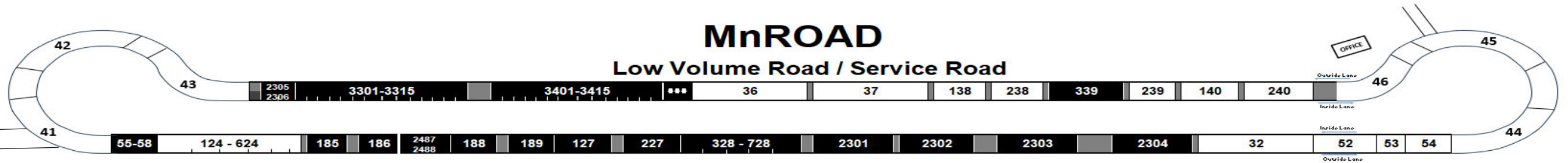




Minnesota Local Road Research Board
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MnROAD

Low Volume Road / Service Road



| Stripping Elements | |
|--------------------|-------------|
| 2411 - 2416 | 2417 - 2422 |
| 2" PG | 2" PG |
| 2" PG | 2" PG |
| 2" PG | 2" PG |
| 6" PCC | 5" HMA |
| 2024 | 2024 |
| 20 | 40 |

| North Side Cells (West to East) | | | | | | | | | | | | | | | | | | | | |
|---------------------------------|--------------------------------|--------------------------------|---------------------------------|------------------------------------------|------------------------------------------------|--------------|-------------------------|-------------------------|---------------------------------------|------------------------------|--------------------------------------------|--------------------------------------------|-------------------------------|-------------------------------|----------------------------------------|---------------------------------------|--------------------------------|--------------------------------|--------------------------------|-----|
| West Loop | | | Water Repellency Unbound Layers | | Spray Rejuvenator (2021) See Table on Right ** | | | | Original Concrete | | Reduced Cementitious | | Fiber Reinforced Concrete | | Unbonded Concrete Overlay | | East Loop | | | |
| 41 | 42 | 43 | 2305 | 2306 | 3301 - 3315 | | 3401 - 3415 | | 36 | 37 | 138 | 238 | 339 | 239 | 140 | 240 | 46 | 45 | 44 | |
| 12" PCC New Ulm Quartz | 12" PCC North Concrete Luverne | 12" PCC Shiely Lakeland | 2" PG 58S-28 | 2" PG 58S-28 | 2" PG 58S-28 | 2" PG 58S-28 | 1" PG 58-34 1.5" HMA | 1" PG 58-34 1.5" HMA | 6" PCC 15'Lx12"W 1" dowel Trans Tined | 6" PCC 12'Lx12"W Trans Tined | 8" PCC 15'Lx12"W Astro Turf 500 lbs Cement | 8" PCC 15'Lx12"W Astro Turf 470 lbs Cement | 3" HMA | 4" Fiber Reinf PCC Turf | 3" Fiber Reinf PCC | 3" Fiber Reinf PCC | 12" PCC High Early Mix | 12" PCC Type III Mix | 12" PCC Control | |
| 15'Lx12"W 1" dowel Trans Tined | 15'Lx12"W 1" dowel Trans Tined | 15'Lx12"W 1" dowel Trans Tined | Large Stone Aggregate | Large Stone Aggregate | 2X Chip | 2X Chip | 4" CCPR Foam (2017) | 4" CCPR Foam (2017) | 5" Class 5 | 5" Class 5 | 5" Class 5 | 5" Class 5 | 6" Class 5 | 6" Class 5 | Thin Fabric 5.5"-7.0" PCC 15'Lx12"W | Std Fabric 5.5"-7.0" PCC 15'Lx12"W | 15'Lx12"W 1" dowel Trans Tined | 15'Lx12"W 1" dowel Trans Tined | 15'Lx12"W 1" dowel Trans Tined | |
| Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Sand | Sand | Clay | Clay | 4" Common Borrow | 4" Common Borrow | Clay | Clay | Clay | Clay | Clay | |
| | | | No Water Repellency | Water Repellency placed at 37", 41", 46" | | | | | 2007 PCC Grind Strips | | | | 6"Lx6"W Sealed Joints 30% RSR | 6"Lx6"W Sealed Joints 30% RSR | 6"Lx6"W 20% RSR Long Tined | 6"Lx6"W 20% RSR Long Tined | | | | |
| Opened Length (ft) | 491 | 490 | 494 | 75 | 75 | 425 | 425 | 425 | 437 | 480 | 504 | 240.5 | 270 | 275.5 | 258.5 | 225 | 234 | 508 | 489 | 442 |
| Inside Gap | 97 | 147 | | | | | | | | 127 | 42 | 19.5 | 8 | | 26 | 108 | 98 | 146 | 0 | |
| Outside Gap | 102 | 152 | 175 | | | | | | | | | | | | | | 102 | 153 | 0 | |
| Outside Cell (ft) | 510 | 510 | 508 | | | | | | | | | | | | | | 493 | 511 | 463 | |

| ** 2021 Spray Rejuvenators (MnROAD and St Michael) | | |
|-------------------------------------------------------|---------|---------------------------------------|
| PG58-28 | PG58-34 | MnROAD Descriptions (50 ft each) |
| St Michael (PG 58-34 - 1/10 mile each) - separate map | | |
| 3301 | 3401 | Replenify - FHR Control |
| 3302 | 3402 | RePlay Biospan |
| 3303 | 3403 | Biorestor Low - ASI Roads |
| 3304 | 3404 | Biorestor - ASI Roads |
| 3305 | 3405 | GSB88 |
| 3306 | 3406 | Biorestor - ASI Roads |
| 3307 | 3407 | CRF |
| 3309 | 3409 | Reclamite |
| 3310 | 3410 | RPE-R -- HG Miegs |
| 3311 | 3411 | Control |
| 3312 | 3412 | Delta Mist - Collaborative Aggregates |
| 3313 | 3413 | BioMAG - Iowa State University |
| 3314 | 3414 | TIO2 |
| 3315 | 3415 | Invigorate |

| Located at the MnROAD Site - not on LVR | | |
|-----------------------------------------|------|------------------------------------------------------------|
| PCC Pervious Pavements | | |
| 64 | 2007 | 7" PCC / 12" CA-15 Base/Geotextile / Clay |
| 64-1 | 2011 | 6" Precast/1" Base / 12" CA-15 Base/Fab/Clay (Parking Lot) |
| 74 | 2006 | 4" PCC/6" washed Stone/Geotextile/Clay (SideWalk) |

| Implements of Husbandry | | |
|-------------------------|------|---------------------------------------------------|
| 83 | 2007 | 3.5" HMA/8" C-5 Base/Clay (Stockpile Area)-450 ft |
| 84 | 2007 | 5.5" HMA/9" C-5 Base/Clay (Stockpile Area)-450 ft |

| West Loop Tie to 41 | | South Side Cells (West to East) | | | | | | | | | | | | | | | | | | | | East Loop Tie to 44 | | | | | | | |
|-----------------------------|----------------------------|---------------------------------|-------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|----------------------------------|----------------------------------|-------------------|----------------------------------|----------------------------------|------------------|---------------------------------|------------------|------------------|------------------|------------------|-------------------|-----------------------------------------------------|--------------------------------------------------|--------------------------------------------------|---------------|--------------|-----------------------------------|----------------------------------------------|----------------------------------------|
| Open Graded Friction Course | | | | Concrete - Early Opening to Traffic | | | | | | Recycled Unbound Base | | | | Large Subbase | | Large Subbase and Geogrid Cells | | | | | | Low Volume Road Reflective Cracking Study (HMA/HMA) | | | | Thin PCC | PCC Dowels | 60-Year PCC | Mesabi PCC |
| 55 | 56 | 57 | 58 | 124 | 224 | 324 | 424 | 524 | 624 | 185 | 186 | 2487 | 188 | 189 | 127 | 227 | 328 | 428 | 528 | 628 | 728 | 2301 | 2302 | 2303 | 2304 | 32 | 52 | 53 | 54 |
| 1" OGFC Reg Tack | 1" OGFC Trackless | 1" OGFC Trackless 3" HMA 58-34 | 1" OGFC Reg Tack 3" HMA 58-34 | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 6" PCC 15'Lx12"W 1" dowel Astro Turf | 3.5" HMA | 3.5" HMA | 3" HMA 1" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 3.5" HMA | 2" PG 58S-28+ | 2" PG 58H-34+ | 2" PG 58H-34- | 2" PG 58S-28- | 5" PCC | 7.5" PCC 15'Lx 13/14"W Astro Turf | 12" PCC 15'Lx12"W 1.5" SS dowels Trans Broom | 7.5" PCC 15'Lx12"W 1" dowel Astro Turf |
| 12" PCC | 12" PCC | 4" Class 6 | 4" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 12" Coarse RCA | 12" Fine RCA | 4" Mesabi Ballast | 12" Limestone Agg Base Class 6 | 12" Agg Base RAP+RCA Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 5Q | 6" Class 5Q | 6" Class 5Q | 6" Class 5Q | 6" Class 6 | 8" FDR | 8" Class 6 | 8" FDR + Fly Ash | 4" Class 5 | 7" Class 5 | 5" Class 4 | 5" Class 5 | 12" Class 3 |
| 12x15 1" dowel Trans Tined | 12x15 1" dowel Trans Tined | Sand | Sand | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 6" Class 6 | 18" Large Subbase | 18" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | 9" Large Subbase | No Grid or fabric | HMA Top Lift 5.0% Oil 1/2 Cell Trans Sawn Cracks | HMA Top Lift 5.0% Oil 1/2 Cell Trans Sawn Cracks | HMA Top Lift 4.5% Oil 1/2 Cell Trans Sawn Cracks | 12" Class 3 | Clay | 36" Select Granular | Clay | |
| Clay | Clay | | | Sand | Sand | Sand | Sand | Sand | Sand | 3.5" Select Granular Borrow Sand | 3.5" Select Granular Borrow Sand | Clay Sand | 3.5" Select Granular Borrow Clay | 3.5" Select Granular Borrow Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | Clay | 2012 Repairs | Number of different Dowels | Clay | Clay |
| Opened Length (ft) | 50 | 50 | 50 | 49 | 130 | 120 | 120 | 120 | 120 | 201 | 201 | 226 | 201 | 201 | 258 | 260 | 109 | 108 | 108 | 113 | 131 | 315 | 310 | 385 | 380 | 460 | 285 | 115 | 194 |
| Gap (ft) | | | | | | | | | | | | 1.5 | 1 | | | | | | | | | | | | | 30 | | | |