



Appendix 1

Field Review Memorandum and Photo Log





MEMORANDUM

Physical Address:
104 East Broadway
Suite G-1
Helena, Montana 59601

Mailing Address:
P.O. Box 1009
Helena, Montana 59624

Phone: (406) 442 - 0370 Fax: (406) 442 - 0377

To: Sheila Ludlow
MDT Project Manager

From: Sarah Nicolai
DOWL HKM Project Manager

Date: December 19, 2011

Subject: **Summary of Field Review Conducted on October 26, 2011**
US 2 - Badrock Canyon Corridor Planning Study

DOWL HKM conducted a field review of the study corridor on October 26, 2011. This summary lists potential constraints observed in the field during the review, although it should not be considered a comprehensive account of all constraints within the corridor. Constraints are listed progressing west to east from Reference Post (RP) 140.0 to RP 142.4 under each category. RP and Station (Sta.) locations are approximated. Potential constraints were visually inspected; no testing or detailed inspections were conducted.

DOWL HKM visually inspected the following features and constraints.

Culverts & Drainage Features

- Single 18-inch corrugated metal pipe (CMP) running underneath US 2 at RP 140.1 (Sta. 21). Photo 3.
- Two 18-inch CMP culverts running underneath US 2 at RP 140.8 (Sta. 55). Photo 17.
- Drainage issues associated with Berne Memorial Park spring. RP 140.8 (Sta. 56). Photo 19.
- Single 18-inch CMP (approximately sixty percent buried) running underneath US 2 at RP 141.3 (Sta. 73). Photos 28 and 29.
- Roadside drainage issues along south side of US 2 looking west. RP 140.6 (Sta 47). Photos 9.
- Roadside drainage issues along south side of US 2 looking west. RP 140.8 (Sta 56). Photos 19.
- Roadside drainage issues along south side of US 2 looking west. RP 141.3 (Sta 75). Photos 30 and 31.

Wildlife Issues

- Wildlife crossing sign at RP 140.3 (Sta. 29). Photo 6.
- No animal carcasses were observed during the field review.

Utility Lines and Facilities / Access Roads

- Power lines parallel US 2 to the south atop the rock outcroppings over the entire corridor. Photos 5, 9, 24, 39 and 40.
- A narrow unpaved road is connected to a roadside pullout at RP 141.1 (Sta. 75). Road appears to provide access to power lines that run parallel to US 2 to the south.
- A fiber optics line runs parallel to US 2 to the south throughout the corridor. Markers were noted at RP 140.9 (Sta. 57) and RP 141.8 (Sta. 112). Photos 21 and 37.
- A gas transmission line runs parallel to US 2 to the south throughout the corridor. Markers were noted at RP 141.7 (Sta. 111) and RP 141.8 (Sta. 112). Photos 34, 35 and 37.
- Access road on south side of US 2 at RP 141.8 (Sta. 114). Photo 38.
- Substation located on south side of US 2 at RP 141.8 (Sta. 117). Photo 39.

Geologic Features

- Unstable geologic features on the south side of US 2 at RP 140.6 (Sta. 47). Photo 8.
- Culturally significant rock outcroppings on the south side of US 2 begin at 140.6 (Sta. 44) and extend to 141.1 (Sta. 73). Photos 8 to 14 and 23 to 25.

Recreational Features

- National Forest recreational sign located off of US 2. RP 140.1 (Sta. 20). Photo 2.
- National Forest trailhead located off of Berne Road. RP 140.3 (Sta. 29). Photo 7.
- Fisherman's Rock on the north side of US 2 at RP 140.7 (Sta. 54). Photos 14 and 15.
- Roadside pullout located on the south side of US 2. The pullout serves as an entrance to Berne Memorial Park and provides access to a spring. RP 140.6 to 140.7 (Sta. 55 to 63). Photos 18, 19, 20, and 22.
- Roadside pullout located on south side of US 2 at RP 141.3 (Sta. 75). Photos 30 and 31.
- Recreational access to the Flathead River on north side of US 2 at RP 141.7 (Sta. 111). Photo 34.

Geometric Features

- Steep side slopes transition into the Flathead River at RP 140.3 (Sta. 30) to RP 140.7 (Sta. 60). Photos 9 to 11.
- Horizontal and vertical curves at RP 141.2 (Sta. 70) and RP 141.3 (sta. 77 to 82). Photos 27, 32, and 33.

Bridges

- Remnants of what appears to be a former bridge across the Flathead River. RP 141.7 (Sta. 111). Photo 36.
- Existing bridge over the South Fork of the Flathead River. Built in 1938 with a bridge deck 26 feet wide. RP 142.1 (Sta. 125). Photos 40 and 41.

Other Features

- Railroad running parallel to US 2 on the north side of the Flathead River. RP 141.1 (Sta. 67). Photo 26.



PHOTO LOG

PREPARED FOR:



PREPARED BY:



104 East Broadway, Suite G-1

P.O. Box 1009

Helena, Montana 59624

(406) 442-0370

December 2011

The photos contained within this photo log illustrate potential constraints observed in the field during a field review conducted on October 26, 2011. Photos are numbered in chronological order progressing west to east. Reference Post (RP) and Station (Sta.) locations are approximated. This photo log does not provide a comprehensive account of all constraints within the corridor. Potential constraints were visually inspected; no testing or detailed inspections were conducted.



Photo 1. Looking east on the north side of US 2 at a recreational access point. RP 140.1 (Sta. 20).



Photo 2. National Forest recreational sign located off of US 2. RP 140.1 (Sta. 20).



Photo 3. Single 18-inch corrugated metal pipe (CMP) on south side of US 2 at RP 140.1 (Sta. 21).



Photo 4. Open pasture south of US 2. RP 140.1 (Sta. 20).



Photo 5. Power lines parallel US 2 to the south atop the rock outcroppings over the entire corridor. RP 140.1 (Sta. 20).



Photo 6. Wildlife crossing sign located on north side of US 2. RP 140.3 (Sta. 29).



Photo 7. National Forest trailhead sign located off of Berne Road. RP 140.3 (Sta. 29).



Photo 8. Unstable geologic features south of US 2. Potential for falling rock. RP 140.6 (Sta. 47).



Photo 9. Looking east on the north side of US 2. Snow and ice on outcroppings to the south of US 2 may cause drainage issues. RP 140.6 (Sta. 47).



Photo 10. West outcropping along the south side of US 2, steep slope adjacent to river on the north side, and sharp horizontal curve. RP 140.7 (Sta. 50).



Photo 11. Steep slope adjacent to river on the north side of US 2. RP 140.7 (Sta. 50).



Photo 12. Icing on west outcropping on south side of US 2. RP 140.7 (Sta. 50).



Photo 13. Spring dedication sign on south side of US 2. RP 140.7 (Sta. 50).



Photo 14. Looking west on the north side of US 2 at Fisherman's rock. RP 140.7 (Sta. 54).



Photo 15. Looking north on the north side of US 2 at Fisherman's rock. RP 140.7 (Sta. 54).



Photo 16. Looking north on the south side of US 2 at foundation for former rest area. RP 140.7 (Sta. 54).



Photo 17. Two 18-inch CMP culverts south of US 2. RP 140.8 (Sta. 55).



Photo 18. South of US 2 looking at the Berne Memorial Park spring. RP 140.8 (Sta. 56).



Photo 19. Drainage issues associated with Berne Memorial Park spring. RP 140.8 (Sta. 56).



Photo 20. South of US 2 looking at original water fountain at Berne Memorial Park. Fountain is no longer in use. RP 140.8 (Sta. 56).



Photo 21. Fiber optic marker at east pullout. RP 140.9 (Sta. 57).

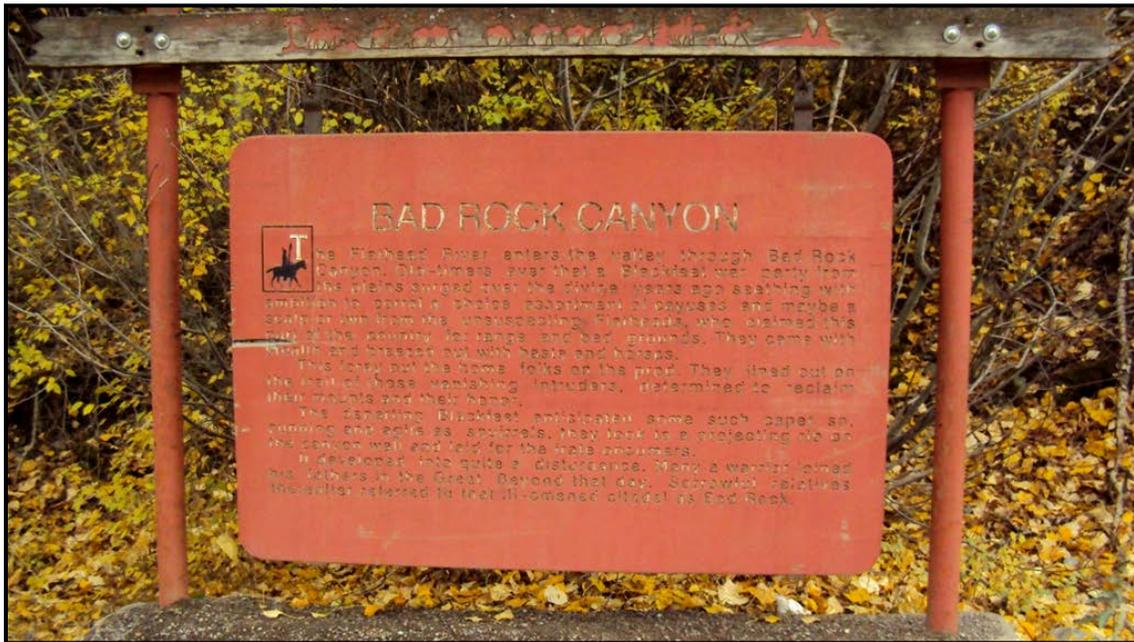


Photo 22. Badrock Canyon historical point sign on south side of US 2. RP 140.9 (Sta. 57).

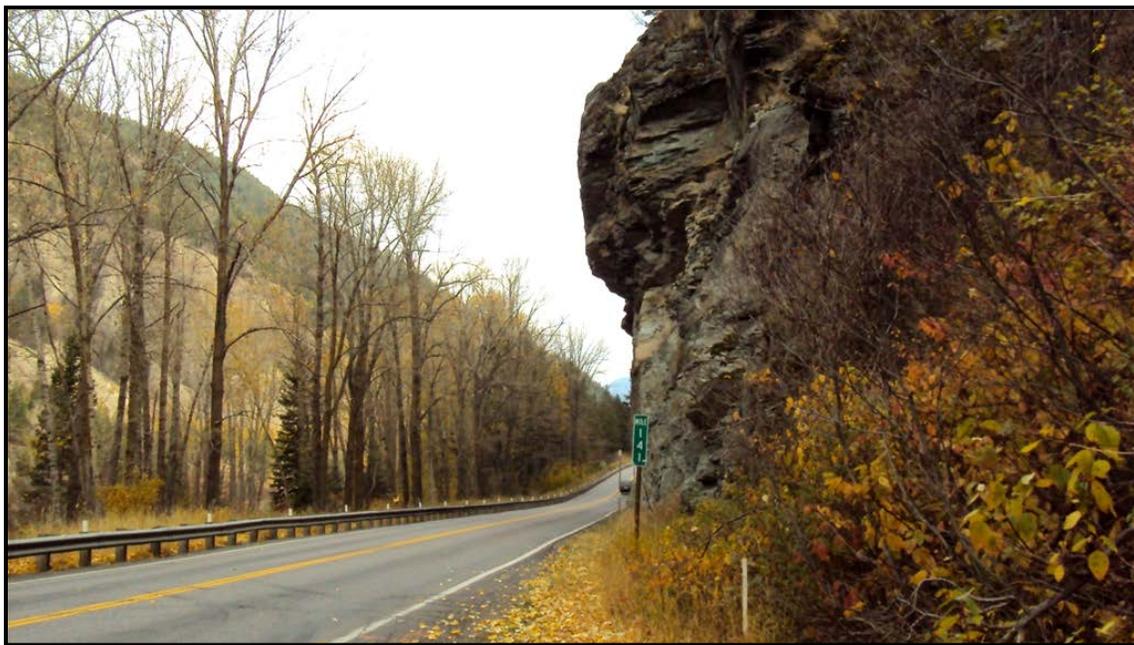


Photo 23. Reference Post 141 marker and east outcropping. RP 141.0 (Sta. 65).



Photo 24. Reference Post 141 marker, power lines overhead, and east outcropping. Potential for falling rock. RP 141.0 (Sta. 65).



Photo 25. Evidence of water flow at east outcropping on the south side of US 2. Potential for falling rock. RP 141.1 (Sta. 67).



Photo 26. Looking north on the north side of US 2 at a freight train running parallel to US 2 from across the Flathead River (north side). RP 141.1 (Sta. 67).



Photo 27. Looking east at a horizontal and vertical curve and a 45 mph warning sign. RP 141.2 (Sta. 70).



Photo 28. Single 18-inch CMP (approximately sixty percent buried) on the north side of US 2. RP 141.3 (Sta. 73).



Photo 29. Single 18-inch CMP (approximately sixty percent buried) with minimal cover beneath roadbed on the south side of US 2. RP 141.3 (Sta. 73).



Photo 30. Looking northwest on the south side of US 2 at the east pullout. Roadside drainage issues are visible alongside the south side of the road. RP 141.3 (Sta. 75).



Photo 31. Roadside drainage issues along south side of US 2 looking west at the east pullout. RP 141.3 (Sta. 75).



Photo 32. Horizontal curve and extended snow reflectors. RP 141.3 (Sta. 77).



Photo 33. Looking west on the south side of US 2 at a horizontal and vertical curve. RP 141.3 (Sta. 82).



Photo 34. Looking north on the north side of US 2 at a recreational access point and the Flathead River. The red pole is a gas utility marker. RP 141.7 (Sta. 111).



Photo 35. Natural gas pipeline marker on north side of US 2 off of boat access road to the river. RP 141.7 (Sta. 111).



Photo 36. Looking north at a former bridge crossing. The concrete foundation of the former bridge can be seen. RP 141.7 (Sta. 111).



Photo 37. Fiber optics line and natural gas pipeline utility markers. RP 141.8 (Sta. 112).



Photo 38. Looking south west on the south side of US 2 at a utility access road. RP 141.8 (Sta. 114).



Photo 39. Substation located on south side of US 2. RP 141.8 (Sta.117).



Photo 40. Looking west at the narrow bridge deck over the South Fork of the Flathead River. RP 142.0 (Sta. 120).



Photo 41. Looking east under the bridge over the South Fork of the Flathead River that is showing signs of corrosion. RP 142.1 (Sta. 129).