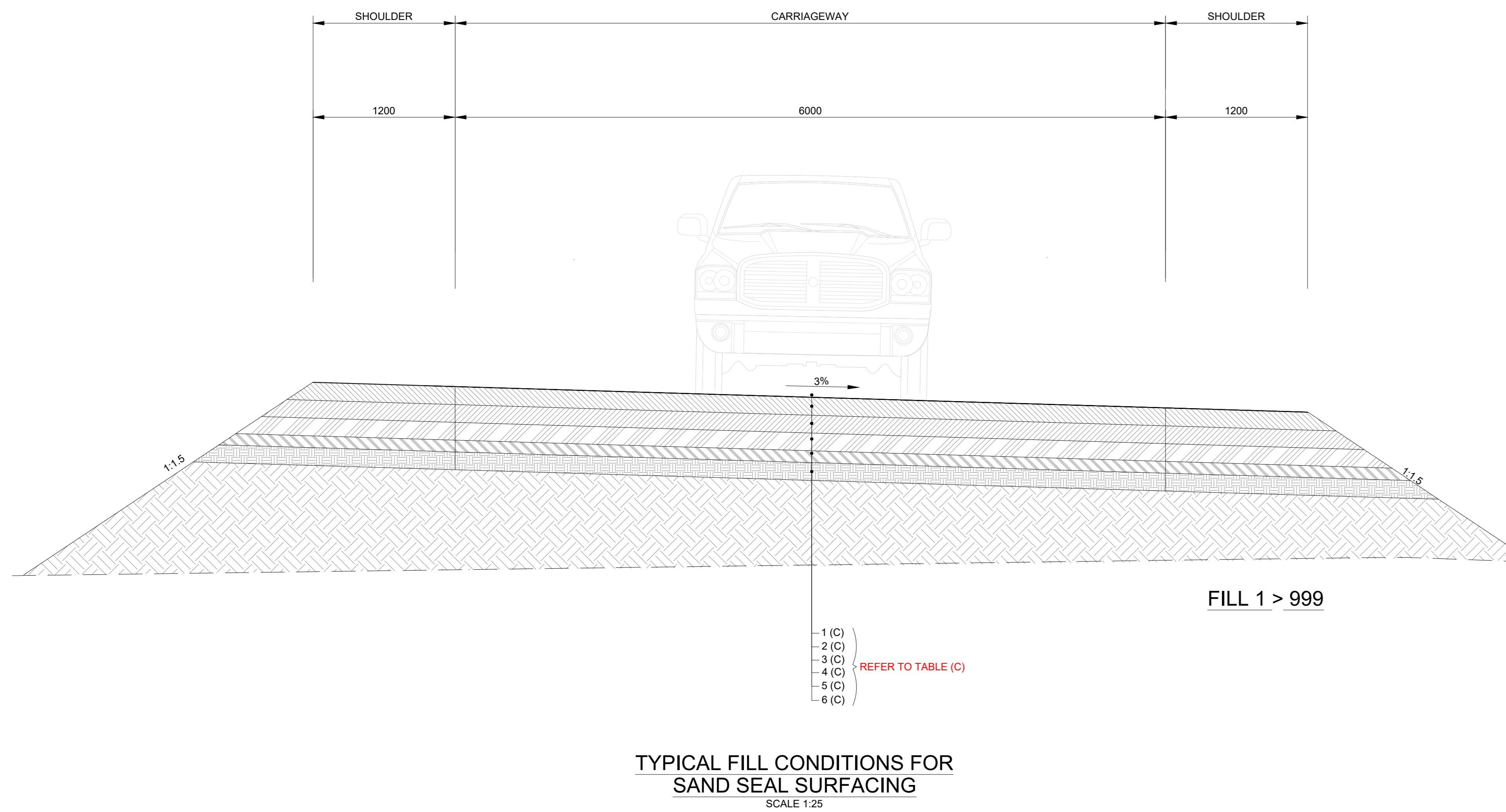


TYPICAL FILL CONDITIONS FOR ASPHALT SURFACING  
SCALE 1:25

TABLE (B) CONTRACT EN3587 SHANGONI ROAD PHASE 1										
40 mm ASPHALT SURFACING										
LAYER No.	LAYER THICKNESS	LAYER DESCRIPTION	CLASSIFICATION ACCORDING TO THE COTO STANDARDS	COMPACTION OF PAVEMENT LAYER TESTED ON ROAD	COMPACTION EXPRESSED IN % OF MAXIMUM DRY DENSITY	GEOMECHANICAL PARAMETERS OF ROAD CONSTRUCTION MATERIALS MUST CONFORM TO THE COTO STANDARDS				
						Level and placing technique: Mechanical spreader, Vibratory and pneumatic-type rollers.	Binder Type 50/70 pen Bitumen	Design Level II	Max. particle size 10 mm	-
1 (B)	40 mm	<b>Asphalt Surfacing</b> (Sand Skeletal Mix)		Continuously graded	Min: (97% - % of design voids) of MVD Max: 96% of MVD					
						PI	GM	MINIMUM CBR @ % OF MDD	MINIMUM UCS @ 100% OF MDD	MINIMUM ITS @ 100% OF MDD
2 (B)	150 mm	<b>Upper Subbase *</b> (Obtained from cut or borrow) (Common Cement Stabilized) (Strength Class 32.5N) (Conform to SANS 50197)		C4	96%	PI ≤ 6 (After stabilization)	2.5 ≥ GM ≥ 1.5	Material requirement at least a G6 before stabilization (CBR @ 95% ≥ 25 PI ≤ (2xGM) + 10 LS ≤ 7%)	0,75 Mpa (min) 3,0 Mpa (max)	200 kPa (min) 350 kPa (max)
3 (B)	150 mm	<b>Lower Subbase *</b> (Obtained from cut or borrow)		G6	95%	PI ≤ (2xGM) + 10	2.5 ≥ GM ≥ 1.5	25 @ 95%		-
4 (B)	100 mm	<b>Lower Selected *</b> (Obtained from cut or borrow)		G7	93%	PI ≤ (3xGM) + 10	2.7 ≥ GM ≥ 0.75	15 @ 93%		-
5 (B)	150 mm	<b>Roadbed</b> (The in-situ material on which the fill, or in the absence of fill, any pavement layers, are to be constructed)		-	Rip and re-compact to 90% of MDD (if required)				Where the in-situ subgrade has CBR < 3, special measures need to be instructed by the Engineer. (Typical a 300mm rockfill pioneer layer, if required)	
6 (B)	In layers of 200 mm or less	<b>Fill *</b> (Obtained from cut or borrow)		G9 (min)	93%	PI ≤ (3xGM) + 10	2.7 ≥ GM ≥ 0.75	7 @ 93%		-
May 2024	Pavement Design conform to the CSIR Human Settlement Planning and Design Manual.					* The use of material obtained from in-situ, cut or borrow will be allowed if the laboratory tested quality is within specification.				



TYPICAL FILL CONDITIONS FOR SAND SEAL SURFACING  
SCALE 1:25

TABLE (C) CONTRACT EN3587 SHANGONI ROAD PHASE 1																															
SAND SEAL																															
LAYER No.	LAYER THICKNESS	LAYER DESCRIPTION	CLASSIFICATION ACCORDING TO THE COTO STANDARDS	COMPACTION OF PAVEMENT LAYER TESTED ON ROAD	COMPACTION EXPRESSED IN % OF MAXIMUM DRY DENSITY	GEOMECHANICAL PARAMETERS OF ROAD CONSTRUCTION MATERIALS MUST CONFORM TO THE COTO STANDARDS																									
						Grading of the sand (Primary & Secondary Seals) Sieve size (mm) Cumulative % passing	Max. particle size	Rolling with 22 ton PTR	PI	GM	MINIMUM CBR @ % OF MDD	MINIMUM UCS @ 100% OF MDD	MINIMUM ITS @ 100% OF MDD																		
1 (C)	10 mm	<b>Sand Seal</b> (Primary seal) (Remaining sand removed after one month) <b>Sand Seal</b> (Secondary seal) (Applied after six months)		Binder Type 150/200 pen Bitumen applied @ 1.35 L/m <sup>2</sup> (hot)	Sand applied @ 0.011 to 0.014 m <sup>3</sup> /m <sup>2</sup>	<table border="1"> <tr><td>10</td><td>100</td></tr> <tr><td>7.5</td><td>97.2</td></tr> <tr><td>5</td><td>95.9</td></tr> <tr><td>2</td><td>87.9</td></tr> <tr><td>1</td><td>59.5</td></tr> <tr><td>0.600</td><td>19.1</td></tr> <tr><td>0.300</td><td>4</td></tr> <tr><td>0.150</td><td>0.5</td></tr> <tr><td>0.075</td><td>0.4</td></tr> </table>	10	100	7.5	97.2	5	95.9	2	87.9	1	59.5	0.600	19.1	0.300	4	0.150	0.5	0.075	0.4	5 mm	Rolling with 22 ton PTR					
10	100																														
7.5	97.2																														
5	95.9																														
2	87.9																														
1	59.5																														
0.600	19.1																														
0.300	4																														
0.150	0.5																														
0.075	0.4																														
						PI	GM	MINIMUM CBR @ % OF MDD	MINIMUM UCS @ 100% OF MDD	MINIMUM ITS @ 100% OF MDD																					
2 (C)	150 mm	<b>Upper Subbase *</b> (Obtained from cut or borrow) (Common Cement Stabilized) (Strength Class 32.5N) (Conform to SANS 50197)		C4	96%	PI ≤ 6 (After stabilization)	2.5 ≥ GM ≥ 1.5	Material requirement at least a G6 before stabilization (CBR @ 95% ≥ 25 PI ≤ (2xGM) + 10 LS ≤ 7%)	0,75 Mpa (min) 3,0 Mpa (max)	200 kPa (min) 350 kPa (max)																					
3 (C)	150 mm	<b>Lower Subbase *</b> (Obtained from cut or borrow)		G6	95%	PI ≤ (2xGM) + 10	2.5 ≥ GM ≥ 1.5	25 @ 95%		-																					
4 (C)	100 mm	<b>Lower Selected *</b> (Obtained from cut or borrow)		G7	93%	PI ≤ (3xGM) + 10	2.7 ≥ GM ≥ 0.75	15 @ 93%		-																					
5 (C)	150 mm	<b>Roadbed</b> (The in-situ material on which the fill, or in the absence of fill, any pavement layers, are to be constructed)		-	Rip and re-compact to 90% of MDD (if required)				Where the in-situ subgrade has CBR < 3, special measures need to be instructed by the Engineer. (Typical a 300mm rockfill pioneer layer, if required)																						
6 (C)	In layers of 200 mm or less	<b>Fill *</b> (Obtained from cut or borrow)		G9 (min)	93%	PI ≤ (3xGM) + 10	2.7 ≥ GM ≥ 0.75	7 @ 93%		-																					
Aug. 2024	Pavement Design conform to the CSIR Human Settlement Planning and Design Manual.					* The use of material obtained from in-situ, cut or borrow will be allowed if the laboratory tested quality is within specification.																									

(REF FOLDER: X:\02 PROJECTS\30003500 - 3599\N3587EN - SHANGONI ROAD KNP\1 DESIGN PHASE\DRAWINGS\TENDER\ROADS\EN3587R6001-2.DWG)