PRJ # EM-P 4411 (01)	**PCN:** 00RV	**Date:** 7/15/2013	**Year Constructed:** 2010
County: Codington		**Structure Location:** 15-202-190	
Assessed By: Sangl, Lunde		**Stream Name:** Willow Creek	

Structure Type	Number of Barrels X Width (ft) X Height (ft)
Box	
Arch	
Pipe Diameter	
[1]Bridge	42'-8" X 100'
[1] *Bridge Deck Length X Width*	

Structure Shape Comments			
Inlet Type		**Outlet Type***	
Projecting		At Stream Grade	
Wing wall		Cascade over Riprap	
Headwall		Free Fall into Pool	
Apron		Free Fall Onto Rip Rap	
Riprap		Apron	
Other:		Other:	

Rapid Visual Assessment:

Observation	**Y / N N.A.**
1. The structure is installed generally in accordance with plans (height, width, elevation, location, etc…) *This item to be completed on initial survey only.*	Y
2. Overall structure width is wider than the average stream widths upstream and downstream .	Y
3. Natural streambed material exists throughout structure (i.e. countersunk approximately 1 foot)	N.A.
4. Stream channel is free of scour activity that may impede fish passage.	Y
5. A natural low flow channel exists through the structure or if not the streambed surface within the structure simulates the streambed beyond the structure inlet and outlet similar to design conditions.**	Y
6. Stream is free of channelizing along the surface of the structure.**	Y
7. Up & downstream channel appears stable (no apparent erosion).	Y
8. Vegetation is/has reestablished on the stream banks within the construction area.	Y

Field Measurements:

Stream Depth and Velocities at Structure***

Location	**Left**		**1/4 Pt**		**1/2 Pt**		**3/4 Pt**		**Right**		**Thalweg**	
	Depth	Vel.	Depth	Vel.	Depth	Vel.	Depth	Vel.	Depth	Vel.	Depth	Vel.
Inlet												
Outlet												
MidStr												
7xW UpStrm												
7xW DwnStrm												

Describe observations used in making above determinations. Describe whether unusual channelizing exists within the structure or stream. Note other unique site conditions that may/may not warrant corrective actions. Document with additional photographs if needed.

- Some rip-rap in stream could create a problem during a lower water flow. Pictures were taken to assess the situation downstream from the bridge.

No other problems were noticed.

*** Document any potential fish passage barriers. ** If 'NO' is checked for Observation 5 or 6, additional field observation & measurements may be required. Refer to section 'Stream Crossing Section' in the Monitoring Protocol for additional measurements and evaluation procedures. Figs 1-4 are included for ease of reference. *** Velocities are to be taken 0.6 times the total depth measured from the water's surface. Refer to Figure 5.**

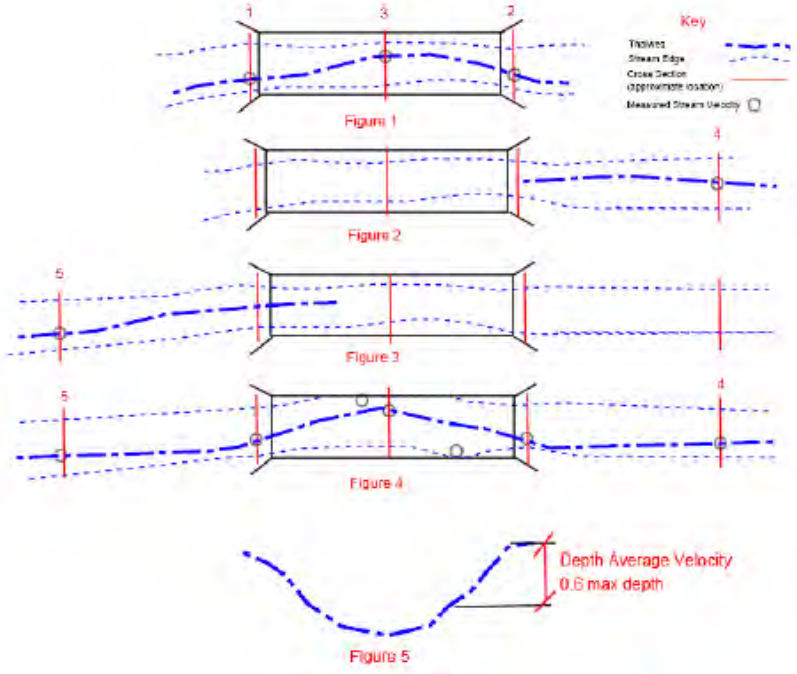
Photos				Location Description (optional)
	N W E S	Latitude	Longitude	Include description of photograph location for future reference. Photos should include: approximately 7xW upstream/downstream from structure in the direction of the structure showing undisturbed channel beyond the construction limits, the upstream/downstream channel disturbed by the project, and the structure inlet and outlet.
Upstream				
1	100-2696	44.876575	-97.083687	Bridge facing upstream
2	100-2701	44.877153	-97.083542	Upstream facing bridge
Downstream				
3	100-2695	44.876457	-97.083768	Bridge facing downstream
4	100-2698	44.875959	-97.083542	Downstream facing bridge
Other (optional)				
5	100-2697	44.876348	-97.083779	Rip-rap downstream from bridge (facing east from west side)
6	100-2699	44.876348	-97.083689	Flow on east side of rip-rap
7	100-2700	44.876348	-97.083689	Flow on west side of rip-rap
8				

REPORT FINDINGS

Per 4/11/2013 Mon. Report Mtg: "excess riprap needs to be removed".

**Based on 2013 re-monitoring, fish passage may not be hindered - suggest re-checking site in 2014. -CO/RH

Figures 1-5



From bridge facing upstream
44.876575 / -97.083687
7/15/2013

Upstream facing bridge
44.877153 / -97.083542
7/15/2013

From bridge facing downstream

44.876457 / -97.083768

7/15/2013

Downstream facing bridge
44.875959 / -97.083542
7/15/2013

Rip-rap downstream from bridge (facing east from west side of stream)
44.876348 / -97.083779
7/15/2013

Flow on east side of rip-rap
44.876348 / -97.083689
7/15/2013

Flow on west side of rip-rap
44.876348 / -97.083779
7/15/2013