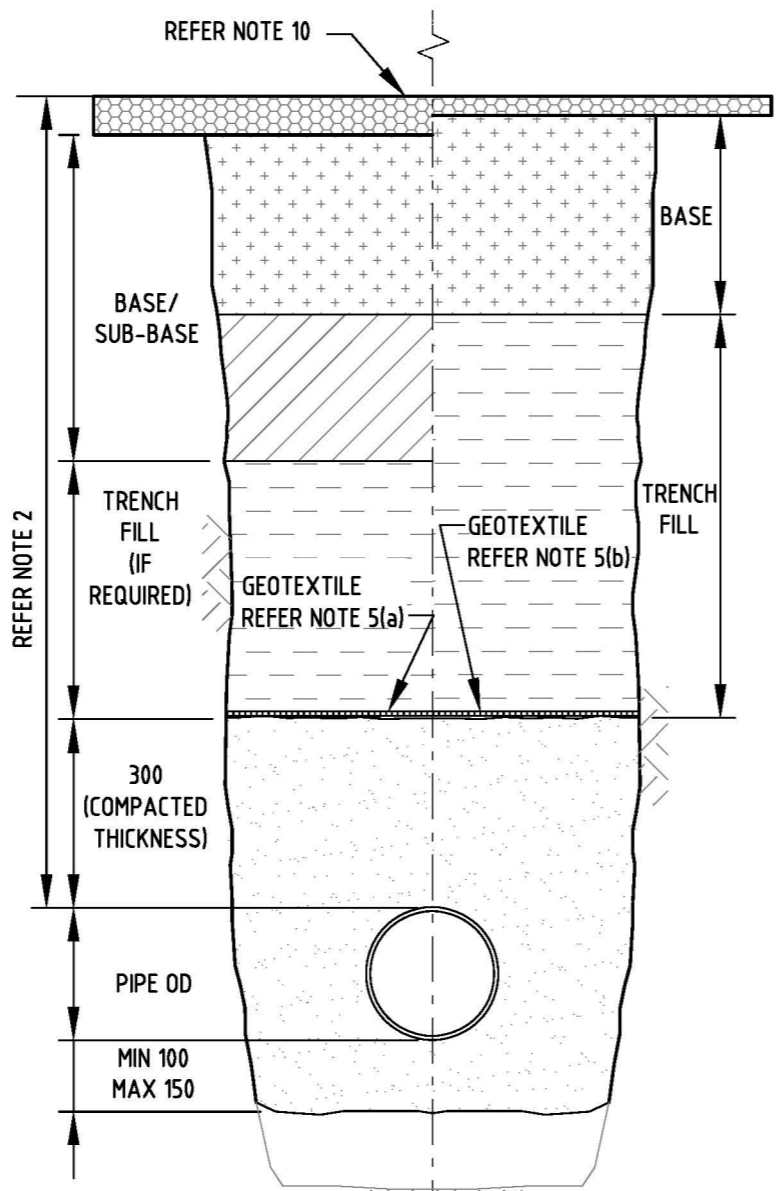


2

DPTI ROAD/ COUNCIL ROAD

NEW ROAD RESERVE (GREENFIELD DEVELOPMENT)

ZONE	MATERIAL	COMPACTION
SURFACE	REFER DPTI SPECIFICATION/ COUNCIL SPECIFICATION FOR ASPHALT AND BASE/ SUB-BASE REQUIREMENTS.	
TRENCH FILL	SAND TO SA-C	< 800 mm FROM THE FINISHED ROAD • 95% MMDD > 800 mm FROM THE FINISHED ROAD • 92% MMDD REFER NOTE 4.
PIPE EMBEDMENT FILL	10 mm OR 14 mm SINGLE SIZE AGGREGATE, COMPLIANT WITH AS/NZ 2566.2 TABLE G2.	REFER 4005-20003-04, NOTE 6.
OVERLAY		
SIDE SUPPORT		
BEDDING	FOR SEWER PUMPING MAINS REFER NOTE 13.	PLACE & RAKE TO GRADE.
OVER-EXCAVATION		

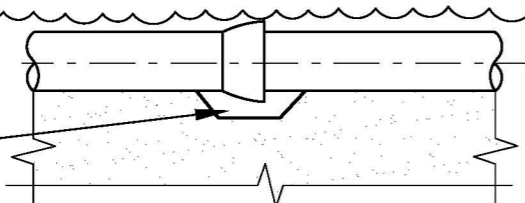


MATERIAL	COMPACTION	ZONE
REFER COUNCIL ROAD SPECIFICATION/ CONSULTANT ROAD DESIGN FOR ASPHALT AND BASE REQUIREMENTS.		SURFACE
INORGANIC MATERIAL FROM THE EXCAVATION OR IMPORTED MATERIAL WITH A PARTICLE SIZE • OTHER THAN ROCK (E.G. CLODS) NOT GREATER THAN 75 mm OR • FOR ROCK NOT GREATER THAN 20 mm	95% SMDD REFER NOTE 4.	TRENCH FILL
10 mm OR 14 mm SINGLE SIZE AGGREGATE, COMPLIANT WITH AS/NZ 2566.2 TABLE G2.	REFER 4005-20003-04, NOTE 6.	PIPE EMBEDMENT FILL
		OVERLAY
		SIDE SUPPORT
		BEDDING
FOR SEWER PUMPING MAINS REFER NOTE 13.	PLACE & RAKE TO GRADE.	OVER-EXCAVATION

NOTES:

- REFER 4005-20002-01 TO 4005-20002-03 FOR GENERAL NOTES.
- THE MINIMUM PIPE COVER SHALL BE:
 - 1000 mm FOR DPTI ROADS
 - 800 mm FOR OTHER ROADS.
- THE MINIMUM TRENCH WIDTH AT THE TOP OF THE PIPE BETWEEN THE FACES OF THE TRENCH OR SHORING SHALL BE:
 - THE MINIMUM REQUIRED TO SAFELY LAY THE PIPE, AND,
 - NO LESS THAN 600 mm.
- ALL MATERIALS SHALL BE PLACED IN MAXIMUM 200 mm (LOOSE) LAYERS. EACH LAYER SHALL BE COMPACTED SEPARATELY.
- (a) WHERE TRENCH FILL IS SAND AND EMBEDMENT IS AGGREGATE, OR, (b) IF MORE THAN 85% OF THE TRENCH FILL IS FINER THAN 2 mm, OR MORE THAN 15% OF THE TRENCH FILL IS FINER THAN 0.075 mm, GEOTEXTILE FABRIC SHALL BE POSITIONED AS A BARRIER TO SEPARATE THE MATERIALS.
- WHERE SAND IS USED, IF THE SAND DOES NOT DISPLAY A DEFINED MOISTURE-DENSITY CURVE, (REFER AS1289.5.5.1, NOTE 1) THEN THE DENSITY INDEX (ID) METHOD (AS 1289.5.6.1) SHALL BE USED FOR COMPACTION CONTROL.
 - AN ID OF 75% SHALL BE TAKEN AS EQUIVALENT TO 95% SMDD AND
 - AN ID OF 90% SHALL BE TAKEN AS EQUIVALENT TO 100% SMDD.
- WHERE REFERENCED, THE DPTI SPECIFICATIONS ARE:
 - WORKS ON ROADS UNDERTAKEN BY OTHER ORGANISATIONS, ROADS UNDER THE CARE AND CONTROL OF THE COMMISSIONER OF HIGHWAYS,
 - PAVEMENT REINSTATEMENT CONFIGURATIONS ("PRC").
- PM2/20 = 20 mm CLASS 2 PAVEMENT MATERIAL. IT MAY BE EITHER QUARRIED OR RECYCLED. RECYCLED MATERIAL SHALL NOT BE USED WHERE IT WILL BE EXPOSED AT THE SURFACE.
- SOIL COMPACTION CLASSIFICATIONS (AS 1289.5.2.1):
 - MMDD = MODIFIED MAXIMUM DRY DENSITY;
 - SMDD = STANDARD MAXIMUM DRY DENSITY
- FOR EXISTING BITUMEN, BRICK PAVING, FOOTPATH, ETC. IT SHALL BE REINSTATED TO MATCH EXISTING.
- HEAVY CONSTRUCTION EQUIPMENT MAY BE USED ABOVE THE PIPE WHERE COVER EXCEEDS 750.
- WHERE THE REQUIRED COVER CANNOT BE ACHIEVED A PROTECTIVE CONCRETE COVER SLAB SHALL BE DESIGNED BY THE CONSULTANT. APPROVAL SHALL BE SOUGHT FOR THE USE OF A PROTECTIVE SLAB.
- FOR SEWER PUMPING MAIN EMBEDMENT AND TRENCH FILL REQUIREMENTS REFER WSCM SECTION 3.
- ALL DIMENSIONS IN MILLIMETRES.

PROVIDE POCKETS IN BEDDING, AT JOINTS, PRIOR TO LAYING PIPES. FILL VOID DURING PLACEMENT OF EMBEDMENT.



PIPE SOCKET BEDDING POCKETS

TRAFFICABLE AREAS
ROAD PAVEMENTS & SHOULDERS

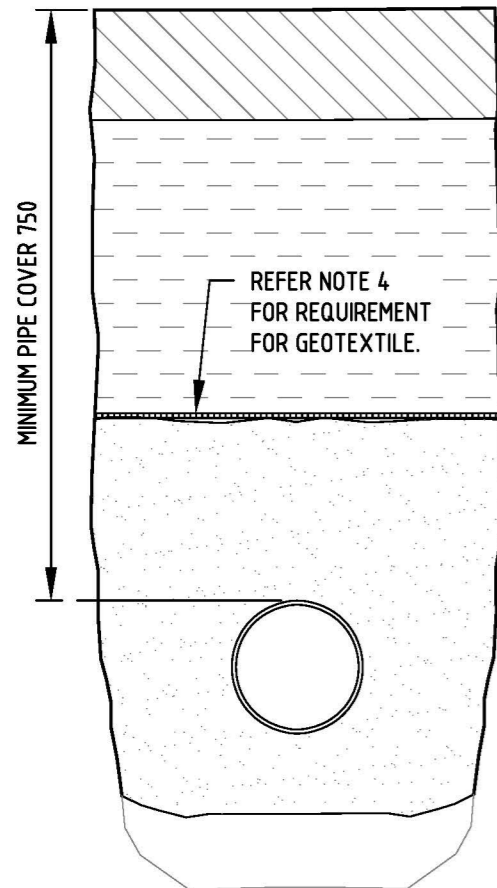
REVISION PANEL				
REV	DATE	DRN	DETAILS	APR
2	03/04/17	RP	TRAFFICABLE AREAS AMENDED,	
1	31/03/16	MS	2016 STANDARDS REVIEW	TG

DESIGN PANEL	
DESIGNED: 03/08/15 RJP	AUTHORISED: 31/03/16 T.GALEK
DRAWN: 25/09/15 MS	SIGNATURE:
REVIEWED: 21/03/16 TG	ORIGINAL SIGNED

This drawing is the property of the SOUTH AUSTRALIAN WATER CORPORATION and shall not be copied or modified in part or in whole without authorization.

SA WATER STANDARD DRAWINGS
SEWER CONSTRUCTION MANUAL
PIPE EMBEDMENT & TRENCH FILL
REQUIREMENTS
ROADS & TRAFFICABLE AREAS

A3	2
SHT SIZE	REVISION
TOTAL SHEETS:	
SUPERSEDES: 02-0296-01 (G1)	
DRAWING NUMBER	
4005-20003-01	
PREFIX	NUMBER SHEET



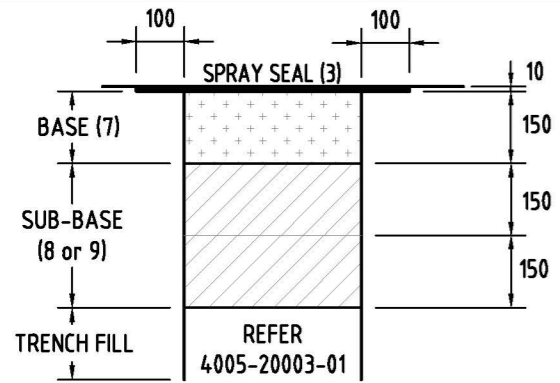
ZONE		MATERIAL	COMPACTION
SURFACE		REINSTATE WITH GOOD QUALITY TOPSOIL AND SEEDED, TURFED, ETC. TO MATCH EXISTING. MINIMUM 150 mm THICK	LIGHTLY COMPACTED TO MATCH EXISTING
TRENCH FILL		MATERIAL OBTAINED FROM THE EXCAVATION OR IMPORTED MATERIAL. CONTAINING <u>NOT MORE THAN 20% ROCK</u> . ROCK SIZE MAY BE > 75 mm AND < 150 mm. NOTHING LARGER THAN 150 mm.	95% SMDD REFER NOTE 4
PIPE EMBEDMENT FILL	OVERLAY	10 mm OR 14 mm SINGLE SIZE AGGREGATE, COMPLIANT WITH AS/NZ 2566.2 TABLE G2. FOR SEWER PUMPING MAINS REFER NOTE 8.	REFER 4005-20003-04, NOTE 6.
	SIDE SUPPORT		
	BEDDING		PLACE & RAKE TO GRADE.
OVER EXCAVATION BACK FILL			

NON-TRAFFICABLE AREAS
EASEMENTS, ETC.

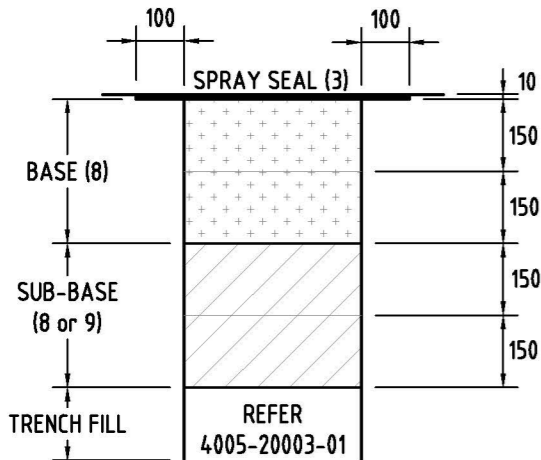
NOTES:

- REFER 4005-20002-01 TO 4005-20002-03 FOR GENERAL NOTES.
- THE MINIMUM TRENCH WIDTH AT THE TOP OF THE PIPE BETWEEN THE FACES OF THE TRENCH OR SHORING SHALL BE:
 - THE MINIMUM REQUIRED TO SAFELY LAY THE PIPE, AND,
 - NO LESS THAN 600 mm.
- ALL MATERIALS SHALL BE PLACED IN MAXIMUM 200 mm (LOOSE) LAYERS. EACH LAYER SHALL BE COMPACTED SEPARATELY.
- IF MORE THAN 85% OF THE TRENCH FILL IS FINER THAN 2 mm, OR MORE THAN 15% OF THE TRENCH FILL IS FINER THAN 0.075 mm, GEOTEXTILE FABRIC SHALL BE POSITIONED AS A BARRIER TO SEPARATE THE MATERIALS.
WHERE SAND IS USED, IF THE SAND DOES NOT DISPLAY A DEFINED MOISTURE-DENSITY CURVE, (REFER AS1289.5.5.1, NOTE 1) THEN THE DENSITY INDEX (ID) METHOD (AS 1289.5.6.1) SHALL BE USED FOR COMPACTION CONTROL.
 - AN ID OF 75% SHALL BE TAKEN AS EQUIVALENT TO 95% SMDD AND
 - AN ID OF 90% SHALL BE TAKEN AS EQUIVALENT TO 100% SMDD.
- SOIL COMPACTION CLASSIFICATIONS (AS 1289.5.2.1):
 - MMDD = MODIFIED MAXIMUM DRY DENSITY;
 - SMDD = STANDARD MAXIMUM DRY DENSITY.
- WHERE THE REQUIRED COVER CANNOT BE ACHIEVED A PROTECTIVE CONCRETE COVER SLAB SHALL BE DESIGNED BY THE CONSULTANT. APPROVAL SHALL BE SOUGHT FOR THE USE OF A PROTECTIVE SLAB.
- FOR SEWER PUMPING MAIN EMBEDMENT AND TRENCH FILL REQUIREMENTS REFER WSCM SECTION 3.
- PREVIOUS 4005-20003-02 RENUMBERED TO 4005-20003-04.
- ALL DIMENSIONS IN MILLIMETRES.

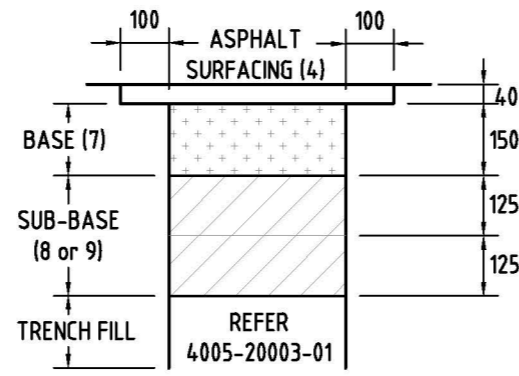
REVISION PANEL					DESIGN PANEL				SA WATER STANDARD DRAWINGS			A3	2
REV	DATE	DRN	DETAILS	APR	CURRENT REV AUTHORISED:	DESIGNED: 03/08/15	AUTHORISED: 31/03/16		SHT SIZE	SEWER CONSTRUCTION MANUAL		REVISION	
					SIGNATURE:	RJP	T.GALEK		PIPE EMBEDMENT & TRENCH FILL				
2	03/04/17	RP	INFORMATION RELOCATED FROM 4005-20003-01			DRAWN: 25/09/15	SIGNATURE:		REQUIREMENTS				
1	31/03/16	MS	2016 STANDARDS REVIEW	TG		REVIEWED: 21/03/16	ORIGINAL SIGNED		NON TRAFFICABLE AREAS				
								 This drawing is the property of the SOUTH AUSTRALIAN WATER CORPORATION and shall not be copied or modified in part or in whole without authorization.			TOTAL SHEETS: SUPERSEDES: 02-0296-01 (G1) DRAWING NUMBER 4005-20003-02 PREFIX NUMBER SHEET		



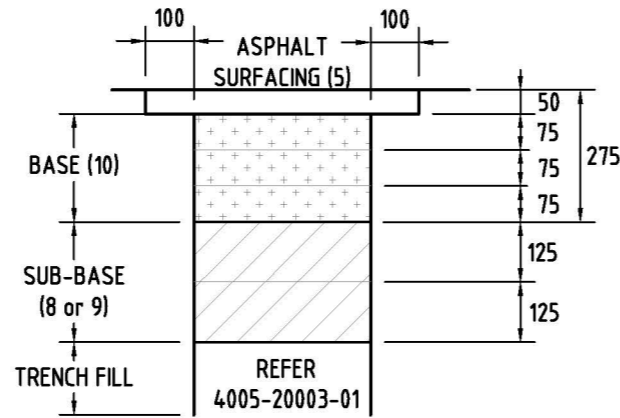
SPRAY SEAL SURFACE
LOW TRAFFIC ROADS WITH AADT (TWO WAY) <10,000 VPD
FIGURE 1



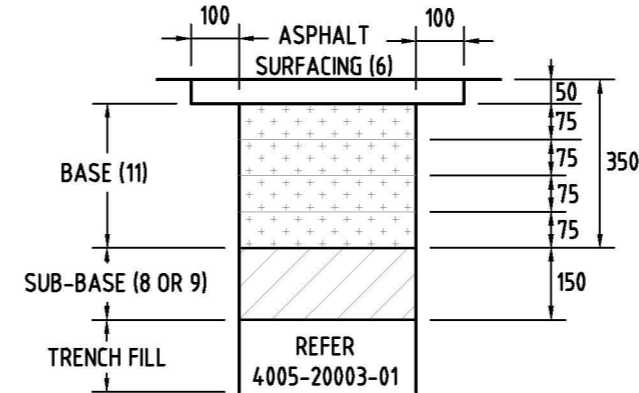
SPRAY SEAL SURFACE
HEAVY TRAFFIC ROADS WITH AADT
(TWO WAY) >10,000 VPD
FIGURE 2



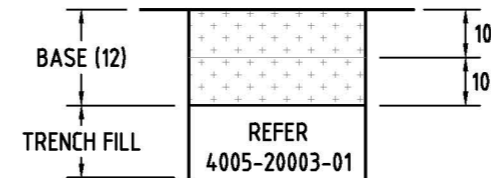
ASPHALT SURFACE
LOW TRAFFIC ROADS WITH AADT (TWO WAY) <2,000 VPD
FIGURE 3



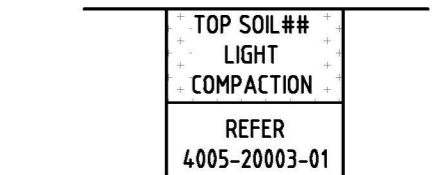
ASPHALT SURFACE
HEAVY TRAFFIC ROADS WITH AADT
(TWO WAY) >2,000 VPD BUT <20,000 VPD
FIGURE 4



ASPHALT SURFACE
VERY HEAVY (COMMERCIAL) TRAFFIC ROADS
WITH AADT (TWO WAY) >20,000 VPD
FIGURE 5



UNSEALED ROAD PAVEMENTS AND SHOULDERS
FIGURE 6



TOP SOIL##
LIGHT
COMPACTION
REFER
4005-20003-01
OR REINSTATE BRICK PAVING ,BITUMEN
FOOTPATH, ETC TO MATCH EXISTING

VERGES
ALL TRAFFIC DENSITIES

FIGURE 7

NOTES:

- THIS DRAWING IS TO BE USED FOR ALL PIPE INSTALLATIONS AND REPAIRS WITHIN EXISTING COUNCIL AND DPTI ROAD RESERVES. FOR INSTALLATION IN NEW SUBDIVISIONS PRIOR TO ROAD CONSTRUCTION THE ROAD PAVEMENT WILL BE SPECIFIED BY THE DESIGNER.
- THE EXISTING ASPHALTIC CONCRETE PAVEMENT SHALL BE SAW CUT AND REMOVED FOR ITS FULL DEPTH AND NOT LESS THAN 100 mm WIDER EACH SIDE THAN THE EXCAVATED TRENCH WIDTH. ALL SURFACES SHALL BE CLEANED OFF AND EMULSION PRIMED PRIOR TO REINSTATEMENT. ALL ASPHALTIC CONCRETE SHALL BE OBTAINED FROM A DPTI AUTHORISED SUPPLIER.
- SPRAY SEAL SPRAYED BITUMINOUS SURFACE SEAL TO MATCH THE EXISTING AND TO BE PLACED ON PRIMER SEAL AS PER CLAUSE 4.4 OF "CRC". THE SPRAY SEAL SHALL EXTEND 100 mm EITHER SIDE OF THE EXCAVATED TRENCH AND THE OUTER EDGE SHALL BE SAW CUT.
- ASPHALT SURFACING AC10 ASPHALTIC CONCRETE WEARING COURSE (LIGHT DUTY MIX) ON TACK COAT (EG CRS60) APPLIED AT 1.0 l/m².
- ASPHALT SURFACING AC10 ASPHALTIC CONCRETE WEARING COURSE (MEDIUM DUTY MIX) ON TACK COAT (EG CRS60) APPLIED AT 0.2 TO 0.3 l/m².
- ASPHALT SURFACING AC10 ASPHALTIC CONCRETE WEARING COURSE (MEDIUM DUTY MIX WITH A35P BITUMEN) ON TACK COAT (EG CRS60) APPLIED AT 0.2 TO 0.3 l/m².
- PM1/20 = 20 mm CLASS 1 QUARRIED PAVEMENT MATERIAL (PM1/20QG).
- PM1/20 = 20 mm CLASS 1 QUARRIED PAVEMENT MATERIAL (PM1/20QG), OR 20 mm CLASS 1 RECYCLED PAVEMENT MATERIAL (PM1/20 RG). - PLACED IN 2 EQUAL LAYERS TO 98% MODIFIED COMPACTION.

- PM2/20 = 20 mm CLASS 2 QUARRIED PAVEMENT MATERIAL (PM2/20 QG) OR 20 mm CLASS 2 RECYCLED PAVEMENT MATERIAL (PM2/20 RG). - PLACED IN 2 EQUAL LAYERS TO 98% MODIFIED COMPACTION.
- AC14M - PLACED IN 3 EQUAL LAYERS ON EMULSION PRIME (EG CRS60) APPLIED AT 1.0 l/m².
- AC14M - PLACED IN 4 EQUAL LAYERS ON EMULSION PRIME (EG CRS60) APPLIED AT 1.0 l/m².
- PM2/20 = 20 mm CLASS 2 QUARRIED PAVEMENT MATERIAL (PM2/20 QG) OR 20 mm CLASS 2 RECYCLED PAVEMENT MATERIAL (PM2/20 RG). - PLACED IN 2 EQUAL LAYERS TO 95% MODIFIED COMPACTION.
- OG14 - WEARING COURSE (MEDIUM DENSITY MIX) ON 10 mm C170 SPRAY AT 1.8 l/m² - WHERE AN EXISTING OPEN GRADE SURFACING LAYER IS TO BE REPLACED, THE LAYER THICKNESS SHALL MATCH EXISTING AT BOTH TOP OF EXISTING SURFACE AND SPRAY SEAL WITH BOTTOM SAME.
- FOR ASPHALT LAYERS, A TACK COAT SHALL BE EVENLY APPLIED TO THE BASE AND SIDES OF THE EXCAVATION. A TACK COAT IS NOT REQUIRED BETWEEN INDIVIDUAL ASPHALT LAYERS IF A HOT BOND IS ACHIEVED.
- WHERE THERE IS AN EXISTING OPEN GRADE SURFACING LAYER GREATER THAN 5 YEARS OLD OR IT IS NO LONGER DRAINING, A DENSE MIX SHALL BE USED IN LIEU OF OPEN GRADED.
- ABBREVIATIONS: AADT = AVERAGE ANNUAL DAILY TRAFFIC; VPD = VEHICLES PER DAY; MMDD = MODIFIED MAXIMUM DRY DENSITY (AS 1289.5.2.1).

REVISION PANEL					DESIGN PANEL			SA WATER STANDARD DRAWINGS		SA WATER		SA WATER STANDARD DRAWINGS		SEWER CONSTRUCTION MANUAL		REINSTATEMENT OF ROAD PAVEMENTS, HARD SHOULDERS AND VERGES IN ROAD RESERVES		A3 SHT SIZE		2 REVISION	
REV	DATE	DRN	DETAILS	APR	CURRENT REV	DESIGNED:	AUTHORISED:	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water	SA Water
					26/04/16	03/08/15	30/03/16														
						RJP	T.GALEK														
						MS															
2	26/04/16	MS	NOTES CHANGED	MA		25/09/15															
1	31/03/16	MS	2016 STANDARDS REVIEW	TG		21/03/16	ORIGINAL SIGNED														
										This drawing is the property of the SOUTH AUSTRALIAN WATER CORPORATION and shall not be copied or modified in part or in whole without authorization.		SA WATER STANDARD DRAWINGS		SEWER CONSTRUCTION MANUAL		REINSTATEMENT OF ROAD PAVEMENTS, HARD SHOULDERS AND VERGES IN ROAD RESERVES		TOTAL SHEETS:		SUPERSEDES: 02-0157-01 (G3)	
																DRAWING NUMBER		4005-20003-03		PREFIX NUMBER SHEET	

