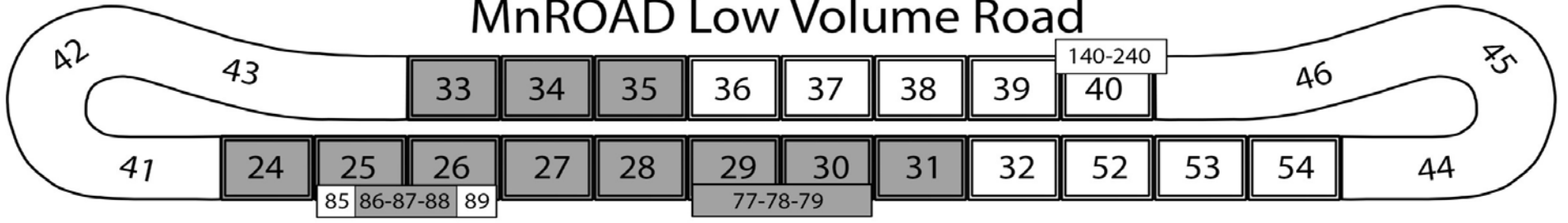


MnROAD Low Volume Road



West Loop			North Side Cells									East Loop			
ASR Concrete Testing (West Loop)			Acid Modified			Original PCC			Pervious Overlay	Unbonded Concrete Overlay		ASR Concrete Testing (East Loop)			
41	42	43	33	34	35	36	37	38	39	140	240	46	45	44	
12" Trans Tined 12x15 1" Dowels	12" Trans Tined 12x15 1" Dowels	12" Trans Tined 12x15 1" Dowels	4" 58-34 PPA 12" Class 6	4" 58-34 SBS+PPA 12" Class 6	4" 58-34 SBS 12" Class 6	6" Trans Tined 15x12 1" dowel 5" Class 5 Sand	6" Trans Tined 12x12 5" Class 5 Sand	6" Trans Tined 15x12 1" dowel 5" Class 5 Clay	4" Perv Overlay 6" 20x12 1" dowel 5" Class 5 Clay	3" UBOL* thin fabric 5.5"-7.0" Trans Tined 15x12 5" Class 5 Clay 6x6 panels Fiber PCC Long Tined	3" UBOL* std fabric 5.5"-7.0" Trans Tined 15x12 5" Class 5 Clay 6x6 panels Fiber PCC Long Tined	12" Trans Tined 12x15 1" Dowels	12" Trans Tined 12x15 1" Dowels	12" Trans Tined 12x15 1" Dowels	
Clay	Clay	Clay	Clay	Clay	Clay	Clay	2007 PCC Grind Strips	Clay	Clay	Clay	Clay	Clay	Clay	Clay	
Jul 93	Jul 93	Jul 93	Sep 07	Sep 07	Sep 07	Jul 93	Jul-93	Jul 93	Oct 08	Jul 13	Jul 13	Jul 93	Jul 93	Jul 93	
Inside Cell (ft) 491	490	508	500	499	499	480	504	480	440	225	234	508	489	442	
Inside Gap 179	97	147	175	71	54	132	41	42	67	67	0	108	98	146	0
Outside Gap 179	102	152	175								108	102	153	0	
Outside Cell (ft) 510	510	494										493	511	463	

Aging Study	Pervious & Porous Pavements					G CBD Fabric	Stabilized Full Depth Reclamation				Mesabi Rock	Concrete Initiatives			Mesabi Rock	
	24	85	86	87	88	89	27	28	77	78	79	31	32	52	53	54
	3" 58-34 4" Class 6 Sand	7" Pervious PCC 4" RR Ballast 8" CA-15 Type V Geo-Textile Sand	5" Porous HMA 4" RR Ballast 10" CA-15 Type V Geo-Textile Sand	4" Control 4" Mesabi Ballast 11" CA-15 Type V Geo-Textile Clay Sand	5" Porous HMA 4" RR Ballast 10" CA-15 Type V Geo-Textile Clay	7" Pervious PCC 4" RR Ballast CA-15	2" 52-34 2" 58-34 6" Class 5 G CBD 2009 Chip Seal 7" Clay Borrow Clay	6" SFDR + Chip Seal 4" Class 5 7" Clay Borrow Clay	4" 58-34 Elvaloy + PPA 8" FDR Clay	4" 58-34 Elvaloy + PPA 8" Class 6 Clay	4" 58-34 Elvaloy + PPA 8" FDR + Fly Ash Clay	4" 64-34 4" Class 5 12" Class 3 Clay	5" Astro Turf 10x12 Class 1f 6" Class 1c Clay	7.5" Astro Turf 15x13/14 Var Dowels 5" Class 4 Clay	12" Trans Broom 15x12 1.5" SS dowels PCC Shld 5" Class 5 36" SG Clay	7.5" Astro Turf 15'x12' 1" dowel 12" Class 6 Clay
Opened Length (ft)	507	216	235	225	225	217	499	500	286	365	325	500	460	285	118	194
Gap (ft)	41	0	0	0	0	43	68	65	49	49	70	30	0	0	0	0

Located at the MnROAD Site - not on LVR

Porous Pavements			Implements of Husbandry	
64	64b	74	83	84
7" Pervious PCC	6" Pervious Precast PCC 1" Class 6	4" Pervious PCC 6" Washed Stone	3.5" 58-34 8" Class 5	5.5" 58-34 9" Class 5
12" CA-15	12" CA-15	Type V Geo-Textile	Clay	Clay
Type V Geo-Textile	Type V Geo-Textile	Clay		
Clay	Clay			
2007	Oct 2011	Aug 06	Oct 07	Oct 07
15x60	15x15	60	450	450
Parking Lot	Sidewalk		Stockpile Area	

Low Volume Road ESALS per Year

MnROAD 5-Axle Semi Tractor Trailer

Year	Inside Lane (80,000 lbs)			Outside Lane (102,000 lbs)		
	Laps	Flexible	Rigid	Laps	Flexible	Rigid
1994	3,283	7,748	12,265	889	6,170	10,357
1995	7,748	18,285	28,947	2,927	20,313	34,100
1996	8,598	20,291	32,122	2,576	17,877	30,010
1997	6,874	16,223	25,681	2,172	15,074	25,304
1998	10,165	23,989	37,976	2,236	15,518	26,049
1999	4,537	10,707	16,950	1,623	11,264	18,908
2000	8,853	20,893	33,075	2,451	17,010	28,554
2001	8,075	19,057	30,168	2,203	15,289	25,665
2002	9,849	23,244	36,796	1,797	12,471	20,935
2003	6,923	16,338	25,864	2,820	19,571	32,853
2004	3,950	9,322	14,757	1,202	8,342	14,003
2005	5,986	14,127	22,364	2,082	14,449	24,255
2006	6,634	15,656	24,785	2,246	15,587	26,166
2007	4,969	11,727	18,564	935	6,489	10,893
2008	2,885	6,809	10,778			
2009	6,229	14,700	23,272			
2010	6,623	15,630	24,744			
2011	5,290	12,484	19,763			
2012	8,447	19,935	31,558			
2013	4,224	9,969	15,781			
	130,142	307,135	486,211	28,159	195,423	328,052

Since 2008 MnROAD has not loaded the outside lane to learn more about the environmental deterioration without traffic

Updated October 2013