

Project Profile

Widening of Shoulder on Sturt Highway



Client	Department of Planning, Transport and Infrastructure
Location	Riverland, South Australia
Duration	November 2017 to April 2018
Contract	Lump Sum Construct Only
Cost	\$3.5 million

Project Overview

Project for the widening the existing sealed shoulder by 1.0m in both directions on the Sturt Highway for between Accommodation Hill and Cobdogla. The works consists of shoulder construction, bituminous surfacing and the removal and replacement of guideposts, signs and other roadside furniture. Over 15,000t of PM2/20 pavement material and 200,000m² of aggregate spray seal pavements were installed across all 125km of highway shoulder. Extensive traffic management strategies were utilised in what is normally a 110km/h road.

PM2/20 pavement rubble was stockpiled at various locations along to the highway for spreading over the existing shoulder, also known as 'topping up'. A shoulder paver fitted with grade level control ensured that shoulder cross fall was between 2.5% and 3.5% grade to the horizontal and was completed within 1.5m of the edge of the seal. A contraflow traffic management setup with traffic speed reduced to 40km/h was implemented during all 'topping up' works.

The imported rubble was then placed on top of the existing shoulder and mixed in with the existing insitu shoulder material to a depth of 150mm using a stabiliser. A water truck was plumbed into the stabiliser allowing water to be added to the mixing process. The 2.0m wide stabiliser was also used to mix the imported PM2/20 with the existing insitu material. The stabiliser cut into the existing seal by approximately 50mm and mixed the shoulder to a width of 2.0m. The stabiliser closely followed the paver and

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utilised the same 40km/h traffic management strategy.

The mixed product was then shaped with a grader, compacted with rollers and later trimmed with a grader to achieve the required profile cross fall, width and compaction. The shaping, compaction and trim of the shoulder was completed concurrently and behind the 'mixing' process at the same reduced traffic speeds all within the same traffic setup.

Guideposts were removed during the topping up and mixing processes then reinstalled after works were completed. Temporary bollards were used while guideposts were removed.

Third party accredited geotechnical testing ensured the shoulder widening achieved satisfactory compaction, dry back and hardness criteria. A two-coat spray seal was then applied to all shoulder widening works.

Plant and equipment utilised on the project included site vehicles, WA480 front end loader, tandem tippers, semi tippers, stabiliser, 30,000L semi-water tankers, 8t smooth drum roller, 20t multi-tyre rollers, graders, skid steer with broom attachment and shoulder paver. Project workforce peaked at 19 delivering 8,500 work hours without incident in the remote and geographical disperse work zone.

Delivery Performance

McMahon Services exceeded the normal production rate on this project achieving 5km/day shoulder reconstruction, 1.5km than the normal industry rate of 3.5km/day by using a specialist road shoulder paver.

The joint treatment detail developed and honed by the construction delivery team ensured there were no joint performance issues. The success of this was evidenced by a 12+ month defect inspection by the Department of Planning, Transport and Infrastructure found there to be zero defects; no rutting, no joint performance issues and no seal segregation.



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