson County	HMA	Gravel	Vigin Agg	1999	NHS-61-7(46)--19-49	1,211	12.0	0.0	0.0
IA-60/E/MP 40.20_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 40.20_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 40.43_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 40.43_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 44.07_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 44.07_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 46.94_1	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/E/MP 46.94_2	IA-60	1 (East)	39.84	47.69	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.0	0.0	0.0
IA-60/W/MP43.85_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.85_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.72_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.72_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.04_1	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
IA-60/W/MP43.04_2	IA-60	2 (West)	42.73	45.05	Osceola County	HMA	HMA	Vigin Agg	2006	NHSX-60-4(31)--3H-72	831	14.5	0.0	0.0
US-30/W/MP57.28	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0
US-30/W/MP57.00	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0
US-30/W/MP56.45	US-30	2 (West)	56.21	57.28	Crawford County	HMA	Gravel	Vigin Agg	1999	NHSN-30-2(103)--2R-24	743	12.0	0.0	0.0

Table A.5. HMA pavement site information (continued)

(a) Phase I

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	HMA Surface Thick	Base Thick	Subbase Thick
US-30/E/MP64.20	US-30	1 (East)	62.2	65.28	Crawford County	HMA	Gravel	Vigin Agg	1998	NHSN-30-2(103)--2R-24	738	9.0	0.0	0.0
US-30/E/MP64.70	US-30	1 (East)	62.2	65.28	Crawford County	HMA	Gravel	Vigin Agg	1998	NHSN-30-2(103)--2R-24	738	9.0	0.0	0.0
US-30/E/MP64.75	US-30	1 (East)	62.2	65.28	Crawford County	HMA	Gravel	Vigin Agg	1998	NHSN-30-2(103)--2R-24	738	9.0	0.0	0.0
US-18/E/MP212.85_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP212.85_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.05	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.35	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.45	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.90	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP214.25	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-218/S/MP219.85_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.85_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.75_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.75_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.20_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.20_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/N/MP215.55_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.55_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.10_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.10_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.75_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.75_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.05_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.05_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0

(b) Phase II

ID	Route	Dir	Bpst	Epst	County	Pave Type	Oshld Type	Subbase Agg Typ	Con Yr	Construction Project	AADTT	HMA Surface Thick	Base Thick	Subbase Thick
US-30/E/MP64.70	US-30	1 (East)	62.2	65.28	Crawford County	HMA	Gravel	Vigin Agg	1998	NHSN-30-2(103)--2R-24	738	9.0	0.0	0.0
US-30/E/MP64.75	US-30	1 (East)	62.2	65.28	Crawford County	HMA	Gravel	Vigin Agg	1998	NHSN-30-2(103)--2R-24	738	9.0	0.0	0.0
US-18/E/MP212.85_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP212.85_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP212.94_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP212.94_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.17_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.17_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.68_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.68_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.97_1	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-18/E/MP213.97_2	US-18	1 (East)	212.74	214.39	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--3H-34	1,730	12.0	0.0	0.0
US-218/S/MP220.23_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP220.23_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.75_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.75_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.35_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.35_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.24_1	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/S/MP219.24_2	US-218	2 (South)	219.17	220.29	Chickasaw County	HMA	Gravel	Vigin Agg	2003	NHSN-218-9(94)--2R-19	1,395	13.0	0.0	0.0
US-218/N/MP215.48_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.48_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.30_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP215.30_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.30_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.30_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.22_1	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0
US-218/N/MP214.22_2	US-218	1 (North)	231.19	232.79	Floyd County	HMA	HMA	Vigin Agg	2000	NHS-218-9(88)--19-34	818	12.0	0.0	0.0

Table A.6. HMA pavement drainage outlet inspection location information

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
US-61/E/MP173.30	1	Oct/31/2012	173.30	N42(D)16(M)26(S) and W90(D)40(M)46(S)
US-61/E/MP173.00	2	Oct/31/2012	173.00	N42(D)16(M)11(S) and W90(D)40(M)46(S)
US-61/E/MP172.75	3	Oct/31/2012	172.75	N42(D)15(M)57(S) and W90(D)40(M)49(S)
IA-60/E/MP 40.17	1	Nov/7/2012	40.17	N43(D)16(M)07(S) and W95(D)48(M)28(S)
IA-60/E/MP 41.70	2	Nov/7/2012	41.70	N43(D)17(M)21(S) and W95(D)47(M)49(S)
IA-60/E/MP 42.13_1	3	Nov/7/2012	42.13	N43(D)13(M)42(S) and W95(D)47(M)40(S)
IA-60/E/MP 42.13_2	3	Nov/7/2012	42.13	N43(D)13(M)42(S) and W95(D)47(M)40(S)
IA-60/E/MP 40.00_1	4	Nov/7/2012	40.00	N43(D)19(M)02(S) and W95(D)46(M)41(S)
IA-60/E/MP 40.00_2	4	Nov/7/2012	40.00	N43(D)19(M)02(S) and W95(D)46(M)41(S)
IA-60/E/MP 46.40	5	Nov/7/2012	46.40	N43(D)21(M)02(S) and W95(D)46(M)15(S)
IA-60/W/MP44.30_1	1	Nov/7/2012	44.30	N43(D)19(M)16(S) and W95(D)46(M)42(S)
IA-60/W/MP44.30_2	1	Nov/7/2012	44.30	N43(D)19(M)16(S) and W95(D)46(M)42(S)
IA-60/W/MP44.30_3	1	Nov/7/2012	44.30	N43(D)19(M)16(S) and W95(D)46(M)42(S)
IA-60/W/MP44.30_4	1	Nov/7/2012	44.30	N43(D)19(M)16(S) and W95(D)46(M)42(S)
IA-60/W/MP44.30_5	1	Nov/7/2012	44.30	N43(D)19(M)16(S) and W95(D)46(M)42(S)
IA-60/W/MP43.80_1	2	Nov/7/2012	43.80	N43(D)18(M)51(S) and W95(D)46(M)43(S)
IA-60/W/MP43.80_2	2	Nov/7/2012	43.80	N43(D)18(M)51(S) and W95(D)46(M)43(S)
IA-60/W/MP43.60_1	3	Nov/7/2012	43.05	N43(D)16(M)15(S) and W95(D)46(M)57(S)
IA-60/W/MP43.60_2	3	Nov/7/2012	43.05	N43(D)16(M)15(S) and W95(D)46(M)57(S)
US-30/W/MP57.00	1	Nov/7/2012	57.00	N42(D)01(M)06(S) and W95(D)19(M)06(S)
US-30/W/MP56.80	2	Nov/7/2012	56.80	N43(D)01(M)03(S) and W95(D)19(M)15(S)
US-30/W/MP56.50	3	Nov/7/2012	56.50	N42(D)00(M)57(S) and W95(D)19(M)32(S)

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
US-61/E/MP172.56_1	1	June/20/2013	172.56	N42(D)15(M)52(S) and W90(D)40(M)50(S)
US-61/E/MP172.56_2	2	June/20/2013	172.56	N42(D)15(M)52(S) and W90(D)40(M)50(S)
IA-60/E/MP 40.20_1	1	July/19/2013	40.20	N43(D)16(M)8(S) and W95(D)48(M)28(S)
IA-60/E/MP 40.20_2	1	July/19/2013	40.20	N43(D)16(M)8(S) and W95(D)48(M)28(S)
IA-60/E/MP 40.43_1	2	July/19/2013	40.43	N43(D)16(M)20(S) and W95(D)48(M)21(S)
IA-60/E/MP 40.43_2	2	July/19/2013	40.43	N43(D)16(M)20(S) and W95(D)48(M)21(S)
IA-60/E/MP 44.07_1	3	July/19/2013	44.07	N43(D)19(M)6(S) and W95(D)46(M)41(S)
IA-60/E/MP 44.07_2	3	July/19/2013	44.07	N43(D)19(M)6(S) and W95(D)46(M)41(S)
IA-60/E/MP 46.94_1	4	July/19/2013	46.94	N43(D)21(M)30(S) and W95(D)46(M)4(S)
IA-60/E/MP 46.94_2	4	July/19/2013	46.94	N43(D)21(M)30(S) and W95(D)46(M)4(S)
IA-60/W/MP43.85_1	1	July/19/2013	43.85	N43(D)18(M)54(S) and W95(D)46(M)43(S)
IA-60/W/MP43.85_2	1	July/19/2013	43.85	N43(D)18(M)54(S) and W95(D)46(M)43(S)
IA-60/W/MP43.72_1	2	July/19/2013	43.72	N43(D)18(M)48(S) and W95(D)46(M)44(S)
IA-60/W/MP43.72_2	2	July/19/2013	43.72	N43(D)18(M)48(S) and W95(D)46(M)44(S)
IA-60/W/MP43.04_1	3	July/19/2013	43.04	N43(D)18(M)16(S) and W95(D)46(M)57(S)
IA-60/W/MP43.04_2	3	July/19/2013	43.04	N43(D)18(M)16(S) and W95(D)46(M)57(S)
US-30/W/MP57.28	1	June/26/2013	57.28	N42(D)01(M)11(S) and W95(D)18(M)49(S)
US-30/W/MP57.00	2	June/26/2013	57.00	N42(D)01(M)06(S) and W95(D)19(M)06(S)
US-30/W/MP56.45	3	June/26/2013	56.45	N42(D)00(M)58(S) and W95(D)19(M)27(S)

Table A.6. HMA pavement drainage outlet inspection location information (continued)

(a) Phase I

ID	Inspection Location No	Date of Inspection	MP	GPS
US-30/E/MP64.20	1	Nov/7/2012	64.20	N42(D)03(M)41(S) and W95(D)11(M)48(S)
US-30/E/MP64.70	2	Nov/7/2012	64.70	N42(D)04(M)02(S) and W95(D)11(M)14(S)
US-30/E/MP64.75	3	Nov/7/2012	64.75	N42(D)04(M)04(S) and W95(D)11(M)10(S)
US-18/E/MP212.85_1	1	Nov/14/2012	212.85	N43(D)04(M)58(S) and W92(D)43(M)04(S)
US-18/E/MP212.85_2	1	Nov/14/2012	212.85	N43(D)04(M)58(S) and W92(D)43(M)04(S)
US-18/E/MP213.05	2	Nov/14/2012	213.05	N43(D)04(M)48(S) and W92(D)43(M)02(S)
US-18/E/MP213.35	3	Nov/14/2012	213.35	N43(D)04(M)32(S) and W92(D)43(M)01(S)
US-18/E/MP213.45	4	Nov/14/2012	213.45	N43(D)04(M)28(S) and W92(D)43(M)01(S)
US-18/E/MP213.90	5	Nov/14/2012	213.90	N43(D)04(M)05(S) and W92(D)43(M)02(S)
US-18/E/MP214.25	6	Nov/14/2012	214.25	N43(D)03(M)46(S) and W92(D)43(M)03(S)
US-218/S/MP219.85_1	1	Nov/14/2012	219.85	N42(D)57(M)09(S) and W92(D)33(M)03(S)
US-218/S/MP219.85_2	1	Nov/14/2012	219.85	N42(D)57(M)09(S) and W92(D)33(M)03(S)
US-218/S/MP219.75_1	2	Nov/14/2012	219.75	N42(D)57(M)05(S) and W92(D)33(M)01(S)
US-218/S/MP219.75_2	2	Nov/14/2012	219.75	N42(D)57(M)05(S) and W92(D)33(M)01(S)
US-218/S/MP219.20_1	3	Nov/14/2012	219.20	N42(D)56(M)39(S) and W92(D)32(M)48(S)
US-218/S/MP219.20_2	3	Nov/14/2012	219.20	N42(D)56(M)39(S) and W92(D)32(M)48(S)
US-218/N/MP215.55_1	1	Nov/14/2012	215.55	N42(D)02(M)39(S) and W92(D)43(M)05(S)
US-218/N/MP215.55_2	1	Nov/14/2012	215.55	N42(D)02(M)39(S) and W92(D)43(M)05(S)
US-218/N/MP215.10_1	2	Nov/14/2012	215.10	N43(D)03(M)03(S) and W92(D)43(M)04(S)
US-218/N/MP215.10_2	2	Nov/14/2012	215.10	N43(D)03(M)03(S) and W92(D)43(M)04(S)
US-218/N/MP214.75_1	3	Nov/14/2012	214.75	N43(D)03(M)22(S) and W92(D)43(M)02(S)
US-218/N/MP214.75_2	3	Nov/14/2012	214.75	N43(D)03(M)22(S) and W92(D)43(M)02(S)
US-218/N/MP214.05_1	4	Nov/14/2012	214.05	N/A
US-218/N/MP214.05_2	4	Nov/14/2012	214.05	N/A

(b) Phase II

ID	Inspection Location No	Date of Inspection	MP	GPS
US-30/E/MP64.70	1	June/26/2013	64.70	N42(D)04(M)02(S) and W95(D)11(M)14(S)
US-30/E/MP64.75	2	June/26/2013	64.75	N42(D)04(M)04(S) and W95(D)11(M)10(S)
US-18/E/MP212.85_1	1	July/18/2013	212.85	N43(D)04(M)58(S) and W92(D)43(M)04(S)
US-18/E/MP212.85_2	1	July/18/2013	212.85	N43(D)04(M)58(S) and W92(D)43(M)04(S)
US-18/E/MP212.94_1	2	July/18/2013	212.94	N43(D)04(M)54(S) and W92(D)43(M)03(S)
US-18/E/MP212.94_2	2	July/18/2013	212.94	N43(D)04(M)54(S) and W92(D)43(M)03(S)
US-18/E/MP213.17_1	3	July/18/2013	213.17	N43(D)04(M)43(S) and W92(D)43(M)01(S)
US-18/E/MP213.17_2	3	July/18/2013	213.17	N43(D)04(M)43(S) and W92(D)43(M)01(S)
US-18/E/MP213.68_1	4	July/18/2013	213.68	N43(D)04(M)15(S) and W92(D)43(M)01(S)
US-18/E/MP213.68_2	4	July/18/2013	213.68	N43(D)04(M)15(S) and W92(D)43(M)01(S)
US-18/E/MP213.97_1	5	July/18/2013	213.97	N43(D)04(M)0(S) and W92(D)43(M)01(S)
US-18/E/MP213.97_2	5	July/18/2013	213.97	N43(D)03(M)0(S) and W92(D)43(M)01(S)
US-218/S/MP220.23_1	1	July/18/2013	220.23	N42(D)57(M)28(S) and W92(D)33(M)14(S)
US-218/S/MP220.23_2	1	July/18/2013	220.23	N42(D)57(M)28(S) and W92(D)33(M)14(S)
US-218/S/MP219.75_1	2	July/18/2013	219.75	N42(D)57(M)05(S) and W92(D)33(M)01(S)
US-218/S/MP219.75_2	2	July/18/2013	219.75	N42(D)57(M)05(S) and W92(D)33(M)01(S)
US-218/S/MP219.35_1	3	July/18/2013	219.35	N42(D)56(M)48(S) and W92(D)32(M)53(S)
US-218/S/MP219.35_2	3	July/18/2013	219.35	N42(D)56(M)48(S) and W92(D)32(M)53(S)
US-218/S/MP219.24_1	4	July/18/2013	219.24	N42(D)56(M)41(S) and W92(D)32(M)48(S)
US-218/S/MP219.24_2	4	July/18/2013	219.24	N42(D)56(M)41(S) and W92(D)32(M)48(S)
US-218/N/MP215.48_1	1	July/18/2013	215.48	N42(D)02(M)43(S) and W92(D)43(M)05(S)
US-218/N/MP215.48_2	1	July/18/2013	215.48	N42(D)02(M)43(S) and W92(D)43(M)05(S)
US-218/N/MP215.30_1	2	July/18/2013	215.30	N43(D)02(M)53(S) and W92(D)43(M)04(S)
US-218/N/MP215.30_2	2	July/18/2013	215.30	N43(D)02(M)53(S) and W92(D)43(M)04(S)
US-218/N/MP214.30_1	3	July/18/2013	214.30	N43(D)03(M)43(S) and W92(D)43(M)02(S)
US-218/N/MP214.30_2	3	July/18/2013	214.30	N43(D)03(M)43(S) and W92(D)43(M)02(S)
US-218/N/MP214.22_1	4	July/18/2013	214.22	N43(D)03(M)49(S) and W92(D)43(M)05(S)
US-218/N/MP214.22_2	4	July/18/2013	214.22	N43(D)03(M)49(S) and W92(D)43(M)05(S)

Table A.7. HMA pavement drainage outlet inspection results

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Present	Embankment Slop Condition	Inspection Location
US-61/E/MP173.30	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking
US-61/E/MP173.00	Corrugated plastic	4	100	Soil block	No	Gate screen	No	More than 30 degree	Transverse cracking
US-61/E/MP172.75	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 40.17	Corrugated plastic	4	80	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 41.70	Corrugated plastic	4	90	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 42.13_1	Corrugated plastic	4	0	No block/Damaged	No	Gate screen	No	Less than 30 degree	Transverse cracking patching
IA-60/E/MP 42.13_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking patching
IA-60/E/MP 40.00_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 40.00_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 46.40	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP44.30_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP44.30_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP44.30_3	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP44.30_4	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP44.30_5	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
IA-60/W/MP43.80_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.80_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.60_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.60_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP57.00	Corrugated plastic	4	40	Soil block/Damaged	No	N/A	No	More than 30 degree	No distress
US-30/W/MP56.80	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
US-30/W/MP56.50	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	(due to tufa) Present	Embankment Slop Condition	Inspection Location
US-61/E/MP172.56_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking
US-61/E/MP172.56_2	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-60/E/MP 40.20_1	Corrugated plastic	4	10	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 40.20_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 40.43_1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Patching due to culvert
IA-60/E/MP 40.43_2	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Patching due to culvert
IA-60/E/MP 44.07_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 44.07_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 46.94_1	Corrugated plastic	4	10	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/E/MP 46.94_2	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.85_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.85_2	Corrugated plastic	4	10	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.72_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.72_2	Corrugated plastic	4	5	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.04_1	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	No distress
IA-60/W/MP43.04_2	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-30/W/MP57.28	Corrugated plastic	4	20	Soil block	Yes (free flowing)	Gate screen	No	More than 30 degree	Transverse cracking
US-30/W/MP57.00	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	Transverse cracking
US-30/W/MP56.45	Corrugated plastic	4	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	Transverse cracking

Table A.7. HMA pavement drainage outlet inspection results (continued)

(a) Phase I

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Present	Embankment Slop Condition	Inspection Location
US-30/E/MP64.20	Corrugated plastic	4	100	Soil block/Damaged	No	Gate screen	No	Less than 30 degree	No distress
US-30/E/MP64.70	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-30/E/MP64.75	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP212.85_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP212.85_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.05	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.35	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.45	Corrugated plastic	4	20	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.90	Corrugated plastic	4	20	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP214.25	Corrugated plastic	4	20	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.85_1	Corrugated plastic	4	100	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.85_2	Corrugated plastic	4	80	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.75_1	Corrugated plastic	4	95	Soil block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.75_2	Corrugated plastic	4	50	Soil block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.20_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.20_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.55_1	Corrugated plastic	4	50	Sediment block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.55_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.10_1	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.10_2	Corrugated plastic	4	20	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.75_1	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.75_2	Corrugated plastic	4	30	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.05_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.05_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress

(b) Phase II

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	(due to tufa) Present	Embankment Slop Condition	Inspection Location
US-30/E/MP64.70	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking
US-30/E/MP64.75	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP212.85_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-18/E/MP212.85_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-18/E/MP212.94_1	Corrugated plastic	4	10	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
US-18/E/MP212.94_2	Corrugated plastic	4	10	Soil block	Yes (standing)	Gate screen	No	More than 30 degree	No distress
US-18/E/MP213.17_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.17_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.68_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-18/E/MP213.68_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-18/E/MP213.97_1	Corrugated plastic	4	90	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-18/E/MP213.97_2	Corrugated plastic	4	70	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP220.23_1	Corrugated plastic	4	10	Soil block	No	Gate screen	No	More than 30 degree	No distress
US-218/S/MP220.23_2	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-218/S/MP219.75_1	Corrugated plastic	4	95	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.75_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.35_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.35_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.24_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/S/MP219.24_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.48_1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.48_2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP215.30_1	Corrugated plastic	4	0	No block	No	Gate screen	No	More than 30 degree	No distress
US-218/N/MP215.30_2	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
US-218/N/MP214.30_1	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.30_2	Corrugated plastic	4	40	Soil block	No	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.22_1	Corrugated plastic	4	50	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress
US-218/N/MP214.22_2	Corrugated plastic	4	50	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	No distress

Table A.8. Pavement distress records for HMA pavement sites in PMIS

(a) Phase I

ID	IRI (in/mile)	PCI (%)	RUT, inch	LCRACT, ft/mile	ACRACK, ft^2/mile	TCRACK, number/mile
US-61/E/MP173.30	65.9	77.0	0.1	240.2	0	87.7092469
US-61/E/MP173.00	65.9	77.0	0.1	240.2	0	87.7092469
US-61/E/MP172.75	65.9	77.0	0.1	240.2	0	87.7092469
IA-60/E/MP 40.17	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 41.70	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 42.13_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 42.13_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 40.00_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 40.00_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 46.40	66.5	80.0	0.1	0.0	0.0	0
IA-60/W/MP44.30_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP44.30_2	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP44.30_3	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP44.30_4	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP44.30_5	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.80_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.80_2	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.60_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.60_2	75.4	78.0	0.1	21.1	0.0	0.80467199
US-30/W/MP57.00	112.8	67.0	0.2	2777.3	155.9	88.51391889
US-30/W/MP56.80	112.8	67.0	0.2	2777.3	155.9	88.51391889
US-30/W/MP56.50	112.8	67.0	0.2	2777.3	155.9	88.51391889

(b) Phase II

ID	IRI (in/mile)	PCI (%)	RUT, inch	LCRACT, ft/mile	ACRACK, ft^2/mile	TCRACK, number/mile
US-61/E/MP172.56_1	65.9	77.0	0.1	240.2	0	87.7092469
US-61/E/MP172.56_2	65.9	77.0	0.1	240.2	0	87.7092469
IA-60/E/MP 40.20_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 40.20_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 40.43_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 40.43_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 44.07_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 44.07_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 46.94_1	66.5	80.0	0.1	0.0	0.0	0
IA-60/E/MP 46.94_2	66.5	80.0	0.1	0.0	0.0	0
IA-60/W/MP43.85_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.85_2	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.72_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.72_2	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.04_1	75.4	78.0	0.1	21.1	0.0	0.80467199
IA-60/W/MP43.04_2	75.4	78.0	0.1	21.1	0.0	0.80467199
US-30/W/MP57.28	112.8	67.0	0.2	2777.3	155.9	88.51391889
US-30/W/MP57.00	112.8	67.0	0.2	2777.3	155.9	88.51391889
US-30/W/MP56.45	112.8	67.0	0.2	2777.3	155.9	88.51391889

Table A.8. Pavement distress records for HMA pavement sites in PMIS (continued)

(a) Phase I

ID	IRI (in/mile)	PCI (%)	RUT, inch	LCRACT, ft/mile	ACRACK, ft^2/mile	TCRACK, number/mile
US-30/E/MP64.20	97.6	71.0	0.1	4482.7	17.3	70.81113512
US-30/E/MP64.70	97.6	71.0	0.1	4482.7	17.3	70.81113512
US-30/E/MP64.75	97.6	71.0	0.1	4482.7	17.3	70.81113512
US-18/E/MP212.85_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP212.85_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.05	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.35	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.45	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.90	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP214.25	82.4	70.0	0.3	308.9	34.6	6.43737592
US-218/S/MP219.85_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.85_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.75_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.75_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.20_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.20_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/N/MP215.55_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.55_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.10_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.10_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.75_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.75_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.05_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.05_2	85.5	74.0	0.2	6174.9	0.0	2.41401597

(b) Phase II

ID	IRI (in/mile)	PCI (%)	RUT, inch	LCRACT, ft/mile	ACRACK, ft^2/mile	TCRACK, number/mile
US-30/E/MP64.70	97.6	71.0	0.1	4482.7	17.3	70.81113512
US-30/E/MP64.75	97.6	71.0	0.1	4482.7	17.3	70.81113512
US-18/E/MP212.85_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP212.85_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP212.94_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP212.94_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.17_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.17_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.68_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.68_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.97_1	82.4	70.0	0.3	308.9	34.6	6.43737592
US-18/E/MP213.97_2	82.4	70.0	0.3	308.9	34.6	6.43737592
US-218/S/MP220.23_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP220.23_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.75_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.75_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.35_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.35_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.24_1	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/S/MP219.24_2	104.5	72.0	0.1	1264.6	0.0	1.60934398
US-218/N/MP215.48_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.48_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.30_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP215.30_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.30_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.30_2	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.22_1	85.5	74.0	0.2	6174.9	0.0	2.41401597
US-218/N/MP214.22_2	85.5	74.0	0.2	6174.9	0.0	2.41401597

Table A.9. Composite pavement site information

ID	Route	Dir	Bpst	Epst	County	Pave Type	Outside Shoulder Type	HMA base Agg Type	Con Yr	Res Yr	Construction Project	Resurfacing Project	AADT	AADT Current Year	HMA Surface Thick	Existing PCC Thick	Base Thick
IA-9/E/MP230.50	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP232.00	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP233.50	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP233.60	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA -9/E/MP234.80	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP235.00	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP235.30	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP235.90	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/E/MP236.20	IA-9	1 (East)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/W/MP238.00	IA-9	2 (West)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/W/MP235.70	IA-9	2 (West)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/W/MP234.50	IA-9	2 (West)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/W/MP234.05	IA-9	2 (West)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
IA-9/W/MP232.95	IA-9	2 (West)	230.46	238.93	Howard County	Composite	HMA	Limestone	1974	2006	FN-9-7(6)--21-45	STPN-009-7(27)--2J-45	3,100	2013	9.0	8.0	0.0
US-63/N/MP0.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP1.00-1	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP1.00-2	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP2.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP2.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP3.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP5.50-1	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP5.50-2	US-63	1 (North)	0.00	10.84	Davis County	Composite	Gravel	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP7.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Sand	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
US-63/N/MP10.00	US-63	1 (North)	0.00	10.84	Davis County	Composite	Sand	Limestone	1974	1999	RF-63-1(11)--35--26	NHS-63-1(42)--19--26	2,080	2010	7.5	8.5	0.0
IA-2/E/MP198.00	IA-2	1 (East)	196.44	200.03	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	2,200	2010	6.5	8.0	0.0
IA-2/E/MP199.00	IA-2	1 (East)	196.44	200.03	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	2,200	2010	6.5	8.0	0.0
IA-2/E/MP200.00	IA-2	1 (East)	196.44	200.03	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	2,200	2010	6.5	8.0	0.0
IA-2/E/MP200.10-1	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP200.10-2	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP200.60-1	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP200.60-2	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP201.00-1	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP201.00-2	IA-2	1 (East)	200.03	201.03	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP201.10	IA-2	1 (East)	201.03	203.97	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	6.5	8.0	0.0
IA-2/E/MP202.10	IA-2	1 (East)	201.03	203.97	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	6.5	8.0	0.0
IA-2/E/MP202.10	IA-2	1 (East)	201.03	203.97	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	6.5	8.0	0.0
IA-2/E/MP203.00	IA-2	1 (East)	201.03	203.97	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	6.5	8.0	0.0
IA-2/E/MP204.00	IA-2	1 (East)	203.97	204.79	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP204.20	IA-2	1 (East)	203.97	204.79	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP204.60	IA-2	1 (East)	203.97	204.79	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/W/MP204.60	IA-2	2 (West)	203.97	204.79	Davis County	Composite	Gravel	Limestone	1977	1991	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,690	2010	7.0	8.0	0.0
IA-2/E/MP206.10	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP206.80-1	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP206.80-2	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP207.00	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP208.00	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/W/MP208.00-1	IA-2	2 (West)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/W/MP208.00-2	IA-2	2 (West)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP208.60	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/W/MP208.60-1	IA-2	2 (West)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/W/MP208.60-2	IA-2	2 (West)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP209.00-1	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
IA-2/E/MP209.00-2	IA-2	1 (East)	204.79	210.41	Davis County	Composite	Gravel	Limestone	1977	1993	PN-2-8 (11)--21-26	STPN-002-8(34)--2J-26	1,350	2010	6.5	8.0	0.0
US-63/E/MP19.00	US-63	1 (East)	18.73	23.30	Davis County	Composite	Gravel	Limestone	1963	2008	F-50-(8)	NHS-63-1(66)--2R--26	5,500	2010	13.5	10.0	0.0
US-63/E/MP19.50	US-63	1 (East)	18.73	23.30	Davis County	Composite	Gravel	Limestone	1963	2008	F-50-(8)	NHS-63-1(66)--2R--26	5,500	2010	13.5	10.0	0.0
US-63/E/MP20.00	US-63	1 (East)	18.73	23.30	Davis County	Composite	Gravel	Limestone	1963	2008	F-50-(8)	NHS-63-1(66)--2R--26	5,500	2010	13.5	10.0	0.0
US-63/E/MP21.80	US-63	1 (East)	18.73	23.30	Davis County	Composite	Gravel	Limestone	1963	2008	F-50-(8)	NHS-63-1(66)--2R--26	5,500	2010	13.5	10.0	0.0
I-29/S/MP42.15	I-29	2 (South)	38.59	43.63	Mills County	Composite	HMA	Limestone	1970	2009	I-IG-29-2(9)43--04-65	IMX-29-2(65)38--02-65	21,800	2012	6.0	8.0	4.0
I-29/S/MP41.55	I-29	2 (South)	38.59	43.63	Mills County	Composite	HMA	Limestone	1970	2009	I-IG-29-2(9)43--04-65	IMX-29-2(65)38--02-65	21,800	2012	6.0	8.0	4.0
I-29/S/MP39.90	I-29	2 (South)	38.59	43.63	Mills County	Composite	HMA	Limestone	1970	2009	I-IG-29-2(9)43--04-65	IMX-29-2(65)38--02-65	21,800	2012	6.0	8.0	4.0

Table A.9. Composite pavement site information (continued)

ID	Route	Dir	Bpst	Epst	County	Pave Type	Outside Shoulder Type	HMA base Agg Type	Con Yr	Res Yr	Construction Project	Resurfacing Project	AADT	AADT Current Year	HMA Surface Thick	Existing PCC Thick	Base Thick
I-29/S/MP38.30	I-29	2 (South)	36.13	38.59	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	21,800	2012	6.0	8.0	4.0
I-29/S/MP37.55	I-29	2 (South)	36.13	38.59	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	21,800	2012	6.0	8.0	4.0
I-29/S/MP37.35	I-29	2 (South)	36.13	38.59	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	21,800	2012	6.0	8.0	4.0
I-29/S/MP34.75	I-29	2 (South)	33.45	34.79	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	12,200	2012	10.0	8.0	4.0
I-29/S/MP34.55	I-29	2 (South)	33.45	34.79	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	12,200	2012	10.0	8.0	4.0
I-29/S/MP34.10	I-29	2 (South)	33.45	34.79	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(13)35--04-65	IM-29-1(45)25--13-65	12,200	2012	10.0	8.0	4.0
I-29/S/MP33.25	I-29	2 (South)	32.88	33.45	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(12)34--04-65	IM-29-1(45)25--13-65	12,200	2012	11.0	8.0	4.0
I-29/S/MP33.00	I-29	2 (South)	32.88	33.45	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(12)34--04-65	IM-29-1(45)25--13-65	12,200	2012	11.0	8.0	4.0
I-29/S/MP32.90	I-29	2 (South)	32.88	33.45	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(12)34--04-65	IM-29-1(45)25--13-65	12,200	2012	11.0	8.0	4.0
I-29/S/MP32.80	I-29	2 (South)	32.17	32.88	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(12)34--04-65	IM-29-1(45)25--13-65	12,200	2012	10.0	8.0	4.0
I-29/S/MP32.80	I-29	2 (South)	32.17	32.88	Mills County	Composite	HMA	Quartz	1970	1999	I-IG-29-2(12)34--04-65	IM-29-1(45)25--13-65	12,200	2012	10.0	8.0	4.0
I-29/S/MP31.95	I-29	2 (South)	26.96	32.17	Mills County	Composite	HMA	Quartz	1971	1999	EACI-29-1(11)27--08-65	IM-29-1(45)25--13-65	12,000	2012	8.0	8.0	4.0
I-29/S/MP26.96	I-29	2 (South)	26.96	32.17	Mills County	Composite	HMA	Quartz	1971	1999	EACI-29-1(11)27--08-65	IM-29-1(45)25--13-65	12,000	2012	8.0	8.0	4.0
I-29/S/MP26.65	I-29	2 (South)	25.49	26.96	Mills County	Composite	HMA	Limestone	1971	1999	EACI-29-1(11)27--08-65	IM-29-1(45)25--13-65	12,000	2012	9.0	8.0	4.0
I-29/S/MP26.20	I-29	2 (South)	25.49	26.96	Mills County	Composite	HMA	Limestone	1971	1999	EACI-29-1(11)27--08-65	IM-29-1(45)25--13-65	12,000	2012	9.0	8.0	4.0
I-29/S/MP25.70	I-29	2 (South)	25.49	26.96	Mills County	Composite	HMA	Limestone	1971	1999	EACI-29-1(11)27--08-65	IM-29-1(45)25--13-65	12,000	2012	9.0	8.0	4.0
I-29/S/MP25.35	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP25.20-1	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP25.20-2	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP23.75	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP22.55-1	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP22.55-2	I-29	2 (South)	21.20	25.49	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMN-29-1(55)0--0E-36	11,200	2012	4.0	8.0	4.0
I-29/S/MP21.00	I-29	2 (South)	19.07	21.20	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	11,200	2012	10.0	8.0	4.0
I-29/S/MP20.75-1	I-29	2 (South)	19.07	21.20	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	11,200	2012	10.0	8.0	4.0
I-29/S/MP20.75-2	I-29	2 (South)	19.07	21.20	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	11,200	2012	10.0	8.0	4.0
I-29/S/MP19.80	I-29	2 (South)	19.07	21.20	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	11,200	2012	10.0	8.0	4.0
I-29/S/MP18.90	I-29	2 (South)	17.00	19.07	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	10,600	2012	10.0	8.0	4.0
I-29/S/MP18.55-1	I-29	2 (South)	17.00	19.07	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	10,600	2012	10.0	8.0	4.0
I-29/S/MP18.55-2	I-29	2 (South)	17.00	19.07	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	10,600	2012	10.0	8.0	4.0
I-29/S/MP17.50-1	I-29	2 (South)	17.00	19.07	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	10,600	2012	10.0	8.0	4.0
I-29/S/MP17.50-2	I-29	2 (South)	17.00	19.07	Fremont County	Composite	HMA	Quartz	1971	1999	I-29-1(12)20--01-36	IMX-29-1(75)16--02-36	10,600	2012	10.0	8.0	4.0
I-29/N/MP10.70-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP10.70-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP12.55-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP12.55-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP13.25-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP13.25-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP14.85-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP14.85-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP16.00-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP16.00-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP16.45-1	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/N/MP16.45-2	I-29	1 (North)	10.40	17.35	Fremont County	Composite	HMA	N/A	1972	2012	I-29-1(13)10--01-36	IMX-029-1(79)10--02-36	10,100	2012	6.0	8.0	4.0
I-29/S/MP16.05-1	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP16.05-2	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP15.40-1	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP15.40-2	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP14.55-1	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP14.55-2	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/S/MP12.95	I-29	2 (South)	10.12	17.00	Fremont County	Composite	HMA	N/A	1972	1999	I-29-1(13)10--01-36	IMX-029-1(76)10--02-36	10,100	2012	8.0	8.0	4.0
I-29/N/MP25.60	I-29	1 (North)	25.49	30.90	Mills County	Composite	HMA	Quartz	1971	2008	EACI-29-1(11)27--08-65	IM-029-1(46)26--13-65	12,000	2012	10.0	8.0	4.0
I-29/N/MP26.25	I-29	1 (North)	25.49	30.90	Mills County	Composite	HMA	Quartz	1971	2008	EACI-29-1(11)27--08-65	IM-029-1(46)26--13-65	12,000	2012	10.0	8.0	4.0
I-29/N/MP26.90	I-29	1 (North)	25.49	30.90	Mills County	Composite	HMA	Quartz	1971	2008	EACI-29-1(11)27--08-65	IM-029-1(46)26--13-65	12,000	2012	10.0	8.0	4.0
I-29/N/MP27.90	I-29	1 (North)	25.49	30.90	Mills County	Composite	HMA	Quartz	1971	2008	EACI-29-1(11)27--08-65	IM-029-1(46)26--13-65	12,000	2012	10.0	8.0	4.0
I-29/N/MP28.25	I-29	1 (North)	25.49	30.90	Mills County	Composite	HMA	Quartz	1971	2008	EACI-29-1(11)27--08-65	IM-029-1(46)26--13-65	12,000	2012	10.0	8.0	4.0
I-29/S/MP139.65	I-29	2 (South)	136.20	140.65	Woodbury County	Composite	HMA	Quartz	1959	2007	I-29-6(10)136	MN-29-6(136)127--0E-97	18,500	2011	5.0	10.0	4.0
I-29/S/MP138.75	I-29	2 (South)	136.20	140.65	Woodbury County	Composite	HMA	Quartz	1959	2007	I-29-6(10)136	MN-29-6(136)127--0E-97	18,500	2011	5.0	10.0	4.0
I-29/S/MP138.55	I-29	2 (South)	136.20	140.65	Woodbury County	Composite	HMA	Quartz	1959	2007	I-29-6(10)136	MN-29-6(136)127--0E-97	18,500	2011	5.0	10.0	4.0
I-29/S/MP137.75	I-29	2 (South)	136.20	140.65	Woodbury County	Composite	HMA	Quartz	1959	2007	I-29-6(10)136	MN-29-6(136)127--0E-97	18,500	2011	5.0	10.0	4.0
I-29/S/MP137.18	I-29	2 (South)	136.20	140.65	Woodbury County	Composite	HMA	Quartz	1959	2007	I-29-6(10)136	MN-29-6(136)127--0E-97	18,500	2011	5.0	10.0	4.0

Table A.10. Composite pavement drainage outlet inspection location information

ID	Inspection Location No	Date of Inspection	MP	GPS
IA-9/E/MP230.50	1	July/11/2013	230.50	N43(D)22(M)15(S) and W92(D)17(M)38(S)
IA-9/E/MP232.00	2	July/11/2013	232.00	N43(D)22(M)15(S) and W92(D)16(M)6(S)
IA-9/E/MP233.50	3	July/11/2013	233.50	N43(D)22(M)15(S) and W92(D)14(M)17(S)
IA-9/E/MP233.60	4	July/11/2013	233.60	N43(D)22(M)15(S) and W92(D)14(M)12(S)
IA -9/E/MP234.80	5	July/11/2013	234.80	N43(D)22(M)15(S) and W92(D)12(M)46(S)
IA-9/E/MP235.00	6	July/11/2013	235.00	N43(D)22(M)15(S) and W92(D)12(M)30(S)
IA-9/E/MP235.30	7	July/11/2013	235.30	N43(D)22(M)15(S) and W92(D)12(M)12(S)
IA-9/E/MP235.90	8	July/11/2013	235.90	N43(D)22(M)15(S) and W92(D)11(M)27(S)
IA-9/E/MP236.20	9	July/11/2013	236.20	N43(D)22(M)15(S) and W92(D)11(M)10(S)
IA-9/W/MP238.00	1	July/11/2013	238.00	N42(D)22(M)15(S) and W92(D)8(M)6(S)
IA-9/W/MP235.70	2	July/11/2013	235.70	N42(D)22(M)15(S) and W92(D)12(M)5(S)
IA-9/W/MP234.50	3	July/11/2013	234.50	N42(D)22(M)15(S) and W92(D)13(M)1(S)
IA-9/W/MP234.05	4	July/11/2013	234.05	N42(D)22(M)15(S) and W92(D)13(M)37(S)
IA-9/W/MP232.95	5	July/11/2013	232.95	N42(D)22(M)15(S) and W92(D)14(M)54(S)
US-63/N/MP0.00	1	May/29/2014	0.00	N40(D)35(M)49(S) and W92(D)31(M)25(S)
US-63/N/MP1.00-1	2	May/29/2014	1.00	N40(D)36(M)29(S) and W92(D)31(M)26(S)
US-63/N/MP1.00-2	3	May/29/2014	1.00	N40(D)36(M)29(S) and W92(D)31(M)26(S)
US-63/N/MP2.00	3	May/29/2014	2.00	N40(D)37(M)19(S) and W92(D)31(M)25(S)
US-63/N/MP2.00	4	May/29/2014	2.00	N40(D)37(M)20(S) and W92(D)31(M)24(S)
US-63/N/MP3.00	5	May/29/2014	3.00	N40(D)39(M)23(S) and W92(D)31(M)25(S)
US-63/N/MP5.50-1	6	May/29/2014	5.50	N40(D)41(M)5(S) and W92(D)30(M)49(S)
US-63/N/MP5.50-2	6	May/29/2014	5.50	N40(D)41(M)5(S) and W92(D)30(M)49(S)
US-63/N/MP7.00	7	May/29/2014	7.00	N40(D)42(M)5(S) and W92(D)30(M)16(S)
US-63/N/MP10.00	8	May/29/2014	10.00	N40(D)44(M)5(S) and W92(D)30(M)17(S)
IA-2/E/MP198.00	1	May/29/2014	198.00	N40(D)43(M)37(S) and W92(D)23(M)25(S)
IA-2/E/MP199.00	2	May/29/2014	199.00	N40(D)43(M)13(S) and W92(D)23(M)25(S)
IA-2/E/MP200.00	3	May/29/2014	200.00	N40(D)42(M)52(S) and W92(D)22(M)7(S)
IA-2/E/MP200.10-1	1	May/29/2014	200.10	N40(D)42(M)39(S) and W92(D)21(M)34(S)
IA-2/E/MP200.10-2	1	May/29/2014	200.10	N40(D)42(M)39(S) and W92(D)21(M)34(S)
IA-2/E/MP200.60-1	2	May/29/2014	200.60	N40(D)42(M)40(S) and W92(D)21(M)28(S)
IA-2/E/MP200.60-2	2	May/29/2014	200.60	N40(D)42(M)40(S) and W92(D)21(M)28(S)
IA-2/E/MP201.00-1	3	May/29/2014	201.00	N40(D)42(M)29(S) and W92(D)21(M)11(S)
IA-2/E/MP201.00-2	3	May/29/2014	201.00	N40(D)42(M)29(S) and W92(D)21(M)11(S)
IA-2/E/MP201.10	1	May/29/2014	201.10	N40(D)42(M)18(S) and W92(D)20(M)46(S)
IA-2/E/MP202.10	2	May/29/2014	202.10	N40(D)41(M)48(S) and W92(D)19(M)26(S)
IA-2/E/MP202.10	3	May/29/2014	202.10	N40(D)41(M)49(S) and W92(D)19(M)26(S)
IA-2/E/MP203.00	4	May/29/2014	203.00	N40(D)41(M)49(S) and W92(D)18(M)47(S)
IA-2/E/MP204.00	1	May/29/2014	204.00	N40(D)41(M)49(S) and W92(D)17(M)32(S)
IA-2/E/MP204.20	2	May/29/2014	204.20	N40(D)41(M)49(S) and W92(D)17(M)13(S)
IA-2/E/MP204.60	3	May/29/2014	204.60	N40(D)41(M)49(S) and W92(D)16(M)58(S)
IA-2/W/MP204.60	4	May/29/2014	204.60	N40(D)41(M)50(S) and W92(D)16(M)57(S)
IA-2/E/MP206.10	1	May/29/2014	206.10	N40(D)41(M)40(S) and W92(D)15(M)15(S)
IA-2/E/MP206.80-1	2	May/29/2014	206.80	N40(D)41(M)31(S) and W92(D)14(M)28(S)
IA-2/E/MP206.80-2	2	May/29/2014	206.80	N40(D)41(M)31(S) and W92(D)14(M)28(S)
IA-2/E/MP207.00	3	May/29/2014	207.00	N40(D)41(M)24(S) and W92(D)14(M)2(S)
IA-2/E/MP208.00	4	May/29/2014	208.00	N40(D)40(M)60(S) and W92(D)12(M)28(S)
IA-2/W/MP208.00-1	5	May/29/2014	208.00	N40(D)41(M)1(S) and W92(D)12(M)45(S)
IA-2/W/MP208.00-2	5	May/29/2014	208.00	N40(D)41(M)1(S) and W92(D)12(M)45(S)
IA-2/E/MP208.60	6	May/29/2014	208.60	N40(D)40(M)36(S) and W92(D)11(M)39(S)
IA-2/W/MP208.60-1	7	May/29/2014	208.60	N40(D)40(M)37(S) and W92(D)11(M)39(S)
IA-2/W/MP208.60-2	7	May/29/2014	208.60	N40(D)40(M)37(S) and W92(D)11(M)39(S)
IA-2/E/MP209.00-1	8	May/29/2014	209.00	N40(D)40(M)24(S) and W92(D)10(M)52(S)
IA-2/E/MP209.00-2	8	May/29/2014	209.00	N40(D)40(M)24(S) and W92(D)10(M)52(S)
US-63/E/MP19.00	1	May/29/2014	19.00	N40(D)47(M)48(S) and W92(D)23(M)56(S)
US-63/E/MP19.50	2	May/29/2014	19.50	N40(D)48(M)51(S) and W92(D)23(M)56(S)
US-63/E/MP20.00	3	May/29/2014	20.00	N40(D)49(M)25(S) and W92(D)23(M)56(S)
US-63/E/MP21.80	4	May/29/2014	21.80	N40(D)49(M)57(S) and W92(D)23(M)56(S)
I-29/S/MP42.15	1	June/04/2014	42.15	N41(D)8(M)21(S) and W95(D)49(M)17(S)
I-29/S/MP41.55	2	June/04/2014	41.55	N41(D)7(M)50(S) and W95(D)45(M)16(S)
I-29/S/MP39.90	3	June/04/2014	39.90	N41(D)6(M)25(S) and W95(D)49(M)44(S)

Table A.10. Composite pavement drainage outlet inspection location information (continued)

ID	Inspection Location No	Date of Inspection	MP	GPS
I-29/S/MP38.30	1	June/04/2014	38.30	N41(D)5(M)4(S) and W95(D)49(M)44(S)
I-29/S/MP37.55	2	June/04/2014	37.55	N41(D)4(M)26(S) and W95(D)49(M)30(S)
I-29/S/MP37.35	3	June/04/2014	37.35	N41(D)4(M)17(S) and W95(D)49(M)26(S)
I-29/S/MP34.75	1	June/04/2014	34.75	N41(D)8(M)21(S) and W95(D)49(M)17(S)
I-29/S/MP34.55	2	June/04/2014	34.55	N41(D)1(M)53(S) and W95(D)48(M)59(S)
I-29/S/MP34.10	3	June/04/2014	34.10	N41(D)1(M)30(S) and W95(D)48(M)52(S)
I-29/S/MP33.25	1	June/04/2014	33.25	N41(D)0(M)48(S) and W95(D)48(M)38(S)
I-29/S/MP33.00	2	June/04/2014	33.00	N41(D)0(M)33(S) and W95(D)48(M)33(S)
I-29/S/MP32.90	3	June/04/2014	32.90	N41(D)0(M)27(S) and W95(D)48(M)31(S)
I-29/S/MP32.80	1	June/04/2014	32.80	N41(D)0(M)17(S) and W95(D)48(M)27(S)
I-29/S/MP32.80	2	June/04/2014	32.80	N41(D)0(M)17(S) and W95(D)48(M)27(S)
I-29/S/MP31.95	1	June/04/2014	31.95	N40(D)59(M)42(S) and W95(D)48(M)15(S)
I-29/S/MP26.96	2	June/04/2014	26.96	N40(D)55(M)23(S) and W95(D)47(M)55(S)
I-29/S/MP26.65	1	June/04/2014	26.65	N40(D)55(M)7(S) and W95(D)47(M)56(S)
I-29/S/MP26.20	2	June/04/2014	26.20	N40(D)54(M)43(S) and W95(D)47(M)57(S)
I-29/S/MP25.70	3	June/04/2014	25.70	N40(D)54(M)17(S) and W95(D)47(M)59(S)
I-29/S/MP25.35	1	June/04/2014	25.35	N40(D)53(M)59(S) and W95(D)47(M)59(S)
I-29/S/MP25.20-1	2	June/04/2014	25.20	N40(D)53(M)50(S) and W95(D)47(M)59(S)
I-29/S/MP25.20-2	2	June/04/2014	25.20	N40(D)53(M)50(S) and W95(D)47(M)59(S)
I-29/S/MP23.75	3	June/04/2014	23.75	N40(D)52(M)36(S) and W95(D)48(M)6(S)
I-29/S/MP22.55-1	2	June/04/2014	22.55	N40(D)51(M)33(S) and W95(D)48(M)18(S)
I-29/S/MP22.55-2	2	June/04/2014	22.55	N40(D)51(M)33(S) and W95(D)48(M)18(S)
I-29/S/MP21.00	1	June/04/2014	21.00	N40(D)50(M)12(S) and W95(D)48(M)24(S)
I-29/S/MP20.75-1	2	June/04/2014	20.75	N40(D)49(M)59(S) and W95(D)48(M)24(S)
I-29/S/MP20.75-2	2	June/04/2014	20.75	N40(D)49(M)59(S) and W95(D)48(M)24(S)
I-29/S/MP19.80	3	June/04/2014	19.80	N40(D)49(M)9(S) and W95(D)48(M)24(S)
I-29/S/MP18.90	1	June/04/2014	18.90	N40(D)48(M)23(S) and W95(D)48(M)21(S)
I-29/S/MP18.55-1	2	June/04/2014	18.55	N40(D)48(M)5(S) and W95(D)48(M)23(S)
I-29/S/MP18.55-2	2	June/04/2014	18.55	N40(D)48(M)5(S) and W95(D)48(M)23(S)
I-29/S/MP17.50-1	3	June/04/2014	17.50	N40(D)47(M)11(S) and W95(D)48(M)27(S)
I-29/S/MP17.50-2	3	June/04/2014	17.50	N40(D)47(M)11(S) and W95(D)48(M)27(S)
I-29/N/MP10.70-1	1	June/05/2014	10.70	N40(D)41(M)47(S) and W95(D)47(M)16(S)
I-29/N/MP10.70-2	1	June/05/2014	10.70	N40(D)41(M)47(S) and W95(D)47(M)16(S)
I-29/N/MP12.55-1	2	June/05/2014	12.55	N40(D)43(M)10(S) and W95(D)48(M)24(S)
I-29/N/MP12.55-2	2	June/05/2014	12.55	N40(D)43(M)10(S) and W95(D)48(M)24(S)
I-29/N/MP13.25-1	3	June/05/2014	13.25	N40(D)43(M)35(S) and W95(D)48(M)56(S)
I-29/N/MP13.25-2	3	June/05/2014	13.25	N40(D)43(M)35(S) and W95(D)48(M)56(S)
I-29/N/MP14.85-1	4	June/05/2014	14.85	N40(D)44(M)58(S) and W95(D)49(M)3(S)
I-29/N/MP14.85-2	4	June/05/2014	14.85	N40(D)44(M)58(S) and W95(D)49(M)3(S)
I-29/N/MP16.00-1	5	June/05/2014	16.00	N40(D)45(M)55(S) and W95(D)48(M)49(S)
I-29/N/MP16.00-2	5	June/05/2014	16.00	N40(D)45(M)55(S) and W95(D)48(M)49(S)
I-29/N/MP16.45-1	6	June/05/2014	16.45	N40(D)46(M)18(S) and W95(D)48(M)37(S)
I-29/N/MP16.45-2	6	June/05/2014	16.45	N40(D)46(M)18(S) and W95(D)48(M)37(S)
I-29/S/MP16.05-1	1	June/05/2014	16.05	N40(D)46(M)42(S) and W95(D)48(M)30(S)
I-29/S/MP16.05-2	1	June/05/2014	16.05	N40(D)46(M)42(S) and W95(D)48(M)30(S)
I-29/S/MP15.40-1	2	June/05/2014	15.40	N40(D)46(M)14(S) and W95(D)48(M)41(S)
I-29/S/MP15.40-2	2	June/05/2014	15.40	N40(D)46(M)14(S) and W95(D)48(M)41(S)
I-29/S/MP14.55-1	3	June/05/2014	14.55	N40(D)44(M)41(S) and W95(D)49(M)4(S)
I-29/S/MP14.55-2	3	June/05/2014	14.55	N40(D)44(M)41(S) and W95(D)49(M)4(S)
I-29/S/MP12.95	4	June/05/2014	12.95	N40(D)43(M)21(S) and W95(D)48(M)43(S)
I-29/N/MP25.60	1	June/05/2014	25.60	N40(D)54(M)12(S) and W95(D)47(M)57(S)
I-29/N/MP26.25	2	June/05/2014	26.25	N40(D)54(M)17(S) and W95(D)47(M)55(S)
I-29/N/MP26.90	3	June/05/2014	26.90	N40(D)55(M)20(S) and W95(D)47(M)53(S)
I-29/N/MP27.90	4	June/05/2014	27.90	N40(D)56(M)12(S) and W95(D)47(M)58(S)
I-29/N/MP28.25	5	June/05/2014	28.25	N40(D)56(M)29(S) and W95(D)47(M)60(S)
I-29/S/MP139.65	1	June/05/2014	139.65	N42(D)22(M)45(S) and W96(D)21(M)25(S)
I-29/S/MP138.75	2	June/05/2014	138.75	N42(D)22(M)3(S) and W96(D)20(M)59(S)
I-29/S/MP138.55	3	June/05/2014	138.55	N42(D)21(M)54(S) and W96(D)20(M)47(S)
I-29/S/MP137.75	4	June/05/2014	137.75	N42(D)21(M)18(S) and W96(D)20(M)18(S)
I-29/S/MP137.18	5-2	June/05/2014	137.18	N42(D)20(M)52(S) and W96(D)19(M)59(S)

Table A.11. Composite pavement drainage outlet inspection results

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Present	Embankment Slop Condition	Inspection Location
US-9/E/MP230.50	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP232.00	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP233.50	Corrugated steel	6	20	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP233.60	Corrugated steel	6	30	Sediment block	Yes (standing)	N/A	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP234.80	Corrugated plastic	4	0	No block/Damaged	No	N/A	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP235.00	Corrugated steel	6	100	Soil block	Yes (standing)	N/A	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP235.30	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	Longitudinal patching
US-9/E/MP235.90	Corrugated steel	6	30	Sediment block	No	Fork	No	Less than 30 degree	Longitudinal/transverse patching
US-9/E/MP236.20	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	Longitudinal patching
US-9/W/MP238.00	Corrugated steel	6	20	Sediment block	No	N/A	No	Less than 30 degree	Longitudinal patching
US-9/W/MP235.70	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	Transverse cracking patching
US-9/W/MP234.50	Corrugated steel	6	0	No block	No	Fork	No	More than 30 degree	No distress
US-9/W/MP234.05	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
US-9/W/MP232.95	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	Longitudinal patching
US-63/N/MP0.00	Corrugated steel	6	30	Sediment block	Yes (standing)	Fork	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP1.00-1	Corrugated steel	6	0	No block	Yes (free flowing)	N/A	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP1.00-2	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP2.00	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP2.50	Corrugated steel	6	0	No block/Damaged	Yes (standing)	N/A	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP3.00	Corrugated plastic	4	10	Soil block	No	Gate screen	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP5.50-1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP5.50-2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Longitudinal/transverse patching
US-63/N/MP7.00	Corrugated steel	6	80	Soil block	No	Fork	No	Less than 30 degree	Transverse cracking
US-63/N/MP10.00	Corrugated steel	6	100	Sediment block	Wet	Fork	No	Less than 30 degree	Reflection cracking
IA-2/E/MP198.00	Corrugated steel	6	100	Sediment block	No	Fork	No	Less than 30 degree	Longitudinal/reflection cracking
IA-2/E/MP199.00	Corrugated steel	6	10	Sediment block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP200.00	Corrugated steel	6	5	Sediment block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP200.10-1	Corrugated steel	6	5	Sediment block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP200.10-2	Corrugated steel	6	5	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP200.60-1	Corrugated steel	6	5	Soil block	No	N/A	No	Less than 30 degree	Transverse cracking
IA-2/E/MP200.60-2	Corrugated steel	6	30	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/E/MP201.00-1	Corrugated steel	6	30	Sediment block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP201.00-2	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	Reflection cracking
IA-2/E/MP201.10	Corrugated steel	6	10	Soil block	Yes (free flowing)	N/A	No	Less than 30 degree	Reflection cracking
IA-2/E/MP202.10	Corrugated steel	6	10	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	Reflection cracking
IA-2/W/MP202.10	Corrugated steel	6	0	No block	No	N/A	No	Less than 30 degree	Reflection cracking
IA-2/E/MP203.00	Corrugated steel	6	60	Sediment block	No	Fork	No	Less than 30 degree	Reflection cracking
IA-2/E/MP204.00	Corrugated steel	6	10	diment block/Damag	No	Fork	No	Less than 30 degree	Reflection cracking
IA-2/E/MP204.20	Corrugated steel	6	30	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/E/MP204.60	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	Transverse cracking
IA-2/W/MP204.60	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	Transverse cracking
IA-2/E/MP206.10	Corrugated steel	6	100	Soil block	Wet	Fork	No	Less than 30 degree	Transverse cracking
IA-2/E/MP206.80-1	Corrugated steel	6	20	Sediment block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP206.80-2	Corrugated steel	6	10	Sediment block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP207.00	Corrugated steel	6	40	Sediment block	Yes (free flowing)	N/A	No	Less than 30 degree	Reflection cracking
IA-2/E/MP208.00	Corrugated steel	6	20	Sediment block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/W/MP208.00-1	Corrugated steel	6	40	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/W/MP208.00-2	Corrugated steel	6	40	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/E/MP208.60	Corrugated steel	6	100	Soil block/Damaged	Wet	Fork	No	Less than 30 degree	Transverse cracking
IA-2/W/MP208.60-1	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	Transverse cracking
IA-2/W/MP208.60-2	Corrugated steel	6	50	Soil block	No	Gate screen	No	Less than 30 degree	Transverse cracking
IA-2/E/MP209.00-1	Corrugated steel	6	0	No block	No	Gate screen	No	Less than 30 degree	Reflection cracking
IA-2/E/MP209.00-2	Corrugated steel	6	0	No block	Wet	Gate screen	No	Less than 30 degree	Reflection cracking
US-63/E/MP19.00	Corrugated steel	6	0	No block	Yes (free flowing)	Gate screen	No	More than 30 degree	No distress
US-63/E/MP19.50	Corrugated steel	6	50	Soil block	No	Fork	No	More than 30 degree	Transverse cracking
US-63/E/MP20.00	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Longitudinal/transverse cracking
US-63/E/MP21.80	Corrugated steel	6	0	No block/Damaged	Yes (standing)	N/A	No	More than 30 degree	Longitudinal/transverse cracking
I-29/S/MP42.15	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Longitudinal cracking
I-29/S/MP41.55	Corrugated steel	6	50	Soil block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP39.90	Corrugated steel	6	40	Soil block	Yes (standing)	Fork	No	Less than 30 degree	No distress

Table A.11. Composite pavement drainage outlet inspection results (continued)

ID	Type of Outlet Pipe	Size of Outlet Pipe (in.)	Condition of Outlet Pipe (% Block)	Condition of Outlet Pipe (Description)	Water Present inside Outlet Pipe	Type of Rodent Guard	Tufa/Dead Zone (due to tufa) Present	Embankment Slop Condition	Inspection Location
I-29/S/MP38.30	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	Transverse cracking
I-29/S/MP37.55	Corrugated steel	6	70	Sediment block	No	Fork	No	Less than 30 degree	Longitudinal cracking
I-29/S/MP37.35	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-29/S/MP34.75	Corrugated steel	6	20	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP34.55	Corrugated steel	6	0	No block	No	Fork	No	Less than 30 degree	No distress
I-29/S/MP34.10	Corrugated steel	6	20	Sediment block	No	Fork	No	Less than 30 degree	No distress
I-29/S/MP33.25	Corrugated steel	6	0	No block	No	Fork	No	More than 30 degree	No distress
I-29/S/MP33.00	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP32.90	Corrugated steel	6	0	No block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP32.80	Corrugated plastic	4	5	Soil block	No	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP32.80	Corrugated plastic	4	5	Soil block	Yes (free flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP31.95	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	More than 30 degree	No distress
I-29/S/MP26.96	Corrugated steel	6	50	Sediment block	Yes (standing)	Fork	No	Less than 30 degree	No distress
I-29/S/MP26.65	Corrugated steel	6	0	No block	Yes (free flowing)	Fork	No	Less than 30 degree	Rutting
I-29/S/MP26.20	Corrugated steel	6	100	Soil block	Yes (standing)	N/A	No	Less than 30 degree	Rutting
I-29/S/MP25.70	Corrugated steel	6	50	Sediment block	Yes (free flowing)	Fork	No	Less than 30 degree	Rutting
I-29/S/MP25.35	Corrugated plastic	4	100	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP25.20-1	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP25.20-2	Corrugated plastic	4	20	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP23.75	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP22.55-1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Longitudinal/transverse cracking
I-29/S/MP22.55-2	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Longitudinal/transverse cracking
I-29/S/MP21.00	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/S/MP20.75-1	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/S/MP20.75-2	Corrugated plastic	4	0	No block	Yes (standing)	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/S/MP19.80	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/S/MP18.90	Corrugated plastic	4	60	Soil block	Yes (standing)	Gate screen	No	Less than 30 degree	Longitudinal cracking
I-29/S/MP18.55-1	Corrugated plastic	4	0	No block	Yes (free flowing)	Gate screen	No	Less than 30 degree	Alligator/transverse cracking
I-29/S/MP18.55-2	Corrugated plastic	4	0	No block	No	Gate screen	No	Less than 30 degree	Alligator/transverse cracking
I-29/S/MP17.50-1	Corrugated plastic	4	60	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/S/MP17.50-2	Corrugated plastic	4	60	Sediment block	Yes (standing)	Gate screen	No	Less than 30 degree	Alligator cracking
I-29/N/MP10.70-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP10.70-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP12.55-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP12.55-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP13.25-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP13.25-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP14.85-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP14.85-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP16.00-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP16.00-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP16.45-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/N/MP16.45-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP16.05-1	Corrugated plastic	4	80	Soil block	N/A	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP16.05-2	Corrugated plastic	4	80	Soil block	N/A	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP15.40-1	Corrugated plastic	4	50	Soil block	Yes (flowing)	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP15.40-2	Corrugated plastic	4	50	Soil block	Yes (flowing)	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/S/MP14.55-1	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP14.55-2	Corrugated plastic	4	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	No distress
I-29/S/MP12.95	Corrugated plastic	6	0	No block	Yes (flowing)	Gate screen	No	Less than 30 degree	Transverse cracking
I-29/N/MP25.60	Corrugated steel	6	100	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Longitudinal/transverse cracking/rutting
I-29/N/MP26.25	Corrugated steel	6	0	No block	Yes (flowing)	Fork	No	Less than 30 degree	No distress
I-29/N/MP26.90	Corrugated steel	6	30	Sediment block	Yes (flowing)	Fork	No	Less than 30 degree	Alligator cracking
I-29/N/MP27.90	Corrugated steel	6	90	Sediment block	Yes (standing)	Fork	No	More than 30 degree	Alligator/transverse cracking/rutting
I-29/N/MP28.25	Corrugated steel	6	100	Soil block	Yes (standing)	N/A	No	Less than 30 degree	Alligator/transverse cracking
I-29/S/MP139.65	Corrugated steel	6	60	Soil block	No	Fork	No	Less than 30 degree	Reflection cracking
I-29/S/MP138.75	Corrugated steel	6	60	Soil block	No	Fork	No	Less than 30 degree	Reflection cracking
I-29/S/MP138.55	Corrugated steel	6	60	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Reflection/transverse cracking
I-29/S/MP137.75	Corrugated steel	6	60	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Transverse cracking
I-29/S/MP137.18	Corrugated steel	6	60	Soil block	Yes (standing)	Fork	No	Less than 30 degree	Reflection cracking/concrete patching

Table A.12. Pavement distress records for composite pavement sites

ID	Type of Outlet Pipe	IRI (in/mile)	PCI (%)	Comment
US-9/E/MP230.50	Corrugated steel	57.0	80.0	old drain
US-9/E/MP232.00	Corrugated steel	57.0	80.0	old drain
US-9/E/MP233.50	Corrugated steel	57.0	80.0	old drain
US-9/E/MP233.60	Corrugated steel	57.0	80.0	small pipe into large pipe (old drain)
US-9/E/MP234.80	Corrugated plastic	57.0	80.0	new drain
US-9/E/MP235.00	Corrugated steel	57.0	80.0	small pipe into large pipe (old drain)
US-9/E/MP235.30	Corrugated steel	57.0	80.0	new drain
US-9/E/MP235.90	Corrugated steel	57.0	80.0	
US-9/E/MP236.20	Corrugated steel	57.0	80.0	
US-9/W/MP238.00	Corrugated steel	57.0	80.0	old drain
US-9/W/MP235.70	Corrugated steel	57.0	80.0	old drain
US-9/W/MP234.50	Corrugated steel	57.0	80.0	
US-9/W/MP234.05	Corrugated steel	57.0	80.0	
US-9/W/MP232.95	Corrugated steel	57.0	80.0	
US-63/N/MP0.00	Corrugated steel	66.5	65.0	If 6-in steel pipe has screen, it will be fork. If 4-in plastic pipe has screen, it will be Gate screen
US-63/N/MP1.00-1	Corrugated steel	66.5	65.0	old drain
US-63/N/MP1.00-2	Corrugated plastic	66.5	65.0	new drain
US-63/N/MP2.00	Corrugated plastic	66.5	65.0	Cracking is not related to drainage
US-63/N/MP2.50	Corrugated steel	66.5	65.0	Cracking is not related to drainage
US-63/N/MP3.00	Corrugated plastic	66.5	65.0	
US-63/N/MP5.50-1	Corrugated plastic	66.5	65.0	new drain
US-63/N/MP5.50-2	Corrugated plastic	66.5	65.0	new drain
US-63/N/MP7.00	Corrugated steel	66.5	65.0	It looks like old pipe works better than new one (drain more water)
US-63/N/MP10.00	Corrugated steel	66.5	65.0	
IA-2/E/MP198.00	Corrugated steel	50.7	67.0	SCR 0.5 in. in 1993 for this section. Reflective cracking is due to skewed joint. Pipe has 90% gravel in.
IA-2/E/MP199.00	Corrugated steel	50.7	67.0	Reflective cracking is due to skewed joint
IA-2/E/MP200.00	Corrugated steel	50.7	67.0	
IA-2/E/MP200.10-1	Corrugated steel	43.0	66.0	SCR 0.5 in. in 1991 for this section.
IA-2/E/MP200.10-2	Corrugated steel	43.0	66.0	
IA-2/E/MP200.60-1	Corrugated steel	43.0	66.0	
IA-2/E/MP200.60-2	Corrugated steel	43.0	66.0	
IA-2/E/MP201.00-1	Corrugated steel	43.0	66.0	
IA-2/E/MP201.00-2	Corrugated steel	43.0	66.0	
IA-2/E/MP201.10	Corrugated steel	50.7	67.0	SCR 0.5 in. in 1993 for this section.
IA-2/E/MP202.10	Corrugated steel	50.7	67.0	
IA-2/W/MP202.10	Corrugated steel	50.7	67.0	
IA-2/E/MP203.00	Corrugated steel	50.7	67.0	Transverse cracking is not related to drainage
IA-2/E/MP204.00	Corrugated steel	46.0	65.0	MIL 0.5 in. in 1991 for this section. Transverse cracking is due to bolt corner.
IA-2/E/MP204.20	Corrugated steel	46.0	65.0	
IA-2/E/MP204.60	Corrugated steel	46.0	65.0	
IA-2/W/MP204.60	Corrugated steel	46.0	65.0	
IA-2/E/MP206.10	Corrugated steel	67.8	64.0	SCR 0.5 in. in 1993 for this section. Transverse cracking is not related with drainage
IA-2/E/MP206.80-1	Corrugated steel	67.8	64.0	
IA-2/E/MP206.80-2	Corrugated steel	67.8	64.0	
IA-2/E/MP207.00	Corrugated steel	67.8	64.0	
IA-2/E/MP208.00	Corrugated steel	67.8	64.0	
IA-2/W/MP208.00-1	Corrugated steel	67.8	64.0	
IA-2/W/MP208.00-2	Corrugated steel	67.8	64.0	
IA-2/E/MP208.60	Corrugated steel	67.8	64.0	
IA-2/W/MP208.60-1	Corrugated steel	67.8	64.0	
IA-2/W/MP208.60-2	Corrugated steel	67.8	64.0	
IA-2/E/MP209.00-1	Corrugated steel	67.8	64.0	
IA-2/E/MP209.00-2	Corrugated steel	67.8	64.0	
US-63/E/MP19.00	Corrugated steel	48.8	81.0	SCR 2.0 in. in 2008 for this section.
US-63/E/MP19.50	Corrugated steel	48.8	81.0	
US-63/E/MP20.00	Corrugated steel	48.8	81.0	
US-63/E/MP21.80	Corrugated steel	48.8	81.0	
I-29/S/MP42.15	Corrugated steel	59.6	92.0	SCR 7.0 in. in 2009 for this section. ATB 4.0 in.
I-29/S/MP41.55	Corrugated steel	59.6	92.0	
I-29/S/MP39.90	Corrugated steel	59.6	92.0	Overall, a few drainage outlet but distress (middle level are observed sevirity)

Table A.12. Pavement distress records for composite pavement sites (continued)

ID	Type of Outlet Pipe	IRI (in/mile)	PCI (%)	Comment
I-29/S/MP38.30	Corrugated steel	58.3	75.0	ATB 4.0 in.
I-29/S/MP37.55	Corrugated steel	58.3	75.0	
I-29/S/MP37.35	Corrugated steel	58.3	75.0	T-cracking in HMA shoulder is related to drainage.
I-29/S/MP34.75	Corrugated steel	N/A	N/A	MSS in 2013/ATB 4.0 in.
I-29/S/MP34.55	Corrugated steel	N/A	N/A	
I-29/S/MP34.10	Corrugated steel	N/A	N/A	
I-29/S/MP33.25	Corrugated steel	N/A	N/A	MSS in 2013/ATB 4.0 in.
I-29/S/MP33.00	Corrugated steel	N/A	N/A	
I-29/S/MP32.90	Corrugated steel	N/A	N/A	
I-29/S/MP32.80	Corrugated plastic	N/A	N/A	MSS in 2013/ATB 4.0 in.
I-29/S/MP32.80	Corrugated plastic	N/A	N/A	
I-29/S/MP31.95	Corrugated steel	N/A	N/A	MSS in 2013/ATB 4.0 in.
I-29/S/MP26.96	Corrugated steel	N/A	N/A	Drainage outlet only exists at the start and end point. However, several distress observed in the section without drainage outlet.
I-29/S/MP26.65	Corrugated steel	N/A	75.0	MSS in 2013/ATB 4.0 in. Rutting exists in all section, see video report.
I-29/S/MP26.20	Corrugated steel	N/A	75.0	The other information is not available.
I-29/S/MP25.70	Corrugated steel	N/A	75.0	
I-29/S/MP25.35	Corrugated plastic	55.8	13.0	ATB 4.0 in.
I-29/S/MP25.20-1	Corrugated plastic	55.8	13.0	
I-29/S/MP25.20-2	Corrugated plastic	55.8	13.0	
I-29/S/MP23.75	Corrugated plastic	55.8	13.0	
I-29/S/MP22.55-1	Corrugated plastic	55.8	13.0	
I-29/S/MP22.55-2	Corrugated plastic	55.8	13.0	
I-29/S/MP21.00	Corrugated plastic	N/A	75.0	ATB 4.0 in. A-cracking is not related to drainage.
I-29/S/MP20.75-1	Corrugated plastic	N/A	75.0	A-cracking is not related to drainage.
I-29/S/MP20.75-2	Corrugated plastic	N/A	76.0	A-cracking is not related to drainage.
I-29/S/MP19.80	Corrugated plastic	N/A	75.0	A-cracking is not related to drainage.
I-29/S/MP18.90	Corrugated plastic	N/A	75.0	CTB 4.0 in.
I-29/S/MP18.55-1	Corrugated plastic	N/A	75.0	A-cracking is related to drainage.
I-29/S/MP18.55-2	Corrugated plastic	N/A	76.0	A-cracking is related to drainage.
I-29/S/MP17.50-1	Corrugated plastic	N/A	77.0	A-cracking is related to drainage.
I-29/S/MP17.50-2	Corrugated plastic	N/A	78.0	A-cracking is related to drainage.
I-29/N/MP10.70-1	Corrugated plastic	N/A	N/A	Retrofitting. CTB 4.0 in/SCR 2.0 in. in 2012
I-29/N/MP10.70-2	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP12.55-1	Corrugated plastic	N/A	N/A	Retrofitting. The distance from sholuder to outlet is 30 ft. Shoulder width is 10.5 ft. Single lane width is 10.5 ft)
I-29/N/MP12.55-2	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP13.25-1	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP13.25-2	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP14.85-1	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP14.85-2	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP16.00-1	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP16.00-2	Corrugated plastic	N/A	N/A	Retrofitting
I-29/N/MP16.45-1	Corrugated plastic	N/A	N/A	Retrofitting. Overall, few distress/Drainage retrofitted in recent.
I-29/N/MP16.45-2	Corrugated plastic	N/A	N/A	Retrofitting. Overall, few distress/Drainage retrofitted in recent.
I-29/S/MP16.05-1	Corrugated plastic	105.2	75.0	Retrofitting. CTB 4.0 in/MIL 2.0 in. in 2012. Bad practice.
I-29/S/MP16.05-2	Corrugated plastic	105.2	75.0	Retrofitting. CTB 4.0 in/MIL 2.0 in. in 2012. Bad practice.
I-29/S/MP15.40-1	Corrugated plastic	105.2	75.0	Retrofitting. However, 50ft away transverse cracking.
I-29/S/MP15.40-2	Corrugated plastic	105.2	75.0	Retrofitting. However, 50ft away transverse cracking.
I-29/S/MP14.55-1	Corrugated plastic	105.2	75.0	Retrofitting
I-29/S/MP14.55-2	Corrugated plastic	105.2	75.0	Retrofitting
I-29/S/MP12.95	Corrugated plastic	105.2	75.0	The transverse cracking is due to before retrofitting. Overall, retrofitting in recent., but some bad construction practice, few cracking.
I-29/N/MP25.60	Corrugated steel	53.2	71.0	ATB 4.0 in
I-29/N/MP26.25	Corrugated steel	53.2	71.0	
I-29/N/MP26.90	Corrugated steel	53.2	71.0	
I-29/N/MP27.90	Corrugated steel	53.2	71.0	
I-29/N/MP28.25	Corrugated steel	53.2	71.0	
I-29/S/MP139.65	Corrugated steel	67.2	64.0	MSS in 1997/MIL 3.0 in. in 2007/GSB 4.0 in
I-29/S/MP138.75	Corrugated steel	67.2	64.0	Quartz aggregates.
I-29/S/MP138.55	Corrugated steel	67.2	64.0	
I-29/S/MP137.75	Corrugated steel	67.2	64.0	
I-29/S/MP137.18	Corrugated steel	67.2	64.0	

APPENDIX B: DRAINAGE INSPECTION REPORT FOR NEWLY CONSTRUCTED JPCP

I-35/N/MP143.50

- **Site information**
  - Route/Dir./MP/County: I-35/N/MP143.50 Hamilton County
  - Traffic (AADTT): 3,984
  - Pavement type: JPCP (11.5 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 2003
  - Construction project number: IM-35-6(94)140--13-40

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/5/2013
  - MP/GPS coordinate: MP143.50, N42(D)27(M)45(S) and W93(D)34(M)7(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree

Water backup in pipe

No pavement surface distress

I-80/W/MP 102.00

- **Site information**

– Route/Dir./MP/County: I-80/W/MP 102.00 Dallas County
– Traffic (AADTT): 7,940
– Pavement type: JPCP (12 in PCC/9.0 in Subbase)
– Outside shoulder type: HMA
– Subbase aggregate type: RPCC
– Construction year: 1991
– Construction project number: IR-80-2(131)99

- **Inspection location information**

– Inspection location number: No. 2
– Date of inspection: June/13/2013
– MP/GPS coordinate: MP 102.00, N41(D)31(M)4(S) and W94(D)9(M)47(S)

- **Subdrain observation information**

– Number of outlet pipe: 2
– Type of outlet pipe: Corrugated steel
– Size of outlet pipe: 6 inch
– Condition of outlet pipe: 80% blockage (tufa blockage and damaged)
– Water present inside outlet pipe: Yes (free flowing)
– Type of rodent guard: N/A
– Tufa/Dead zone (due to tufa) present: Yes
– Embankment slop condition: More than 30 degree

Tufa blockage extends back into the pipe

Damaged and tufa formation at outlet

IA 163/W/MP 21.26

- **Site information**
  - Route/Dir./MP/County: IA 163/W/MP 21.26 Jasper County
  - Traffic (AADTT): 1,262
  - Pavement type: JPCP (10 in PCC/10 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1998
  - Construction project number: NHSN-163-2(15)--2R-50

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/11/2013
  - MP/GPS coordinate: MP 21.26, N41(D)35(M)15(S) and W93(D)11(M)40(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree

Had to dig to find drain

No pavement surface distress

I-80/E/MP 154.27

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP 154.27 Jasper County
  - Traffic (AADTT): 8,582
  - Pavement type: JPCP (12 in PCC/9.0 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1993
  - Construction project number: IM-80-5(164)154--13-50

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP 154.27, N41(D)41(M)17(S) and W93(D)15(M)52(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree

- **Pavement distress condition on inspection location**
  - Transverse patching

Tufa blockage

Transverse patching

I-80/E/MP 80.17

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP 80.17 Adair County
  - Traffic (AADTT): 7,810
  - Pavement type: JPCP (11.4 in PCC/10.0 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 2000
  - Construction project number: IM-80-2(156)73--13-01

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP 80.17, N41(D)29(M)48(S) and W94(D)34(M)12(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree

- **Pavement distress condition on inspection location**
  - Cracking due to culvert

Soil blockage with standing water

Transverse cracking due to culvert

I-35/N/MP140.80

- **Site information**
  - Route/Dir./MP/County: I-35/N/MP140.80 Hamilton County
  - Traffic (AADTT): 4,945
  - Pavement type: JPCP (11.5 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 2003
  - Construction project number: IM-35-6(94)140--13-40

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/5/2013
  - MP/GPS coordinate: MP140.80, N42(D)25(M)25(S) and W93(D)34(M)13(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 90% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Had to dig out drain

Soil backup

No pavement surface distress

I-35/S/MP128.93

- **Site information**
  - Route/Dir./MP/County: I-35/N/MP128.93 Hamilton County
  - Traffic (AADTT): 5,033
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1999
  - Construction project number: IM-35-5(71)111--13-85

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/5/2013
  - MP/GPS coordinate: MP128.93, N42(D)15(M)5(S) and W93(D)34(M)14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-35/S/MP125.17

- **Site information**
  - Route/Dir./MP/County: I-35/N/MP125.17Hamilton County
  - Traffic (AADTT): 5,033
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1999
  - Construction project number: IM-35-5(71)111--13-85

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/5/2013
  - MP/GPS coordinate: MP125.17, N42(D)11(M)50(S) and W93(D)34(M) 14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No pavement distress

- **Note**
  - N/A

Broken pipe

No pavement surface distress

US 30/W/MP156.65

- **Site information**
  - Route/Dir./MP/County: US 30/W/MP 156.65 Story County
  - Traffic (AADTT): 1,084
  - Pavement type: JPCP (10 in PCC/10 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1992
  - Construction project number: F-30-5(80)--20-85

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/5/2013
  - MP/GPS coordinate: MP156.65, N42(D)0(M)24(S) and W93(D)28(M)7(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 20% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A


Sediment blockage


No pavement surface distress

I-80/W/MP132.05

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP132.05 Polk County
  - Traffic (AADTT): 13,264
  - Pavement type: JPCP (12.5 in PCC/12.5 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1997
  - Construction project number: IM-35-3(69)82--13-77

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP132.05, N41(D)39(M)7(S) and W93(D)41(M)10(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Small corner cracking

- **Note**
  - N/A


Covered pipe


Small corner crack

US 6/E/MP121.30

- **Site information**
  - Route/Dir./MP/County: US 6/E/Mp121.30 Dallas County
  - Traffic (AADTT): N/A
  - Pavement type: JPCP (10.6 in PCC/9.8 in Subbase)
  - Outside shoulder type: PCC
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1999
  - Construction project number: STP-6-3(48)--2C-25

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP121.30, N41(D)36(M)53(S) and W93(D)53(M)36(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

No blockage

No pavement surface distress

I-80/W/MP103.47

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP 103.47 Dallas County
  - Traffic (AADTT): 7,940
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number:IR-80-2(131)99

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP103.47, N41(D)31(M)4(S) and W94(D)8(M)4(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 10% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/W/MP56.63

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP56.63 Cass County
  - Traffic (AADTT): 7,682
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: IR-80-1(186)43

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP56.63, N41(D)29(M)50(S) and W95(D)0(M)8(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 95% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP56.30

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP56.30 Cass County
  - Traffic (AADTT): 7,682
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-1(178)40

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/13/2013
  - MP/GPS coordinate: MP56.30, N41(D)29(M)49(S) and W95(D)1(M)40(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - N/A

Tufa blockage

Longitudinal cracking along centerline

IA 5/E/MP86.16

- **Site information**
  - Route/Dir./MP/County: IA 5/E/MP86.16 Warren County
  - Traffic (AADTT): N/A
  - Pavement type: JPCP (10 in PCC/10 in Subbase)
  - Outside shoulder type: gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1999
  - Construction project number: STPN-5-4(40)--2J-91

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/11/2013
  - MP/GPS coordinate: MP86.16, N41(D)28(M)57(S) and W93(D)26(M)56(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 50% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Sediment blockage

No pavement surface distress

I-80/E/MP160.87

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP160.87 Jasper County
  - Traffic (AADTT): 8,679
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1996
  - Construction project number:IM-80-5(184)160--13-50

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP160.87, N41(D)40(M)59(S) and W93(D)8(M)37(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage and damaged)
  - Water present inside outlet pipe: No
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - End of the pipe is clamped shut

End clamped shut

Longitudinal cracking

I-80/E/MP165.65

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP165.65 Jasper County
  - Traffic (AADTT): 8,847
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1994
  - Construction project number:IM-80-5(169)165--13-50

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP165.65, N41(D)41(M)0(S) and W93(D)3(M)6(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A


Tufa blockage


No pavement surface distress

I-80/E/MP172.07

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP172.07 Jasper County
  - Traffic (AADTT): 9,007
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1995
  - Construction project number:IM-80-5(184)160--13-50

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP172.07, N41(D)40(M)50(S) and W92(D)55(M)41(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 80% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

IA 330/W/MP13.55

- **Site information**
  - Route/Dir./MP/County: IA 330/W/MP13.55 Marshall County
  - Traffic (AADTT): N/A
  - Pavement type: JPCP (10.2 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2002
  - Construction project number: NHSX-330-2(39)--3H-64

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/11/2013
  - MP/GPS coordinate: MP13.55/N41(D)58(M)30(S) and W93(D)7(M)0(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 70% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

I-80/E/MP193.20

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP193.20 Poweshiek County
  - Traffic (AADTT): 8,994
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1990
  - Construction project number: IR-80-6(136)193

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP193.20, N41(D)41(M)44(S) and W92(D)31(M)23(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP208.45

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP208.45 Iowa County
  - Traffic (AADTT): 9,022
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1990
  - Construction project number:IR-80-6(136)193

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP208.45, N41(D)41(M)44(S) and W92(D)13(M)44(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 5% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Example of outlet damaged during tufa removal

Pipe damaged during tufa removal

No pavement surface distress

I-80/E/MP221.72

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP221.72 Iowa County
  - Traffic (AADTT): 9,431
  - Pavement type: JPCP (12 in PCC/10 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1996
  - Construction project number:IM-80-6(187)221--13-48

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP221.72, N41(D)41(M)12(S) and W91(D)58(M)23(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP248.65

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP248.65 Johnson County
  - Traffic (AADTT): 11,755
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1993
  - Construction project number:IM-80-7(59)247--13-52

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP248.65, N41(D)40(M)41(S) and W91(D)27(M)32(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 90% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP254.16

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP254.16 Cedar County
  - Traffic (AADTT): 11,780
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1993
  - Construction project number:IM-80-7(59)247--13-52

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP254.16, N41(D)39(M)50(S) and W91(D)21(M)21(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP268.65

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP268.65 Cedar County
  - Traffic (AADTT): 11,632
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-7(57)265

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP268.65, N41(D)38(M)39(S) and W91(D)4(M)48(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 70% blockage (tufa blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Pavement Patching

- **Note**
  - N/A

Tufa blockage

Pavement patching

I-80/E/MP270.80

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP270.80 Cedar County
  - Traffic (AADTT): 11,632
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-7(57)265

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/19/2013
  - MP/GPS coordinate: MP270.80, N41(D)38(M)13(S) and W91(D)2(M)23(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP274.86

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP274.86 Cedar County
  - Traffic (AADTT): 11,457
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: IR-80-7(57)265

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP274.86, N41(D)38(M)00(S) and W90(D)57(M)43(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 40% blockage (tufa blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage and dead zone

No pavement surface distress

I-80/E/MP277.85

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP277.85 Cedar County
  - Traffic (AADTT): 11,473
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-7(57)265

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP277.85, N41(D)37(M)58(S) and W90(D)54(M)15(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 95% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Cracking and patching 50-ft. away

Tufa blockage

Pavement patching 50-ft. away

I-80/E/MP280.30

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP280.30 Scott County
  - Traffic (AADTT): 11,552
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1997
  - Construction project number: IM-80-8(165)279--13-82

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP280.30, N41(D)37(M)58(S) and W90(D)51(M)26(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 20% blockage (tufa blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - New installation

Tufa blockage

Pavement patching

US 61/E/MP107.67

- **Site information**
  - Route/Dir./MP/County: US 61/E/MP107.67 Scott County
  - Traffic (AADTT): 1,757
  - Pavement type: JPCP (10.5 in PCC/10.3 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2001
  - Construction project number:NHSX-61-5(92)--3H-82

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP107.67, N41(D)30(M)55(S) and W90(D)46(M)34(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 95% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Corner cracking

- **Note**
  - N/A

Soil blockage

Corner crack

I-80/E/MP298.07

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP298.07 Scott County
  - Traffic (AADTT): 9,609
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1997
  - Construction project number: IM-80-8(171)295--13-82

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP298.07, N41(D)35(M)44(S) and W90(D)31(M)20(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 95% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

US 151/S/MP71.60

- **Site information**
  - Route/Dir./MP/County: US 151/S/MP71.60 Jones County
  - Traffic (AADTT): 1,101
  - Pavement type: JPCP (9.5 in PCC/10 in Subbase)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: RPCC
  - Construction year: 2003
  - Construction project number: NHSX-151-4(85)--3H-53

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP71.60, N42(D)17(M)10(S) and W91(D)5(M)10(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 95% blockage (tufa blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

US 151/S/MP65.57

- **Site information**
  - Route/Dir./MP/County: US 151/S/MP65.57 Jones County
  - Traffic (AADTT): 1,101
  - Pavement type: JPCP (9.5 in PCC/10 in Subbase)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: RPCC/Virgin aggregate
  - Construction year: 2003
  - Construction project number: NHSX-151-4(90)--3H-53

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP65.57, N42(D)14(M)0(S) and W91(D)10(M)13(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 40% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

US 151/N/MP63.30

- **Site information**
  - Route/Dir./MP/County: US 151/N/MP63.30 Jones County
  - Traffic (AADTT): 1,101
  - Pavement type: JPCP (9.5 in PCC/10 in Subbase)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: RPCC/Virgin aggregate
  - Construction year: 2003
  - Construction project number:NHSX-151-4(90)--2R-53

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP63.30, N42(D)12(M)27(S) and W91(D)11(M)7(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 65% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

US 151/N/MP44.50

- **Site information**
  - Route/Dir./MP/County: US 151/N/MP44.50 Linn County
  - Traffic (AADTT): N/A
  - Pavement type: JPCP (9.5 in PCC/10 in Subbase)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: F-RP-151-3(79)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP44.50, N42(D)3(M)23(S) and W91(D)25(M)36(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (soil blockage and damaged)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Pavement patch due to culvert

- **Note**
  - N/A

Soil blockage

Pavement patching due to culvert

US 30/W/MP260.58

- **Site information**
  - Route/Dir./MP/County: US 30/W/MP260.58 Linn County
  - Traffic (AADTT): N/A
  - Pavement type: JPCP (10 in PCC/10.3 in Subbase)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2000
  - Construction project number: NHSX-30-7(94)--3H-57

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP260.58, N41(D)55(M)33(S) and W91(D)31(M)10(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 70% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Pavement patch due to culvert

- **Note**
  - N/A

Soil blockage

Pavement patching due to culvert

I-80/W/MP193.80

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP193.80 Poweshiek County
  - Traffic (AADTT): 8,994
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-6(145)191

- **Inspection location information**
  - Inspection location number: No. 5
  - Date of inspection: June/21/2013
  - MP/GPS coordinate: MP193.80, N41(D)41(M)46(S) and W92(D)30(M)43(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Sediment blockage

No pavement surface distress

I-80/W/MP168.23

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP168.23 Jasper County
  - Traffic (AADTT): 8,815
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1995
  - Construction project number:IM-80-5(184)160--13-50

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/21/2013
  - MP/GPS coordinate: MP168.23, N41(D)40(M)59(S) and W93(D)0(M)8(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Good drainage installation practice

Good drainage pad installation

Slight shoulder dip

I-80/W/MP150.67

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP150.67 Jasper County
  - Traffic (AADTT): 8,580
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1990
  - Construction project number: IR-80-5(130)145

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/21/2013
  - MP/GPS coordinate: MP150.67, N41(D)40(M)53(S) and W93(D)20(M)0(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 10% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Transverse cracks two slabs away

Sediment blockage

Transverse cracking

IA 60/E/MP 48.97

- **Site information**
  - Route/Dir./MP/County: IA 60/E/MP 48.97 Osceola County
  - Traffic (AADTT): 956
  - Pavement type: JPCP (10.2 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2007
  - Construction project number: NHSX-060-4(35)--3H-72

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: July/19/2013
  - MP/GPS coordinate: MP48.97, N43(D)22(M)58(S) and W95(D)44(M)55(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 40% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Transverse crack due to culvert

- **Note**
  - Dowel bar installation

Soil blockage

Dowel bar retrofit

IA 60/W/MP 47.75

- **Site information**
  - Route/Dir./MP/County: IA 60/W/MP 47.75 Osceola County
  - Traffic (AADTT): 956
  - Pavement type: JPCP (10.2 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2007
  - Construction project number: NHSX-060-4(35)--3H-72

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: July/19/2013
  - MP/GPS coordinate: MP47.75, N43(D)22(M)09(S) and W95(D)45(M)51(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 30% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Sediment blockage

No pavement surface distress

I-80/W/MP47.60

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP47.60 Pottawattamie County
  - Traffic (AADTT): 7,793
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-1(178)40

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP47.60, N41(D)29(M)51(S) and W95(D)11(M)44(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Broken open 7-ft. up from opening; water is flowing from there

Tufa blockage and damage

No pavement surface distress

I-80/W/MP38.20

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP38.20 Pottawattamie County
  - Traffic (AADTT): 8,093
  - Pavement type: JPCP (11.5 in PCC/12.3 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 2005
  - Construction project number: IM-80-1(286)35--13-78

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP38.20, N41(D)29(M)51(S) and W95(D)22(M)34(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 30% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/W/MP25.82

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP25.82 Pottawattamie County
  - Traffic (AADTT): 6,404
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1998
  - Construction project number: IM-80-1(235)23--13-78

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP25.82, N41(D)28(M)26(S) and W95(D)35(M)29(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Tufa in plastic pipe (only one observation in all inspected locations)

Tufa blockage

No pavement surface distress

I-80/W/MP10.40

- **Site information**
  - Route/Dir./MP/County: I-80/W/MP10.40 Pottawattamie County
  - Traffic (AADTT): 6,825
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1999
  - Construction project number: IM-80-1(249)6--13-78

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP10.40, N41(D)18(M)16(S) and W95(D)46(M)7(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: No
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - New installation

No blockage

Transverse cracking

I-29/S/MP 62.80

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP62.80 Pottawattamie County
  - Traffic (AADTT): 3,241
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1995
  - Construction project number: IM-29-3(52)61--13-78

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP62.80, N41(D)22(M)1(S) and W95(D)53(M)58(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No distress

I-29/N/MP 78.44

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP78.44 Harrison County
  - Traffic (AADTT): 3,185
  - Pavement type: JPCP (11.8 in PCC/3.9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1999
  - Construction project number: IM-29-4(52)72--13-43

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP 78.44, N41(D)34(M)56(S) and W95(D)56(M)24(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - N/A

Tufa blockage

Longitudinal cracking

I-29/S/MP 73.03

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP73.03 Harrison County
  - Traffic (AADTT): 3,609
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1995
  - Construction project number: IM-29-3(52)61--13-78

- **Inspection location information**
  - Inspection location number: No. 4
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP73.03/ N41(D)30(M)46(S) and W95(D)54(M)43(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP8.64

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP8.64 Pottawattamie County
  - Traffic (AADTT): 6,825
  - Pavement type: JPCP (12 in PCC/10.3 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 2003
  - Construction project number: IM-80-1(251)6--13-78

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP8.64, N41(D)16(M)54(S) and W95(D)46(M)59(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 90% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Tufa blockage

No pavement surface distress

I-80/E/MP27.53

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP27.53 Pottawattamie County
  - Traffic (AADTT): 6,404
  - Pavement type: JPCP (11.8 in PCC/10.2 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1998
  - Construction project number: IM-80-1(235)23--13-78

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP27.53, N41(D)29(M)50(S) and W95(D)34(M)50(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Longitudinal/Transverse cracking

- **Note**
  - Potential break higher up in pipe

Water flowing out of ground

Longitudinal and transverse cracking

I-80/E/MP35.10

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP35.10 Pottawattamie County
  - Traffic (AADTT): 8,093
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1990
  - Construction project number: IR-80-1(183)34

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP 35.10, N41(D)29(M)53(S) and W95(D)26(M)09(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (tufa blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - Corner cracking

- **Note**
  - N/A

Tufa blockage

Corner cracking

I-80/E/MP 47.72

- **Site information**
  - Route/Dir./MP/County: I-80/E/MP47.72 Pottawattamie County
  - Traffic (AADTT): 7,793
  - Pavement type: JPCP (12 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1991
  - Construction project number: IR-80-1(178)40

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/28/2013
  - MP/GPS coordinate: MP 47.72, N41(D)29(M)50(S) and W95(D)11(M)34(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

APPENDIX C: DRAINAGE INSPECTION REPORT FOR NEWLY CONSTRUCTED HMA

US 61/E/MP 172.56

- **Site information**
  - Route/Dir./MP/County: US 61/E/MP 172.56 Jackson County
  - Traffic (AADTT): 1,211
  - Pavement type: HMA (12 in HMA)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1999
  - Construction project number: NHS-61-7(46)--19-49

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/20/2013
  - MP/GPS coordinate: MP 172.56/ N42(D)15(M)52(S) and W90(D)40(M)50(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 40% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - N/A

Soil blockage

Transverse cracking

IA 60/E/MP 46.94

- **Site information**
  - Route/Dir./MP/County: IA 60/E/MP 46.94 Osceola County
  - Traffic (AADTT): 831
  - Pavement type: HMA (14 in HMA)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2006
  - Construction project number: NHSX-60-4(31)--3H-72

- **Inspection location information**
  - Inspection location number: No. 4
  - Date of inspection: July/19/2013
  - MP/GPS coordinate: MP 46.94/ N43(D)21(M)30(S) and W95(D)46(M)4(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 10% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Sediment blockage

No pavement surface distress

IA 60/W/MP 43.04

- **Site information**
  - Route/Dir./MP/County: IA 60/W/MP 43.04 Osceola County
  - Traffic (AADTT): 831
  - Pavement type: HMA (14.5 in HMA)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin Aggregate
  - Construction year: 2006
  - Construction project number: NHSX-60-4(31)--3H-72

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: July/19/2013
  - MP/GPS coordinate: MP 43.04, N43(D)18(M)16(S) and W95(D)46(M)57(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 20% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

US 30/W/MP 57.28

- **Site information**
  - Route/Dir./MP/County: US 30/W/57.28 Crawford County
  - Traffic (AADTT): 743
  - Pavement type: HMA (12 in HMA)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1999
  - Construction project number: NHSN-30-2(103)--2R-24

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP 57.28, N42(D)01(M)11(S) and W95(D)18(M)49(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 20% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - N/A

Soil blockage

Transverse cracking

US 30/E/MP 64.70

- **Site information**
  - Route/Dir./MP/County: US 30/E/64.70 Crawford County
  - Traffic (AADTT): 738
  - Pavement type: HMA (9 in HMA)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 1998
  - Construction project number: NHSN-30-2(103)--2R-24

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP 64.70, N42(D)04(M)02(S) and W95(D)11(M)14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - N/A

No blockage

Transverse cracking

US 18/E/MP 213.97

- **Site information**
  - Route/Dir./MP/County: US 18/E/MP 213.97 Floyd County
  - Traffic (AADTT): 1,730
  - Pavement type: HMA (12 in HMA)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2000
  - Construction project number: NHS-218-9(88)--3H-34

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: July/18/2013
  - MP/GPS coordinate: MP 213.97, N43(D)04(M)0(S) and W92(D)43(M)01(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 90% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Grinding

Soil blockage

Pavement surface grinding

US 218/S/MP 219.75

- **Site information**
  - Route/Dir./MP/County: US 218/S/MP 219.75 Chickasaw County
  - Traffic (AADTT): 1,395
  - Pavement type: HMA (13 in HMA)
  - Outside shoulder type: Gravel
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2003
  - Construction project number: NHSN-218-9(94)--2R-19

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: July/18/2013
  - MP/GPS coordinate: MP 219.75, N42(D)57(M)05(S) and W92(D)33(M)01(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 95% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Phase I site

Soil blockage

No pavement surface distress

US 218/N/MP 214.22

- **Site information**
  - Route/Dir./MP/County: US 218/N/MP 214.22 Floyd County
  - Traffic (AADTT): 818
  - Pavement type: HMA (12 in HMA)
  - Outside shoulder type: HMA
  - Subbase aggregate type: Virgin aggregate
  - Construction year: 2000
  - Construction project number: NHS-218-9(88)--19-34

- **Inspection location information**
  - Inspection location number: No. 4
  - Date of inspection: July/18/2013
  - MP/GPS coordinate: MP 214.22, N43(D)03(M)49(S) and W92(D)43(M)05(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 50% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - N/A

Soil blockage

No pavement surface distress

APPENDIX D: DRAINAGE INSPECTION REPORT FOR HMA OVER JPCP

IA 9/E/MP235.00

- **Site information**
  - Route/Dir./MP/County: IA 9/E/MP 235.00 Howard County
  - Traffic (AADTT): 3,100
  - Pavement type: HMA over JPCP (9.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2006 (overlay)/1974 (existing pavement)
  - Construction project number: STPN-009-7(27)--2J-45 (overlay)/FN-9-7(6)--21-45 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: July/11/2013
  - MP/GPS coordinate: MP 235.00, N43(D)22(M)15(S) and W92(D)12(M)30(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated Steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Longitudinal and transverse cracking patching

- **Note**
  - Suggested by District 2 for investigation

Soil blockage

Longitudinal and transverse cracking patching

IA 9/W/MP238.00

- **Site information**
  - Route/Dir./MP/County: IA 9/W/MP 238.00 Howard County
  - Traffic (AADTT): 3,100
  - Pavement type: HMA over JPCP (9.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2006 (overlay)/1974 (existing pavement)
  - Construction project number: STPN-009-7(27)--2J-45 (overlay)/FN-9-7(6)--21-45 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: July/11/2013
  - MP/GPS coordinate: MP 238.00, N42(D)22(M)15(S) and W92(D)8(M)6(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated Steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 20% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone(due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at Outlet: N/A

- **Pavement distress condition on inspection location**
  - Longitudinal cracking patching

- **Note**
  - Suggested by District 2 for investigation

Sediment blockage

Longitudinal cracking patching

US 63/N/MP0.00

- **Site information**
  - Route/Dir./MP/County: US 63/N/MP 0.00 Davis County
  - Traffic (AADTT): 2,080
  - Pavement type: HMA over JPCP (7.5 in HMA/8.5 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1974 (existing pavement)
  - Construction project number: NHS-63-1(42)--19--26 (overlay)/RF-63-1(11)--35--26 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 0.00, N40(D)35(M)49(S) and W92(D)31(M)25(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated Steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 30% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Longitudinal and transverse cracking patching

- **Note**
  - Suggested by District 5 for investigation
  - Cracked and seated in 1990
  - No load transfer in existing JPCP

Sediment blockage

Longitudinal and transverse cracking patching

US 63/N/MP3.00

- **Site information**
  - Route/Dir./MP/County: US 63/N/MP 3.00 Davis County
  - Traffic (AADTT): 2,080
  - Pavement type: HMA over JPCP (7.5 in HMA/8.5 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1974 (existing pavement)
  - Construction project number: NHS-63-1(42)--19--26 (overlay)/RF-63-1(11)--35--26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 5
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 3.00, N40(D)39(M)23(S) and W92(D)31(M)25(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated Plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 10% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Longitudinal and transverse cracking patching

- **Note**
  - Suggested by District 5 for investigation
  - Cracked and seated in 1990
  - No load transfer in existing JPCP


Soil blockage


Longitudinal and transverse cracking patching

US 63/N/MP7.00

- **Site information**
  - Route/Dir./MP/County: US 63/N/MP 7.00 Davis County
  - Traffic (AADTT): 2,080
  - Pavement type: HMA over JPCP (7.5 in HMA/8.5 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1974 (existing pavement)
  - Construction project number: NHS-63-1(42)--19--26 (overlay)/RF-63-1(11)--35--26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 7
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 7.00, N40(D)42(M)5(S) and W92(D)30(M)16(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 80% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Suggested by District 5 for investigation
  - Cracked and seated in 1990
  - No load transfer in existing JPCP

Soil blockage

Transverse cracking

US 63/N/MP10.00

- **Site information**
  - Route/Dir./MP/County: US 63/N/MP 10.00 Davis County
  - Traffic (AADTT): 2,080
  - Pavement type: HMA over JPCP (7.5 in HMA/8.5 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1974 (existing pavement)
  - Construction project number: NHS-63-1(42)--19--26 (overlay)/RF-63-1(11)--35--26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 8
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 10.00, N40(D)44(M)5(S) and W92(D)30(M)17(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: No (wet)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Reflection cracking

- **Note**
  - Suggested by District 5 for investigation
  - Cracked and seated in 1990
  - No load transfer in existing JPCP


Soil blockage


Reflection cracking

US 63/N/MP20.00

- **Site information**
  - Route/Dir./MP/County: US 63/N/MP 20.00 Davis County
  - Traffic (AADTT): 5,500
  - Pavement type: HMA over JPCP (13.5 in HMA/10.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 2008 (overlay)/1963 (existing pavement)
  - Construction project number: F-50-(8) (overlay)/NHS-63-1(66)--2R--26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 3
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 20.00, N40(D)49(M)25(S) and W92(D)23(M)56(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Longitudinal/transverse cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer

Soil blockage

Longitudinal and transverse cracking

IA 2/E/MP198.00

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 198.00 Davis County
  - Traffic (AADTT): 2,200
  - Pavement type: HMA over JPCP (6.5 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1993 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 1
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 198.00, N40(D)43(M)37(S) and W92(D)23(M)25(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone(due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Longitudinal/reflection cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer
  - Pipe has 90% gravel in.

Sediment blockage

Longitudinal and reflection cracking

IA 2/E/MP200.10

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 200.10 Davis County
  - Traffic (AADTT): 1,690
  - Pavement type: HMA over JPCP (7.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1991 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 1
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 200.10/N40(D)42(M)39(S) and W92(D)21(M)34(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated Steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 5% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone(due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Reflection cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer

Sediment blockage

Reflection cracking

IA 2/E/MP200.60

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 200.60 Davis County
  - Traffic (AADTT): 1,690
  - Pavement type: HMA over JPCP (7.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1991 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 2
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 200.60, N40(D)42(M)40(S) and W92(D)21(M)28(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 30% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone(due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer


Soil blockage


Transverse cracking

IA 2/E/MP204.20

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 204.20 Davis County
  - Traffic (AADTT): 1,690
  - Pavement type: HMA over JPCP (7.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1991 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 1
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 204.20, N40(D)41(M)49(S) and W92(D)17(M)13(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 30% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer


Soil blockage


Transverse cracking

IA 2/E/MP207.00

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 207.00 Davis County
  - Traffic (AADTT): 1,350
  - Pavement type: HMA over JPCP (6.5 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1993 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 3
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 207.00, N40(D)41(M)24(S) and W92(D)14(M)2(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 40% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (flowing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Reflection cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer


Sediment blockage


Reflection cracking

IA 2/E/MP208.60

- **Site information**
  - Route/Dir./MP/County: IA 2/E/MP 208.60 Davis County
  - Traffic (AADTT): 1,350
  - Pavement type: HMA over JPCP (6.5 in HMA/8.0 in JPCP)
  - Outside shoulder type: Gravel
  - HMA base aggregate type: Limestone
  - Construction year: 1993 (overlay)/1977 (existing pavement)
  - Construction project number: PN-2-8 (11)--21-26 (overlay)/STPN-002-8(34)--2J-26 (existing pavement)

- **Inspection location Information**
  - Inspection location number: No. 6
  - Date of inspection: May/29/2014
  - MP/GPS coordinate: MP 208.60, N40(D)40(M)36(S) and W92(D)11(M)39(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage and damaged)
  - Water present inside outlet pipe: No (wet)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Suggested by District 5 for investigation
  - Skewed joint without load transfer

Soil blockage

Transverse cracking

I-29/S/MP42.15

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 42.15 Mills County
  - Traffic (AADTT): 21,800
  - Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2009 (overlay)/1970 (existing pavement)
  - Construction project number: IMX-29-2(65)38--02-65 (overlay)/I-IG-29-2(9)43--04-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 42.15, N41(D)8(M)21(S) and W95(D)49(M)17(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - Flooded by Missouri River in 2011


Soil blockage


Longitudinal cracking

I-29/S/MP41.55

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 41.55 Mills County
  - Traffic (AADTT): 21,800
  - Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2009 (overlay)/1970 (existing pavement)
  - Construction project number: IMX-29-2(65)38--02-65 (overlay)/I-IG-29-2(9)43--04-65 (existing pavement

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 41.55, N41(D)7(M)50(S) and W95(D)45(M)16(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Transverse cracking

I-29/S/MP37.55

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 37.55 Mills County
  - Traffic (AADTT): 21,800
  - Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1970 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/I-IG-29-2(13)35--04-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 37.55, N41(D)4(M)26(S) and W95(D)49(M)30(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 70% blockage (sediment blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - Flooded by Missouri River in 2011


Sediment blockage


Longitudinal cracking

I-29/S/MP34.10

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 34.10 Mills County
  - Traffic (AADTT): 12,200
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1970 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/I-IG-29-2(13)35--04-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 34.10, N41(D)1(M)30(S) and W95(D)48(M)52(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - Flooded by Missouri River in 2011
  - Quartz aggregates

No blockage

No pavement surface distress

I-29/S/MP29.30

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 29.30 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1 (extra)
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 29.30, N40(D)57(M)25(S) and W95(D)48(M)0(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Transverse cracking/rutting

- **Note**
  - Flooded by Missouri River in 2011
  - Quartz aggregates
  - This section has no drainage outlet

No drainage outlet

Transverse cracking/rutting

I-29/S/MP26.96

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 26.96 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 26.96, N40(D)55(M)23(S) and W95(D)47(M)55(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011
  - Quartz aggregates
  - Drainage outlet only exists at the start and end point. However, several distress observed in the section without drainage outlet.

Soil blockage

Transverse cracking

I-29/S/MP26.20

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 26.20 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (9.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 26.20, N40(D)54(M)43(S) and W95(D)47(M)57(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Rutting

- **Note**
  - Flooded by Missouri River in 2011
  - Quartz aggregates


Soil blockage


Rutting

I-29/S/MP25.70

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 25.70 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (9.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(45)25--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 25.70, N40(D)55(M)23(S) and W95(D)47(M)55(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 50% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (flowing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Rutting/Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011
  - Quartz aggregates

Sediment blockage

Rutting/transverse cracking

I-29/S/MP25.35

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 25.35 Fremont County
  - Traffic (AADTT): 1,1200
  - Pavement type: HMA over JPCP (4.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IMN-29-1(55)0--0E-36 (overlay)/I-29-1(12)20--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 25.35, N40(D)53(M)59(S) and W95(D)47(M)59(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Transverse cracking

I-29/S/MP25.20

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 25.20 Fremont County
  - Traffic (AADTT): 11,200
  - Pavement type: HMA over JPCP (4.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IMN-29-1(55)0--0E-36 (overlay)/I-29-1(12)20--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 25.20, N40(D)53(M)50(S) and W95(D)47(M)59(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 20% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Transverse cracking

I-29/S/MP18.90

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 18.90 Fremont County
  - Traffic (AADTT): 10,600
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IMX-29-1(75)16--02-36 (overlay)/I-29-1(12)20--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 18.90, N40(D)48(M)23(S) and W95(D)48(M)21(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 60% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: uphill

- **Pavement distress condition on inspection location**
  - Longitudinal cracking

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Longitudinal cracking

I-29/S/MP17.50

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 17.50 Fremont County
  - Traffic (AADTT): 10,600
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 1999 (overlay)/1971 (existing pavement)
  - Construction project number: IMX-29-1(75)16--02-36 (overlay)/I-29-1(12)20--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 17.50, N40(D)47(M)11(S) and W95(D)48(M)27(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 60% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Alligator cracking

- **Note**
  - Flooded by Missouri River in 2011

Sediment blockage

Alligator cracking

I-29/N/MP16.45

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP 16.45 Fremont County
  - Traffic (AADTT): 10,100
  - Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: N/A
  - Construction year: 2012 (overlay)/1972 (existing pavement)
  - Construction project number: IMX-029-1(79)10--02-36 (overlay)/I-29-1(13)10--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 6
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 16.45, N40(D)46(M)18(S) and W95(D)48(M)37(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: No blockage
  - Water present inside outlet pipe: Yes (flowing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - No distress

- **Note**
  - Flooded by Missouri River in 2011
  - Overall, few distress/Drainage retrofitted in recent

No blockage

No pavement surface distress

I-29/S/MP16.05

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 16.05 Fremont County
  - Traffic (AADTT): 10,100
  - Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: N/A
  - Construction year: 1999 (overlay)/1972 (existing pavement)
  - Construction project number: IMX-029-1(79)10--02-36 (overlay)/I-29-1(13)10--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 16.05, N40(D)46(M)42(S) and W95(D)48(M)30(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 80% blockage (soil blockage)
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress

- **Note**
  - Flooded by Missouri River in 2011
  - Retrofitted

Soil blockage

No pavement surface distress

I-29/S/MP15.40

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 15.40 Fremont County
  - Traffic (AADTT): 10,100
  - Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: N/A
  - Construction year: 1999 (overlay)/1972 (existing pavement)
  - Construction project number: IMX-029-1(79)10--02-36 (overlay)/I-29-1(13)10--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 15.40, N40(D)46(M)14(S) and W95(D)48(M)41(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 50% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (flowing)
  - Type of rodent guard: Gate screen
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011
  - Retrofitted and 50 ft. away transverse cracking

Soil blockage

Transverse cracking

I-29/S/MP5.00

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 5.00 Fremont County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2007 (overlay)/1972 (existing pavement)
  - Construction project number: IM-29-1(65)0--13-36 (overlay)/I-IG-29-1(16)0--04-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1 (extra)
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 5.00, N40(D)37(M)54(S) and W95(D)43(M)14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Alligator/Transverse cracking

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet.
  - Cracking is related to drainage

No drainage outlet

Alligator and transverse cracking

I-29/S/MP3.05

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 3.05 Fremont County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (6.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2007 (overlay)/1972 (existing pavement)
  - Construction project number: IM-29-1(65)0--13-36 (overlay)/I-IG-29-1(16)0--04-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2 (extra)
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 3.05, N40(D)36(M)51(S) and W95(D)41(M)36(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Stripping/patching

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet.

No drainage outlet

Stripping/patching

I-29/S/MP8.95

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 8.95 Fremont County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (8.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Limestone
  - Construction year: 2007 (overlay)/1972 (existing pavement)
  - Construction project number: IM-29-1(65)0--13-36 (overlay)/I-29-1(13)10--01-36 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1 (extra)
  - Date of inspection: June/04/2014
  - MP/GPS coordinate: MP 8.95, N40(D)40(M)29(S) and W95(D)46(M)14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Transverse and alligator cracking/severity crashing

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet

No drainage outlet

Alligator cracking/corner erosion damage

I-29/N/MP25.60

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP 25.60 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 25.60/N40(D)54(M)12(S) and W95(D)47(M)57(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Longitudinal/Transverse cracking/Rutting

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Longitudinal and transverse cracking/rutting

I-29/N/MP26.90

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP 26.90 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 26.90, N40(D)55(M)20(S) and W95(D)47(M)53(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 30% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (flowing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Alligator cracking

- **Note**
  - Flooded by Missouri River in 2011


Sediment blockage


Alligator cracking

I-29/N/MP27.20

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 27.20 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-029-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1 (extra)
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 27.20, N40(D)55(M)35(S) and W95(D)47(M)54(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope Condition at Outlet: N/A

- **Pavement distress condition on inspection location**
  - Transverse and alligator cracking/severity crashing

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet.

No drainage outlet

Transverse and alligator cracking

I-29/N/MP27.40

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 27.40 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-029-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 2 (extra)
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 27.40, N40(D)55(M)35(S) and W95(D)47(M)54(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Transverse and alligator cracking

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet.
  - The cracking has a culvert nearby.

No drainage outlet

Transverse and alligator cracking

I-29/N/MP27.90

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP 27.90 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 4
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 27.90, N40(D)56(M)12(S) and W95(D)47(M)58(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 90% blockage (sediment blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Parallel

- **Pavement distress condition on inspection location**
  - Transverse and alligator cracking/rutting

- **Note**
  - Flooded by Missouri River in 2011

Sediment blockage

Transverse and alligator cracking/rutting

I-29/N/MP28.25

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP 28.25 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971 (existing pavement)
  - Construction project number: IM-29-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 5
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 28.25/N40(D)56(M)29(S) and W95(D)47(M)60(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 100% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Transverse and alligator cracking

- **Note**
  - Flooded by Missouri River in 2011

Soil blockage

Transverse and alligator cracking

I-29/N/MP29.90

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 29.90 Mills County
  - Traffic (AADTT): 12,000
  - Pavement type: HMA over JPCP (10.0 in HMA/8.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2008 (overlay)/1971(existing pavement)
  - Construction project number: IM-029-1(46)26--13-65 (overlay)/EACI-29-1(11)27--08-65 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3 (extra)
  - Date of inspection: June/05/2014
- MP/GPS coordinate: MP 29.90, N40(D)57(M)54(S) and W95(D)47(M)57(S)

- **Subdrain observation information**
  - Number of outlet pipe: 0
  - Type of outlet pipe: N/A
  - Size of outlet pipe: N/A
  - Condition of outlet pipe: N/A
  - Water present inside outlet pipe: N/A
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: N/A
  - Slope condition at outlet: N/A

- **Pavement distress condition on inspection location**
  - Rutting

- **Note**
  - Flooded by Missouri River in 2011
  - This section has no drainage outlet.

No drainage outlet

Rutting

I-29/S/MP139.65

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 139.65 Woodbury County
  - Traffic (AADTT): 18,500
  - Pavement type: HMA over JPCP (5.0 in HMA/10.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2007 (overlay)/1959 (existing pavement)
  - Construction project number: IMN-29-6(136)127--0E-97 (overlay)/I-29-6(10)136 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 139.65, N42(D)22(M)45(S) and W96(D)21(M)25(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 60% blockage (soil blockage)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Reflection cracking

- **Note**
  - Suggested by District 3 for investigation
  - Quartz aggregates

Soil blockage

Reflection cracking

I-29/S/MP138.55

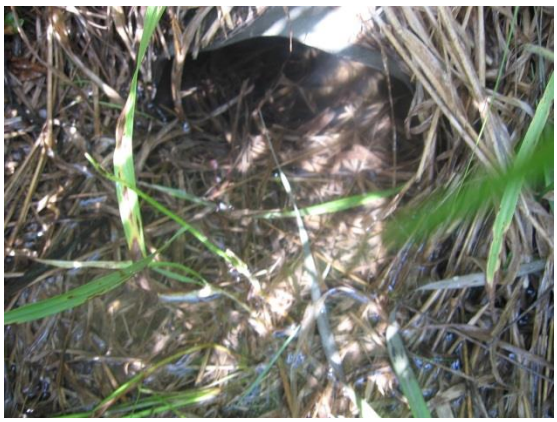
- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 138.55 Woodbury County
  - Traffic (AADTT): 18,500
  - Pavement type: HMA over JPCP (5.0 in HMA/10.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2007 (overlay)/1959 (existing pavement)
  - Construction project number: IMN-29-6(136)127--0E-97 (overlay)/I-29-6(10)136 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 3
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 138.55, N42(D)21(M)54(S) and W96(D)20(M)47(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 60% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - Reflection and transverse cracking

- **Note**
  - Suggested by District 3 for investigation
  - Quartz aggregates



Soil blockage

Reflection and transverse cracking

I-29/S/MP137.18

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP 137.18 Woodbury County
  - Traffic (AADTT): 18,500
  - Pavement type: HMA over JPCP (5.0 in HMA/10.0 in JPCP)
  - Outside shoulder type: HMA
  - HMA base aggregate type: Quartz
  - Construction year: 2007 (overlay)/1959 (existing pavement)
  - Construction project number: IMN-29-6(136)127--0E-97 (overlay)/I-29-6(10)136 (existing pavement)

- **Inspection location information**
  - Inspection location number: No. 5
  - Date of inspection: June/05/2014
  - MP/GPS coordinate: MP 137.18, N42(D)20(M)52(S) and W96(D)19(M)59(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 60% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: Fork
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - Reflection cracking/concrete patching

- **Note**
  - Suggested by District 3 for investigation
  - Quartz aggregates
  - This section has concrete patch. The beginning and ending points of patching have no drainage outlet, and the middle point has a drainage outlet

Soil blockage

Reflection cracking/concrete patching

I-29/N/MP 58.95

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP58.95 Pottawattamie County
  - Traffic (AADTT): 2,575
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: IM-29-4(39)56

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP58.95, N/A

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 80% blockage (sediment block)
  - Water present inside outlet pipe: No
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - New HMA overlay


Sediment blockage


New HMA overlay

I-29/S/MP 60.35

- **Site information**
  - Route/Dir./MP/County: I-29/S/MP60.35 Pottawattamie County
  - Traffic (AADTT): 2,721
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1994
  - Construction project number: IM-29-3(38)58--13-78

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/26/2013
  - MP/GPS coordinate: MP60.35, N41(D)20(M)02(S) and W95(D)53(M)14(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 90% blockage (soil blockage)
  - Water present inside outlet pipe: Yes (free flowing)
  - Type of rodent guard: Gate
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: More than 30 degree
  - Slope condition at outlet: Downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - New HMA overlay


Soil blockage


New HMA overlay

I-29/N/MP 72.15

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP72.15 Pottawattamie County
  - Traffic (AADTT): 3,242
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: IM-29-4(39)56

- **Inspection location information**
  - Inspection location number: No. 1
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP72.15, N41(D)30(M)07(S) and W95(D)54(M)05(S)

- **Subdrain observation information**
  - Number of outlet pipe: 2
  - Type of outlet pipe: Corrugated steel
  - Size of outlet pipe: 6 inch
  - Condition of outlet pipe: 80% blockage (tufa blockage and damaged)
  - Water present inside outlet pipe: Yes (standing)
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: Yes
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Parallel/Less than 1-ft. downhill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - New HMA overlay

Tufa blockage/damaged outlet pipe

New HMA overlay

I-29/N/MP 74.82

- **Site information**
  - Route/Dir./MP/County: I-29/N/MP74.82 Pottawattamie County
  - Traffic (AADTT): 3,609
  - Pavement type: JPCP (11.5 in PCC/9 in Subbase)
  - Outside shoulder type: HMA
  - Subbase aggregate type: RPCC
  - Construction year: 1992
  - Construction project number: IM-29-4(39)56

- **Inspection location information**
  - Inspection location number: No. 4
  - Date of inspection: June/27/2013
  - MP/GPS coordinate: MP74.82, N41(D)32(M)14(S) and W95(D)55(M)03(S)

- **Subdrain observation information**
  - Number of outlet pipe: 1
  - Type of outlet pipe: Corrugated plastic
  - Size of outlet pipe: 4 inch
  - Condition of outlet pipe: 100% blockage (soil blockage and damaged)
  - Water present inside outlet pipe: No
  - Type of rodent guard: N/A
  - Tufa/Dead zone (due to tufa) present: No
  - Embankment slop condition: Less than 30 degree
  - Slope condition at outlet: Uphill

- **Pavement distress condition on inspection location**
  - No distress observed

- **Note**
  - New HMA overlay

Soil blockage/damaged outlet pipe

New HMA overlay