





Photograph 5: KM16.3, Upstream Ends of 3 CSP Culverts from Front to Back of Photo: 1000 mm, 700 mm, and 1300 mm Ø Looking South (20 September 2017)



Photograph 6, 1 and 8: 3 CSP culverts at KM 16.3 from Upstream Looking Downstream. Good Condition, some Clear Flow in 1300 mm Ø Culvert. Good condition and no Flow for the 700 mm Ø (middle) and 1000 mm Ø (right) Culverts. (20 September 2017)





Photograph 9: Downstream Ends of Three CSP Culverts at KM16.3. Small Flow in 1300 Ø Culvert, Minor Deformation of End of Culvert. Small Erosion Visible at Outlet (20 September 2017)



Photograph 10: Road Over 3 CSP Culverts, at KM16.3 Looking North (20 September 2017)







Photograph 11: View of Upstream Ends of Two CSP Culverts at KM18.1, Upper is 900 mm  $\varnothing$  and the Lower is 1000 mm  $\varnothing$ , Looking North to Single 600 mm  $\varnothing$  CSP at KM18.15 in Background of Photo. Cover Over Upper (900 mm  $\varnothing$ ) Culvert is Thin on Upstream Side (20 September 2017)

Photographs 11 to 14 were taken at KM18.1. There are 2 vertically offset, CSP culverts the upper culvert is 900 mm Ø and the lower culvert is 1000 mm Ø. Note that the road near KM18.1 would need to almost be flooded to reach inlet of 900 mm Ø culvert. If water management in this area is a problem, suggest installing second culvert at a lower elevation. A ditch on the upstream side hydraulically connects the culverts at KM18.1 to culvert at KM18.15.



Photograph 12: View Through 1000 mm Ø CSP Culvert at KM18.1 From Upstream Side. Some Damage to Inlet of Culvert (20 September 2017)







Photograph 13: Downstream View of Two CSP Culverts at KM 18.1 (20 September 2017)



Photograph 14: Downstream Ends of the Two CSP Culverts at KM 18.1 (20 September 2017)







Photographs 15 to 19 taken at KM18.15 where there is a single 600 mm Ø CSP culvert.

Photograph 15: Upstream End of 600 mm Ø CSP Culvert at KM18.15 (20 September 2017)



Photograph 16: View through 600 mm Ø CSP Culvert at KM18.15 from Upstream end (20 September 2017)







Photograph 17: View of The Road Embankment North of Upstream End Of 600 Mm  $\varnothing$  CSP Culvert at KM18.15. Some Erosion Observed on Embankment (20 September 2017)



Photograph 18: Downstream End of 600 mm Ø CSP Culvert at KM18.15 (20 September 2017)







Photograph 19: Road Surface Looking North from 600 mm Ø CSP Culvert at KM18.15 (20 September 2017).



Photograph 20: KM21.7, View of the Upstream Ends of Pipes (20 September 2017)

Photographs 20 to 23 were taken at KM21.7. There are two 170 mm outside Ø pipes, vertically offset. AEM inspections note water ponding at or over road in this area during freshet. There is evidence of high water surrounding the area, the capacity of the pipes may be inadequate, or pipes could have been frozen/blocked causing water to backup.







Photograph 21: Looking through Upper Pipe at KM21.7 (20 September 2017)



Photograph 22: Looking through Lower Pipe at KM21.7 (20 September 2017)







Photograph 23: Downstream View of the Pipes at KM21.7 (20 September 2017)



Photograph 24: KM22.3, There are Two Steel Pipes Vertically Offset, 160 Mm  $\emptyset$ . Looking at Upstream Ends. Inlets are Elevated, Could Be Installed at a Lower Elevation to Reduce Ponded Water Along Road (20 September 2017)

Photographs 24 26 through 98 were taken at KM22.3. There are two steel pipes vertically offset, 160 mm Ø. Both pipes were clear with no flow. AEM inspection reports note water ponding at or over road in this area during freshet. The capacity of the pipes may be inadequate, or pipes could have been frozen/blocked causing water to backup.







Photograph 25: Downstream End of Pipes at KM22.3 (20 September 2017)



Photograph 26: Road Surface North of The Steel Pipes at KM22.3 Looking North (20 September 2017)







Photographs 27 to 29 were taken at KM22.7. Ponded water, no culvert.

Photograph 27: Ponded Water on East Side of the Road Near KM22.7 (22 September 2017)



Photograph 28: Wet Ground on West side of Road Indicating Possible Seepage through Road Near KM22.7 (22 September 2017)







Photographs 29 through 32 were taken at KM25.8. HDPE corrugated 600 mm Ø culvert. Minor flow, some gravel in the base of the culvert and minor dents. Erosion observed on road embankment.

Photograph 29: Upstream end of HDPE Corrugated 600 mm Ø Culvert at KM25.8 (22 September 2017)



Photograph 30: Looking at the Inlet of the Culvert from Upstream to Downstream, 600 mm Ø HDPE, at KM25.8 (22 September 2017)

