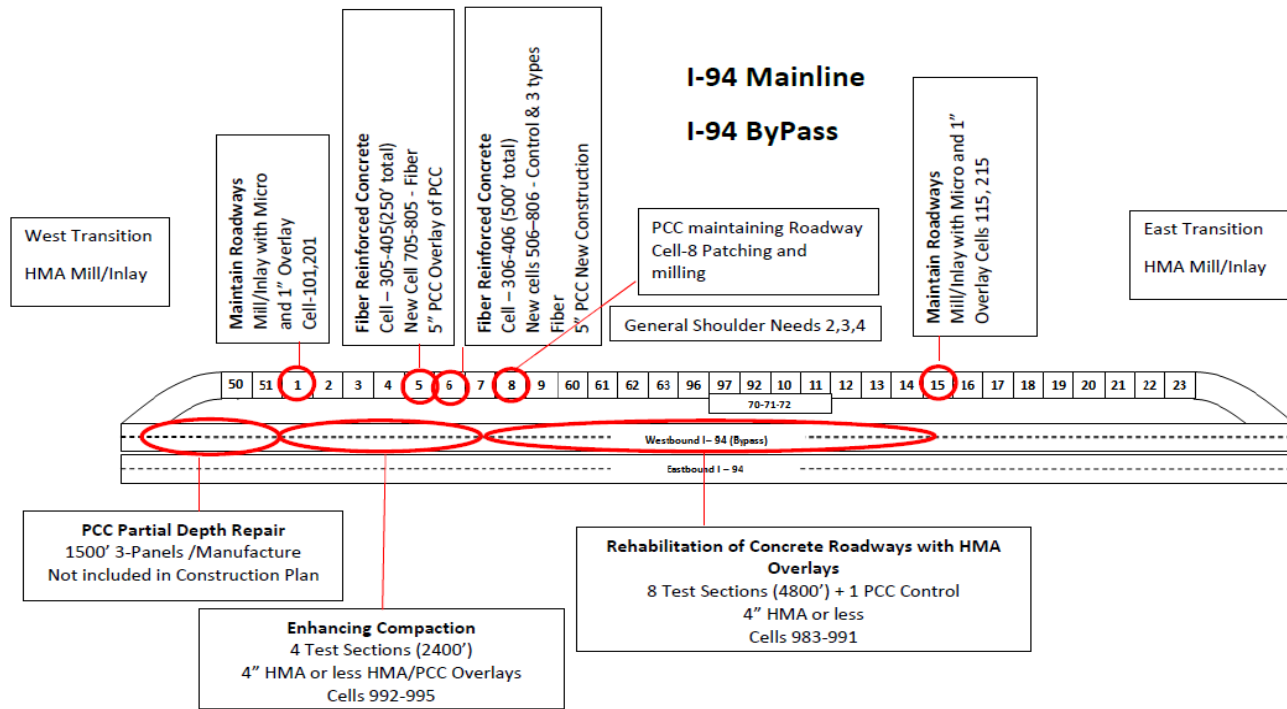


2017 MnROAD-NRRA CONSTRUCTION

I-94 Mainline & ByPass



Maintain Roadways			Fiber Reinforced PCC				Fiber Reinforced PCC					
Original	New	New	Original	Original	New	New	Original	New	New	Original	New	New
1	101	201	305	405	705	805	306	506	606	406	706	806
6" 58-28 75 blow	0.75" HMA 5.5" 58-28 75 blow	2X Chip 6" 58-28 75 blow	5" UBOL	5" UBOL	5" Fiber Reinforced PCC	5" Fiber Reinforced PCC	6" Long Time	5" PCC Control - No Fibers	5" Fiber Reinforced PCC (Standard)	6" Long Time	5" Fiber Reinforced PCC (Enhanced)	5" Fiber Reinforced PCC (High)
33" Class 4	33" Class 4	33" Class 4	1" PSAB	1" PSAB	7.5" cracked jts '93 PCC	7.5" cracked jts '93 PCC	6" OGAB Sp	11" Class 5Q	11" Class 5Q	6" OGAB Sp	11" Class 5Q	11" Class 5Q
Driving Lane 1.5" 52-34 HMA inlay 2006	Mill 0.75" (4.75 mm PG 58V-34)	Micro surface CQS-1P 0.375" 2 lifts	3" CI 4	3" CI 4	3" CI 4	3" CI 4	7" Class 5	3" Class 5	3" Class 5	7" Class 5	3" Class 5	3" Class 5
Micro Surface Aug 2012			27" Class 3	27" Class 3	27" Class 3	27" Class 3	Clay	Clay	Clay	Clay	Clay	Clay
Clay	Clay	Clay	15'Lx14'W 15'Lx13'W no dowels	15'Lx14'W 15'Lx13'W no dowels	12'Lx14'W 12'Lx13'W Unsealed Joints	12'Lx14'W 12'Lx13'W Unsealed Joints	15'Lx12'W 1" dowel	6'Lx6'W Unsealed Joints	20% RSR 6'Lx6'W Unsealed Joints	15'Lx12'W 1" dowel	30% RSR 6'Lx6'W Unsealed Joints	0.75% by Volume 6'Lx6'W Unsealed Joints
Sep 92	2017	2017	Clay	Clay	Clay	Clay	RCC Shlds	HMA Shlds	HMA Shlds	RCC Shlds	HMA Shlds	HMA Shlds
462	231	231	Oct 08	Oct 08	2017	2017	Sep 11	2017	2017	Sep 11	2017	2017
97			133	117	133	117	261	134	135	292	135	135

Original Concrete	Maintain Roadways			Rehabilitation of Concrete Roadways with HMA Overlays									
Same	Original	New	New	New	New	New	New	New	New	New	New	New	New
8	15	115	215	983	984	985	986	987	988	989	990	991	991
7.5" Trans Tined	3" WM 58-34	2X Chip 2.6" WM 58-34	1.5" HMA 2.25" WM 58-34	1.5" HMA	1.5" HMA	1.75" HMA	1.5" HMA	1.75" HMA	1.75" HMA	1.75" HMA	1.75" HMA	1.75" HMA	1.75" HMA
4" PSAB	11" 64-22 1993 HMA	11" 64-22 1993 HMA	11" 64-22 1993 HMA	9.5" PCC Control	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels	9.5" PCC 27x12 Panels 1.25" dowels
3" CI 4				5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5	5" Class 5
Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay
15x14 15x13 13' PCC Shldr 1" dowel		Mill 0.375"	Mill 0.75"	2013 Driving Lane Grind	9.5 mm HMA overlay	12.5 mm HMA	12.5 mm HMA	12.5 mm HMA	1.5" 9.5 mm HMA	1.75" 12.5 mm HMA, 4% void, 92% compaction in field	1.75" 12.5 mm HMA, SP 5, 95% density, 5% in-place voids	1.75" 12.5 mm HMA, 95% density, 3% air void regression	1.75" 9.5 mm HMA, 95% density, fine grained - AASHTO M323-#8
2017 Patching & diamond grind		Micro surface CQS-1P 0.375" 2 lifts	Overlay 1.5" (2 0.75" lifts, 4.75 mm PG 58V-34)	27x12 Panels 1.25" dowels	Standard tack CSS-1h @ 0.08-0.10 gal/sy	Tack @ (residual rate) of 0.05-0.06 gal/sy	Tack CRS-1P @ (residual rate) of 0.10 gal/sy	Tack CRS-1P @ (residual rate) of 0.10 gal/sy	2.5" 19 mm HMA	2.25" 19 mm PG 58H-28 HMA overlay	2.25" 19 mm PG 58H-28 HMA overlay	2.25" 19 mm PG 58H-28 HMA overlay	2.25" 19 mm PG 58H-28 HMA overlay
Sep 92	Sept 08	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017	2017
500	500	285	287.5	500	500	500	500	500	500	500	500	500	500
29	95			100	100	100	100	100	100	100	100	100	100

Enhancing Compaction				PCC Partial Depth Repair
New	New	New	New	New
992	993	994	995	3 Panels per Patch Manufacture - Cells TBD
1.5" HMA	1.5" HMA	1.5" HMA	0.75" UTBWC	
1" HP	1" PSAB			
9.5" PCC	9.5" PCC	9.5" PCC	9.5" PCC	9.5" PCC
27x12 Panels 1.25" dowels	27x12 Panels 1.25" dowels	27x12 Panels 1.25" dowels	27x12 Panels 1.25" dowels	2013 Driving Land Grind
5" Class 5	5" Class 5	5" Class 5	5" Class 5	27x12 Panels 1.25" Dowels
Clay	Clay	Clay	Clay	5" Class 5
1.5" 9.5 mm HMA overlay	1.5" 9.5 mm HMA overlay	9.5 mm HMA overlay	Polymer modified emulsion membrane @ 0.20 gal/sy Spray Paver	Clay
1" high polymer asphalt interlayer	1" PSAB/PASSRC	Standard tack CSS-1H @ 0.08-0.10 gal/sy		3 Panels (27' each) per Patching Material 16 Type of Materials
2017	2017	2017	2017	2017
500	500	500	500	
100	100	100		