

Utility Crossing Inspection Program

DWR DMP Phase I Eligibility

Reference ID (DS_ID): 17369

Detailed Field Report

NON-URGENT

Date of Survey: 05/29/2024

Crossing Status: Found

(Installed)

Completed by: Jasraj Singh

Location

Sutter Maintenance Yard - (ST0003)

A. LMA Info: East Levee Sacramento River - Unit No. 01 Sacramento River

B. Waterway: Sacramento River - Left Bank

C. Levee Type: Non-Urban Levee

D. Current Levee Mile (CLM): 12.963

E. Historical Levee Mile (HLM): 12.962

F. GPS Coordinates: 39.300140, -122.013599

Structure Type

IRR - Irrigation

Accessible for viewing off River
Road, Colusa, CA

Other Information

A. Record Source:

12 : DWR Levee Log and USACE Operation and Maintenance Manual

B. Installed On/Before: 03/01/1960 [66 yrs]

C. Permit No: 9510

D. Related Permits: N/A

E. Issued To:

Helen May Forry
Route 1, Box 1815
Colusa 95932

Field Structure Description & Details

36-inch corrugated metal irrigation pipe through the levee, 18 feet below the crown. Slide gate in a 48-inch corrugated metal pipe (CMP) riser on the waterside (WS) slope. Concrete box on the WS. Pump mounted on the WS bank. (36-inch CMP with 36-inch CMP riser [HLM 12.95] authorized under Automatic Board Order (ABO) issued as Permit No. 9510, 1974 - Forry). [Additional Reference(s): DWR Levee Log, 2002 (HLM 13.01), listed as 36-inch CMP. USACE Sacramento O&M Manual, Unit 136, March 1960, Revised 29 Dec 2016, (HLM 12.95), listed as 36-inch pipe]. USACE As-Built Drawing No. 50-04-3510, 16 May 1960, Sheet 15.2, 167+66].

Utility Crossing Risk Reduction Efforts

Sponsor(s): DWR Deferred Maintenance Program

Evaluation: Video Internal Inspection

Date Performed: 11/07/2023

Pipe Segment: MH1 to WS

Results: Structural PACP LOF Grade 4

Recommendation: CIPP

Rehab Completion Date:

Date Performed: 11/07/2023

Pipe Segment: LS to MH1

Results: Structural PACP LOF Grade 4

Recommendation: CIPP

Rehab Completion Date:

Urgent Issue(s)

Non-Urgent Issue(s)

High Priority - (Monitor)

08/25/2025 (5) Pipe Damage - Pipe contains moderate defects. Soil loss adjacent to the pipe was not identified or suspected during inspection. Recommend performing proactive rehabilitation before conditions worsen. Continue monitoring the progression of the pipe conditions. Recommend another internal inspection in 5 years and periodic site visits.

11/12/2019 (6) Levee Damage or Threat for Levee Damage - Mild levee disturbance, less than 1/2-foot displacement, caused by surface erosion, scarp, cracking, or potential levee threat.

Low Priority - Paperwork/Compliance Issue

07/02/2024 (12b) Unauthorized Encroachment - Legacy crossing recorded in USACE O&M Manual or As-Built Drawings.

No Action Needed

Comments

08/25/2025 Record updated from Urgent to Non-Urgent. DMP internal video inspection has not found grade 5 structural defects. Crossing will be monitored until funding becomes available for rehabilitation. (O. Yakimov - DWR UCIP)

05/29/2024 Pipe remains urgent, severe erosion was noted at concrete box. (J. Singh - DWR UCIP)

01/31/2023 Record updated from Non-Urgent to Urgent. DMP internal video inspection has found pipe integrity issues. LOF of crossing is between 5 and 6. Crossing will be monitored until funding becomes available to address the issues. (O.Yakimov - DWR UCIP)

08/01/2019 Record has been downgraded from Urgent to Non-Urgent due to the proximity of the erosion present on the WS. Erosion at the surge box is still present (located away from WS toe). Recommend auditing this record to determine if ABO issued as permit number 9510 authorizes all appurtenances associated with this structure. Need to owner to address the erosion on WS toe. (O. Magana - DWR UCIP)

08/30/2018 Same as last inspection; erosion at surge box so crossing remains Urgent. (D. Sanoski - DWR UCIP)

04/20/2017 Erosion hole at WS surge box has gotten worse after the Jan/Feb 2017 high water event. Pipe also leaked which is believed to be caused by the screw gate not fully closing. (A. Freitag - DWR Sutter Yard)

10/31/2016 No repairs have been made here yet. Bad erosion still present at the WS toe distribution box. (A. Freitag - DWR Sutter Yard)

06/03/2016 Bad erosion still present all around the WS surge box. Pipes were flowing water at the time of inspection and the bottom of the erosion hole was wet and had standing water in it indicating a leak coming from the surge box. (A. Freitag - DWR Sutter Yard)

04/14/2016 Heavy scour still present around surge box on WS exposing pipe. Levee caved in and severely damaged around surge box. Erosion around CMP riser on WS cited previously not found. (K. Fazel - DWR UCIP)

04/02/2015 Pipe leaks during high water. It is suspected that the screw gate does not fully close and may need to be cleaned to allow it to close fully. (A. Freitag - DWR Sutter Yard)

07/02/2014 Same as last inspection. (A. Freitag - DWR Sutter Yard)

12/19/2013 Same as last inspection. (A. Freitag - DWR Sutter Yard)

07/23/2013 Water was flowing from the WS to LS ditch. Not sure where water flow was originating. All erosion problems are still present. (A. Freitag - DWR Sutter Yard)

12/10/2012 Soil erosion around CMP riser and surge concrete box on WS damaged due to overflow. Pump not found. Flap gate missing on WS concrete box. WS slope eroded. Structure might have been used as drainage structure. This needs to be determined during routine inspection. (P. Amatyia - DWR UCIP)

Utility Crossing Photos



05/29/2024 (ST0003U01 LM:12.963) : Veew of severe erosion at concrete box



05/29/2024 (ST0003U01 LM:12.963) : View at landside pipe opening



05/29/2024 (ST0003U01 LM:12.963) : View of landside



05/29/2024 (ST0003U01 LM:12.963) : View of levee crown



05/29/2024 (ST0003U01 LM:12.963) : View of waterside and CMP riser



11/12/2019 (ST0003U01 LM:12.963) : LS view: overview of LS.



11/12/2019 (ST0003U01 LM:12.963) : Overview of levee crown looking u/s towards pipe crossing.



11/12/2019 (ST0003U01 LM:12.963) : WS view: CMP riser located on WS slope.



11/12/2019 (ST0003U01 LM:12.963) : WS view: concrete vault with screen located on the WS toe.



11/12/2019 (ST0003U01 LM:12.963) : WS view: erosion associated with concrete box.



11/12/2019 (ST0003U01 LM:12.963) : WS view: inside view of CMP riser.



11/12/2019 (ST0003U01 LM:12.963) : WS view: leak visible on WS.



08/01/2019 (ST0003U01 LM:12.963) : WS view: pipe running during inspection (flow schematics).



08/30/2018 (ST0003U01 LM:12.963) : WS view: same massive erosion around concrete surge box.



08/30/2018 (ST0003U01 LM:12.963) : Crown view: no signs of levee threat.



08/30/2018 (ST0003U01 LM:12.963) : LS view: ditch looks same as last inspection.



04/20/2017 (ST0003U01 LM:12.963) : Erosion hole at WS surge box 4/20/2017



04/20/2017 (ST0003U01 LM:12.963) : Erosion hole at WS surge box 4/20/2017



04/20/2017 (ST0003U01 LM:12.963) : Erosion hole at WS surge box 4/20/2017



04/20/2017 (ST0003U01 LM:12.963) : View inside of WS surge box 4/20/2017



06/03/2016 (ST0003U01 LM:12.963) : WS slope: close-up view of scour hole at WS slope.



04/14/2016 (ST0003U01 LM:12.963) : View of LS slope above ditch.



04/14/2016 (ST0003U01 LM:12.963) : LS view of unlined ditch with water in it. (Electricity line runs parallel to levee toward solar panels)



04/14/2016 (ST0003U01 LM:12.963) : LS view: inside CMP outlet with some water in it.



04/14/2016 (ST0003U01 LM:12.963) : WS slope: riser with slide gate. Erosion around riser cited during previous visit appears to be fixed.



04/14/2016 (ST0003U01 LM:12.963) : WS slope: another view of scour hole



04/14/2016 (ST0003U01 LM:12.963) : WS slope: Massive erosion and scour hole on two sides of concrete surge box. Pipe exposed.



04/14/2016 (ST0003U01 LM:12.963) : WS slope: pipe visible inside concrete surge box (photo taken facing WS slope)



12/10/2012 (ST0003U01 LM:12.963) : LS view: outlet pipe on water transfer ditch



12/10/2012 (ST0003U01 LM:12.963) : LS view: overview of ditch



12/10/2012 (ST0003U01 LM:12.963) : WS view: CMP in surge box. Flap gate missing.



12/10/2012 (ST0003U01 LM:12.963) : WS view: CMP riser on levee slope.



12/10/2012 (ST0003U01 LM:12.963) : WS view: concrete surge box



12/10/2012 (ST0003U01 LM:12.963) : WS view: huge erosion around concrete surge box



12/10/2012 (ST0003U01 LM:12.963) : WS view: overview of concrete surge box



12/10/2012 (ST0003U01 LM:12.963) : WS view: soil erosion around CMP riser

Reference ID (DS_ID): 17340

Detailed Field Report

NON-URGENT

Date of Survey: 06/13/2024

Crossing Status: Found

(Installed)

Completed by: Jasraj Singh

Location

Sutter Maintenance Yard - (ST0003)

A. LMA Info: East Levee Sacramento River - Unit No. 01 Sacramento River

B. Waterway: Sacramento River - Left Bank

C. Levee Type: Non-Urban Levee

D. Current Levee Mile (CLM): 13.376

E. Historical Levee Mile (HLM): 13.373

F. GPS Coordinates: 39.306065, -122.013112

Structure Type

SD - Drainage (Storm Drain)

Accessible for viewing off River
Road, Colusa, CA**Other Information**

A. Record Source:

12 : DWR Levee Log and USACE Operation and
Maintenance Manual

B. Installed On/Before: 03/01/1960 [66 yrs]

C. Permit No: 9511

D. Related Permits: N/A

E. Issued To:

Roy A. Jr & Geraldine A. Moresco
Route 1, Box 1812
Colusa 95932**Field Structure Description & Details**

48-inch corrugated metal drainage pipe through the levee, 16.5 feet below the crown. Slide gate in a 60-inch corrugated metal pipe (CMP) riser on the waterside (WS) slope. Landside (LS) end of pipe on east side of River Road. (48-inch pipe [HLM 13.37] authorized under Automatic Board Order (ABO) issued as Permit No. 9511, 1974 - Ray A. Jr. and Geraldine A. Moresco). [Additional Reference(s): DWR Levee Log, 2002 (HLM 13.41), listed as an abandoned 48-inch pipe. USACE Sacramento O&M Manual, Unit 136, March 1960, Revised 29 Dec 2016, (HLM 13.37), listed as 48-inch pipe]. USACE As-Built Drawing No. 50-04-3510, 16 May 1960, Sheet 14.2, 145+83].

Utility Crossing Risk Reduction Efforts

Sponsor(s): DWR Deferred Maintenance Program

Evaluation: Video Internal Inspection

Date Performed: 11/07/2023

Pipe Segment: LS to MH1

Results: Structural PACP LOF Grade 4

Recommendation: Full Replacement

Rehab Completion Date:

Date Performed: 11/07/2023

Pipe Segment: MH1 to WS

Results: Structural PACP LOF Grade 4

Recommendation: Full Replacement

Rehab Completion Date:

Urgent Issue(s)**Non-Urgent Issue(s)***High Priority - (Monitor)*

10/21/2024 (5) Pipe Damage - Pipe contains moderate defects. Soil loss adjacent to the pipe was not identified or suspected during inspection. Recommend performing proactive rehabilitation before conditions worsen. Continue monitoring the progression of the pipe conditions. Recommend another internal inspection in 5 years and periodic site visits.

Low Priority - Paperwork/Compliance Issue

08/14/2019 (16) Abandoned Encroachment - Recommend LMA to prepare a contingency plan for increased inspections during high water to identify any pipe integrity or levee integrity issues that might arise with the abandoned pipe.

No Action Needed**Comments**

10/21/2024 Record updated from Urgent to Non-Urgent. LoF rating was changed due to the difference in CCTV operator opinion in severity of offset joint. (O. Yakimov - DWR UCIP)

06/13/2024 Pipe abandoned, capped on WS. Code 12b removed since LMA responsible pipe. (J. Singh - DWR UCIP)

08/01/2019 Record updated from Non-Urgent to Urgent. DMP internal video inspection has found pipe integrity issues. LOF of crossing is between 5 and 6, pipe has been abandoned, and ABO issued as permit number 9511. Recommend auditing this record to determine current owner and if crossing is no longer in use, the pipe will need to be removed or abandoned per Title 23. Board has been placed on WS outlet to prevent sediment buildup. (O. Magana - DWR UCIP)

04/20/2017 Abandoned- needs to be done properly. A oak tree has fallen down onto the WS pipe end. It does not appear to have damaged the pipe but it will need to be better inspected after the tree has been cleared away. (A. Freitag - DWR Sutter Yard)

10/31/2016 Abandoned. (A. Freitag - DWR Sutter Yard)

06/14/2016 Pipe was internally cleaned and camera inspected on 11-6-2015 by Nor-Cal Pipeline Services. The 48" cmp pipe section that runs through the levee was deemed to be in good condition. After the LS levee toe the pipe changes to a 48" concrete box culvert for under the roadway and that showed signs of some cracking. After the inspection the WS end was capped to keep sediment out until further abandonment can be achieved. (A. Freitag - DWR Sutter Yard)

04/16/2016 A wooden board has been placed on WS outlet of pipe to prevent sediment from entering pipe. This is a temporary repair measure by Sutter Yard until pipe can be grouted. Need to contact owner to ensure pipe's proper abandonment. Blockage of pipe outlet by wooden board or sediment will pose a hazard during high water. Pipe owner unclear, as landowner differs on LS and WS. (K. Fazel - DWR UCIP)

04/02/2015 Pipe has been selected for internal camera inspection. (A. Freitag - DWR Sutter Yard)

Outlet pipe silted on WS. Inlet structure damaged on LS. Not properly abandoned. (A. Freitag - DWR Sutter Yard)

07/02/2014 Same as last inspection. (A. Freitag - DWR Sutter Yard)

12/19/2013 Same as last inspection. (A. Freitag - DWR Sutter Yard)

07/23/2013 Same as last inspection. (A. Freitag - DWR Sutter Yard)

Utility Crossing Photos



06/13/2024 (ST0003U01 LM:13.376) : Landside pipe end



06/13/2024 (ST0003U01 LM:13.376) : View of capped pipe on WS



06/13/2024 (ST0003U01 LM:13.376) : View of landside



06/13/2024 (ST0003U01 LM:13.376) : View of levee crown



06/13/2024 (ST0003U01 LM:13.376) : View of waterside with CMP riser



08/01/2019 (ST0003U01 LM:13.376) : LS view: overview of LS.



08/01/2019 (ST0003U01 LM:13.376) : LS view: River Road located on LS toe.



08/01/2019 (ST0003U01 LM:13.376) : Overview of levee crown looking u/s towards pipe crossing.



08/01/2019 (ST0003U01 LM:13.376) : WS view: CMP riser with slide gate.



08/01/2019 (ST0003U01 LM:13.376) : WS view: overview of WS.



08/01/2019 (ST0003U01 LM:13.376) : WS view: overview of WS.



04/20/2017 (ST0003U01 LM:13.376) : Fallen oak tree over WS pipe end



04/20/2017 (ST0003U01 LM:13.376) : LS headwall across River road.



04/20/2017 (ST0003U01 LM:13.376) : View inside LS pipe end



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



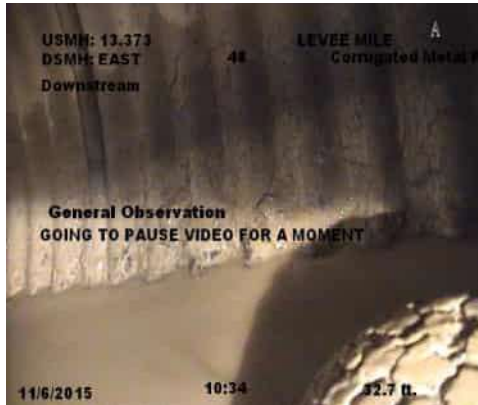
06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



06/16/2016 (ST0003U01 LM:13.376) : Snapshot from internal inspection performed by Nor-Cal Pipeline Services on 11/6/2015.



04/14/2016 (ST0003U01 LM:13.376) : Looking upstream from crown and facing LS.



04/14/2016 (ST0003U01 LM:13.376) : View up WS slope: sediment buildup against board covering pipe outlet. Board placed as a temporary fix.



04/14/2016 (ST0003U01 LM:13.376) : WS slope:
sediment buildup temporarily prevented from
entering WS pipe outlet by wooden board.



12/10/2012 (ST0003U01 LM:13.376) : LS view:
damaged concrete culvert across the road



12/10/2012 (ST0003U01 LM:13.376) : LS view:
inside concrete culvert



12/10/2012 (ST0003U01 LM:13.376) : LS view:
overview of county road



12/10/2012 (ST0003U01 LM:13.376) : WS view:
CMP riser with slide gate



12/10/2012 (ST0003U01 LM:13.376) : WS view:
overview of CMP riser and outlet pipe



12/10/2012 (ST0003U01 LM:13.376) : WS view:
silted concrete lined CMP outlet pipe

Utility Crossing Inspection Program

OMRR&R - LMA RESPONSIBILITY
DWR DMP Phase I Eligibility

Reference ID (DS_ID): 17345

Detailed Field Report

NON-URGENT

Date of Survey: 06/13/2024

Crossing Status: Found

(Installed)

Completed by: Jasraj Singh

Location

Sutter Maintenance Yard - (ST0003)

A. LMA Info: East Levee Sacramento River - Unit No. 01 Sacramento River

B. Waterway: Sacramento River - Left Bank

C. Levee Type: Non-Urban Levee

D. Current Levee Mile (CLM): 18.612

E. Historical Levee Mile (HLM): 18.653

F. GPS Coordinates: 39.362866, -121.997993

Other Information

A. Record Source:

12 : DWR Levee Log and USACE Operation and Maintenance Manual

B. Installed On/Before: 03/01/1960 [66 yrs]

C. Permit No: N/A

D. Related Permits: N/A

E. Issued To:

Structure Type

SD - Drainage (Storm Drain)

Accessible for viewing off River Road, Colusa, CA

Field Structure Description & Details

36-inch corrugated metal drainage pipe through the levee, 20 feet below the crown. Slide gate at the waterside (WS) toe. [Additional Reference(s): DWR Levee Log, 2002 (HLM 18.65), listed as an abandoned 36-inch CMP. USACE Sacramento O&M Manual, Unit 136, March 1960, Revised 29 Dec 2016, (HLM 18.65), listed as 36-inch pipe].

Utility Crossing Risk Reduction Efforts

Sponsor(s): DWR Deferred Maintenance Program

Evaluation: Video Internal Inspection

Date Performed: 11/07/2023

Pipe Segment: LS to WS

Results: Structural PACP LOF Grade 4

Recommendation: CIPP

Rehab Completion Date:

NO Riser - CIPP Lining only in area for nearby viewing

Urgent Issue(s)

Non-Urgent Issue(s)

High Priority - (Monitor)

08/25/2025 (5) Pipe Damage - Pipe contains moderate defects. Soil loss adjacent to the pipe was not identified or suspected during inspection. Recommend performing proactive rehabilitation before conditions worsen. Continue monitoring the progression of the pipe conditions. Recommend another internal inspection in 5 years and periodic site visits.

No Action Needed

Comments

08/25/2025 Record updated from Urgent to Non-Urgent. DMP internal video inspection has not found Grade 5 structural defects. Crossing will be monitored until funding becomes available for rehabilitation. (O. Yakimov - DWR UCIP)
09/25/2024 Record updated from No Action Needed to Urgent. DMP internal video inspection has found severe pipe defects. Crossing will be monitored until funding becomes available to address the issues. (M. Thao - DWR UCIP)
06/13/2024 Code 12b removed as LMA responsible pipe. (J. Singh - DWR UCIP)
08/05/2019 Crossing has been upgraded from No Action Needed to Non-Urgent; no permit has been identified for this crossing. Need to contact owner to determine primary use of pipe through the levee. Need to establish who own this crossing. (O. Magana - DWR UCIP)
04/20/2017 Crossing appears to be in good condition. (A. Freitag - DWR Sutter Yard)
11/01/2016 Crossing appears to be in good condition. (A. Freitag - DWR Sutter Yard)
06/16/2016 Pipe was internally cleaned and camera inspected on 11-19-2015 by Nor-Cal Pipeline Services. Pipe is 155ft in total length and the inspection showed some minor rusting but no holes or other deformations were found. Pipe is still used by the landowner for irrigation and the sloughing near the WS end was repaired and rockered to prevent future sloughing or erosion. (A. Freitag - DWR Sutter Yard)
04/14/2016 Sloughing repaired by Sutter Yard with rock revetment. (K. Fazel - DWR UCIP)
04/02/2015 Same as last inspection. Pipe has been selected for internal camera inspection. (A. Freitag - DWR Sutter Yard)
07/02/2014 Sloughing at outlet and levee slope is damaged due to sloughing. (A. Freitag - DWR Sutter Yard)
12/19/2013 Same as last inspection. (A. Freitag - DWR Sutter Yard)
07/24/2013 Same as last inspection. (A. Freitag - DWR Sutter Yard)
11/27/2012 It is not an abandoned crossing. Sloughing at outlet and levee slope is damaged due to sloughing. (P. Amatya - DWR UCIP)

Utility Crossing Photos



06/13/2024 (ST0003U01 LM:18.612) : Closer view of slide gate on WS



06/13/2024 (ST0003U01 LM:18.612) : View of crown



06/13/2024 (ST0003U01 LM:18.612) : View of landside and distribution box



06/13/2024 (ST0003U01 LM:18.612) : View of pipe in distribution box on landside



06/13/2024 (ST0003U01 LM:18.612) : View of waterside



08/05/2019 (ST0003U01 LM:18.612) : LS view: concrete structure located on LS.



08/05/2019 (ST0003U01 LM:18.612) : LS view: overview of LS.



08/05/2019 (ST0003U01 LM:18.612) : LS view: pipe visible on LS.



08/05/2019 (ST0003U01 LM:18.612) : LS view: power meter and concrete structure located on the LS.



08/05/2019 (ST0003U01 LM:18.612) : Overview of levee crown looking d/s towards pipe crossing.



08/05/2019 (ST0003U01 LM:18.612) : Overview of levee crown looking u/s towards pipe crossing.



08/05/2019 (ST0003U01 LM:18.612) : WS view: close up of the slide gate.



08/05/2019 (ST0003U01 LM:18.612) : WS view: inside view of pipe from WS.



08/05/2019 (ST0003U01 LM:18.612) : WS view: overview of WS.



08/05/2019 (ST0003U01 LM:18.612) : WS view: slide gate visible on WS.



04/14/2016 (ST0003U01 LM:18.612) : WS slope: slight borrowing activity



04/14/2016 (ST0003U01 LM:18.612) : WS slope: rock revetment placed along slide gate to repair sloughing.



11/27/2012 (ST0003U01 LM:18.612) : LS view: inlet structure



11/27/2012 (ST0003U01 LM:18.612) : LS view: overview



11/27/2012 (ST0003U01 LM:18.612) : LS view: soil deposite in inlet box



11/27/2012 (ST0003U01 LM:18.612) : LS view: wooden gate at inlet box.



11/27/2012 (ST0003U01 LM:18.612) : WS view: damaged levee slope



11/27/2012 (ST0003U01 LM:18.612) : WS view: outlet pipe with concrete headwall and floor apron.



11/27/2012 (ST0003U01 LM:18.612) : WS view: overview of sliding gate structure



11/27/2012 (ST0003U01 LM:18.612) : WS view: sloughing at outlet pipe