

Oregon Department of Transportation --Central Oregon Rail Project
 Alternate 'A' -- Redmond / Bend Track and Crossing Cost

11/4/2009



RAILROAD CROSSING DATA										RAILROAD TRACK SEGMENT DATA							COMMENTS			
Crossing No.	Name of Crossing	Over RR or Under RR	Extg Rdwy Width, ft	New Rdwy Width, ft	Skew Degrees	Span Length	Bridge/Crossing Cost	Approach Cost	Utility + 60% E&C Bridge/Crossing	Track Segment ID	Cut(cy)	Fill(cy)	Track(tf)	Total Track Cost	No. 24 Mainline Turnout	60% E&C Trackwork	Total Cost (in millions)			
BNSF Mainline Tie (North)															\$1.0	\$0.5	\$1.5			
	North Tie																			
118/119	Kings Way/Pilot Butte Canal	Under	NA	15	na	na	\$1.5	\$0.0	\$0.8	North Tie to 118/119	6,778	3,014	2,740	\$0.7		\$0.3	\$1.0			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
										118/119 to 111	408,913	387,546	17,819	\$17.1		\$8.6	\$25.7			
117	COID Lateral						\$0.80		\$0.4								\$1.2			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
114	COID Lateral						\$0.80		\$0.4								\$1.2			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
113	COID Lateral						\$0.80		\$0.4								\$1.2			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
111	Maple Ave./ Negus Ave.	Over	24'	86'	45	145'	\$2.1	\$10.3	\$7.5								\$19.9			roadway realigned. Standard Overcrossing is feasible.
101	Antler Ave.	Over	NA	86'	30	115'	\$1.6	\$10.3	\$7.2								\$19.1			There is no existing road, but city plans to extend Antler to the east. Standard Overcrossing is feasible.
99	Hwy 126	Over	32' Or 36'	86'	30	115'	\$1.6	\$10.3	\$7.2								\$19.1			Road is tangent. Standard overcrossing is feasible.
										111 to 91	0	68,552	2,432	\$1.5		\$0.7	\$2.2			
91	N. Unit Main Canal	Under	NA	15	na	na	\$1.5	\$0.0	\$0.8								\$2.3			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
88,89, 127	SW McCaffery	Over	18' gravel	24'	0	100'	\$0.4	\$2.2	\$1.7								\$4.3			Realign roads so that one structure carries all. Standard overcrossing is feasible.
76	Hornor Rd	Over	28'	86'	20	107'	\$1.5	\$10.2	\$7.1								\$18.8			Road is tangent. Standard overcrossing is feasible.
71 & 72	Morrill Rd	Over	28'	86'	0	100'	\$1.4	\$10.2	\$7.0								\$18.6			Realign roads so that one structure carries all. Standard overcrossing is feasible.
70	Powell Butte Hwy	Over	28'	86'	45	145'	\$2.1	\$10.3	\$7.5								\$19.9			Road is tangent. Standard overcrossing is feasible.
56	Alfalfa Market Rd.	Over	28'	86'	0	100'	\$1.4	\$10.2	\$7.0								\$18.6			Road is tangent. Standard overcrossing is feasible.
142	Bear Creek Rd.	Over	18' gravel	24'	0	100'	\$0.4	\$2.2	\$1.7								\$4.3			Road is tangent. Standard overcrossing is feasible.
										91 to 140	125,510	1,349,711	80,963	\$36.9		\$18.5	\$55.4			
140	Central Oregon Irrigation District Canal	Under	NA	15	na	na	\$1.5	\$0.0	\$0.8								\$2.3			Canal crossing - Buried 8 to 11 ft. diameter irrigation pipe with 15 ft. x 18 ft. box cluvert for maintenance road.
139	US Hwy 20	Over	40'	86'	17	105'	\$1.5	\$10.2	\$7.1								\$18.8			Road is tangent. Standard overcrossing is feasible.
135	Rickard Rd.	Over	20' gravel	24'	0	100'	\$0.4	\$2.2	\$1.7								\$4.3			Realign Road to 90 degree crossing. Standard crossing is feasible.
21	Calgary Drive	Under	24'	45'	0	100'	\$2.9	\$0.0	\$1.8								\$4.7			Assume 100 ft span length with vertical abutments.
										140 to 20	2,108,278	1,179,292	36,370	\$66.2		\$33.1	\$99.3			
20	Ravine	Under	NA	45'	0	200'	\$5.7	\$0.0	\$3.5								\$9.2			Assume 200 ft bridge length, using most economical span lengths.
17	Horse Butte Rd	Over	18' Gravel	24'	0	100'	\$0.4	\$2.2	\$1.7								\$4.3			Realign Road to 90 degree crossing. Standard crossing is feasible.
5	China Hat Rd	Over	24'	86'	25	110'	\$1.6	\$10.2	\$7.2								\$19.0			Road is tangent. Standard overcrossing is feasible.
2	Scale House Rd.	Over	20'	86'	35	125'	\$1.8	\$10.2	\$7.3								\$19.3			Road is tangent. Standard overcrossing is feasible.
										20 to 1	2,314,393	1,848,067	41,456	\$81.3		\$40.6	\$121.9			
1	Hwy 97	Under	NA	45'	75	150'-150'	\$9.40	\$0.0	\$5.8								\$15.2			The entrance to the High Desert Museum is located at the low point of the highway profile. It is assumed that this entrance will be moved to the south so that the undercrossing can be located at the low point to avoid raising the RR grade any more than necessary.
										1 to South Tie	8,575	27,267	1,919	\$0.9		\$0.5	\$1.4			
BNSF Mainline Tie (South)															\$1.0	\$0.5	\$1.5			
South Tie																				
Subtotal											4,972,446	4,863,448	183,699	\$204.5	\$2.0	\$103.3	\$557.5			
LUMP SUM ITEMS																				
Right of Way Fence																		\$7.3		
10000 LF siding connected to mainline with 2 No 15 Turnouts																		\$9.8		
Clear and Grub																		\$32.0		
Grand Total																		\$606.7		
Note: Cost estimates for the crossing structures were predicated on the assumption that cast-in-place abutments and pre-cast (typical bulb-tee section) girders would be used.																				
Cost Assumptions:											Design Assumptions									
Cut - \$20 cu. yd.											Cut and Fill numbers represent a double track subgrade and a 13' access road.									
Fill - \$15 cu. yd.											Track numbers represent a single track installation.									
Clear and Grub - \$13.00 s.y											All vertical data compiled from GIS information provided by Deschutes County.									
Structures - \$635 sq. ft.											Overhead power line clearances meet UPRR and Bonneville Power Company standards in their present location									
Track (including subballast, ballast, ties, rail & OTM) - \$175 TF											Utility relocations are not part of track estimate									
Right of Way Fence - \$20 LF											All cuts are assumed to be rock cuts.									
10000 LFsiding connected to mainline with 2 No 15 Turnouts (switches) - \$3,250,000											BNSF requires a 10,000 LF siding be installed at 10 mile intervals									
No 24 Mainline Turnout (switch) - \$1,000,000																				