
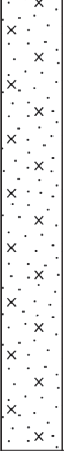


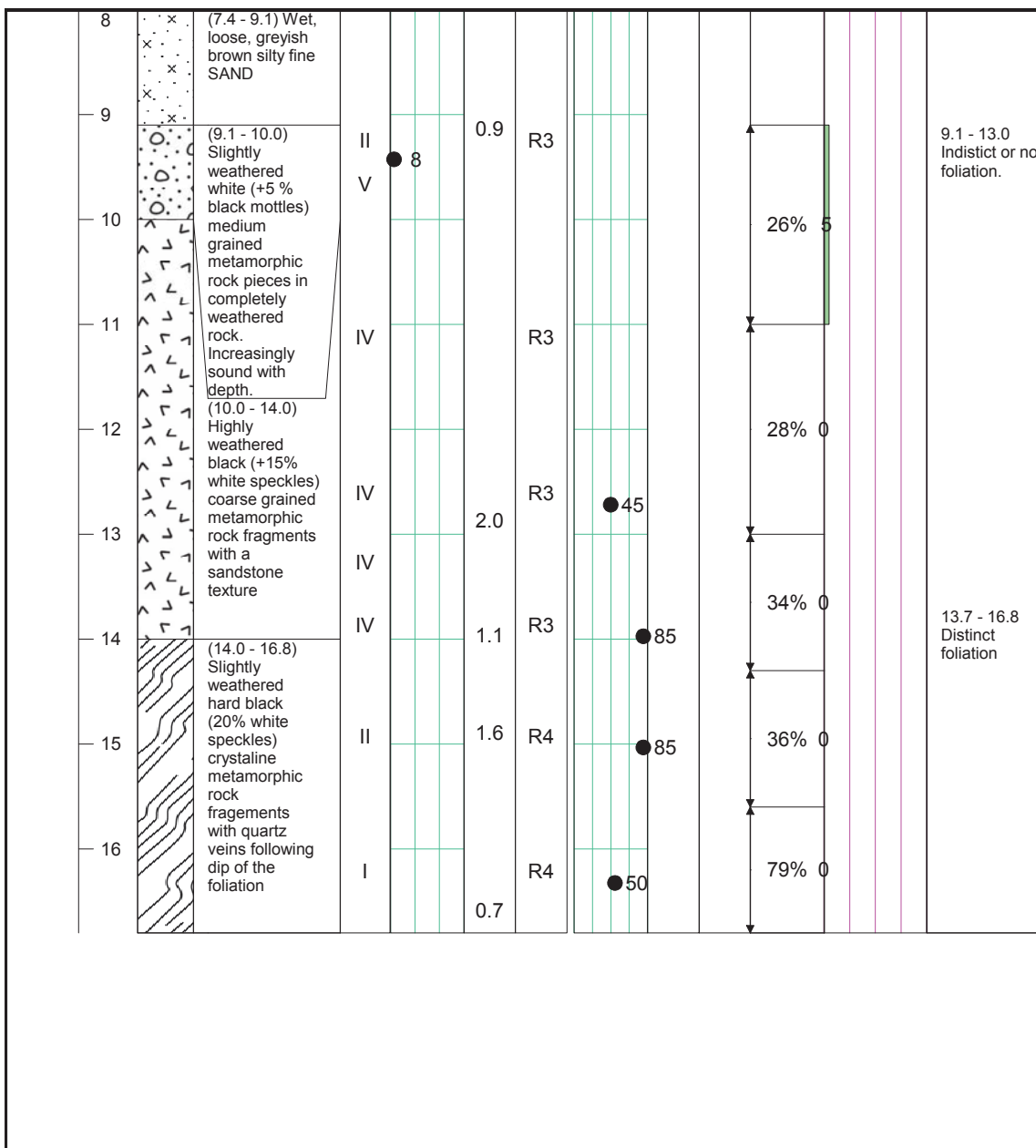
 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.	
		LOCATION BH 18	CLIENT PADECO Co. Ltd
SOIL LOG: BH 18		NORTHING 9259373	DRILLING METHOD Rotary PQ+ NQ
		EASTING 254985.49	DRILL DATE 19 - 20/12/2015
		SURFACE ELEV. 602.547m	FIELD SUPERVISOR JN/SD

ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	SPT							REMARKS	
					0	10	20	30	40	50	60		70
602	0.0		(0.0 - 0.4) Dry soft dark brown clayey SILT										
601	1.0	DS G.S.F=11.85.03 PI=NP	(0.4 - 1.6) Moist, loose, brown to brownish grey silty CLAY										
600	2.0	SPT SM G.S.F=06.65.30 PI=NP	(1.6 - 2.5) Moist, loose, dark brown clayey SAND	2.2.1									
599	3.0		(2.5 - 3.5) Wet loose, brownish grey silty fine SAND										
598	4.0	DS G.S.F=07.48.45 PI=26	(3.5 - 7.0) Damp, loose, mottled brownish dark clayey SILT with SAND patches	1.1.1									
597	5.0	SPT SC G.S.F=06.54.40 PI=15.2											
596	6.0	U4 - G.S.F=--- PI=23.6											
595	7.0	DS MH G.S.F=02.16.82 PI=23.6											
594	8.0	SPT SM G.S.F=10.77.13 PI=NP	(7.0 - 7.4) Wet, medium dense, brownish grey sandy GRAVEL	3.1.1									
593	9.0		(7.4 - 9.1) Wet, loose, greyish brown silty fine SAND	14.10.>50									
592	10.0		(9.1 - 15.9) Weathered rock with silty sand layers. Increasingly sound with depth										
591	11.0	DS SM G.S.F=00.74.26 PI=NP											

 <p>SOIL LOG: BH 18</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.									
		LOCATION BH 18	CLIENT PADECO Co. Ltd								
		NORTHING 9259373	DRILLING METHOD Rotary PQ+ NQ								
		EASTING 254985.49	DRILL DATE 19 - 20/12/2015								
		SURFACE ELEV. 602.547m	FIELD SUPERVISOR JN/SD								
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT						REMARKS	
				0	10	20	30	40	50		60
590	12.0										
589	13.0										
588	14.0										
587	15.0										
586	16.0				(15.9 - 16.8) Intact ROCK						

 <p>ROCK LOG : BH 18</p>	PROJECT Kilosa Gulwe Central Railway. JICA Study.	
	LOCATION BH 18	CLIENT PADECO Co. Ltd
	NORTHING 9259373	DRILLING METHOD Rotary PQ+ NQ
	EASTING 254985.49	DRILL DATE 19 - 20/12/2015
	SURFACE ELEV. 602.547m	FIELD SUPERVISOR JN/SD
















ELEV (m)	DEPTH (m)	LITHOLOGY	Deg. of Weathering	STRENGTH DATA			DISCONTINUITY DATA			TCR %			RQD%		
				UCS MPa	Is (50)	Hardness	Dip Angle	Type	Spacing	0	50	100	0	50	100





BOREHOLE 18 - PROFILE PICTURES





BOREHOLE 18 - PROFILE PICTURES



			
			
			
			
8-10m	10-12m	12-14m	14-16m

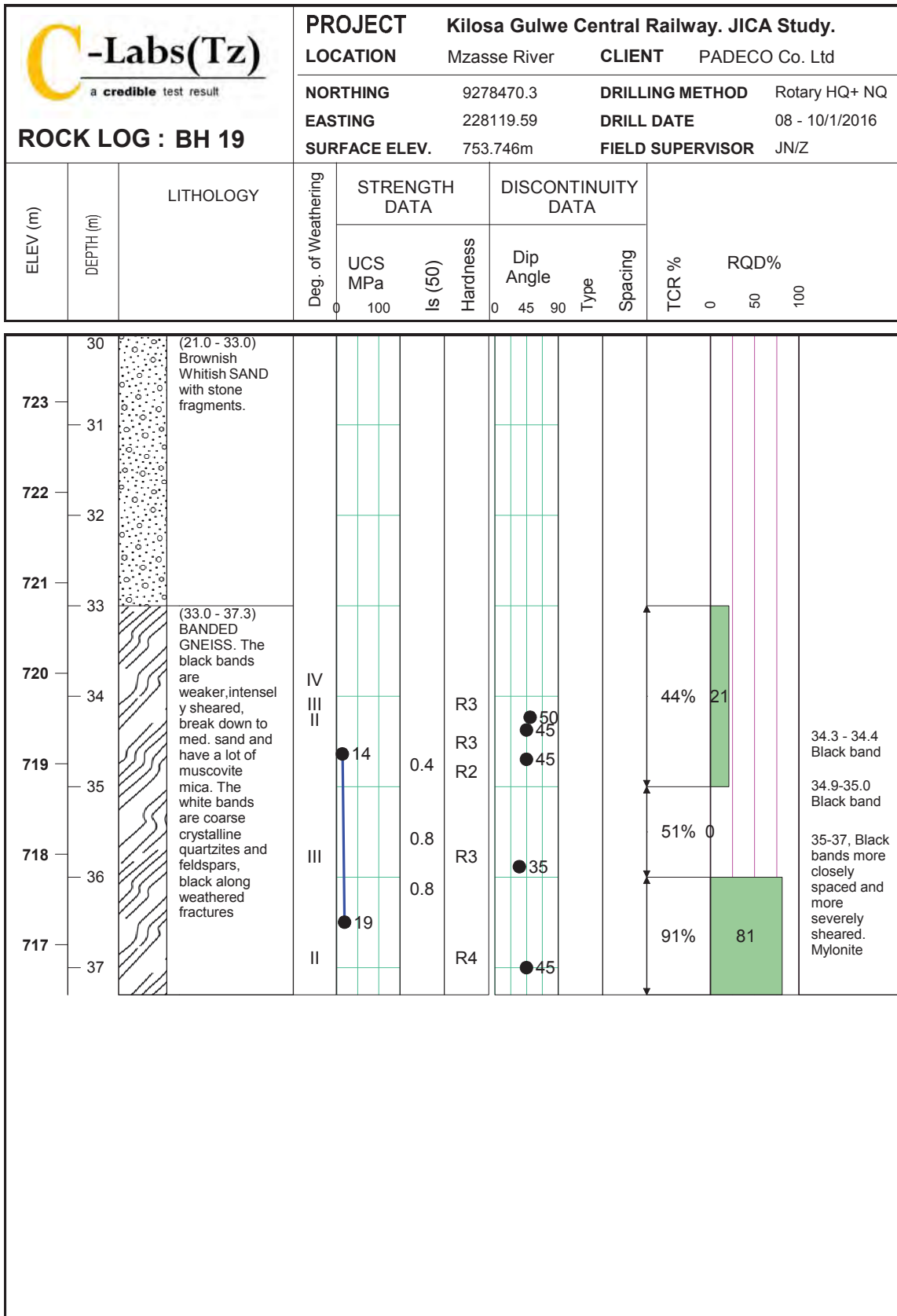
BOREHOLE 18 - PROFILE PICTURES

<p>16-18m</p>		
		

		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd		
SOIL LOG: BH 19		NORTHING 9278470.3	DRILLING METHOD Rotary HQ+ NQ		
		EASTING 228119.59	DRILL DATE 08 - 10/1/2016		
		SURFACE ELEV. 753.746m	FIELD SUPERVISOR JN/Z		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
				0 10 20 30 40 50 60 70	
753	0.0	DS SM G.S.F=00.78.22 PI=NP	(0.0 - 1.5) Top soil. Grey Sand		
752	1.0				
751	2.0	DS SC G.S.F=00.59.41 PI=14.5	(1.5 - 5.0) Brown clayey SAND	10.14.17	
750	3.0	DS SC G.S.F=00.60.40 PI=12.1			No groundwater in borehole
749	4.0				
748	5.0	DS SC G.S.F=00.70.30 PI=9.5	(5.0 - 9.0) Brown SAND	5.8.10	
747	6.0				
746	7.0	DS SM G.S.F=00.79.21 PI=NP			
745	8.0	DS SM G.S.F=00.79.21 PI=NP			
744	9.0	DS SM G.S.F=00.82.18 PI=NP			
743	10.0	DS SM G.S.F=00.86.14 PI=NP			
742	11.0	DS - G.S.F=-.-.- PI=NP			
		DS SP-SM G.S.F=00.89.12 PI=NP	(9.0 - 21.0) Brownish Greyish SAND	8.18.25	

 <p>SOIL LOG: BH 19</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd		
		NORTHING 9278470.3	DRILLING METHOD Rotary HQ+ NQ		
		EASTING 228119.59	DRILL DATE 08 - 10/1/2016		
		SURFACE ELEV. 753.746m	FIELD SUPERVISOR JN/Z		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
				0 10 20 30 40 50 60 70	
741	12.0	DS SM G.S.F=00.86.14 PI=NP		8.10.13	● 23
740	13.0	DS - G.S.F=--- PI=NP			
739	14.0	DS SW G.S.F=00.97.04 PI=NP			
738	15.0			20.25.30	● 55
737	16.0	DS SW G.S.F=00.96.04 PI=NP			
736	17.0	DS SW G.S.F=00.96.04 PI=NP			
735	18.0	DS SW G.S.F=00.96.04 PI=NP		22.22.31	● 53
734	19.0	DS SW-SM G.S.F=00.93.07 PI=NP			
733	20.0	DS SW G.S.F=00.97.03 PI=NP			
732	21.0	DS SC G.S.F=00.87.13 PI=14.8	(21.0 - 33.0) Brownish Whitish SAND with stone fragments. Completely Weathered Rock	25.24.34	● 58
731	22.0	DS SP-SM G.S.F=00.89.11 PI=NP			
730	23.0	DS SM G.S.F=00.86.14 PI=NP			
<p>Drilling stopped at 12.5m and recommenced on 9-Jan.</p> <p>18.8 - 20m has rock fragments</p> <p>Drilling stopped at 21.5m and recommenced on 10-Jan.</p>					

		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd		
SOIL LOG: BH 19		NORTHING 9278470.3	DRILLING METHOD Rotary HQ+ NQ		
		EASTING 228119.59	DRILL DATE 08 - 10/1/2016		
		SURFACE ELEV. 753.746m	FIELD SUPERVISOR JN/Z		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
				0 10 20 30 40 50 60 70	
717	36.0 37.0		 (36.0 - 37.0) Black and White banded Gneiss		



BOREHOLE 19 - PROFILE PICTURES

			
			
			
			
0-2m	2-4m	4-6m	6-8m



BOREHOLE 19 - PROFILE PICTURES

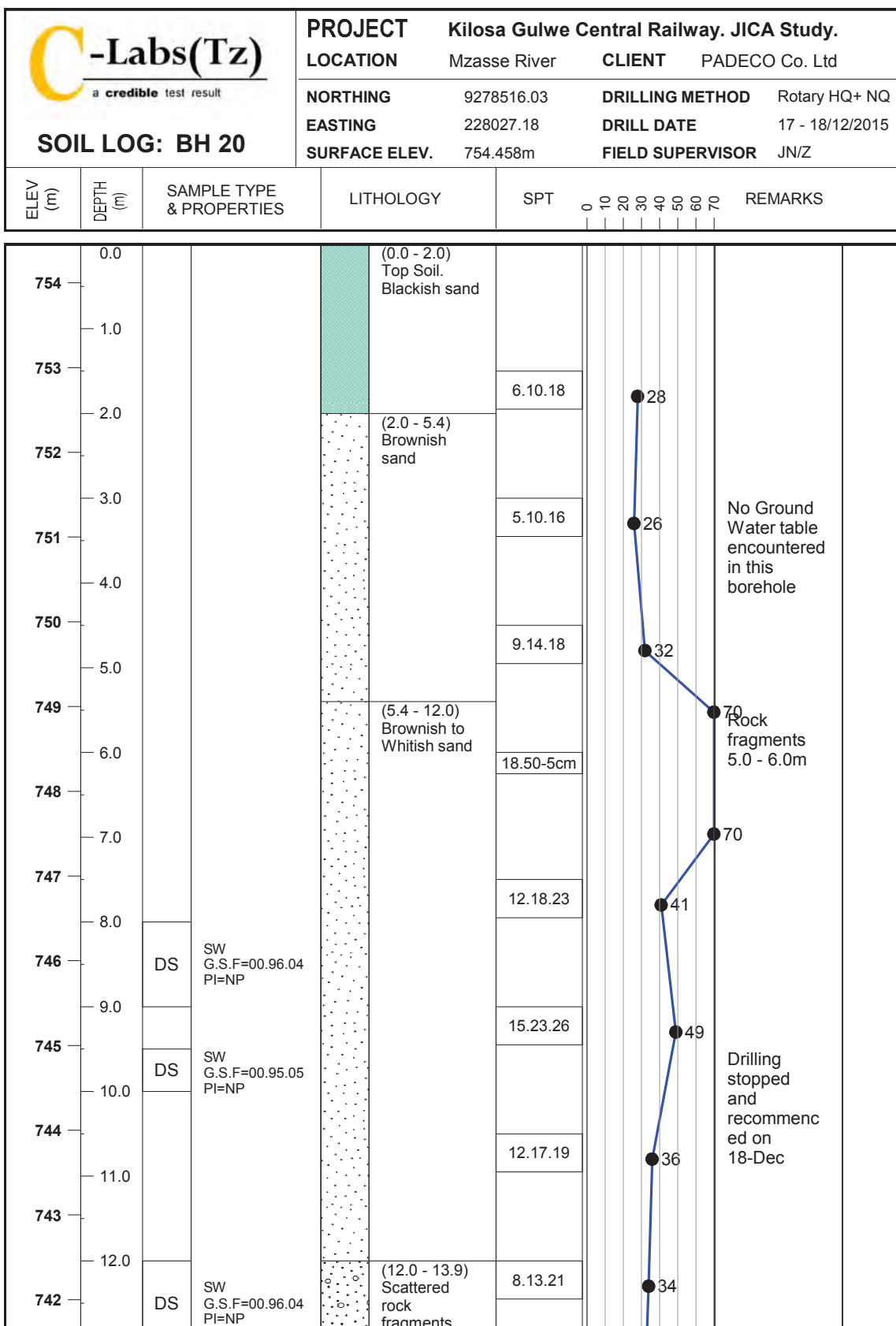
				
				
				
				
8-10m	10-12m	12-14m	14-16m	16-18m


BOREHOLE 19 - PROFILE PICTURES


18-20m			
20-22m			
22-24m			
24-26m			
26-28m			

BOREHOLE 19 - PROFILE PICTURES

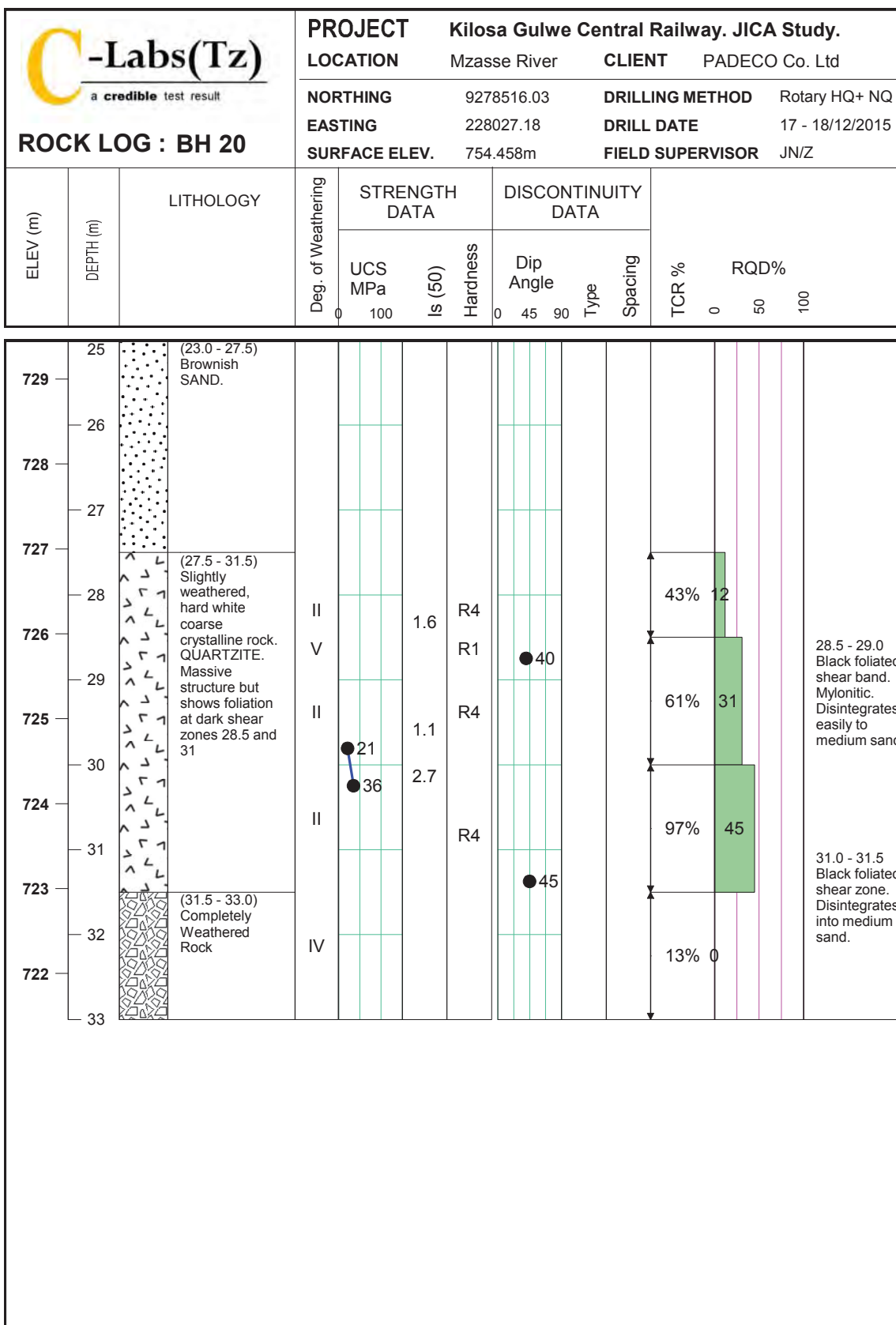
28-30m			
30-32m			
32-34m			



 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd		
SOIL LOG: BH 20		NORTHING 9278516.03	DRILLING METHOD Rotary HQ+ NQ		
		EASTING 228027.18	DRILL DATE 17 - 18/12/2015		
		SURFACE ELEV. 754.458m	FIELD SUPERVISOR JN/Z		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
				0 10 20 30 40 50 60 70	
741	13.0				Black rock piece at 12.8m
740	14.0		(13.9 - 23.0) Brownish to Whitish sand		
739	15.0			9.13.16	29
738	16.0				
737	17.0	DS SW-SM G.S.F=00.93.07 PI=NP		8.11.19	30
736	18.0			9.16.18	34
735	19.0				
734	20.0	DS SW G.S.F=00.96.04 PI=NP		7.13.18	31
733	21.0	DS SW-SM G.S.F=00.93.07 PI=NP		9.11.14	25
732	22.0				
731	23.0		(23.0 - 27.5) Brownish sand		Rock fragment 20.9m
730	24.0				
729	25.0			10.10.53	63

 <p>C-Labs(Tz) a credible test result</p> <p>SOIL LOG: BH 20</p>	PROJECT Kilosa Gulwe Central Railway. JICA Study.	
	LOCATION Mzasse River	CLIENT PADECO Co. Ltd
	NORTHING 9278516.03	DRILLING METHOD Rotary HQ+ NQ
	EASTING 228027.18	DRILL DATE 17 - 18/12/2015
	SURFACE ELEV. 754.458m	FIELD SUPERVISOR JN/Z

















ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT							REMARKS	
				0	10	20	30	40	50	60		70
26.0												
728												
27.0												
727			(27.5 - 33.0) Whitish hard rock									
28.0												
726												
29.0												
725												
30.0												
724												
31.0												
723												
32.0												
722												
33.0												


















BOREHOLE 20 - PROFILE PICTURES



BOREHOLE 20 - PROFILE PICTURES


			
			
			
			
8- 10m	10- 12m	12- 14m	14- 16m

BOREHOLE 20 - PROFILE PICTURES

			
			
			
			
16- 18m	18- 20m	20- 22m	22- 24m


BOREHOLE 20 - PROFILE PICTURES


<p>24- 26m</p>	<p>26- 28m</p>	<p>28- 30m</p>

 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.	
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd
SOIL LOG: MS-1		NORTHING 9278599.6	DRILLING METHOD Rotary HQ
		EASTING 228146.62	DRILL DATE 22 - 25/12/2015
		SURFACE ELEV. 752.621m	FIELD SUPERVISOR JN/Z





















ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	SPT							REMARKS	
					0	10	20	30	40	50	60		70
752	0.0		(0.0 - 0.3) Top Soil.										
	0.3	DS SM G.S.F=02.79.19 PI=NP	Brownish sand										
	1.0		(0.3 - 1.6) Greyish sand										
751	2.0	SPT ML G.S.F=00.19.81 PI=NP	(1.6 - 2.5) Blackish sand	5.9.13									
750	3.0	U4 CL G.S.F=00.06.94 PI=14.2	(2.5 - 4.6) Brownish silty sand										
	3.0	SPT ML G.S.F=10.29.61 PI=NP		8.10.13									
749	4.0	DS CL G.S.F=08.37.55 PI=17.6											
748	5.0	SPT SC-SM G.S.F=02.63.35 PI=6.7	(4.6 - 5.0) Loose red soil	12.18.18									
747	6.0	DS SM G.S.F=01.79.19 PI=NP	(5.0 - 20.0) Brownish sand										
	6.0			10.14.19									
746	7.0	DS SM G.S.F=01.85.15 PI=NP											
	7.0			9.15.18									
745	8.0												
744	9.0	DS SW-SM G.S.F=01.89.10 PI=NP											
	9.0			10.15.20									
743	10.0	SPT SP G.S.F=03.94.03 PI=NP											
	10.0	DS SW G.S.F=00.96.04 PI=NP											
742	11.0	SPT SW-SM G.S.F=21.70.10 PI=NP		16.30.32									
741		DS SW-SM G.S.F=00.95.05 PI=NP											

	Drilling stopped 6.5m and recommenced on 24-Dec Ground water first encountered at 8m. Dried out in intervening lower layers
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 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.										
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd									
SOIL LOG: MS-1		NORTHING 9278599.6	DRILLING METHOD Rotary HQ									
		EASTING 228146.62	DRILL DATE 22 - 25/12/2015									
		SURFACE ELEV. 752.621m	FIELD SUPERVISOR JN/Z									
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS							
					0	10	20	30	40	50	60	70
740	12.0	SPT SW G.S.F=01.95.05 PI=NP		15.22.23							45	
	13.0	DS SW-SM G.S.F=00.94.06 PI=NP										
739	14.0	SPT SM G.S.F=02.84.14 PI=NP		23.25.24							49	
738	15.0	DS SW-SM G.S.F=01.93.06 PI=NP										
737	16.0	DS SW G.S.F=00.96.04 PI=NP									48	Drilling stopped 15m and recommenced on 25-Dec
736	17.0	SPT SW G.S.F=00.96.04 PI=NP		18.24.24								
735	18.0	DS SW-SM G.S.F=00.95.05 PI=NP									40	A lower ground water level encountered at 17m.
734	19.0	DS SW G.S.F=00.97.03 PI=NP										
733	20.0	SPT SW-SM G.S.F=00.95.05 PI=NP		15.18.22								
732	21.0	DS SW-SM G.S.F=02.89.09 PI=NP	(20.0 - 22.0) Whitish Sand with soft weathered rock pieces									
731	22.0	DS SW-SM G.S.F=02.88.10 PI=NP										
730	23.0	DS SW-SM G.S.F=00.93.07 PI=NP	(22.0 - 30.0) Brown SAND	18.18.33							51	
729		DS SW-SM G.S.F=01.91.08 PI=NP										

		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd		
SOIL LOG: MS-1		NORTHING 9278599.6	DRILLING METHOD Rotary HQ		
		EASTING 228146.62	DRILL DATE 22 - 25/12/2015		
		SURFACE ELEV. 752.621m	FIELD SUPERVISOR JN/Z		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
				0 10 20 30 40 50 60 70	
728	24.0	DS SW G.S.F=04.92.04 PI=NP	[Dotted pattern]		70
	25.0			22.23.48	
727	26.0	DS SW G.S.F=00.95.05 PI=NP			
726	27.0	DS SW G.S.F=13.83.05 PI=NP			
725	28.0	DS SW-SM G.S.F=01.92.07 PI=NP		19.34.40	
724	29.0				
723	30.0	DS SW-SM G.S.F=01.91.08 PI=NP			




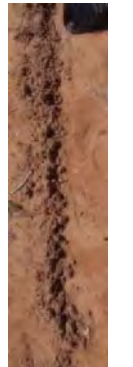



BOREHOLE MS 01 - PROFILE PICTURES


				
				
				
				
0-2m	2-4m	4-6m	6-8m	8-10m

BOREHOLE MS 01 - PROFILE PICTURES


<p>10-12m</p>				
<p>12-14m</p>				
<p>14-16m</p>				
<p>16-18m</p>				
<p>18-20m</p>				


BOREHOLE MS 01 - PROFILE PICTURES


<p>20- 22m</p>		<p>22- 24m</p>		<p>24- 26m</p>		<p>26- 28m</p>		<p>28- 30m</p>	
									
									
									


 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.																	
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd																
SOIL LOG: MS-2		NORTHING 9277880.89	DRILLING METHOD Rotary HQ+ NQ																
		EASTING 227636.77	DRILL DATE 04 - 06/1/2016																
		SURFACE ELEV. m	FIELD SUPERVISOR JN/Z																
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS														
					0	10	20	30	40	50	60	70							
0.0		DS SW-SM G.S.F=00.91.09 PI=NP	(0.0 - 2.5) Top Soil. Brownish SAND																
1.0																			
2.0		SPT SW-SM G.S.F=00.91.09 PI=NP		3.3.4															
		U4 SM G.S.F=01.87.12 PI=NP																	
3.0		DS SM G.S.F=00.68.32 PI=NP	(2.5 - 9.5) Brownish silty SAND																
		SPT SC G.S.F=04.71.25 PI=10.5		4.7.13															
4.0		DS SC G.S.F=00.82.18 PI=10.7																	
5.0		DS SM G.S.F=00.80.20 PI=NP																	
6.0		DS SC G.S.F=00.82.18 PI=12																	
		SPT SC G.S.F=12.71.17 PI=10.5		9.12.13															
7.0		DS SC-SM G.S.F=00.86.14 PI=5.6																	
8.0		SPT SP-SM G.S.F=08.82.10 PI=NP		9.16.25															
		DS SM G.S.F=00.87.13 PI=NP																	
9.0		DS SC G.S.F=00.71.29 PI=15.8	(9.5 - 13.0) Red clayey SAND																
10.0		SPT SC G.S.F=12.48.40 PI=17.3		14.51-16cm															
11.0		DS SC G.S.F=00.67.33 PI=15.9																	


No groundwater encountered in borehole

		PROJECT Kilosa Gulwe Central Railway. JICA Study.												
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd											
SOIL LOG: MS-2		NORTHING 9277880.89	DRILLING METHOD Rotary HQ+ NQ											
		EASTING 227636.77	DRILL DATE 04 - 06/1/2016											
		SURFACE ELEV. m	FIELD SUPERVISOR JN/Z											
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	0	10	20	30	40	50	60	70	REMARKS	
12.0		DS SM G.S.F=00.73.27 PI=NP	(13.0 - 25.0) Brownish greyish SAND											
13.0														
14.0		SPT SM G.S.F=03.77.20 PI=NP			12.14.13									
15.0		DS SM G.S.F=00.87.13 PI=NP												
16.0		DS SW-SM G.S.F=00.90.10 PI=NP												
17.0		SPT SC G.S.F=03.71.26 PI=9			9.11.11									
18.0		DS SC G.S.F=00.88.12 PI=12												
19.0		DS SP-SM G.S.F=00.89.11 PI=NP												
20.0		SPT SC G.S.F=03.62.36 PI=7.6			16.22.18									
21.0		DS SM G.S.F=00.88.12 PI=NP												
22.0		DS SP-SM G.S.F=00.90.11 PI=NP												
23.0		SPT SM G.S.F=21.55.24 PI=NP			35.35.40									
		DS SM G.S.F=00.86.14 PI=NP												Drilling stopped at 20m and recommenced on 5-Jan.
														Rock fragments found at 23-27m.

 <p>C-Labs(Tz) a credible test result</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.												
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd											
SOIL LOG: MS-2		NORTHING 9277880.89	DRILLING METHOD Rotary HQ+ NQ											
		EASTING 227636.77	DRILL DATE 04 - 06/1/2016											
		SURFACE ELEV. m	FIELD SUPERVISOR JN/Z											
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	0	10	20	30	40	50	60	70	REMARKS	
	24.0												Drilling progressed with HQ core barrel	
	25.0	DS SM G.S.F=00.87.13 PI=NP	(25.0 - 30.0) Whitish greyish SAND with some stone fragments											
	26.0	DS SW-SM G.S.F=00.93.07 PI=NP												
	27.0	DS SW-SM G.S.F=00.93.07 PI=NP												Drilling stopped at 27m and recommenced on 6-Jan.
	28.0	DS SW-SM G.S.F=00.91.09 PI=NP												
	29.0	DS SW-SM G.S.F=00.91.09 PI=NP												Rock fragments
	30.0	DS SM G.S.F=00.87.13 PI=NP												

ELEV (m)		DEPTH (m)		SAMPLE TYPE & PROPERTIES		LITHOLOGY		SPT		REMARKS	
<div style="display: flex; justify-content: space-between;"> <div style="width: 30%;">  <p>SOIL LOG: MS-3</p> </div> <div style="width: 65%;"> <p>PROJECT Kilosa Gulwe Central Railway. JICA Study.</p> <p>LOCATION Mzasse River CLIENT PADECO Co. Ltd</p> <p>NORTHING 9276995.76 DRILLING METHOD Rotary HQ+ NQ</p> <p>EASTING 227014.11 DRILL DATE 28 - 02/1/2016</p> <p>SURFACE ELEV. m FIELD SUPERVISOR JN/Z</p> </div> </div>											
0.0	DS	SM	G.S.F=01.75.24 PI=NP	(0.0 - 3.0)	Top Soil. Loose red to brownish SAND						Drilling started with PQ single core barrel
1.0	U4	SC	G.S.F=00.74.26 PI=10.1			4.6.5					
2.0	DS	SC	G.S.F=05.63.32 PI=10.7								
3.0				(3.0 - 6.6)	Brownish SAND	9.11.11					No Ground Water table encountered in this borehole
4.0	DS	SC	G.S.F=00.67.33 PI=13.8								
5.0						6.9.11					
6.0	DS	SC	G.S.F=01.82.18 PI=11								Drilling stopped at 5m and recommenced on 29-Dec
7.0				(6.6 - 7.7)	Whitish SAND	9.23.24					
8.0								50-10cm			
9.0				(7.7 - 12.0)	Soft whitish weathered rock						Drilling progressed with HQ single core barrel 7.5 - 9.0m is weathered rock
10.0	DS	SM	G.S.F=00.83.18 PI=NP								
11.0											
	DS	SM	G.S.F=00.84.16 PI=NP								9 - 11.3m Soft rock. Crushed to sand in core barrel

		PROJECT Kilosa Gulwe Central Railway. JICA Study.											
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd										
SOIL LOG: MS-3		NORTHING 9276995.76	DRILLING METHOD Rotary HQ+ NQ										
		EASTING 227014.11	DRILL DATE 28 - 02/1/2016										
		SURFACE ELEV. m	FIELD SUPERVISOR JN/Z										
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	0	10	20	30	40	50	60	70	REMARKS
12.0		DS SP-SM G.S.F=00.89.11 PI=NP	(12.0 - 13.0) Hard blackish rock										12 - 16m. Predominantly dark rock. Some white streak
13.0			(13.0 - 14.9) Soft blackish rock										
14.0			(14.9 - 15.3) Hard whitish rock										Drilling stopped at 13m and recommenced on 1-Jan with NQ bit. Very slow progress because of rocky formations 15-16 predominantly white rock. Band intrusion
15.0			(15.3 - 15.5) whitish sand stone										
16.0			(15.5 - 16.0) Hard whitish rock										
17.0			(16.0 - 17.2) Soft whitish rock										
18.0			(17.2 - 17.5) Hard whitish rock										
19.0			(17.5 - 18.4) Soft rock										
20.0			(18.4 - 20.3) Hard, white and black banded rock. GNEISS										16-20m. Predominantly dark rock. Some white streak


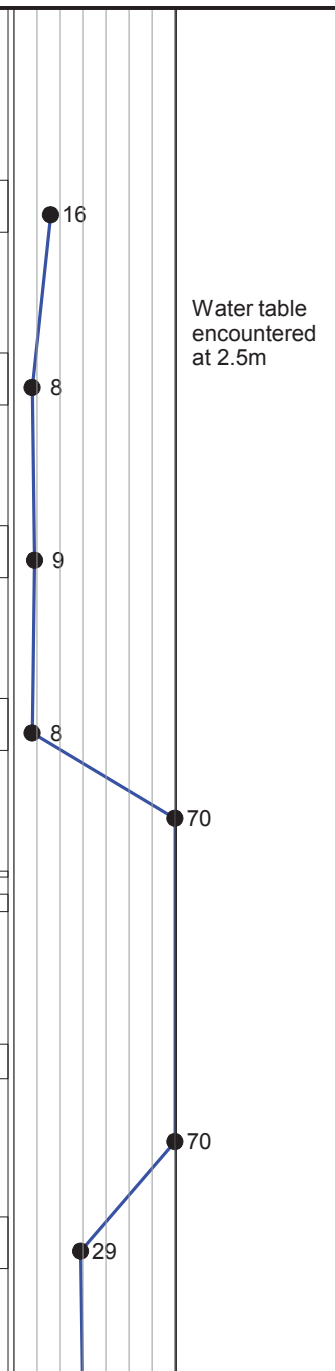
		PROJECT Kilosa Gulwe Central Railway. JICA Study.										
		LOCATION Mzasse River	CLIENT PADECO Co. Ltd									
ROCK LOG : MS-3		NORTHING 9276995.76	DRILLING METHOD Rotary HQ+ NQ									
		EASTING 227014.11	DRILL DATE 28 - 02/1/2016									
		SURFACE ELEV. m	FIELD SUPERVISOR JN/Z									
ELEV (m)	DEPTH (m)	LITHOLOGY	Deg. of Weathering	STRENGTH DATA			DISCONTINUITY DATA			TCR %		
				UCS MPa	Is (50)	Hardness	Dip Angle	Type	Spacing	0	50	100
			0 100				0 45 90					
	10	(7.7 - 12.0) Soft whitish weathered rock										
	11											
	12	(12.0 - 13.0) Hard blackish rock			1.2					32%	10	
	13	(13.0 - 14.9) Soft blackish rock										
	14									35%	0	
	15	(14.9 - 15.3) Hard whitish rock										
	16	(15.3 - 15.5) whitish sand stone			4.9					29%	0	
	17	(15.5 - 16.0) Hard whitish rock										
	18	(16.0 - 17.2) Soft whitish rock										
	19	(17.2 - 17.5) Hard whitish rock								0%	0	
	20	(17.5 - 18.4) Soft rock										
		(18.4 - 20.0) Hard, white and black banded rock. GNEISS			1.1 2.3					85%	25	

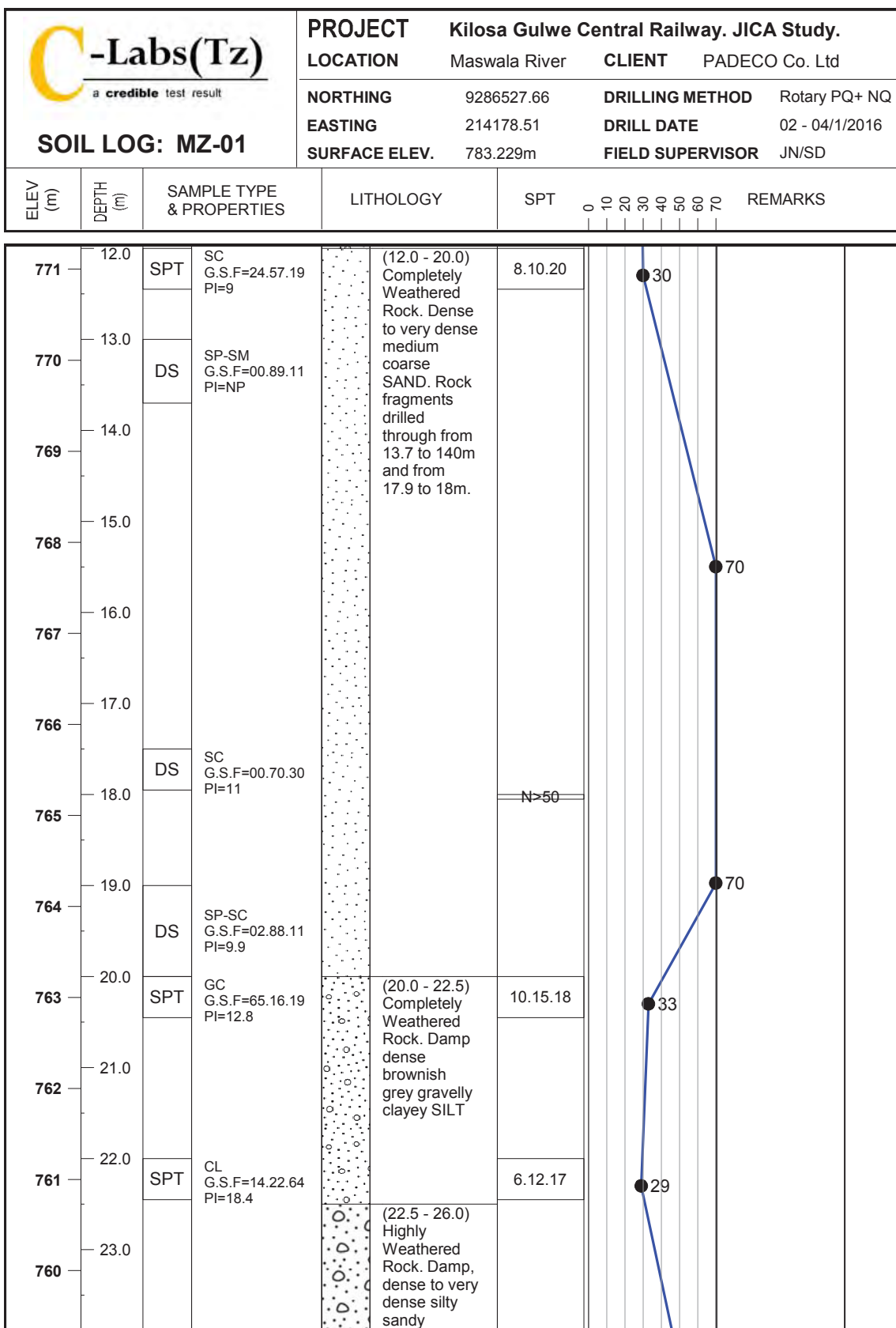
BOREHOLE MS 03 - PROFILE PICTURES


					
					
					
0-2m		2-4m	4-6m	6-8m	8-10m


BOREHOLE MS 03 - PROFILE PICTURES


		
10- 12m	12- 14m	14- 16m

			PROJECT Kilosa Gulwe Central Railway. JICA Study.									
			LOCATION Maswala River	CLIENT PADECO Co. Ltd								
			NORTHING 9286527.66	DRILLING METHOD Rotary PQ+ NQ								
SOIL LOG: MZ-01			EASTING 214178.51	DRILL DATE 02 - 04/1/2016								
			SURFACE ELEV. 783.229m	FIELD SUPERVISOR JN/SD								
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS							
					0	10	20	30	40	50	60	70
783	0.0		(0.0 - 2.5) Moist, loose to medium dense, light brown silty medium coarse SAND									
782	1.0	DS	SW-SM G.S.F=01.92.07 PI=NP	5.8.8	 <p>Water table encountered at 2.5m</p>							
		SPT	SP-SM G.S.F=01.88.12 PI=NP									
781	2.0											
780	3.0	DS	SM G.S.F=00.81.19 PI=NP	1.2.6								
		SPT	GP G.S.F=51.45.05 PI=NP									
779	4.0											
778	5.0	DS	SW G.S.F=27.69.04 PI=NP	3.2.7								
		SPT	SW G.S.F=14.82.05 PI=NP									
777	6.0											
776	7.0	DS	SW-SM G.S.F=33.62.06 PI=NP	4.3.5								
		SPT	SW-SM G.S.F=01.91.09 PI=NP									
775	8.0											
774	9.0	SPT	SW G.S.F=09.89.02 PI=NP	N>50 35.N>50								
		SPT	SM G.S.F=01.58.41 PI=NP									
773	10.0											
772	11.0	DS	(7.6 - 12.0) Completely Weathered Rock. Medium dense to dense fine SAND with few cobbles from 7.7 to 9.3m	1.20.N>50								
		SPT	SC G.S.F=00.69.31 PI=10									



 <p>SOIL LOG: MZ-01</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Maswala River	CLIENT PADECO Co. Ltd		
		NORTHING 9286527.66	DRILLING METHOD Rotary PQ+ NQ		
		EASTING 214178.51	DRILL DATE 02 - 04/1/2016		
		SURFACE ELEV. 783.229m	FIELD SUPERVISOR JN/SD		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
759	24.0		GRAVEL with some rock cobbles	20.25.25	
758	25.0	DS SC G.S.F=02.54.43 PI=11.6			
757	26.0		(26.0 - 29.7) Wet, very dense SAND with cobbles of highly weathered quartzitic rock		
756	27.0				
755	28.0	DS SW-SM G.S.F=00.93.07 PI=NP			
754	29.0				
	30.0		(29.7 - 30.0) Hard rock. Boulders		

 <p>ROCK LOG : MZ-01</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.										
		LOCATION Maswala River	CLIENT PADECO Co. Ltd									
		NORTHING 9286527.66	DRILLING METHOD Rotary PQ+ NQ									
		EASTING 214178.51	DRILL DATE 02 - 04/1/2016									
		SURFACE ELEV. 783.229m	FIELD SUPERVISOR JN/SD									
ELEV (m)	DEPTH (m)	LITHOLOGY	Deg. of Weathering	STRENGTH DATA			DISCONTINUITY DATA			TCR %		
				UCS MPa	Is (50)	Hardness	Dip Angle	Type	Spacing	0	50	100
773	10	(7.6 - 12.0) Completely Weathered Rock. Medium dense to dense fine SAND with few cobbles from 7.7 to 9.3m										
772	11											
771	12	(12.0 - 20.0) Completely Weathered Rock. Dense to very dense medium coarse SAND. Rock fragments drilled through from 13.7 to 14.0m and from 17.9 to 18m.										
770	13								15%	0		
769	14											
768	15											
767	16											
766	17											
765	18											
764	19											
763	20	(20.0 - 22.5) Completely Weathered Rock. Damp dense										

		PROJECT Kilosa Gulwe Central Railway. JICA Study.										
		LOCATION Maswala River	CLIENT PADECO Co. Ltd									
ROCK LOG : MZ-01		NORTHING 9286527.66	DRILLING METHOD Rotary PQ+ NQ									
		EASTING 214178.51	DRILL DATE 02 - 04/1/2016									
		SURFACE ELEV. 783.229m	FIELD SUPERVISOR JN/SD									
ELEV (m)	DEPTH (m)	LITHOLOGY	Deg. of Weathering	STRENGTH DATA			DISCONTINUITY DATA			TCR %		
				UCS MPa	Is (50)	Hardness	Dip Angle	Type	Spacing	0	50	100
762	21	brownish grey gravelly clayey SILT										
761	22											
760	23	(22.5 - 26.0) Highly Weathered Rock. Damp, dense to very dense silty sandy GRAVEL with some rock cobbles										
759	24											
758	25											
757	26	(26.0 - 29.7) Wet, very dense SAND with cobbles of highly weathered quartzitic rock		11.7						69%	0	
756	27			3.8								
755	28											
754	29									9%	0	
	30	(29.7 - 30.0) Hard rock. Quartzite boulders										












BOREHOLE MZ01 - PROFILE PICTURES


0-2m		2-4m		4-6m		6-8m		8-10m	
									
									

BOREHOLE MZ01 - PROFILE PICTURES


10-12m				
12-14m				
14-16m				
16-18m				
18-20m				


BOREHOLE MZ01 - PROFILE PICTURES


20-22m				
22-24m				
24-26m				
26-28m				
28-30m				


 <p>C-Labs(Tz) a credible test result</p>		<p>PROJECT Kilosa Gulwe Central Railway. JICA Study.</p>																
		<p>LOCATION Maswala River</p>	<p>CLIENT PADECO Co. Ltd</p>															
<p>SOIL LOG: MZ-02</p>		<p>NORTHING 9286360.06</p>	<p>DRILLING METHOD Rotary PQ+ NQ</p>															
		<p>EASTING 213773.24</p>	<p>DRILL DATE 24 - 02/01/2016</p>															
		<p>SURFACE ELEV. 787.658m</p>	<p>FIELD SUPERVISOR JN/SD</p>															
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS													
					0	10	20	30	40	50	60	70						
787	0.0		(0.0 - 2.6) Dry loose, light brown silty coarse SAND with some quartz riverine gravel															
786	2.0	DS SW G.S.F=27.69.04 PI=NP		1.1.2	3													
784	4.0	DS SM G.S.F=03.84.13 PI=NP	(2.6 - 4.3) Moist light brown silty fine to medium coarse SAND with few cobbles	5.6.6	12													
783	5.0	SPT SM G.S.F=00.61.39 PI=NP	(4.3 - 4.9) Damp soft, dark brown clayey SILT															
782	6.0	DS ML G.S.F=00.49.51 PI=NP	(4.9 - 7.5) Moist yellowish brown clayey silty fine SAND. Clay proportion increases with depth	2.2.4	6													
781	7.0	U4 CL G.S.F=00.30.70 PI=11.2																
780	8.0	DS CL G.S.F=01.49.50 PI=11	(7.5 - 12.5) Wet, greyish brown gravelly silty SAND	4.8.7	15													
779	9.0	SPT MH G.S.F=26.19.55 PI=22.2																
778	10.0	DS SC G.S.F=14.41.45 PI=14.7		2.4.5	9													
777	11.0	SPT CL G.S.F=03.46.51 PI=20.7																
776		DS SC G.S.F=45.35.20 PI=8.5																

Water table encountered at 7.2m

 <p>SOIL LOG: MZ-02</p>		PROJECT Kilosa Gulwe Central Railway. JICA Study.			
		LOCATION Maswala River	CLIENT PADECO Co. Ltd		
		NORTHING 9286360.06	DRILLING METHOD Rotary PQ+ NQ		
		EASTING 213773.24	DRILL DATE 24 - 02/01/2016		
		SURFACE ELEV. 787.658m	FIELD SUPERVISOR JN/SD		
ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT	REMARKS
775	12.0	SPT SM G.S.F=20.52.28 PI=NP	(12.5 - 14.7) Wet, brownish grey silty fine SAND with cobbles of cemented sandstone from 14.0 to 14.7m	6.8.11	19
774	13.0				
773	14.0		(14.7 - 21.8) Wet, brownish grey silty SAND with gravels and cobbles	N>50	70
772	15.0				
771	16.0	DS SM G.S.F=17.64.19 PI=NP		8.14.N>50	
770	17.0	DS SM G.S.F=02.78.20 PI=NP			
769	18.0				70
768	19.0	DS SM G.S.F=01.76.23 PI=NP			
767	20.0	SPT ML G.S.F=31.19.51 PI=15.2		11.16.21	37
766	21.0	DS SC G.S.F=00.71.29 PI=11.2			70
765	22.0		(21.8 - 25.0) Wet very dense sand and boulders. The rock is weathered and porous.	N>50	
764	23.0				

 <p>C-Labs(Tz) a credible test result</p> <p>SOIL LOG: MZ-02</p>	PROJECT Kilosa Gulwe Central Railway. JICA Study.	
	LOCATION Maswala River	CLIENT PADECO Co. Ltd
	NORTHING 9286360.06	DRILLING METHOD Rotary PQ+ NQ
	EASTING 213773.24	DRILL DATE 24 - 02/01/2016
	SURFACE ELEV. 787.658m	FIELD SUPERVISOR JN/SD

ELEV (m)	DEPTH (m)	SAMPLE TYPE & PROPERTIES	LITHOLOGY	SPT						REMARKS		
				0	10	20	30	40	50		60	70
763	24.0		 <p>(25.0 - 30.0) As above but rock is hard</p>									
762	25.0											
761	26.0											
760	27.0											
759	28.0											
758	29.0											
	30.0											

		PROJECT Kilosa Gulwe Central Railway. JICA Study.	
		LOCATION Maswala River	CLIENT PADECO Co. Ltd
ROCK LOG : MZ-02		NORTHING 9286360.06	DRILLING METHOD Rotary PQ+ NQ
		EASTING 213773.24	DRILL DATE 24 - 02/01/2016
		SURFACE ELEV. 787.658m	FIELD SUPERVISOR JN/SD

ELEV (m)	DEPTH (m)	LITHOLOGY	Deg. of Weathering	STRENGTH DATA			DISCONTINUITY DATA			TCR %			RQD%				
				UCS MPa	Is (50)	Hardness	Dip Angle	Type	Spacing	0	50	100	0	50	100		
768	20	(14.7 - 21.5) Wet, brownish grey silty SAND with gravels and cobbles	IV														
767	21																
766	22	(21.5 - 30.0) Moderately weathered light greenish white, massive, pitted LIMESTONE	III	13			R3					14%	0				
765	23																
764	24																
763	25																
762	26		III	7			R3										
761	27																
760	28																
759	29		III				R3										
758	30																

Pitted. No obvious jointing seen








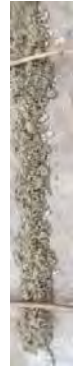









BOREHOLE MZ02 - PROFILE PICTURES

				
				
				
				
0-2m	2-4m	4-6m	6-8m	8-10m


BOREHOLE MZ02 - PROFILE PICTURES

10-12m		12-14m		14-16m		16-18m		18-20m	
									
									

BOREHOLE MZ02 - PROFILE PICTURES


<p>20-22m</p>				
<p>22-24m</p>				
<p>24-26m</p>				
<p>26-28m</p>				
<p>28-30m</p>				

CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA - GULWE SECTION GEOTECHNICAL INVESTIGATION		-Labs(Tz) A CRIBABLE TEST HOUSE																								
LABORATORY TEST RESULTS SUMMARY		FEBRUARY 2016																								
CLIENT: PADECO COMPANY LIMITED																										
Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	FINES %	CLAY %	nmcc %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	Eoed	
S01147	7300	BH Nr12 [DS] 1.10 - 1.50	Dec-15	25	16	9	0	17	60	23	-	-	-	-	-	Very clayey gravelly SAND	SC(L)	SC	-	-	-	-	-	-	-	
S01147	7301	BH Nr12 [SPT] 1.50 - 1.67	Dec-15	22	NP	NP	0	0	54	46	-	-	-	-	-	Sandy SILT of low plasticity	MS(L)	SM	-	-	-	-	-	-	-	
S01147	7302	BH Nr12 [DS] 2.00 - 3.00	Dec-15	23	NP	NP	0	4	84	11	-	-	-	-	-	Silty SAND	S-M	SP-SM	-	-	-	-	-	-	-	
S01147	7303	BH Nr12 [DS] 3.00 - 4.00	Dec-15	23	NP	NP	0	10	83	6	-	-	-	-	-	Silty gravelly SAND	S-M	SW-SM	-	-	-	-	-	-	-	
S01147	7309	BH Nr12 [DS] 14.00 - 15.15	Dec-15	24	NP	NP	0	0	83	16	-	-	-	-	-	Silty SAND	SM(L)	SM	DS	22	37.2	-	-	-	-	
S01147	7313	BH Nr13 [DS] 0.00 - 1.00	Dec-15	46	18	29	14	1	28	71	-	-	-	-	-	CLAY of intermediate plasticity	C(I)	CL	-	-	-	-	-	-	-	
S01147	7317	BH Nr13 [DS] 3.50 - 4.00	Dec-15	28	NP	NP	1	23	49	28	-	-	-	-	-	Very silty very gravelly SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7320	BH Nr13 [DS] 4.50 - 5.00	Dec-15	25	NP	NP	0	1	81	18	-	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7321	BH Nr13 [DS] 5.00 - 6.00	Dec-15	26	NP	NP	0	0	85	15	-	-	-	-	-	Silty SAND	S-M	SM	-	-	-	-	-	-	-	
S01147	7322	BH Nr13 [DS] 6.00 - 7.00	Dec-15	27	NP	NP	0	1	84	15	-	-	-	-	-	Silty SAND	S-M	SM	-	-	-	-	-	-	-	
S01147	7323	BH Nr13 [DS] 7.00 - 8.00	Dec-15	25	NP	NP	0	0	98	2	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7324	BH Nr13 [DS] 8.00 - 9.00	Dec-15	27	NP	NP	0	0	97	3	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7326	BH Nr13 [DS] 9.00 - 10.00	Dec-15	26	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7328	BH Nr13 [SPT] 11.00 - 12.00	Dec-15	25	NP	NP	0	0	95	5	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7330	BH Nr13 [DS] 12.00 - 13.00	Dec-15	24	NP	NP	0	0	91	9	-	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	
S01147	7332	BH Nr13 [DS] 14.00 - 15.00	Dec-15	23	NP	NP	0	0	92	8	-	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	
S01147	7334	BH Nr13 [DS] 15.00 - 16.00	Dec-15	24	NP	NP	0	1	95	5	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7336	BH Nr13 [DS] 16.00 - 17.00	Dec-15	23	NP	NP	0	0	94	6	-	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	
S01147	7339	BH Nr13 [DS] 18.00 - 19.00	Dec-15	26	NP	NP	1	1	79	21	-	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7341	BH Nr13 [DS] 19.00 - 20.00	Dec-15	25	NP	NP	1	5	77	19	-	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7342	BH Nr13 [DS] 20.00 - 21.00	Dec-15	27	NP	NP	1	3	75	22	-	-	-	-	-	Very silty SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7094	BH Nr14 [DS] 5.00 - 6.00	Dec-15	25	NP	NP	0	62	11	28	-	-	-	-	-	Very silty sandy GRAVEL	GM(L)	GM	-	-	-	-	-	-	-	
S01147	7095	BH Nr14 [SPT] 6.00 - 6.45	Dec-15	25	NP	NP	0	8	84	8	-	-	-	-	-	Silty gravelly SAND	S-M	SW-SM	-	-	-	-	-	-	-	
S01147	7096	BH Nr14 [DS] 7.50 - 8.00	Dec-15	24	NP	NP	0	2	96	3	-	-	-	-	-	SAND	SP	SW	DS	18.2	38.8	-	-	-	-	
S01147	7097	BH Nr14 [SPT] 8.00 - 8.45	Dec-15	25	NP	NP	0	1	96	3	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7098	BH Nr14 [DS] 9.50 - 10.00	Dec-15	26	NP	NP	0	47	52	2	-	-	-	-	-	SAND and GRAVEL	SP	SW	DS	0	38.5	-	-	-	-	
S01147	7099	BH Nr14 [SPT] 10.00 - 10.45	Dec-15	26	NP	NP	0	60	38	3	-	-	-	-	-	SAND and GRAVEL	GW	SW	-	-	-	-	-	-	-	
S01147	7101	BH Nr14 [SPT] 12.00 - 12.45	Dec-15	27	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	
S01147	7102	BH Nr14 [DS] 13.50 - 14.00	Dec-15	28	NP	NP	0	-	-	-	-	-	-	-	-	SAND and GRAVEL	-	-	DS	0	38.3	-	-	-	-	
S01147	7103	BH Nr14 [SPT] 14.00 - 14.45	Dec-15	30	20	10	5	39	57	5	-	-	-	-	-	SAND and GRAVEL	SW	SW	-	-	-	-	-	-	-	
S01147	7104	BH Nr14 [DS] 15.50 - 16.00	Dec-15	25	NP	NP	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
S01147	7106	BH Nr14 [DS] 17.50 - 18.00	Dec-15	26	NP	NP	0	0	99	2	-	-	-	-	-	-	-	-	DS	0	47.7	-	-	-	-	-
S01147	7110	BH Nr15 [SPT] 1.50 - 1.95	Dec-15	27	NP	NP	0	2	81	17	-	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	
S01147	7117	BH Nr15 [DS] 8.00 - 9.00	Dec-15	29	NP	NP	0	72	28	0	-	-	-	-	-	very sandy GRAVEL	GP	GP	DS	14.4	44.8	-	-	-	-	-



C-Labs(Tz)
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CENTRAL RAILWAY JICA STUDY - PHASE II
KILOSA - GULWE SECTION
GEOTECHNICAL INVESTIGATION



C-Labs(Tz)
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LABORATORY TEST RESULTS SUMMARY

CLIENT: PADECO COMPANY LIMITED

FEBRUARY 2016


Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	FINES %	CLAY %	mm %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	E _{oed}	
S01147	7119	BH № 15 [DS] 9.20 - 11.20	Dec-15	30	NP	NP	0	0	95	5	-	-	-	-	SAND	SP	SW	DS	13.6	36.6	-	-	-	-		
S01147	7121	BH № 15 [DS] 12.50 - 13.20	Dec-15	26	NP	NP	0	0	98	2	-	-	-	-	SAND	SP	SW	DS	9	37.2	-	-	-	-		
S01147	7124	BH № 15 [SPT] 16.20 - 16.65	Dec-15	27	NP	NP	0	29	67	4	-	-	-	-	very gravely SAND	SW	SW	-	-	-	-	-	-	-		
S01147	7125	BH № 15 [SPT] 19.20 - 19.65	Dec-15	26	NP	NP	0	4	82	15	-	-	-	-	Sily SAND	S-M	SM	-	-	-	-	-	-	-		
S01147	7127	BH № 15 [DS] 22.00 - 23.40	Dec-15	26	NP	NP	0	0	96	4	-	-	-	-	SAND	SP	SW	DS	32.3	36.1	-	-	-	-		
S01147	7130	BH № 18 [DS] 1.00 - 1.60	Dec-15	24	NP	NP	0	11	85	3	-	-	-	-	gravely SAND	SP	SW	-	-	-	-	-	-	-		
S01147	7131	BH № 18 [SPT] 2.00 - 2.45	Dec-15	24	NP	NP	0	6	65	30	-	-	-	-	Very silty gravely SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7133	BH № 18 [DS] 3.50 - 4.00	Dec-15	50	24	26	13	7	48	45	-	-	-	-	Sandy CLAY of intermediate plasticity	CS(I)	SC	-	-	-	-	-	-	-		
S01147	7134	BH № 18 [SPT] 4.00 - 4.45	Dec-15	36	20	15	8	6	54	40	-	-	-	-	Sandy CLAY of intermediate plasticity	CS(I)	SC	-	-	-	-	-	-	-		
S01147	7135	BH № 18 [U4] 5.50 - 5.95	Dec-15	50	26	24	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
S01147	7138	BH № 18 [DS] 6.50 - 7.00	Dec-15	53	29	24	12	2	16	82	-	-	-	-	SILT of high plasticity	M(-)	MH	-	-	-	-	-	-	-		
S01147	7139	BH № 18 [DS] 7.40 - 8.00	Dec-15	20	NP	NP	0	10	77	13	-	-	-	-	Sily gravely SAND	S-M	SM	DS	1.1	38.4	-	-	-	-		
S01147	7142	BH № 18 [DS] 11.00 - 12.00	Dec-15	23	NP	NP	1	0	74	26	-	-	-	-	Very silty SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7413	BH № 19 [DS] 0.00 - 1.00	Jan-15	25	NP	NP	0	0	78	22	-	-	-	-	Very silty SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7415	BH № 19 [DS] 2.00 - 3.00	Jan-15	32	18	15	7	0	59	41	-	-	-	-	Sandy CLAY of low plasticity	CS(L)	SC	-	-	-	-	-	-	-		
S01147	7416	BH № 19 [DS] 3.00 - 4.00	Jan-15	29	17	12	6	0	60	40	-	-	-	-	Sandy CLAY of low plasticity	CS(L)	SC	-	-	-	-	-	-	-		
S01147	7418	BH № 19 [DS] 5.00 - 6.00	Jan-15	25	16	10	4	0	70	30	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-		
S01147	7420	BH № 19 [DS] 6.50 - 7.00	Jan-15	25	NP	NP	1	0	79	21	-	-	-	-	Sily SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7421	BH № 19 [DS] 7.00 - 8.00	Jan-15	24	NP	NP	1	0	79	21	-	-	-	-	Sily SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7423	BH № 19 [DS] 8.00 - 9.00	Jan-15	24	NP	NP	1	0	82	18	-	-	-	-	Sily SAND	SM(L)	SM	-	-	-	-	-	-	-		
S01147	7425	BH № 19 [DS] 9.50 - 10.00	Jan-15	28	NP	NP	0	0	86	14	-	-	-	-	Sily SAND	S-M	SM	-	-	-	-	-	-	-		
S01147	7427	BH № 19 [DS] 11.00 - 12.00	Jan-15	26	NP	NP	0	0	89	12	-	-	-	-	Sily SAND	S-M	SP-SM	-	-	-	-	-	-	-	-	
S01147	7429	BH № 19 [DS] 12.50 - 13.00	Jan-15	23	NP	NP	0	0	96	4	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-		
S01147	7430	BH № 19 [DS] 13.00 - 14.00	Jan-15	28	NP	NP	0	0	90	10	-	-	-	-	Sily SAND	S-M	SP-SM	-	-	-	-	-	-	-	-	
S01147	7431	BH № 19 [DS] 14.00 - 15.00	Jan-15	25	NP	NP	0	0	97	4	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	-	
S01147	7434	BH № 19 [DS] 16.00 - 17.00	Jan-15	25	NP	NP	0	0	96	4	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	-	
S01147	7435	BH № 19 [DS] 17.00 - 18.00	Jan-15	24	NP	NP	0	0	96	4	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	-	
S01147	7437	BH № 19 [DS] 18.50 - 19.00	Jan-15	26	NP	NP	0	0	96	4	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	-	
S01147	7438	BH № 19 [DS] 19.00 - 20.00	Jan-15	27	NP	NP	1	0	93	7	-	-	-	-	Sily SAND	S-M	SW-SM	-	-	-	-	-	-	-	-	
S01147	7439	BH № 19 [DS] 20.00 - 21.00	Jan-15	24	NP	NP	0	0	97	3	-	-	-	-	SAND	SP	SW	-	-	-	-	-	-	-	-	
S01147	7441	BH № 19 [DS] 21.50 - 22.00	Jan-15	34	19	15	8	0	87	13	-	-	-	-	Clayey SAND	S-C	SC	-	-	-	-	-	-	-	-	
S01147	7442	BH № 19 [DS] 22.00 - 23.00	Jan-15	25	NP	NP	1	0	89	11	-	-	-	-	Sily SAND	S-M	SP-SM	-	-	-	-	-	-	-	-	
S01147	7443	BH № 19 [DS] 23.00 - 24.00	Jan-15	27	NP	NP	0	0	86	14	-	-	-	-	Sily SAND	S-M	SM	-	-	-	-	-	-	-	-	
S01147	7445	BH № 19 [DS] 24.00 - 25.00	Jan-15	27	14	13	6	0	87	13	-	-	-	-	Clayey SAND	S-C	SC	-	-	-	-	-	-	-	-	
S01147	7446	BH № 19 [DS] 25.00 - 26.00	Jan-15	27	17	10	5	0	86	15	-	-	-	-	Clayey SAND	S-C	SC	-	-	-	-	-	-	-	-	
S01147	7447	BH № 19 [DS] 26.00 - 27.00	Jan-15	27	NP	NP	0	0	89	11	-	-	-	-	Sily SAND	S-M	SP-SM	-	-	-	-	-	-	-	-	-

C-Labs(Tz)		CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA - GULWE SECTION GEOTECHNICAL INVESTIGATION										C-Labs(Tz)														
LABORATORY TEST RESULTS SUMMARY												FEBRUARY 2016														
CLIENT: PADECO COMPANY LIMITED																										
Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	FINES %	CLAY %	nmcc %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	Eoed	
S01147	7449	BH № 19 [DS] 27.00 - 28.00	Jan-15	25	NP	NP	0	0	81	19	-	-	-	-	-	SILY SAND	SM(L) SM									
S01147	7450	BH № 19 [DS] 28.00 - 29.00	Jan-15	23	NP	NP	1	0	85	15	-	-	-	-	-	SILY SAND	S-M SM									
S01147	7451	BH № 19 [DS] 29.00 - 30.00	Jan-15	24	NP	NP	0	0	87	13	-	-	-	-	-	SILY SAND	S-M SM									
S01147	7453	BH № 19 [DS] 31.00 - 32.00	Jan-15	25	18	7	4	0	91	10	-	-	-	-	-	Clayey SAND	S-C SW/SP-SP/SC									
S01147	7354	BH №20 [DS] 8.00 - 9.00	Jan-15	20	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP SW									
S01147	7356	BH №20 [DS] 9.50 - 10.00	Jan-15	25	NP	NP	0	0	95	5	-	-	-	-	-	SAND	SP SW									
S01147	7361	BH №20 [DS] 12.00 - 13.00	Jan-15	25	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP SW									
S01147	7368	BH №20 [DS] 17.00 - 18.00	Jan-15	22	NP	NP	0	0	93	7	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7371	BH №20 [DS] 20.00 - 21.00	Jan-15	24	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP SW									
S01147	7374	BH №20 [DS] 21.00 - 22.00	Jan-15	25	NP	NP	0	0	93	7	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7225	BH № MS1 [DS] 0.64 - 1.00	Jan-15	26	NP	NP	0	2	79	19	-	-	-	-	-	SILY SAND	SM(L) SM									
S01147	7226	BH № MS1 [SPT] 1.50 - 1.95	Jan-15	33	NP	NP	1	0	19	81	-	-	-	-	-	SILT of low plasticity	M(L) ML									
S01147	7227	BH № MS1 [U4] 2.50 - 2.67	Jan-15	32	18	14	7	0	6	94	-	-	-	-	-	CLAY of low plasticity	C(L) CL									
S01147	7228	BH № MS1 [U4 SHOE] 2.67 - 2.7	Jan-15	44	24	20	10	0	6	94	-	-	-	-	-	CLAY of intermediate plasticity	C(I) CL									
S01147	7229	BH № MS1 [SPT] 3.00 - 3.45	Jan-15	27	NP	NP	1	10	29	61	-	-	-	-	-	Slightly sandy SILT of low plasticity	MS(L) ML									
S01147	7230	BH № MS1 [DS] 3.45 - 4.00	Jan-15	35	17	18	9	8	37	55	-	-	-	-	-	Sandy CLAY of low plasticity	CS(L) CL									
S01147	7231	BH № MS1 [SPT] 4.50 - 4.95	Jan-15	24	17	7	4	2	63	35	-	-	-	-	-	Very clayey SAND	SC(L) SC-SM									
S01147	7232	BH № MS1 [DS] 5.00 - 6.00	Jan-15	26	NP	NP	0	1	79	19	-	-	-	-	-	SILY SAND	SM(L) SM									
S01147	7234	BH № MS1 [DS] 6.50 - 7.00	Jan-15	24	NP	NP	0	1	85	15	-	-	-	-	-	SILY SAND	S-M SM	DS	0	36.3						
S01147	7236	BH № MS1 [DS] 8.00 - 9.00	Jan-15	20	NP	NP	0	1	89	10	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7237	BH № MS1 [SPT] 9.00 - 9.45	Jan-15	20	NP	NP	0	3	94	3	-	-	-	-	-	SAND	SP SP									
S01147	7238	BH № MS1 [DS] 9.50 - 10.00	Jan-15	25	NP	NP	1	0	96	4	-	-	-	-	-	SAND	SP SW	DS	10.8	37						
S01147	7239	BH № MS1 [SPT] 10.50 - 10.95	Jan-15	25	NP	NP	0	21	70	10	-	-	-	-	-	Sily very gravelly SAND	S-M SW-SM									
S01147	7240	BH № MS1 [DS] 11.00 - 12.00	Jan-15	25	NP	NP	0	0	95	5	-	-	-	-	-	SAND	SP SW-SM									
S01147	7241	BH № MS1 [SPT] 12.00 - 12.45	Jan-15	23	NP	NP	0	1	95	5	-	-	-	-	-	SAND	SP SW									
S01147	7242	BH № MS1 [DS] 12.50 - 13.00	Jan-15	27	NP	NP	0	0	94	6	-	-	-	-	-	SILY SAND	S-M SW-SM	DS	0	41.2						
S01147	7243	BH № MS1 [SPT] 13.50 - 13.95	Jan-15	23	NP	NP	0	2	84	14	-	-	-	-	-	SILY SAND	S-M SM									
S01147	7244	BH № MS1 [DS] 14.00 - 15.00	Jan-15	25	NP	NP	0	1	93	6	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7245	BH № MS1 [DS] 15.00 - 16.00	Jan-15	28	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP SW									
S01147	7246	BH № MS1 [SPT] 16.50 - 16.95	Jan-15	29	NP	NP	0	0	96	4	-	-	-	-	-	SAND	SP SW									
S01147	7247	BH № MS1 [DS] 17.00 - 18.00	Jan-15	24	NP	NP	0	0	95	5	-	-	-	-	-	SAND	SP SW-SM									
S01147	7248	BH № MS1 [DS] 18.00 - 19.00	Jan-15	25	NP	NP	0	0	97	3	-	-	-	-	-	SAND	SP SW									
S01147	7249	BH № MS1 [SPT] 19.50 - 19.95	Jan-15	28	NP	NP	0	0	95	5	-	-	-	-	-	SAND	SP SW-SM									
S01147	7250	BH № MS1 [DS] 20.00 - 21.00	Jan-15	24	NP	NP	0	2	89	9	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7251	BH № MS1 [DS] 21.00 - 22.00	Jan-15	26	NP	NP	0	2	88	10	-	-	-	-	-	SILY SAND	S-M SW-SM									
S01147	7253	BH № MS1 [DS] 22.00 - 23.00	Jan-15	27	NP	NP	0	0	93	7	-	-	-	-	-	SILY SAND	S-M SW-SM									



C-Labs(Tz)
A CREDIBLE TEST RESULT

CENTRAL RAILWAY JICA STUDY - PHASE II
KILOSA - GULWE SECTION
GEOTECHNICAL INVESTIGATION



C-Labs(Tz)
A CREDIBLE TEST RESULT

LABORATORY TEST RESULTS SUMMARY

CLIENT: PADECO COMPANY LIMITED

FEBRUARY 2016

Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	FINES %	CLAY %	nmcc %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	Eoed
S01147	7254	BH № MS1 [DS] 23.00 - 24.00	Jan-15	23	NP	NP	0	1	91	8	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7255	BH № MS1 [DS] 24.00 - 25.00	Jan-15	25	NP	NP	0	4	92	4	-	-	-	-	SAND	SP	SW		-	-	-	-	-	-	
S01147	7257	BH № MS1 [DS] 25.50 - 26.00	Jan-15	25	NP	NP	0	0	95	5	-	-	-	-	SAND	SP	SW		-	-	-	-	-	-	
S01147	7258	BH № MS1 [DS] 26.00 - 27.00	Jan-15	25	NP	NP	0	13	83	5	-	-	-	-	gravelly SAND	SP	SW		-	-	-	-	-	-	
S01147	7259	BH № MS1 [DS] 27.00 - 28.00	Jan-15	26	NP	NP	0	1	92	7	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7262	BH № MS1 [DS] 29.00 - 30.00	Jan-15	25	NP	NP	0	1	91	8	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7263	BH № MS2 [DS] 0.00 - 1.00	Jan-15	23	NP	NP	0	0	91	9	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7264	BH № MS2 [SPT] 1.50 - 1.95	Jan-15	25	NP	NP	0	0	91	9	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7265	BH № MS2 [U4] 2.00 - 2.28	Jan-15	25	NP	NP	0	1	87	12	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7266	BH № MS2 [U4 SHOE] 2.21 - 2.2	Jan-15	25	NP	NP	0	1	93	7	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7267	BH № MS2 [DS] 2.50 - 3.00	Jan-15	39	NP	NP	1	0	68	32	-	-	-	-	Very sily SAND	SM(I)	SM		-	-	-	-	-	-	
S01147	7268	BH № MS2 [SPT] 3.00 - 3.45	Jan-15	26	15	11	5	4	71	25	-	-	-	-	Very clayey SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7269	BH № MS2 [DS] 3.50 - 4.00	Jan-15	33	22	11	5	0	82	18	-	-	-	-	Clayey SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7270	BH № MS2 [DS] 4.00 - 5.00	Jan-15	23	NP	NP	1	0	80	20	-	-	-	-	Sily SAND	SM(L)	SM		-	-	-	-	-	-	
S01147	7271	BH № MS2 [DS] 5.00 - 6.00	Jan-15	26	14	12	6	0	82	18	-	-	-	-	Clayey SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7272	BH № MS2 [SPT] 6.00 - 6.45	Jan-15	25	15	11	5	12	71	17	-	-	-	-	Clayey gravelly SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7273	BH № MS2 [DS] 6.50 - 7.00	Jan-15	24	18	6	3	0	86	14	-	-	-	-	Clayey SAND	S-C	SC-SM		-	-	-	-	-	-	
S01147	7274	BH № MS2 [SPT] 7.50 - 7.95	Jan-15	23	NP	NP	0	8	82	10	-	-	-	-	Sily gravelly SAND	S-M	SP-SM		-	-	-	-	-	-	
S01147	7275	BH № MS2 [DS] 8.00 - 9.00	Jan-15	24	NP	NP	0	0	87	13	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7276	BH № MS2 [DS] 9.00 - 10.00	Jan-15	36	20	16	8	0	71	29	-	-	-	-	Very clayey SAND	SC(I)	SC	DS	0	40.1	-	-	-	-	
S01147	7277	BH № MS2 [SPT] 10.05 - 10.95	Jan-15	34	17	17	8	12	48	40	-	-	-	-	Sandy CLAY of low plasticity	CS(L)	SC		-	-	-	-	-	-	
S01147	7278	BH № MS2 [DS] 11.00 - 12.00	Jan-15	37	21	16	8	0	67	33	-	-	-	-	Very clayey SAND	SC(I)	SC		-	-	-	-	-	-	
S01147	7279	BH № MS2 [DS] 12.00 - 13.00	Jan-15	22	NP	NP	1	0	73	27	-	-	-	-	Very sily SAND	SM(L)	SM		-	-	-	-	-	-	
S01147	7280	BH № MS2 [SPT] 13.50 - 13.95	Jan-15	24	NP	NP	0	3	77	20	-	-	-	-	Sily SAND	SM(L)	SM		-	-	-	-	-	-	
S01147	7281	BH № MS2 [DS] 14.00 - 15.00	Jan-15	25	NP	NP	0	0	87	13	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7282	BH № MS2 [DS] 15.00 - 16.00	Jan-15	22	NP	NP	0	0	90	10	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7283	BH № MS2 [SPT] 16.50 - 16.95	Jan-15	24	15	9	4	3	71	26	-	-	-	-	Very clayey SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7284	BH № MS2 [DS] 17.00 - 18.00	Jan-15	22	10	12	6	0	88	12	-	-	-	-	Clayey SAND	S-C	SC		-	-	-	-	-	-	
S01147	7285	BH № MS2 [DS] 18.00 - 19.00	Jan-15	25	NP	NP	0	0	89	11	-	-	-	-	Sily SAND	S-M	SP-SM		-	-	-	-	-	-	
S01147	7286	BH № MS2 [SPT] 19.50 - 19.95	Jan-15	22	14	8	4	3	62	36	-	-	-	-	Very clayey SAND	SC(L)	SC		-	-	-	-	-	-	
S01147	7287	BH № MS2 [DS] 20.00 - 21.00	Jan-15	25	NP	NP	0	0	88	12	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7288	BH № MS2 [DS] 21.00 - 22.00	Jan-15	22	NP	NP	1	0	90	11	-	-	-	-	Sily SAND	S-M	SP-SM		-	-	-	-	-	-	
S01147	7289	BH № MS2 [SPT] 22.50 - 22.95	Jan-15	19	NP	NP	0	21	55	24	-	-	-	-	Very sily very gravelly SAND	SM(L)	SM		-	-	-	-	-	-	
S01147	7291	BH № MS2 [DS] 23.08 - 24.00	Jan-15	25	NP	NP	0	0	86	14	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7293	BH № MS2 [DS] 24.50 - 25.00	Jan-15	23	NP	NP	0	0	87	13	-	-	-	-	Sily SAND	S-M	SM		-	-	-	-	-	-	
S01147	7294	BH № MS2 [DS] 25.00 - 26.00	Jan-15	24	NP	NP	0	0	93	7	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	
S01147	7296	BH № MS2 [DS] 26.00 - 27.00	Jan-15	24	NP	NP	0	0	93	7	-	-	-	-	Sily SAND	S-M	SW-SM		-	-	-	-	-	-	




CENTRAL RAILWAY JICA STUDY - PHASE II
KILOSA - GULWE SECTION
GEOTECHNICAL INVESTIGATION

LABORATORY TEST RESULTS SUMMARY

CLIENT: PADECO COMPANY LIMITED


FEBRUARY 2016

Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	FINES %	CLAY %	nmcc %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	Eoed
S01147	7297	BH № MS2 [DS] 27.00 - 28.00	Jan-15	23	NP	NP	0	0	91	9	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7298	BH № MS2 [DS] 28.00 - 29.00	Jan-15	23	NP	NP	0	0	91	9	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7299	BH № MS2 [DS] 29.00 - 30.00	Jan-15	24	NP	NP	0	0	87	13	-	-	-	-	Silty SAND	S-M	SM	-	-	-	-	-	-	-	-
S01147	7391	BH № MS3 [DS] 0.00 - 1.00	Jan-15	20	NP	NP	0	1	75	24	-	-	-	-	Very silty SAND	SM(L)	SM	-	-	-	-	-	-	-	-
S01147	7392	BH № MS3 [U4] 1.00 - 1.25	Jan-15	24	14	10	5	0	74	26	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7394	BH № MS3 [DS] 2.00 - 3.00	Jan-15	31	20	11	5	5	63	32	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7396	BH № MS3 [DS] 3.50 - 4.00	Jan-15	29	15	14	7	0	67	33	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7398	BH № MS3 [DS] 5.00 - 6.00	Jan-15	25	14	11	6	1	82	18	-	-	-	-	Clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7400	BH № MS3 [DS] 6.50 - 7.00	Jan-15	28	NP	NP	0	0	80	20	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	-
S01147	7404	BH № MS3 [DS] 9.00 - 10.00	Jan-15	25	NP	NP	0	0	83	18	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	-
S01147	7405	BH № MS3 [DS] 10.00 - 11.00	Jan-15	26	NP	NP	0	0	84	16	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	-
S01147	7407	BH № MS3 [DS] 12.00 - 13.00	Jan-15	27	NP	NP	0	0	89	11	-	-	-	-	Silty SAND	S-M	SP-SM	-	-	-	-	-	-	-	-
S01147	7143	BH № 01 MZ [DS] 1.00 - 1.50	Jan-15	26	NP	NP	0	1	92	7	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7144	BH № 01 MZ [SPT] 1.50 - 1.95	Jan-15	24	NP	NP	0	1	88	12	-	-	-	-	Silty SAND	S-M	SP-SM	-	-	-	-	-	-	-	-
S01147	7145	BH № 01 MZ [DS] 2.50 - 3.00	Jan-15	25	NP	NP	0	0	81	19	-	-	-	-	Silty SAND	SM(L)	SM	-	-	-	-	-	-	-	-
S01147	7146	BH № 01 MZ [SPT] 3.00 - 3.45	Jan-15	27	NP	NP	0	51	45	5	-	-	-	-	SAND and GRAVEL	GP	GP	-	-	-	-	-	-	-	-
S01147	7147	BH № 01 MZ [DS] 4.00 - 4.50	Jan-15	22	NP	NP	0	27	69	4	-	-	-	-	very gravelly SAND	SP	SW	-	-	-	-	-	-	-	-
S01147	7148	BH № 01 MZ [SPT] 4.50 - 4.95	Jan-15	22	NP	NP	0	14	82	5	-	-	-	-	gravelly SAND	SP	SW	-	-	-	-	-	-	-	-
S01147	7149	BH № 01 MZ [DS] 5.50 - 6.00	Jan-15	24	NP	NP	0	33	62	6	-	-	-	-	Silty SAND and GRAVEL	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7150	BH № 01 MZ [SPT] 6.00 - 6.45	Jan-15	24	NP	NP	0	1	91	9	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7151	BH № 01 MZ [DS] 7.00 - 7.50	Jan-15	24	NP	NP	0	9	89	2	-	-	-	-	gravelly SAND	SP	SW	-	-	-	-	-	-	-	-
S01147	7154	BH № 01 MZ [SPT] 9.00 - 9.30	Jan-15	32	NP	NP	1	1	58	41	-	-	-	-	Sandy SILT of low plasticity	MS(L)	SM	-	-	-	-	-	-	-	-
S01147	7155	BH № 01 MZ [DS] 10.00 - 10.50	Jan-15	33	23	10	5	0	69	31	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7156	BH № 01 MZ [SPT] 10.50 - 10.95	Jan-15	25	19	6	3	33	49	18	-	-	-	-	Clayey SAND and GRAVEL	SC(L)	SC-SM	-	-	-	-	-	-	-	-
S01147	7157	BH № 01 MZ [SPT] 12.00 - 12.45	Jan-15	27	18	9	4	24	57	19	-	-	-	-	Clayey very gravelly SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7158	BH № 01 MZ [DS] 13.00 - 13.70	Jan-15	23	NP	NP	0	0	89	11	-	-	-	-	Silty SAND	S-M	SP-SM	-	-	-	-	-	-	-	-
S01147	7159	BH № 01 MZ [DS] 17.50 - 17.95	Jan-15	31	20	11	6	0	70	30	-	-	-	-	Very clayey SAND	SC(L)	SC	-	-	-	-	-	-	-	-
S01147	7161	BH № 01 MZ [DS] 19.00 - 20.00	Jan-15	23	13	10	5	2	88	11	-	-	-	-	Clayey SAND	S-C	SP-SC	-	-	-	-	-	-	-	-
S01147	7162	BH № 01 MZ [SPT] 20.00 - 20.45	Jan-15	37	24	13	7	65	16	19	-	-	-	-	Clayey sandy GRAVEL	GC(I)	GC	-	-	-	-	-	-	-	-
S01147	7163	BH № 01 MZ [SPT] 22.00 - 22.45	Jan-15	40	21	18	9	14	22	64	-	-	-	-	Slightly sandy CLAY of intermediate plasticity	CS(I)	CL	-	-	-	-	-	-	-	-
S01147	7166	BH № 01 MZ [DS] 25.50 - 26.00	Jan-15	35	23	12	6	2	54	43	-	-	-	-	Sandy CLAY of low plasticity	CS(L)	SC	-	-	-	-	-	-	-	-
S01147	7167	BH № 01 MZ [DS] 27.50 - 28.00	Jan-15	23	NP	NP	0	0	93	7	-	-	-	-	Silty SAND	S-M	SW-SM	-	-	-	-	-	-	-	-
S01147	7169	BH № 02 MZ [DS] 1.50 - 2.00	Jan-15	24	NP	NP	0	27	69	4	-	-	-	-	very gravelly SAND	SW	SW	DS	6.5	40.9	-	-	-	-	-
S01147	7171	BH № 02 MZ [DS] 3.50 - 4.00	Jan-15	26	NP	NP	0	3	84	13	-	-	-	-	Silty SAND	S-M	SM	DS	0	34.3	-	-	-	-	-
S01147	7172	BH № 02 MZ [SPT] 4.00 - 4.45	Jan-15	22	NP	NP	0	0	61	39	-	-	-	-	Sandy SILT of low plasticity	MS(L)	SM	-	-	-	-	-	-	-	-



C-Labs(Tz)
A credible test result

CENTRAL RAILWAY JICA STUDY - PHASE II
KILOSA - GULWE SECTION
GEOTECHNICAL INVESTIGATION



C-Labs(Tz)
A credible test result

LABORATORY TEST RESULTS SUMMARY

CLIENT: PADECO COMPANY LIMITED

FEBRUARY 2016

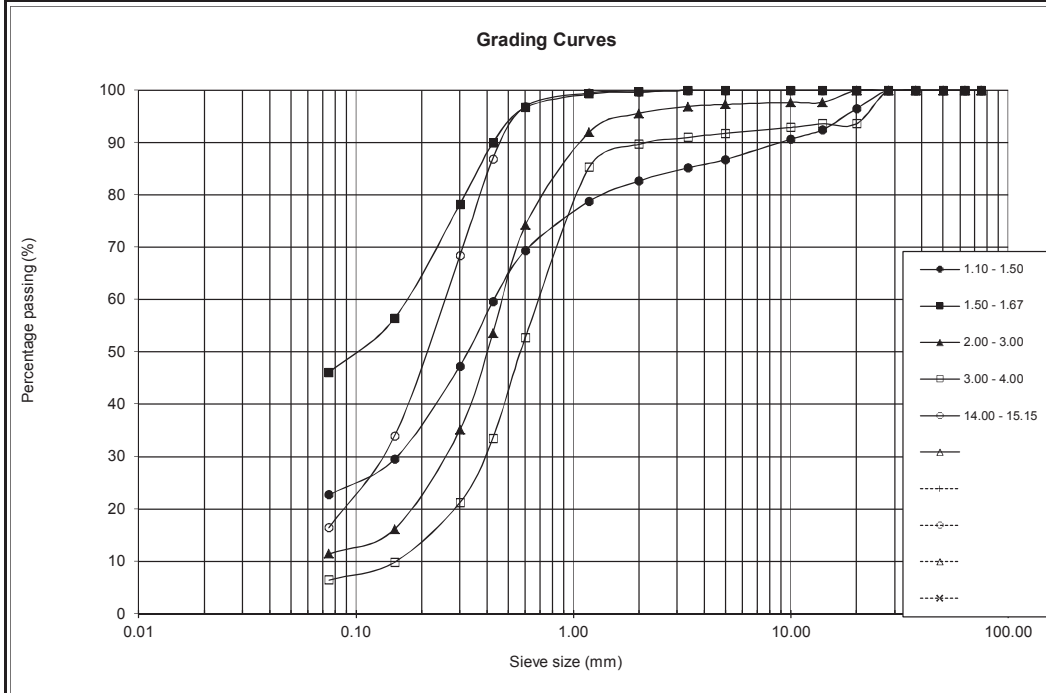
Job No.	Sample No.	SOURCE (Depth)	Date Sampled	LL	PL	PI	LS	GRAVE SAND L %	SAND %	FINES %	CLAY %	mm %	LI	Act	p (g/cc)	SOIL DESCRIPTION - BSCS	BSCS SYMBOL	USCS SYMBOL	Shear test	C	Ø	Cc	Cr	Pc	OCR	Eoed
S01147	7173	BH No 02 MZ [DS] 5.20 - 5.50	Jan-15	24	NP	NP	0	0	49	51	-	-	-	-	-	Sandy SILT of low plasticity	MS(L) ML									
S01147	7174	BH No 02 MZ [U4] 5.50 - 5.95	Jan-15	28	17	11	5	0	30	70	-	-	-	-	-	CLAY of low plasticity	C(L) CL									
S01147	7175	BH No 02 MZ [U4 SHO] 5.95	Jan-15	29	21	8	4	0	33	67	-	-	-	-	-	Sandy CLAY of low plasticity	CS(L) CL									
S01147	7176	BH No 02 MZ [SPT] 6.00 - 6.45	Jan-15	24	12	12	6	0	28	72	-	-	-	-	-	CLAY of low plasticity	C(L) CL									
S01147	7177	BH No 02 MZ [U4] 7.00 - 7.50	Jan-15	25	14	11	5	1	49	50	-	-	-	-	-	Sandy CLAY of low plasticity	CS(L) CL									
S01147	7178	BH No 02 MZ [U4] 7.50 - 7.95	Jan-15	28	20	8	4	3	44	52	-	-	-	-	-	Sandy CLAY of low plasticity	CS(L) CL									
S01147	7180	BH No 02 MZ [SPT] 8.00 - 8.45	Jan-15	52	30	22	11	26	19	55	-	-	-	-	-	Slightly sandy, Slightly gravely SILT of high plasticity	MG(H) MH									
S01147	7181	BH No 02 MZ [DS] 9.50 - 10.00	Jan-15	34	19	15	7	14	41	45	-	-	-	-	-	Sandy CLAY of low plasticity	CS(L) SC									
S01147	7182	BH No 02 MZ [SPT] 10.00 - 10.45	Jan-15	38	17	21	11	3	46	51	-	-	-	-	-	Sandy CLAY of intermediate plasticity	CS(I) CL									
S01147	7183	BH No 02 MZ [DS] 11.50 - 12.00	Jan-15	25	17	9	5	45	35	20	-	-	-	-	-	Clayey SAND and GRAVEL	GC(L) SC									
S01147	7184	BH No 02 MZ [SPT] 12.00 - 12.45	Jan-15	25	NP	NP	1	20	52	28	-	-	-	-	-	Very silty gravely SAND	SM(L) SM									
S01147	7187	BH No 02 MZ [DS] 16.50 - 17.00	Jan-15	24	NP	NP	0	17	64	19	-	-	-	-	-	Silty gravely SAND	SM(L) SM									
S01147	7189	BH No 02 MZ [DS] 17.50 - 18.00	Jan-15	25	NP	NP	0	2	78	20	-	-	-	-	-	Silty SAND	SM(L) SM									
S01147	7190	BH No 02 MZ [DS] 19.50 - 20.00	Jan-15	25	NP	NP	0	1	76	23	-	-	-	-	-	Very silty SAND	SM(L) SM									
S01147	7191	BH No 02 MZ [SPT] 20.00 - 20.45	Jan-15	43	28	15	8	31	19	51	-	-	-	-	-	Slightly sandy, Slightly gravely SILT of intermediate plasticity	MG(I) ML									
S01147	7192	BH No 02 MZ [DS] 21.20 - 21.70	Jan-15	27	16	11	6	0	71	29	-	-	-	-	-	Very clayey SAND	SC(L) SC									

	<p>CLASSIFICATION - BH 12 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION</p>
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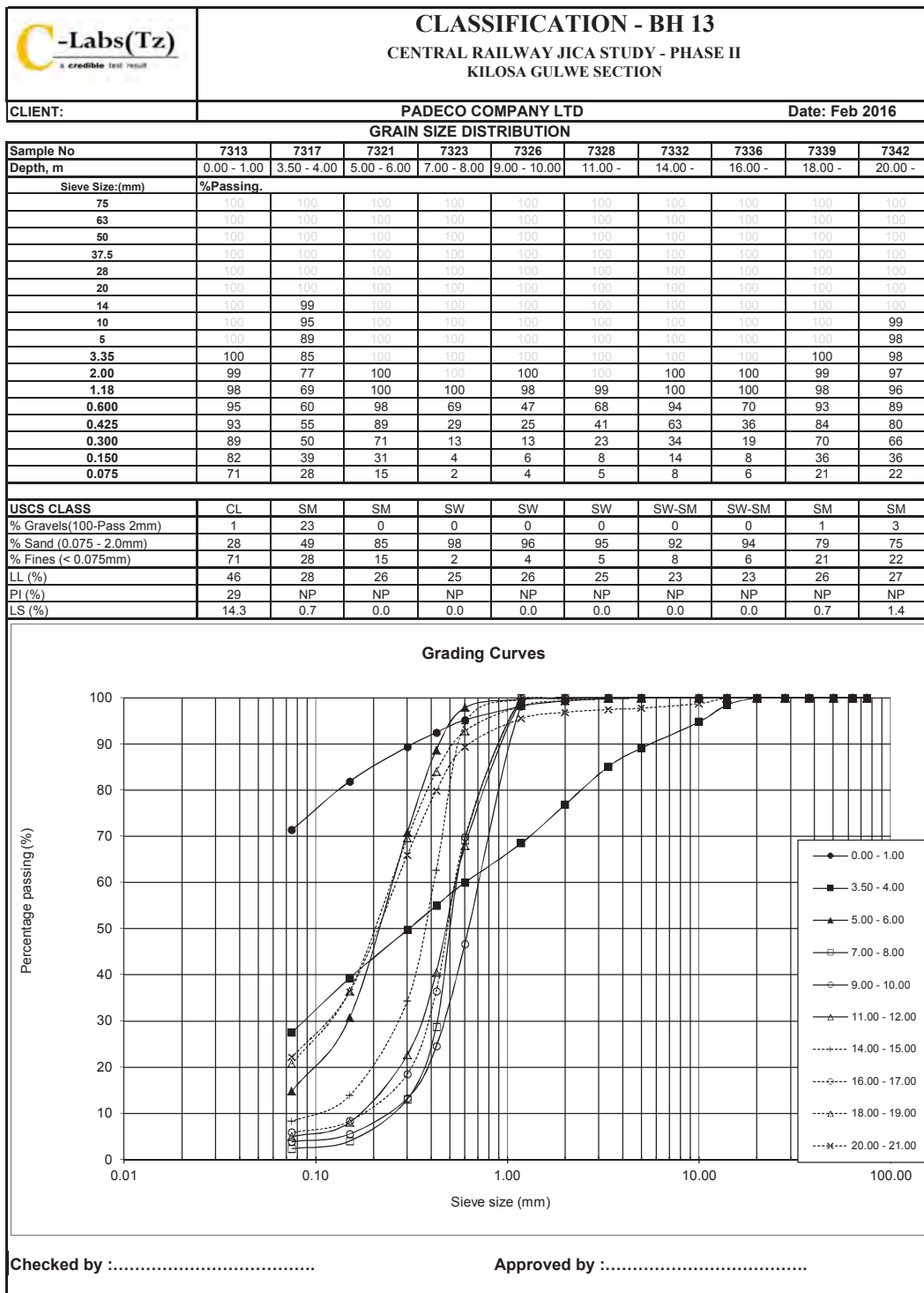
CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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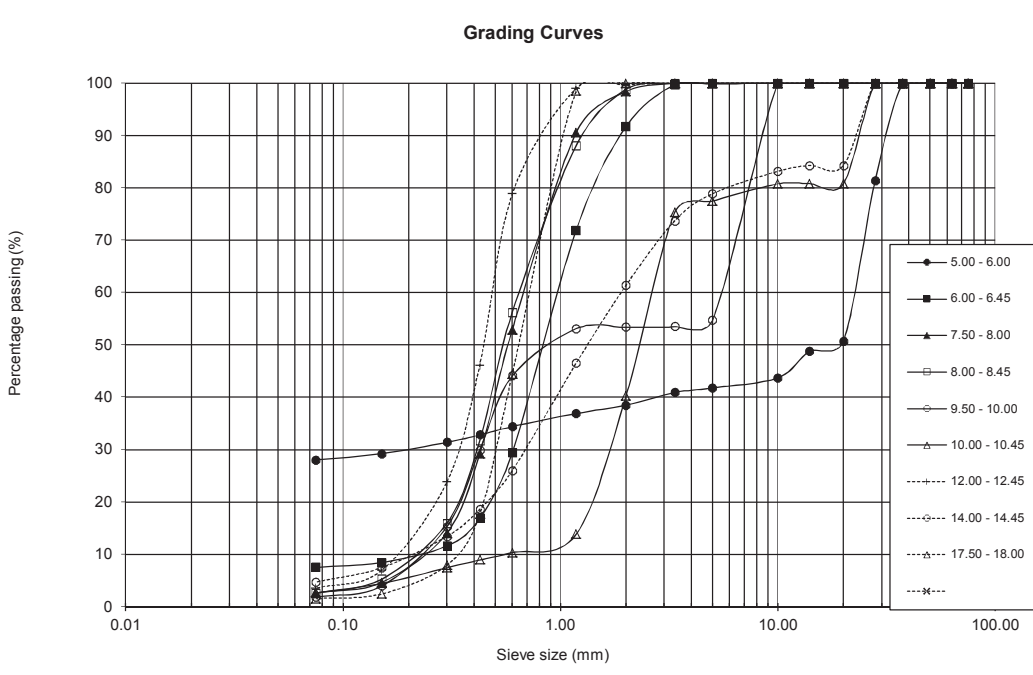
GRAIN SIZE DISTRIBUTION						
Sample No	7300	7301	7302	7303	7309	
Depth, m	1.10 - 1.50	1.50 - 1.67	2.00 - 3.00	3.00 - 4.00	14.00 -	
Sieve Size:(mm)	%Passing.					
75	100	100	100	100	100	
63	100	100	100	100	100	
50	100	100	100	100	100	
37.5	100	100	100	100	100	
28	100	100	100	100	100	
20	97	100	100	94	100	
14	93	100	98	94	100	
10	91	100	98	93	100	
5	87	100	97	92	100	
3.35	85	100	97	91	100	
2.00	83	100	96	90	100	
1.18	79	99	92	85	100	
0.600	69	97	74	53	97	
0.425	60	90	54	34	87	
0.300	47	78	35	21	68	
0.150	30	56	16	10	34	
0.075	23	46	11	6	16	

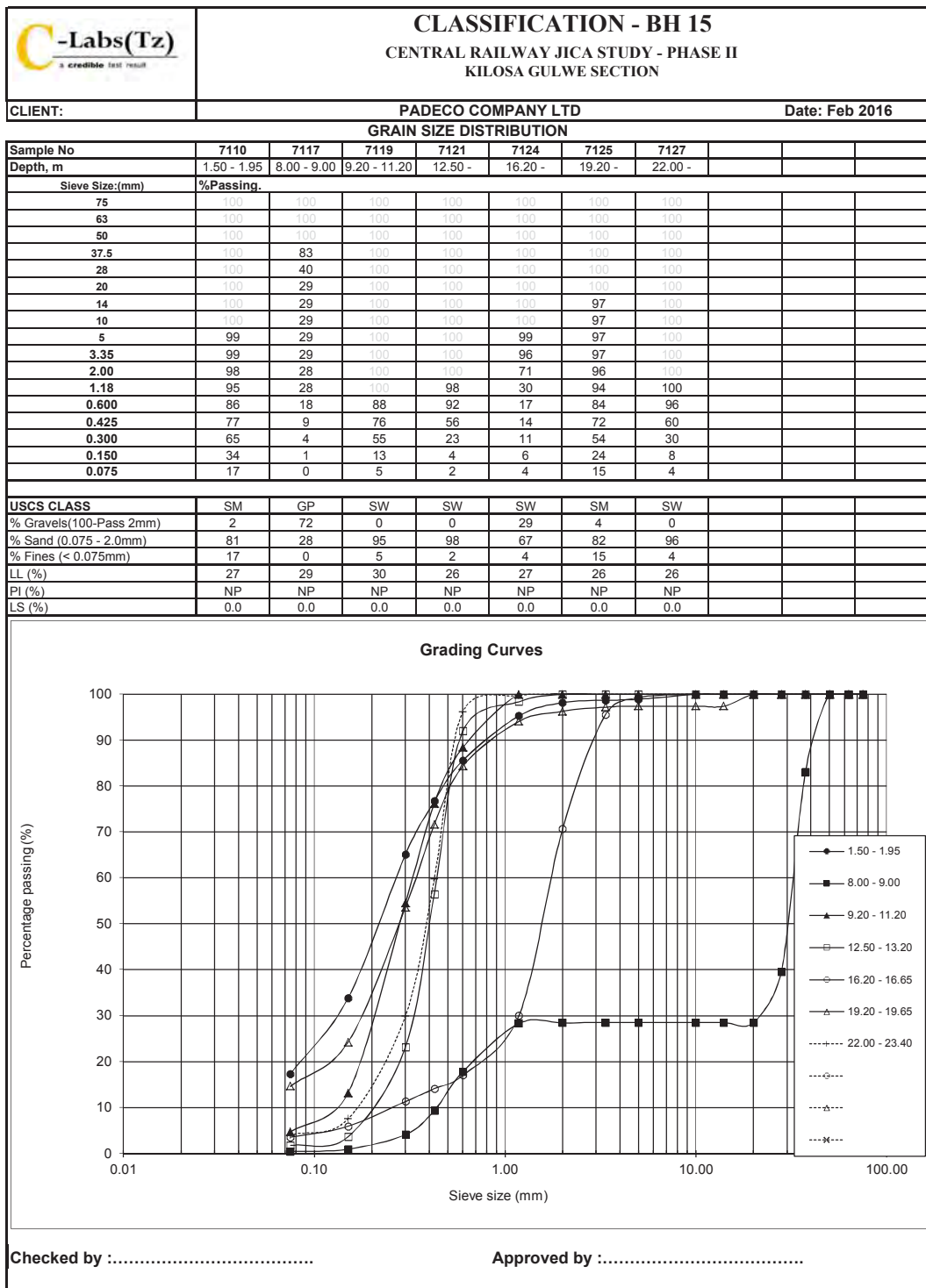
USCS CLASS	SC	SM	SP-SM	SW-SM	SM	
% Gravels(100-Pass 2mm)	17	0	4	10	0	
% Sand (0.075 - 2.0mm)	60	54	84	83	83	
% Fines (< 0.075mm)	23	46	11	6	16	
LL (%)	25	22	23	23	24	
PI (%)	9	NP	NP	NP	NP	
LS (%)	0.0	0.0	0.0	0.0	0.0	




Checked by : Approved by :



	CLASSIFICATION - BH 14 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION								
	CLIENT: PADECO COMPANY LTD						Date: Feb 2016		
GRAIN SIZE DISTRIBUTION									
Sample No	7094	7095	7096	7097	7098	7099	7101	7103	7106
Depth, m	5.00 - 6.00	6.00 - 6.45	7.50 - 8.00	8.00 - 8.45	9.50 - 10.00	10.00 -	12.00 -	14.00 -	17.50 -
Sieve Size:(mm)	%Passing.								
75	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100
28	81	100	100	100	100	100	100	100	100
20	51	100	100	100	100	81	100	84	100
14	49	100	100	100	100	81	100	84	100
10	44	100	100	100	100	81	100	83	100
5	42	100	100	100	55	78	100	79	100
3.35	41	100	100	100	54	75	100	74	100
2.00	39	92	98	99	53	40	100	61	100
1.18	37	72	91	88	53	14	99	47	99
0.600	34	29	53	56	44	10	79	26	44
0.425	33	17	29	32	30	9	46	19	18
0.300	31	12	14	16	15	7	24	13	8
0.150	29	8	5	5	4	4	7	7	2
0.075	28	8	3	3	2	3	4	5	2
USCS CLASS	GM	SW-SM	SW	SW	SW	SW	SW	SW	SW
% Gravels(100-Pass 2mm)	62	8	2	1	47	60	0	39	0
% Sand (0.075 - 2.0mm)	11	84	96	96	52	38	96	57	99
% Fines (< 0.075mm)	28	8	3	3	2	3	4	5	2
LL (%)	25	25	24	25	26	26	27	30	26
PI (%)	NP	NP	NP	NP	NP	NP	NP	10	NP
LS (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0
Grading Curves									
									
Checked by :					Approved by :				

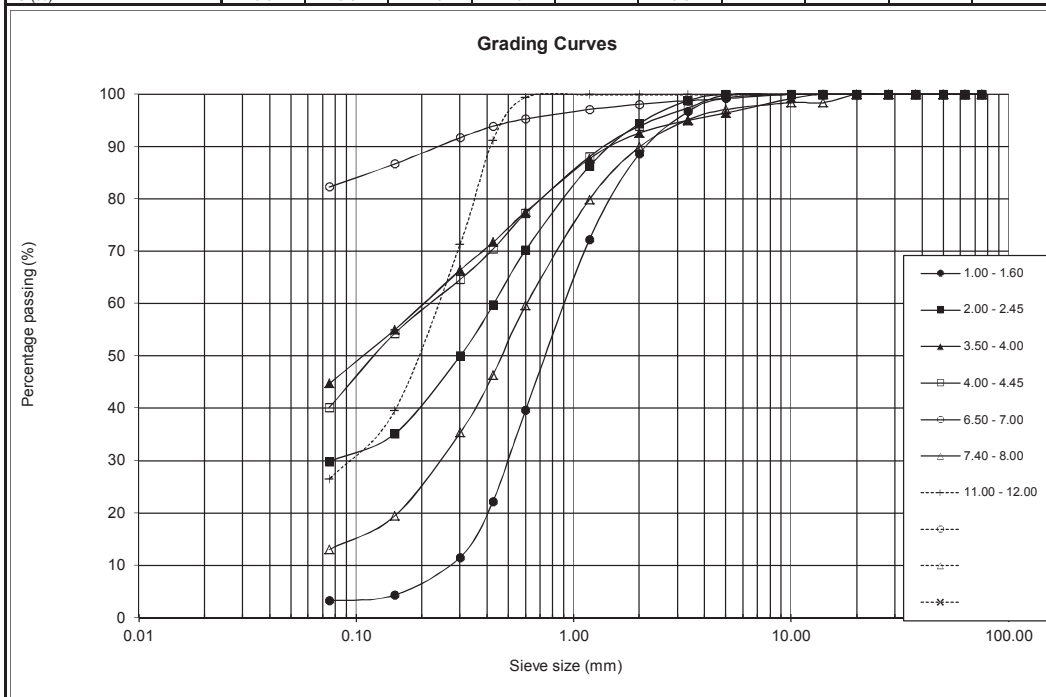


	<p>CLASSIFICATION - BH 18 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION</p>
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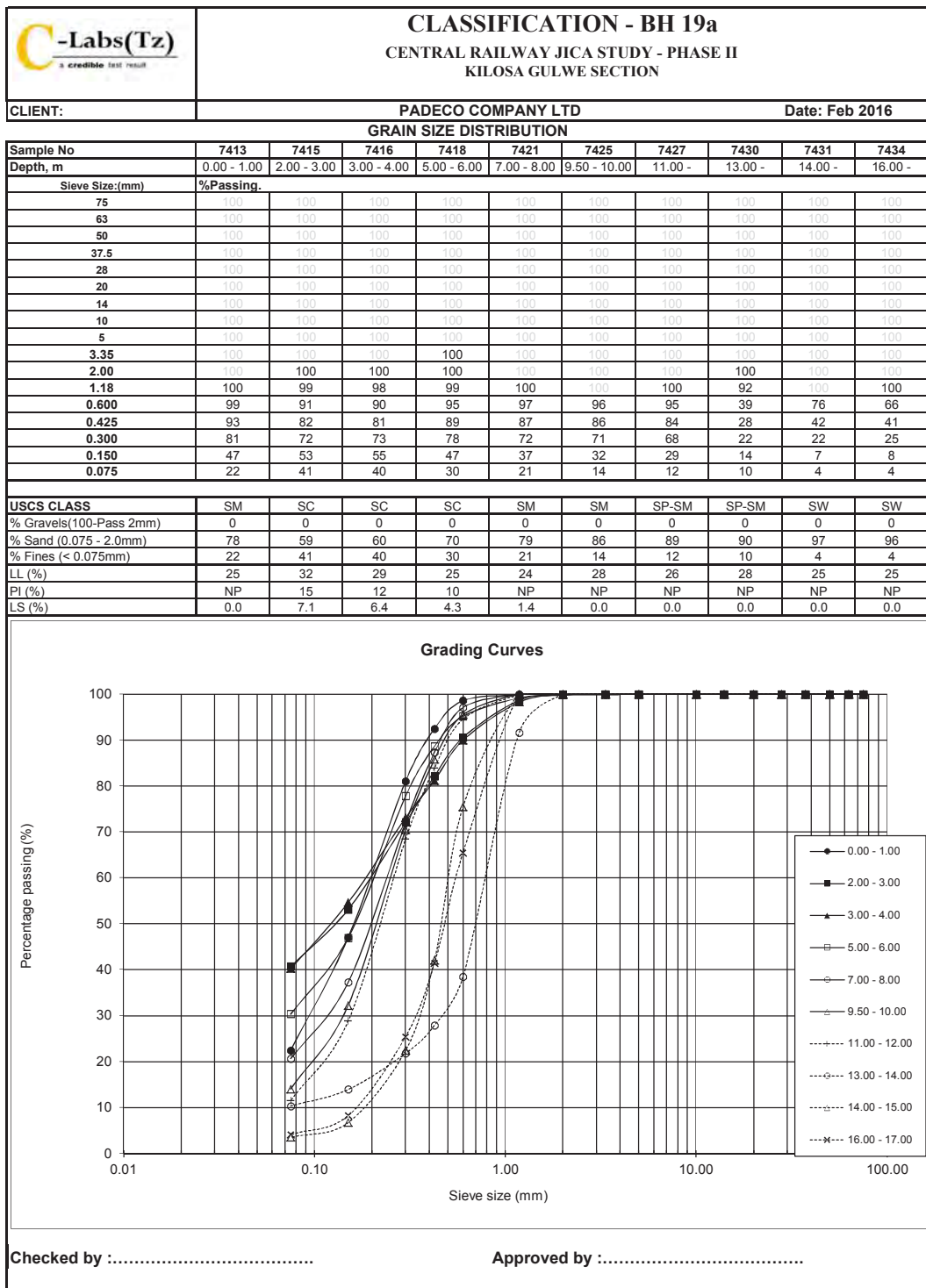
CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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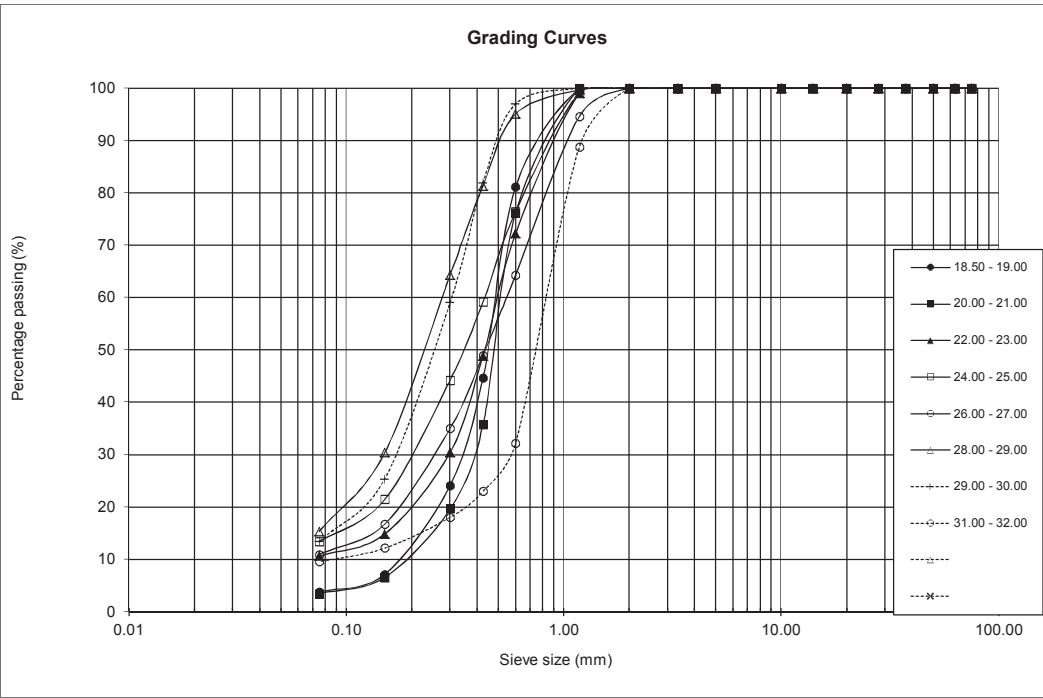
GRAIN SIZE DISTRIBUTION								
Sample No	7130	7131	7133	7134	7138	7139	7142	
Depth, m	1.00 - 1.60	2.00 - 2.45	3.50 - 4.00	4.00 - 4.45	6.50 - 7.00	7.40 - 8.00	11.00 -	
Sieve Size:(mm)	%Passing.							
75	100	100	100	100	100	100	100	
63	100	100	100	100	100	100	100	
50	100	100	100	100	100	100	100	
37.5	100	100	100	100	100	100	100	
28	100	100	100	100	100	100	100	
20	100	100	100	100	100	100	100	
14	100	100	100	100	100	98	100	
10	100	100	99	100	100	98	100	
5	99	100	96	100	99	97	100	
3.35	97	99	95	97	99	95	100	
2.00	89	94	93	94	98	90	100	
1.18	72	86	88	88	97	80	100	
0.600	40	70	78	77	95	60	99	
0.425	22	60	72	70	94	46	91	
0.300	12	50	66	65	92	35	71	
0.150	4	35	55	54	87	19	40	
0.075	3	30	45	40	82	13	26	


USCS CLASS	SW	SM	SC	SC	MH	SM	SM
% Gravels(100-Pass 2mm)	11	6	7	6	2	10	0
% Sand (0.075 - 2.0mm)	85	65	48	54	16	77	74
% Fines (< 0.075mm)	3	30	45	40	82	13	26
LL (%)	24	24	50	36	53	20	23
PI (%)	NP	NP	26	15	24	NP	NP
LS (%)	0.0	0.0	12.9	7.9	12.1	0.0	1.4



Checked by : Approved by :



	CLASSIFICATION - BH 19b CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION								
CLIENT:	PADECO COMPANY LTD							Date: Feb 2016	
GRAIN SIZE DISTRIBUTION									
Sample No	7437	7439	7442	7445	7447	7450	7451	7453	
Depth, m	18.50 -	20.00 -	22.00 -	24.00 -	26.00 -	28.00 -	29.00 -	31.00 -	
Sieve Size:(mm)	%Passing.								
75	100	100	100	100	100	100	100	100	
63	100	100	100	100	100	100	100	100	
50	100	100	100	100	100	100	100	100	
37.5	100	100	100	100	100	100	100	100	
28	100	100	100	100	100	100	100	100	
20	100	100	100	100	100	100	100	100	
14	100	100	100	100	100	100	100	100	
10	100	100	100	100	100	100	100	100	
5	100	100	100	100	100	100	100	100	
3.35	100	100	100	100	100	100	100	100	
2.00	100	100	100	100	100	100	100	100	
1.18	100	100	99	99	95	100	100	89	
0.600	81	76	72	76	64	95	97	32	
0.425	45	36	49	59	49	81	82	23	
0.300	24	20	30	44	35	64	59	18	
0.150	7	7	15	21	17	30	25	12	
0.075	4	3	11	13	11	15	13	10	
USCS CLASS	SW	SW	SP-SM	SC	SP-SM	SM	SM	SW/SP/SC	
% Gravels(100-Pass 2mm)	0	0	0	0	0	0	0	0	
% Sand (0.075 - 2.0mm)	96	97	89	87	89	85	87	91	
% Fines (< 0.075mm)	4	3	11	13	11	15	13	10	
LL (%)	26	24	25	27	27	23	24	25	
PI (%)	NP	NP	NP	13	NP	NP	NP	7	
LS (%)	0.0	0.0	0.7	6.4	0.0	0.7	0.0	3.6	
									
Checked by :.....					Approved by :.....				

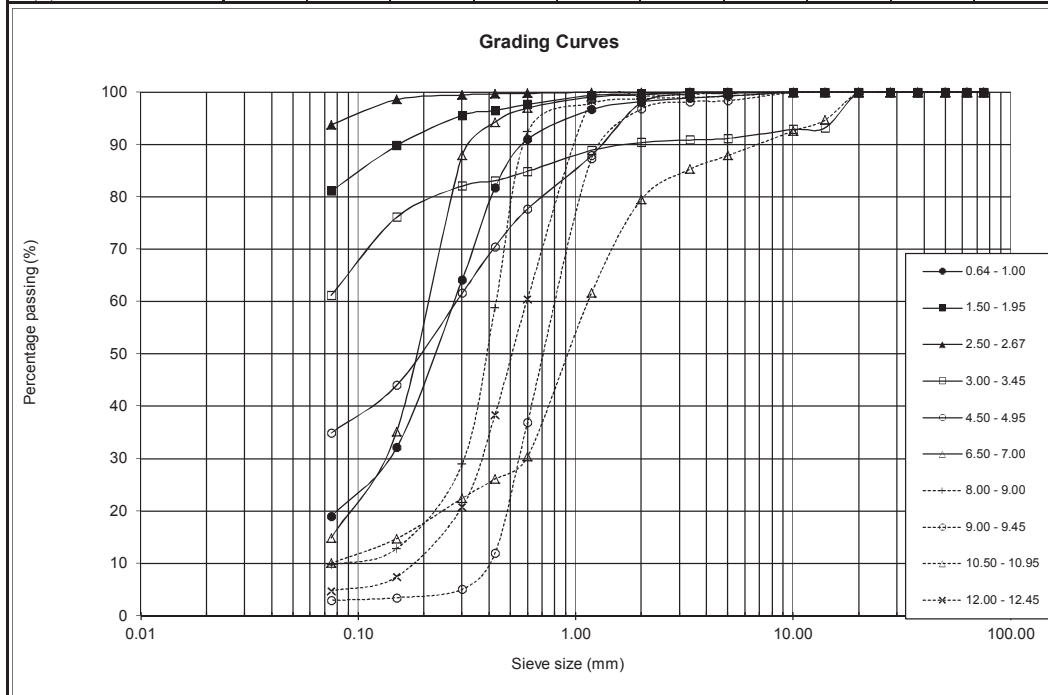
	CLASSIFICATION - BH 19b CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION					
CLIENT:	PADECO COMPANY LTD					Date: Feb 2016
GRAIN SIZE DISTRIBUTION						
Sample No	7354	7356	7361	7368	7371	7374
Depth, m	8.00 - 9.00	9.50 - 10.00	12.00 -	17.00 -	20.00 -	21.00 -
Sieve Size:(mm)	%Passing.					
75	100	100	100	100	100	100
63	100	100	100	100	100	100
50	100	100	100	100	100	100
37.5	100	100	100	100	100	100
28	100	100	100	100	100	100
20	100	100	100	100	100	100
14	100	100	100	100	100	100
10	100	100	100	100	100	100
5	100	100	100	100	100	100
3.35	100	100	100	100	100	100
2.00	100	100	100	100	100	100
1.18	99	97	99	100	100	100
0.600	52	45	61	99	82	95
0.425	25	20	35	81	46	88
0.300	12	11	16	46	23	60
0.150	5	6	6	11	6	16
0.075	4	5	4	7	4	7
USCS CLASS	SW	SW	SW	SW-SM	SW	SW-SM
% Gravels(100-Pass 2mm)	0	0	0	0	0	0
% Sand (0.075 - 2.0mm)	96	95	96	93	96	93
% Fines (< 0.075mm)	4	5	4	7	4	7
LL (%)	20	25	25	22	24	25
PI (%)	NP	NP	NP	NP	NP	NP
LS (%)	0.0	0.0	0.0	0.0	0.0	0.0
Checked by :			Approved by :			

	CLASSIFICATION - BH MS-01a CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION
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CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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GRAIN SIZE DISTRIBUTION										
Sample No	7225	7226	7227	7229	7231	7234	7236	7237	7239	7241
Depth, m	0.64 - 1.00	1.50 - 1.95	2.50 - 2.67	3.00 - 3.45	4.50 - 4.95	6.50 - 7.00	8.00 - 9.00	9.00 - 9.45	10.50 -	12.00 -
Sieve Size:(mm)	%Passing.									
75	100	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100	100
28	100	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100	100
14	100	100	100	93	100	100	100	100	95	100
10	100	100	100	93	100	100	100	100	93	100
5	99	100	100	91	100	100	99	98	88	100
3.35	99	100	100	91	100	100	99	98	85	100
2.00	98	100	100	90	98	100	99	97	80	99
1.18	97	99	100	89	88	99	98	87	62	98
0.600	91	98	100	85	78	97	92	37	30	61
0.425	82	97	100	83	71	94	59	12	26	38
0.300	64	96	100	82	62	88	29	5	22	21
0.150	32	90	99	76	44	35	13	3	15	7
0.075	19	81	94	61	35	15	10	3	10	5

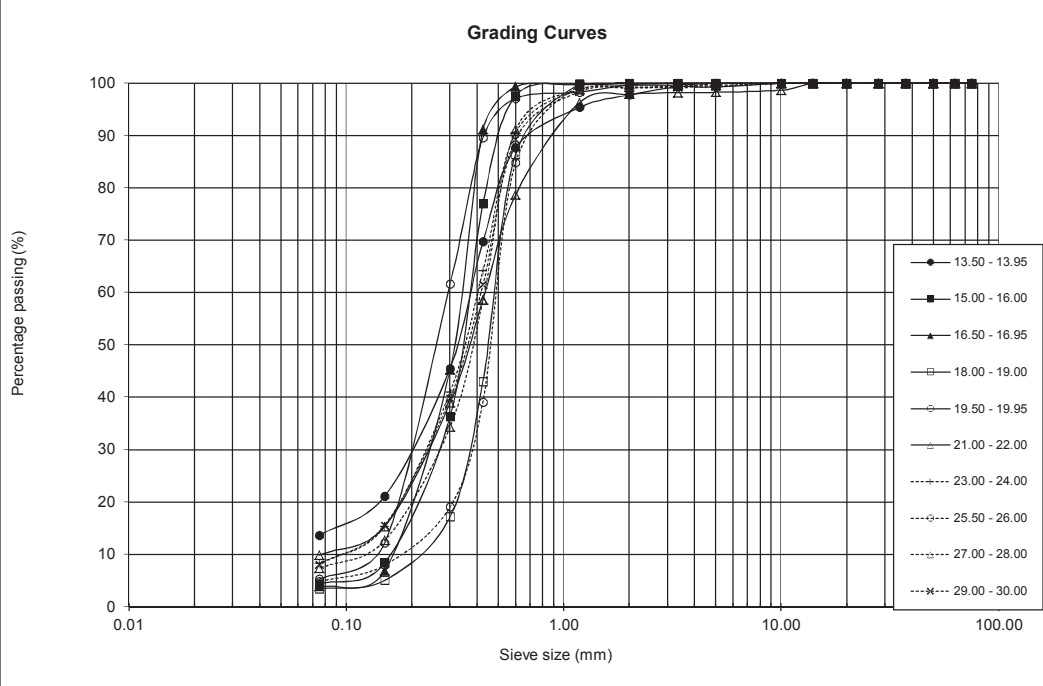
USCS CLASS	SM	ML	CL	ML	SC-SM	SM	SW-SM	SP	SW-SM	SW
% Gravels(100-Pass 2mm)	2	0	0	10	2	1	1	3	21	1
% Sand (0.075 - 2.0mm)	79	19	6	29	63	85	89	94	70	95
% Fines (< 0.075mm)	19	81	94	61	35	15	10	3	10	5
LL (%)	26	33	32	27	24	24	20	20	25	23
PI (%)	NP	NP	14	NP	7	NP	NP	NP	NP	NP
LS (%)	0.0	1.4	7.1	0.7	3.6	0.0	0.0	0.0	0.0	0.0



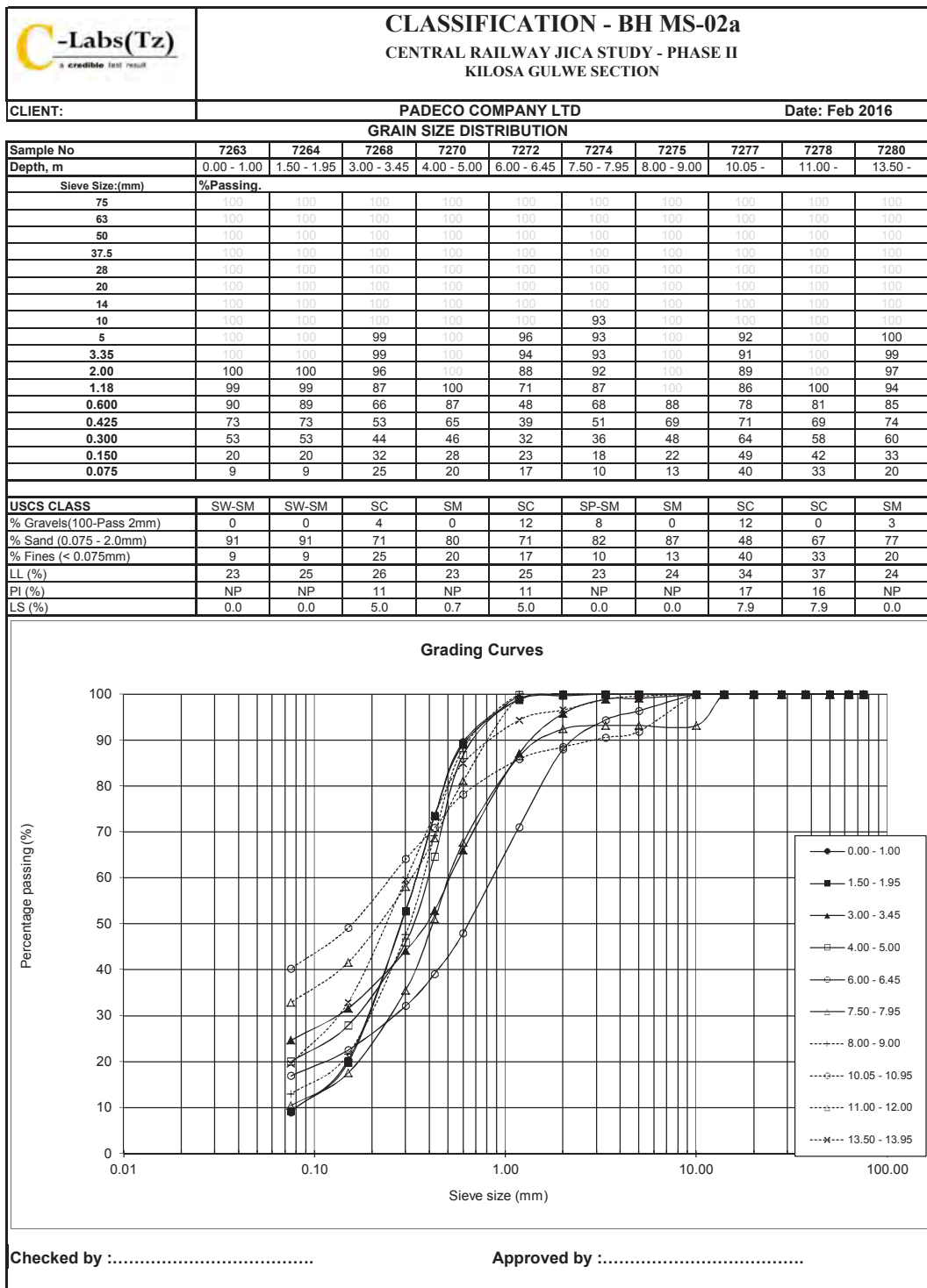
Checked by : Approved by :

	CLASSIFICATION - BH MS-01b CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION									
CLIENT:	PADECO COMPANY LTD								Date: Feb 2016	
GRAIN SIZE DISTRIBUTION										
Sample No	7243	7245	7246	7248	7249	7251	7254	7257	7259	7262
Depth, m	13.50 -	15.00 -	16.50 -	18.00 -	19.50 -	21.00 -	23.00 -	25.50 -	27.00 -	29.00 -
Sieve Size:(mm)	%Passing.									
75	100	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100	100
28	100	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100	100
14	100	100	100	100	100	100	100	100	100	100
10	100	100	100	100	100	99	100	100	100	100
5	99	100	100	100	100	98	100	100	100	99
3.35	99	100	100	100	100	98	99	100	100	99
2.00	98	100	100	100	100	98	99	100	99	99
1.18	95	100	100	100	98	96	99	100	99	98
0.600	88	98	99	86	97	79	91	85	91	89
0.425	70	77	91	43	90	59	64	39	59	62
0.300	46	36	45	17	62	39	41	19	34	40
0.150	21	8	7	5	12	15	15	8	13	16
0.075	14	4	4	3	5	10	8	5	7	8
USCS CLASS	SM	SW	SW	SW	SW-SM	SW-SM	SW-SM	SW	SW-SM	SW-SM
% Gravels(100-Pass 2mm)	2	0	0	0	0	2	1	0	1	1
% Sand (0.075 - 2.0mm)	84	96	96	97	95	88	91	95	92	91
% Fines (< 0.075mm)	14	4	4	3	5	10	8	5	7	8
LL (%)	23	28	29	25	28	26	23	25	26	25
PI (%)	NP	NP	NP	NP	NP	NP	NP	NP	NP	NP
LS (%)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Grading Curves



Checked by :.....
Approved by :.....

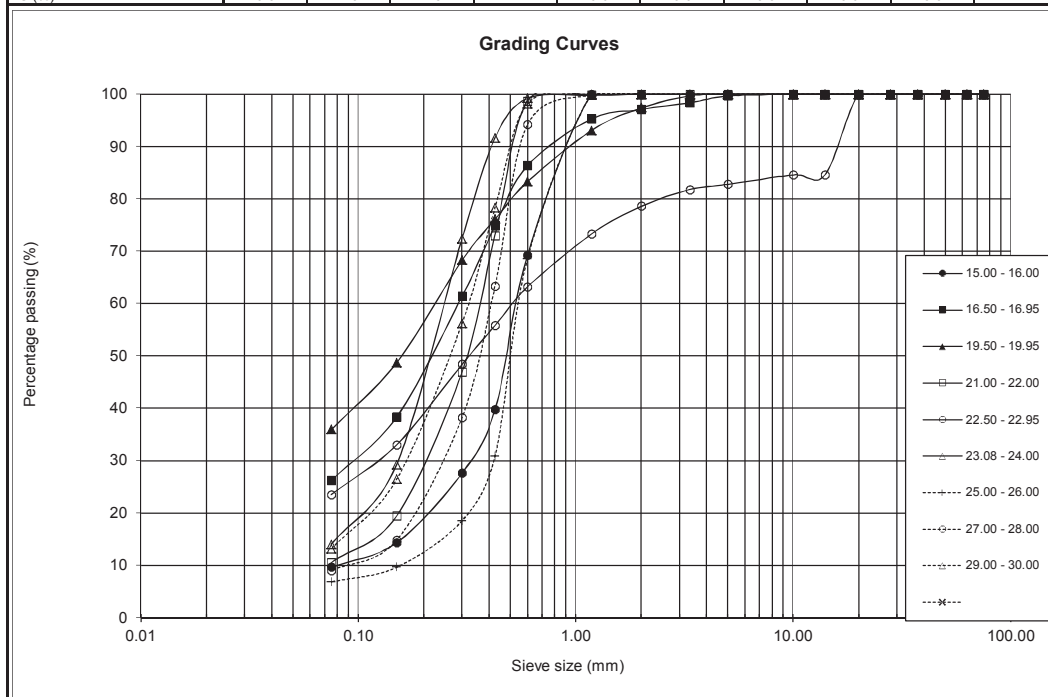


	CLASSIFICATION - BH MS-02b CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION
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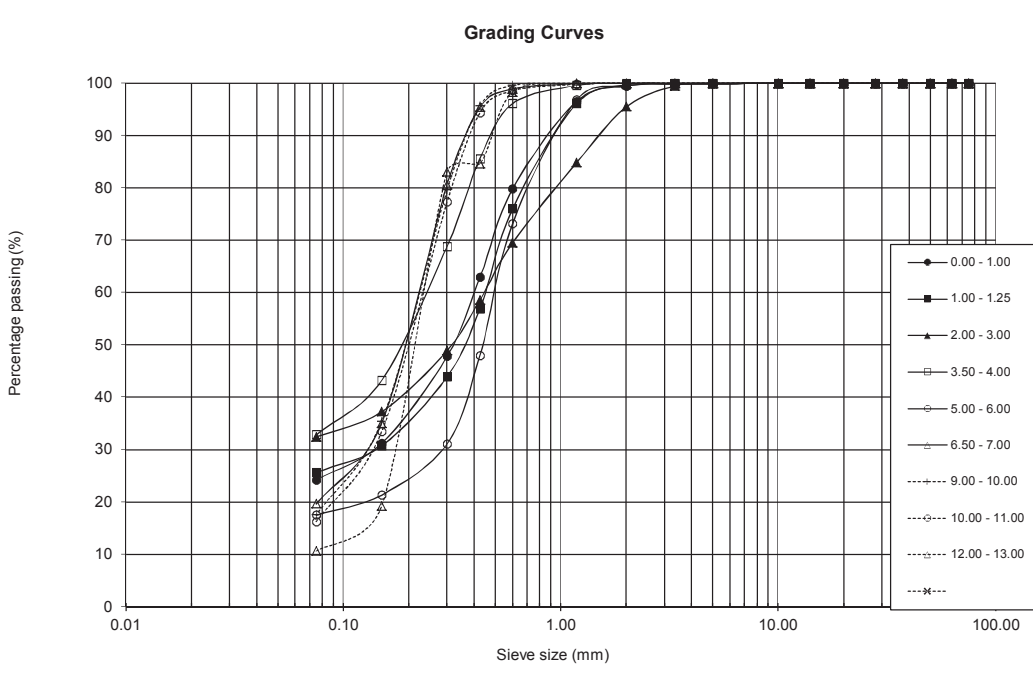
CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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GRAIN SIZE DISTRIBUTION									
Sample No	7282	7283	7286	7288	7289	7291	7294	7297	7299
Depth, m	15.00 -	16.50 -	19.50 -	21.00 -	22.50 -	23.08 -	25.00 -	27.00 -	29.00 -
Sieve Size:(mm)	%Passing.								
75	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100
28	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	100	100	100
14	100	100	100	100	85	100	100	100	100
10	100	100	100	100	85	100	100	100	100
5	100	100	100	100	83	100	100	100	100
3.35	100	98	100	100	82	100	100	100	100
2.00	100	97	97	100	79	100	100	100	100
1.18	100	95	93	100	73	100	100	100	100
0.600	69	86	83	99	63	99	69	94	98
0.425	40	75	76	73	56	92	31	63	78
0.300	28	61	68	47	48	72	19	38	56
0.150	14	38	49	19	33	29	10	15	26
0.075	10	26	36	11	24	14	7	9	13

USCS CLASS	SW-SM	SC	SC	SP-SM	SM	SM	SW-SM	SW-SM	SM
% Gravels(100-Pass 2mm)	0	3	3	0	21	0	0	0	0
% Sand (0.075 - 2.0mm)	90	71	62	90	55	86	93	91	87
% Fines (< 0.075mm)	10	26	36	11	24	14	7	9	13
LL (%)	22	24	22	22	19	25	24	23	24
PI (%)	NP	9	8	NP	NP	NP	NP	NP	NP
LS (%)	0.0	4.3	4.3	1.4	0.0	0.0	0.0	0.0	0.0



Checked by : Approved by :

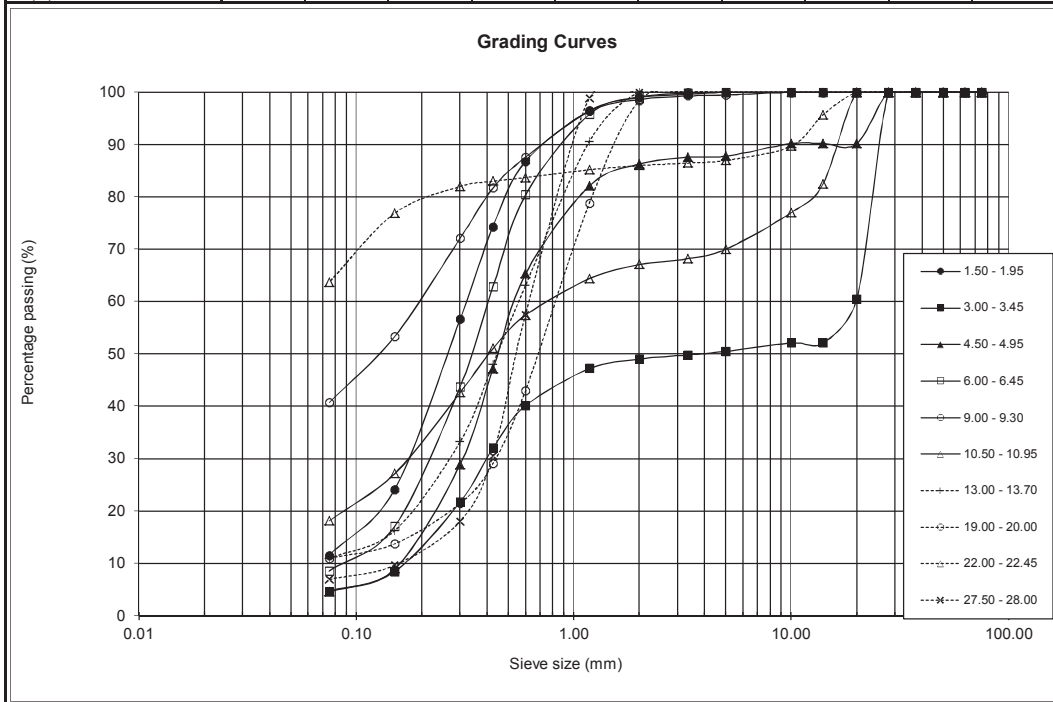
	CLASSIFICATION - BH MS-03 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION									
	CLIENT: PADECO COMPANY LTD					Date: Feb 2016				
GRAIN SIZE DISTRIBUTION										
Sample No	7391	7392	7394	7396	7398	7400	7404	7405	7407	
Depth, m	0.00 - 1.00	1.00 - 1.25	2.00 - 3.00	3.50 - 4.00	5.00 - 6.00	6.50 - 7.00	9.00 - 10.00	10.00 -	12.00 -	
Sieve Size:(mm)	%Passing.									
75	100	100	100	100	100	100	100	100	100	
63	100	100	100	100	100	100	100	100	100	
50	100	100	100	100	100	100	100	100	100	
37.5	100	100	100	100	100	100	100	100	100	
28	100	100	100	100	100	100	100	100	100	
20	100	100	100	100	100	100	100	100	100	
14	100	100	100	100	100	100	100	100	100	
10	100	100	100	100	100	100	100	100	100	
5	100	100	100	100	100	100	100	100	100	
3.35	100	100	100	100	100	100	100	100	100	
2.00	100	100	96	100	100	100	100	100	100	
1.18	97	96	85	100	97	100	100	100	100	
0.600	80	76	70	96	73	99	100	99	98	
0.425	63	57	59	86	48	95	96	94	85	
0.300	48	44	49	69	31	81	80	77	83	
0.150	31	31	37	43	21	35	35	33	19	
0.075	24	26	32	33	18	20	18	16	11	
USCS CLASS	SM	SC	SC	SC	SC	SM	SM	SM	SP-SM	
% Gravels(100-Pass 2mm)	1	0	5	0	1	0	0	0	0	
% Sand (0.075 - 2.0mm)	75	74	63	67	82	80	83	84	89	
% Fines (< 0.075mm)	24	26	32	33	18	20	18	16	11	
LL (%)	20	24	31	29	25	28	25	26	27	
PI (%)	NP	10	11	14	11	NP	NP	NP	NP	
LS (%)	0.0	5.0	5.0	7.1	5.7	0.0	0.0	0.0	0.0	
Grading Curves										
										
Checked by :					Approved by :					

	CLASSIFICATION - BH MZ-01 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION
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CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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GRAIN SIZE DISTRIBUTION										
Sample No	7144	7146	7148	7150	7154	7156	7158	7161	7163	7167
Depth, m	1.50 - 1.95	3.00 - 3.45	4.50 - 4.95	6.00 - 6.45	9.00 - 9.30	10.50 -	13.00 -	19.00 -	22.00 -	27.50 -
Sieve Size:(mm)	%Passing.									
75	100	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100	100
28	100	100	100	100	100	100	100	100	100	100
20	100	60	90	100	100	100	100	100	100	100
14	100	52	90	100	100	83	100	100	96	100
10	100	52	90	100	100	77	100	100	90	100
5	100	51	88	100	100	70	100	100	87	100
3.35	100	50	88	100	99	68	100	100	87	100
2.00	99	49	86	99	99	67	100	98	86	100
1.18	97	47	82	96	96	64	91	79	85	99
0.600	87	40	65	80	88	57	63	43	84	58
0.425	74	32	47	63	82	51	48	29	83	31
0.300	57	22	29	44	72	43	33	21	82	18
0.150	24	8	9	17	53	27	16	14	77	10
0.075	12	5	5	9	41	18	11	11	64	7

USCS CLASS	SP-SM	GP	SW	SW-SM	SM	SC-SM	SP-SM	SP-SC	CL	SW-SM
% Gravels(100-Pass 2mm)	1	51	14	1	1	33	0	2	14	0
% Sand (0.075 - 2.0mm)	88	45	82	91	58	49	89	88	22	93
% Fines (< 0.075mm)	12	5	5	9	41	18	11	11	64	7
LL (%)	24	27	22	24	32	25	23	23	40	23
PI (%)	NP	NP	NP	NP	NP	6	NP	10	18	NP
LS (%)	0.0	0.0	0.0	0.0	0.7	2.9	0.0	5.0	9.3	0.0



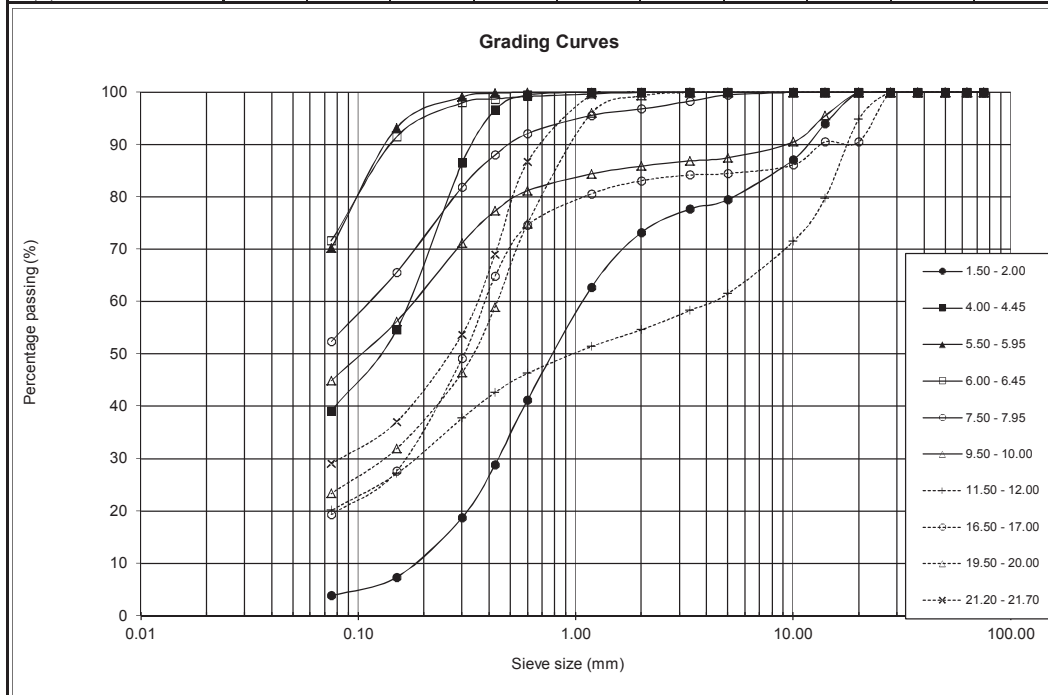
Checked by : Approved by :

	CLASSIFICATION - BH MZ-02 CENTRAL RAILWAY JICA STUDY - PHASE II KILOSA GULWE SECTION
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CLIENT:	PADECO COMPANY LTD	Date: Feb 2016
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GRAIN SIZE DISTRIBUTION										
Sample No	7169	7172	7174	7176	7178	7181	7183	7187	7190	7192
Depth, m	1.50 - 2.00	4.00 - 4.45	5.50 - 5.95	6.00 - 6.45	7.50 - 7.95	9.50 - 10.00	11.50 -	16.50 -	19.50 -	21.20 -
Sieve Size:(mm)	%Passing.									
75	100	100	100	100	100	100	100	100	100	100
63	100	100	100	100	100	100	100	100	100	100
50	100	100	100	100	100	100	100	100	100	100
37.5	100	100	100	100	100	100	100	100	100	100
28	100	100	100	100	100	100	100	100	100	100
20	100	100	100	100	100	100	95	91	100	100
14	94	100	100	100	100	96	80	91	100	100
10	87	100	100	100	100	91	72	86	100	100
5	80	100	100	100	100	88	62	85	100	100
3.35	78	100	100	100	98	87	58	84	100	100
2.00	73	100	100	100	97	86	55	83	99	100
1.18	63	100	100	100	96	84	51	81	96	100
0.600	41	100	100	99	92	81	46	75	75	87
0.425	29	97	100	99	88	77	43	65	59	69
0.300	19	87	99	98	82	71	38	49	46	54
0.150	7	55	93	92	66	56	27	28	32	37
0.075	4	39	70	72	52	45	20	19	23	29

USCS CLASS	SW	SM	CL	CL	CL	SC	SC	SM	SM	SC
% Gravels(100-Pass 2mm)	27	0	0	0	3	14	45	17	1	0
% Sand (0.075 - 2.0mm)	69	61	30	28	44	41	35	64	76	71
% Fines (< 0.075mm)	4	39	70	72	52	45	20	19	23	29
LL (%)	24	22	28	24	28	34	25	24	25	27
PI (%)	NP	NP	11	12	8	15	9	NP	NP	11
LS (%)	0.0	0.0	5.0	6.4	4.3	7.1	5.0	0.0	0.0	5.7



Checked by : Approved by :

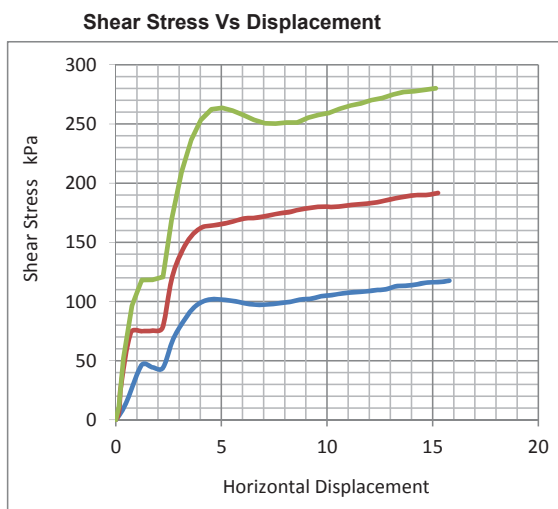
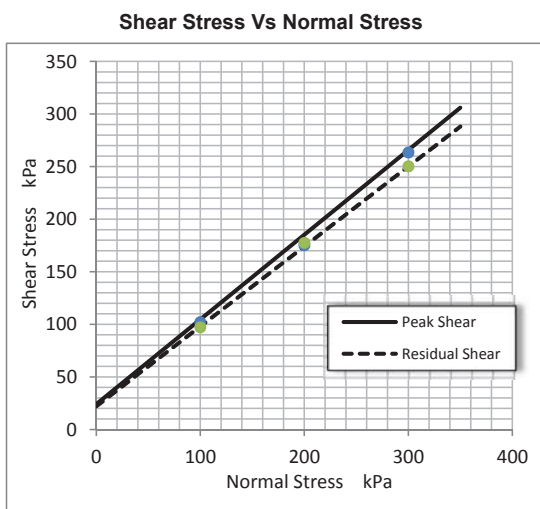
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7309	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH12 14.00 - 15.15m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 29-Feb-2016
		CHECKED: jn DATE: Feb-16
		APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.558	Normal Stress (kPa) 100 200 300
Mosture Content %	10.52	Mass of specimen (g) 136.43 136.4 136.42
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 2.112 1.819 2.335
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.119 2.084 2.145
Av. Bulk density (Mg/m ³)	1.895	Dry Density (Mg/m ³) 1.917 1.886 1.941
		Intial Void Ratio 0.49 0.49 0.49
		Void ratio at end of consolidation 0.33 0.36 0.32
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 102.1 175.4 263.5
		Residual Shear Stress (kPa) 97.2 177.6 250.3

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	24.0	22.0
Angle of internal Friction,	Ø	38.9	37.2

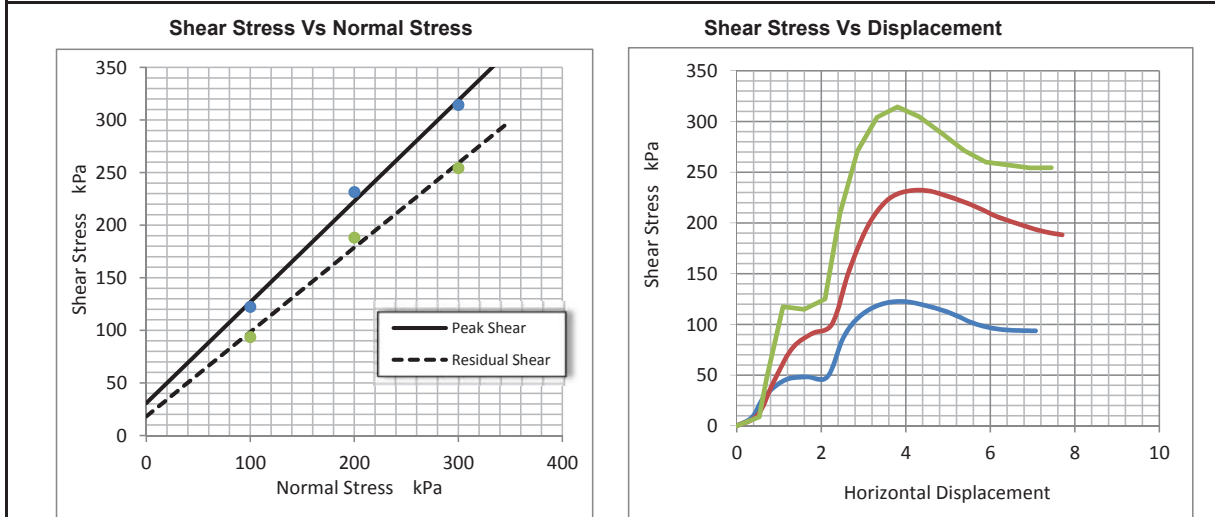
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7096	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH14 7.50 - 8.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 6-Feb-2016
		CHECKED: jn DATE: Feb-16 APPROVED: DATE:

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.543	Normal Stress (kPa) 100 200 300
Mosture Content %	18.10	Mass of specimen (g) 169.09 169.08 169.03
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.924 1.858 1.804
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.598 2.589 2.580
Av. Bulk density (Mg/m ³)	2.348	Dry Density (Mg/m ³) 2.200 2.192 2.185
		Intial Void Ratio 0.28 0.28 0.28
		Void ratio at end of consolidation 0.16 0.16 0.16
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 122.3 231.5 314.4
		Residual Shear Stress (kPa) 93.7 188.3 254.3

Plot of Results



Shear Strength Parameters at Failure			
		Peak Shear	Residual Shear
Cohesion	C	30.7	18.2
Angle of internal Friction,	Ø	43.8	38.8

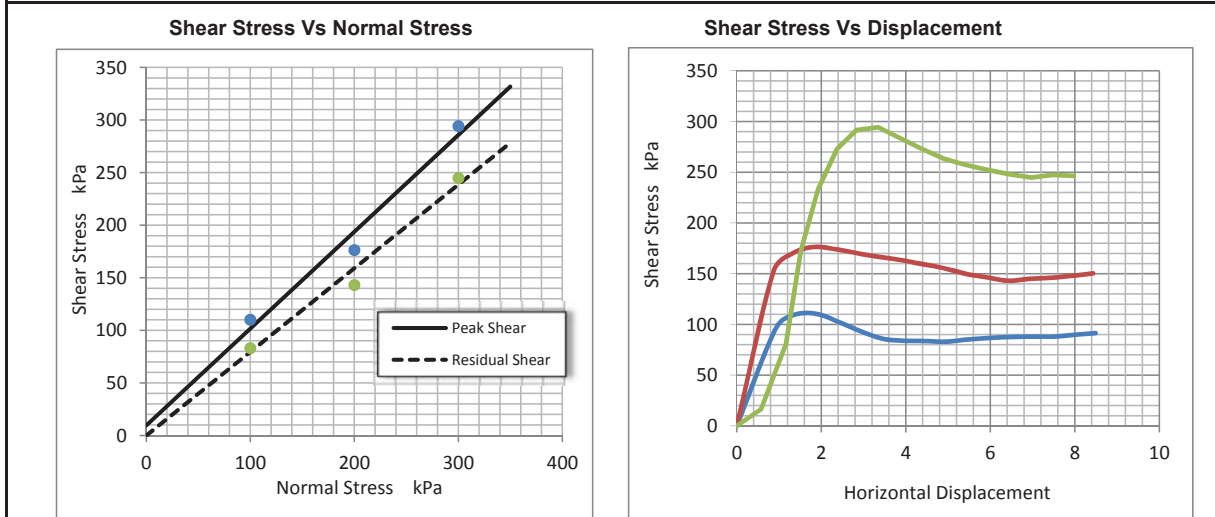
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7098	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH14 9.50 - 10.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 5-Feb-2016
		CHECKED: jn DATE: Feb-16
		APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.431	Normal Stress (kPa) 100 200 300
Mosture Content %	21.45	Mass of specimen (g) 163.48 163.5 163.87
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.923 1.964 2.053
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.512 2.518 2.536
Av. Bulk density (Mg/m ³)	2.272	Dry Density (Mg/m ³) 2.068 2.073 2.088
		Intial Void Ratio 0.30 0.30 0.30
		Void ratio at end of consolidation 0.18 0.17 0.16
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 110.2 176.4 294.3
		Residual Shear Stress (kPa) 83.0 143.0 244.8

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	9.5	0.0
Angle of internal Friction,	Ø	42.6	38.5

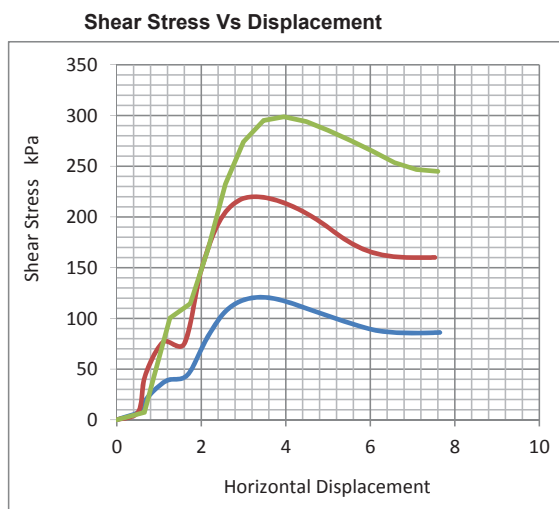
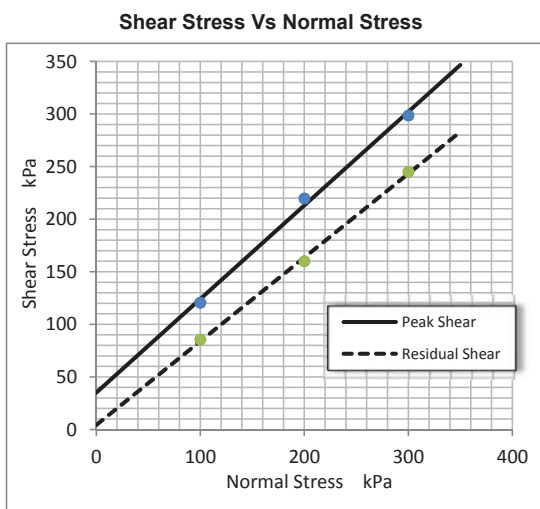
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7100	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH14 11.50 - 12.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 28-Jan-2016
		CHECKED: jn DATE: Feb-16 APPROVED: DATE:

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.621	Normal Stress (kPa) 100 200 300
Mosture Content %	23.88	Mass of specimen (g) 164.48 164.5 167.78
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.46 1.453 2.228
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.464 2.464 2.622
Av. Bulk density (Mg/m ³)	2.300	Dry Density (Mg/m ³) 1.989 1.989 2.117
		Intial Void Ratio 0.42 0.42 0.39
		Void ratio at end of consolidation 0.32 0.32 0.24
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 120.7 219.7 298.7
		Residual Shear Stress (kPa) 85.6 160.0 244.9

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	35.0	4.2
Angle of internal Friction,	Ø	41.7	38.5

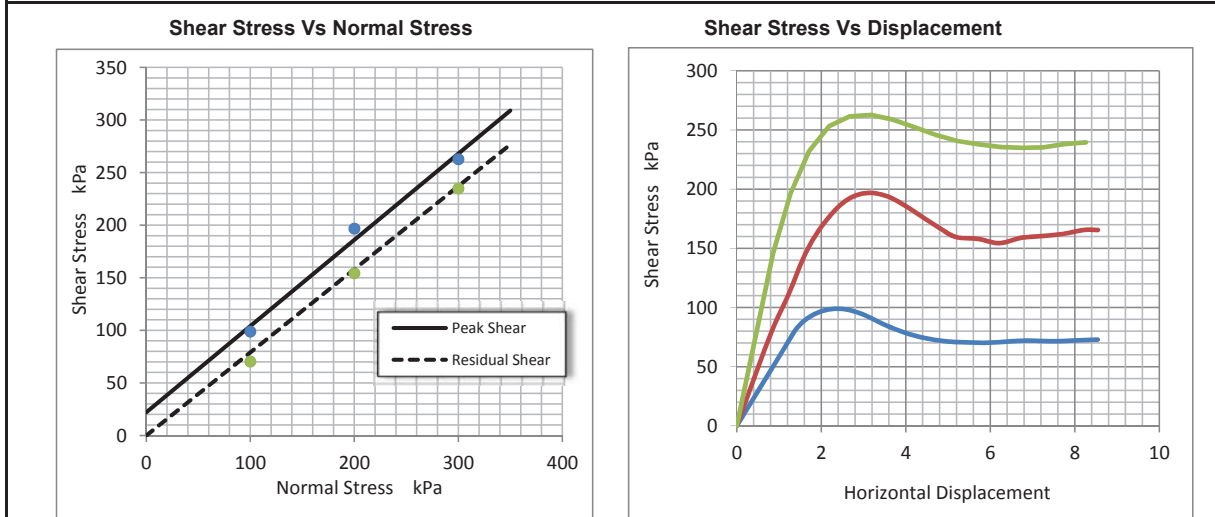
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test



FORM No	7102	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH14 13.50 - 14.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 3-Feb-2016
		CHECKED: jn DATE: Feb-16
		APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.46	Normal Stress (kPa) 100 200 300
Mosture Content %	23.32	Mass of specimen (g) 181.67 181.59 182.62
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.746 1.828 1.764
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.765 2.776 2.782
Av. Bulk density (Mg/m ³)	2.527	Dry Density (Mg/m ³) 2.242 2.251 2.256
		Intial Void Ratio 0.20 0.20 0.20
		Void ratio at end of consolidation 0.10 0.09 0.09
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 98.9 196.7 262.7
		Residual Shear Stress (kPa) 70.3 154.3 234.9

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	22.0	0.0
Angle of internal Friction,	Ø	39.4	38.3

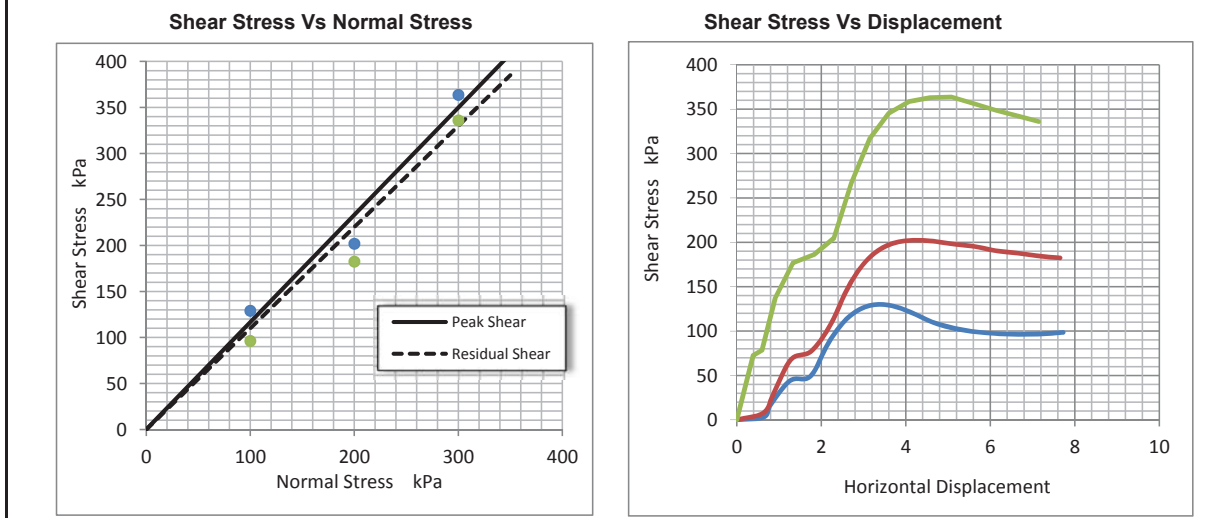
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7106	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH14 17.50 - 18.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 1-Feb-2016
		CHECKED: jn DATE: Feb-16
		APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.632	Normal Stress (kPa) 100 200 300
Moisture Content %	21.53	Mass of specimen (g) 145.98 148.49 144.65
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.668 2.213 2.389
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.212 2.319 2.282
Av. Bulk density (Mg/m ³)	2.033	Dry Density (Mg/m ³) 1.820 1.908 1.877
		Initial Void Ratio 0.58 0.55 0.59
		Void ratio at end of consolidation 0.45 0.38 0.40
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 129.1 202.0 363.7
		Residual Shear Stress (kPa) 96.3 182.5 336.0

Plot of Results



		Peak Shear	Residual Shear
Cohesion	C	0.0	0.0
Angle of internal Friction,	Ø	49.4	47.7

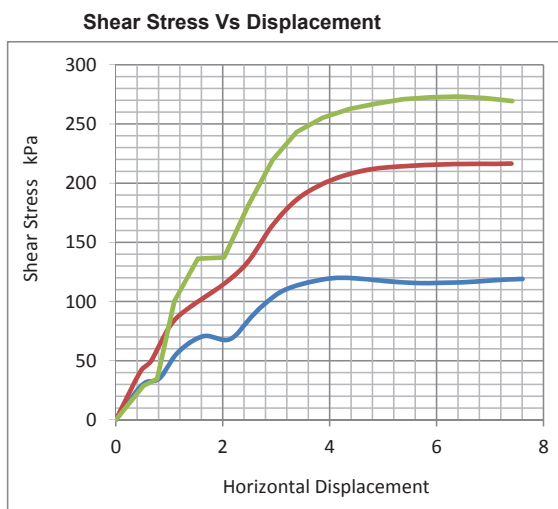
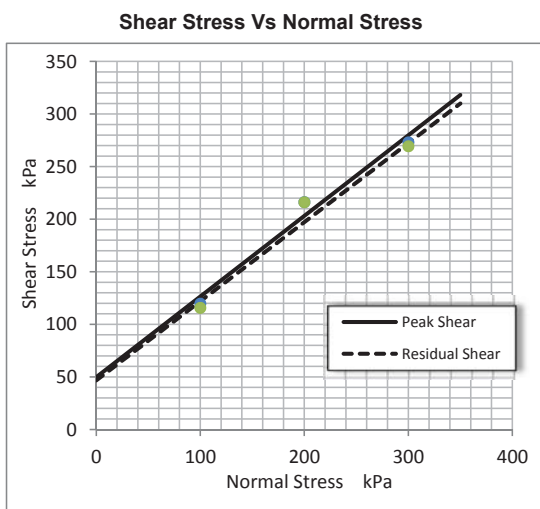
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7109	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH15 1.00 - 1.50m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 1-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.569	Normal Stress (kPa) 100 200 300
Mosture Content %	18.10	Mass of specimen (g) 133.02 133.1 132.78
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.11 2.95 2.499
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 1.956 2.168 2.107
Av. Bulk density (Mg/m ³)	1.847	Dry Density (Mg/m ³) 1.656 1.836 1.785
		Intial Void Ratio 0.64 0.64 0.65
		Void ratio at end of consolidation 0.55 0.40 0.44
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 119.8 216.3 273.1
		Residual Shear Stress (kPa) 115.7 216.1 269.4

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	49.7	46.7
Angle of internal Friction,	Ø	37.5	37.0

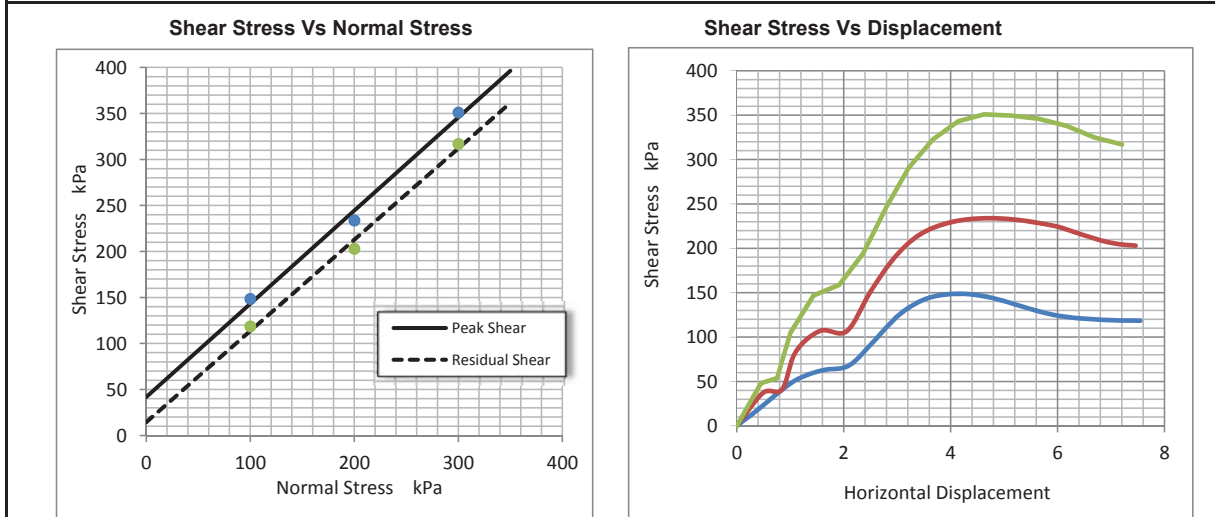
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7117	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH15 8.50 - 9.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 1-Feb-2016
		CHECKED: jn DATE: Feb-16 APPROVED: DATE:

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.496	Normal Stress (kPa) 100 200 300
Mosture Content %	18.21	Mass of specimen (g) 145.98 148.49 144.65
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.668 2.213 2.389
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.212 2.319 2.282
Av. Bulk density (Mg/m ³)	2.033	Dry Density (Mg/m ³) 1.871 1.962 1.930
		Intial Void Ratio 0.46 0.43 0.47
		Void ratio at end of consolidation 0.33 0.27 0.29
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 148.4 233.8 351.0
		Residual Shear Stress (kPa) 118.5 203.0 316.9

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	41.8	14.4
Angle of internal Friction,	Ø	45.4	44.8

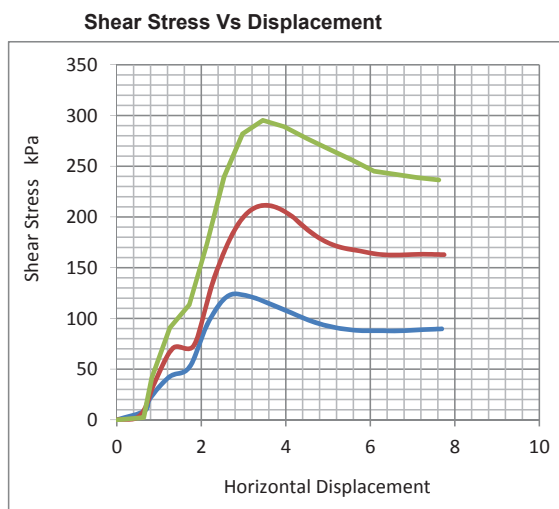
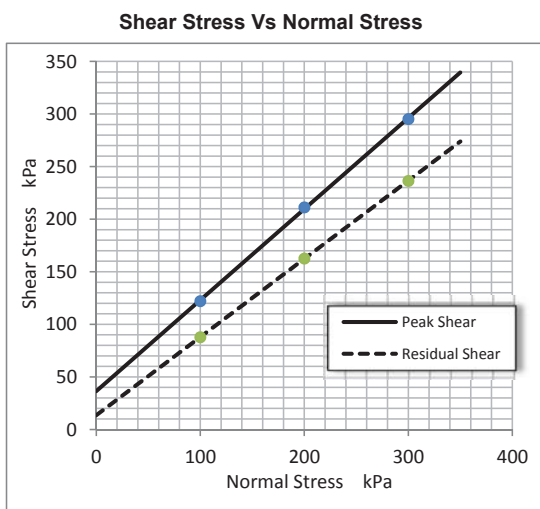
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7119	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH15 9.20 - 11.20m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 28-Jan-2016
		CHECKED: jn DATE: Feb-16 APPROVED: DATE:

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.486	Normal Stress (kPa) 100 200 300
Mosture Content %	20.26	Mass of specimen (g) 170.52 172.23 172.16
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.674 2.118 2.22
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.585 2.675 2.690
Av. Bulk density (Mg/m ³)	2.384	Dry Density (Mg/m ³) 2.149 2.225 2.237
		Intial Void Ratio 0.26 0.25 0.25
		Void ratio at end of consolidation 0.16 0.12 0.11
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 122.1 211.3 295.3
		Residual Shear Stress (kPa) 87.8 162.6 236.4

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	36.4	13.6
Angle of internal Friction,	Ø	40.9	36.6

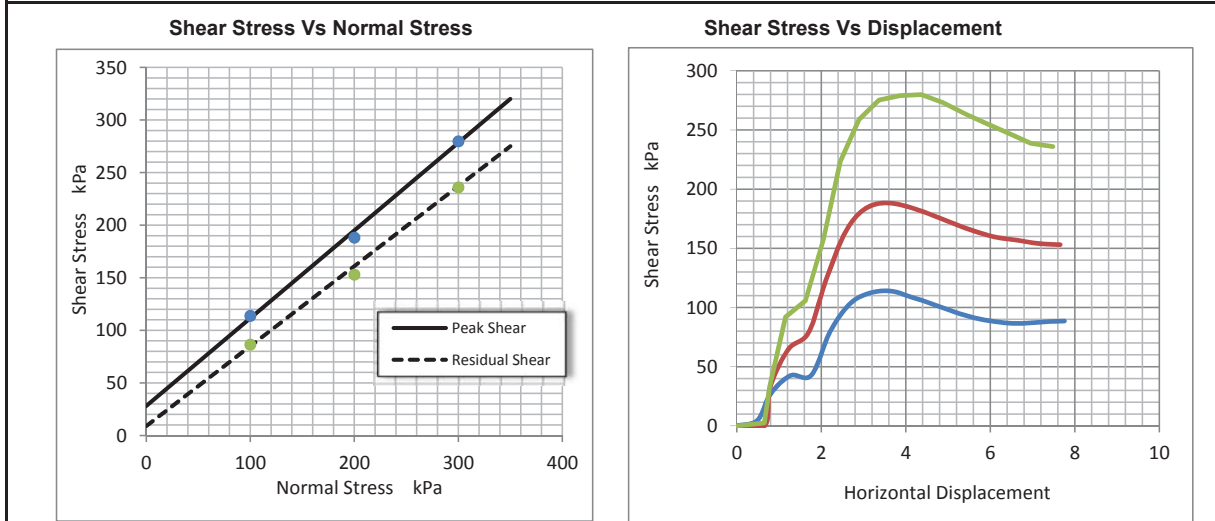
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7121	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	BH15 12.50 - 13.20m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 28-Jan-2016
		CHECKED: jn DATE: Feb-16 APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.521	Normal Stress (kPa) 100 200 300
Moisture Content %	21.55	Mass of specimen (g) 159.84 159.82 165.19
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.593 2.352 2.837
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.412 2.516 2.674
Av. Bulk density (Mg/m ³)	2.245	Dry Density (Mg/m ³) 1.984 2.070 2.200
		Initial Void Ratio 0.38 0.38 0.34
		Void ratio at end of consolidation 0.27 0.22 0.15
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 113.8 188.2 279.8
		Residual Shear Stress (kPa) 86.5 153.1 236.0

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	28.0	9.0
Angle of internal Friction,	Ø	39.8	37.2

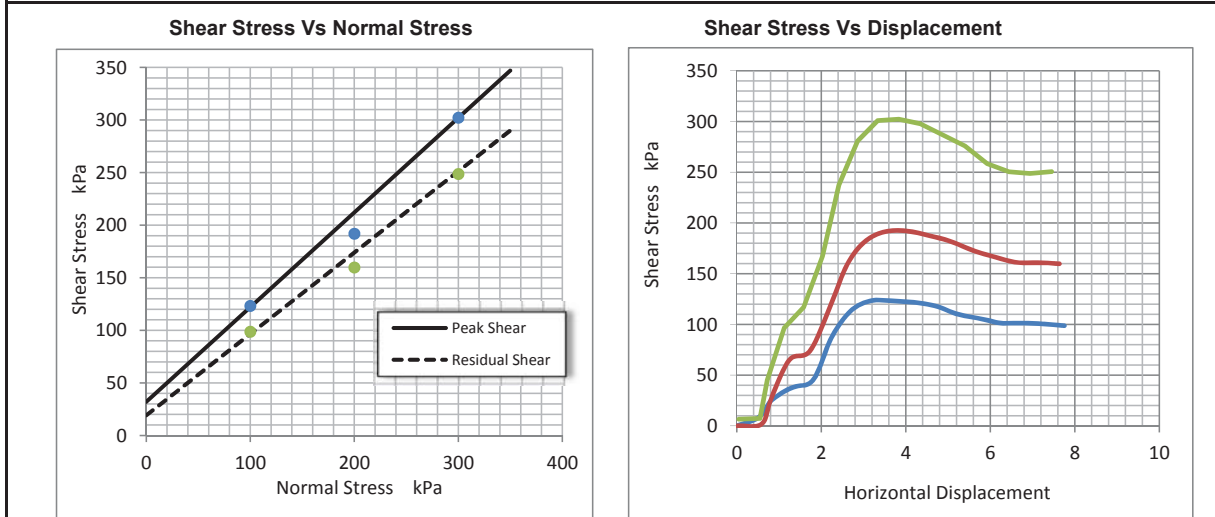
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7123	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH15 15.00 - 16.20m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		APPROVED
	TESTING DATE	DATE
	27-Jan-2016	

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.543	Normal Stress (kPa) 100 200 300
Moisture Content %	19.92	Mass of specimen (g) 174.38 175.3 177.12
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.479 1.695 2.218
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.615 2.660 2.767
Av. Bulk density (Mg/m ³)	2.439	Dry Density (Mg/m ³) 2.181 2.218 2.307
		Initial Void Ratio 0.26 0.25 0.24
		Void ratio at end of consolidation 0.17 0.15 0.10
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 123.3 191.9 302.2
		Residual Shear Stress (kPa) 98.7 159.7 248.7

Plot of Results



		Peak Shear	Residual Shear
Cohesion	C	32.0	19.1
Angle of internal Friction,	Ø	42.0	37.7

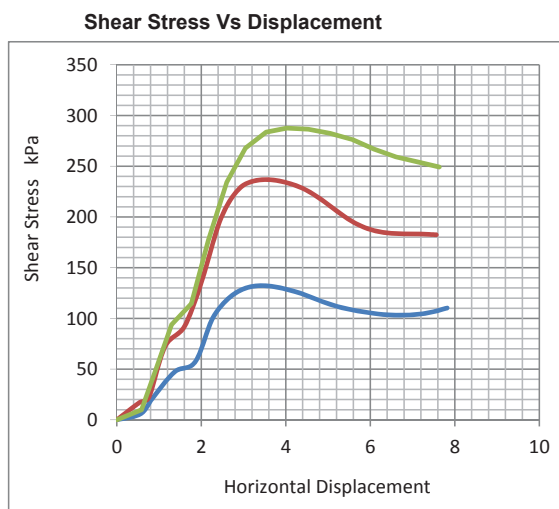
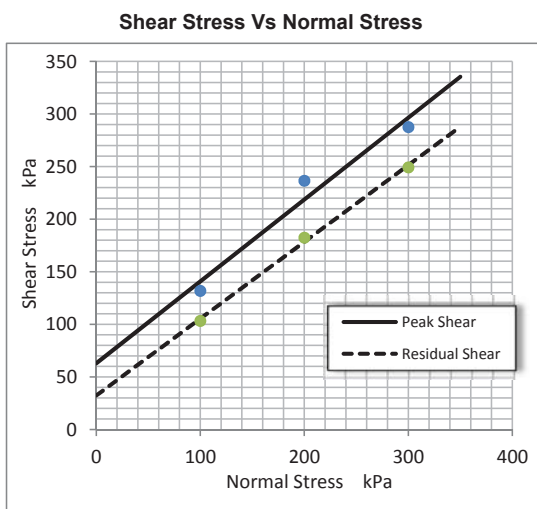
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7127	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH15 22.00 - 23.40m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 30-Jan-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.424	Normal Stress (kPa) 100 200 300
Moisture Content %	19.33	Mass of specimen (g) 177.37 177.78 179.55
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 0.894 2.32 1.768
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.579 2.793 2.736
Av. Bulk density (Mg/m ³)	2.475	Dry Density (Mg/m ³) 2.161 2.341 2.292
		Initial Void Ratio 0.17 0.17 0.16
		Void ratio at end of consolidation 0.12 0.04 0.06
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 131.8 236.5 287.5
		Residual Shear Stress (kPa) 103.3 182.5 249.3

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	62.9	32.3
Angle of internal Friction,	Ø	37.9	36.1

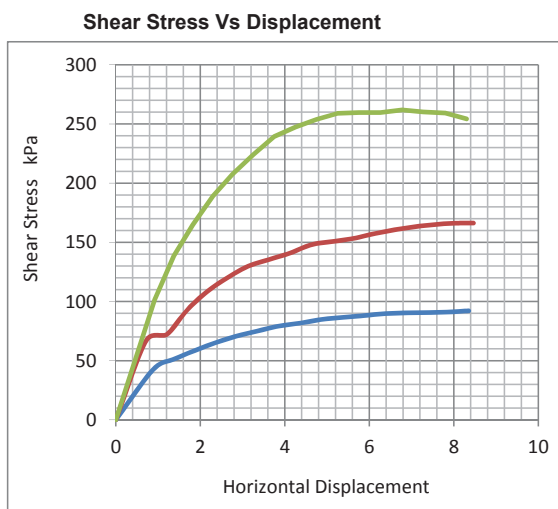
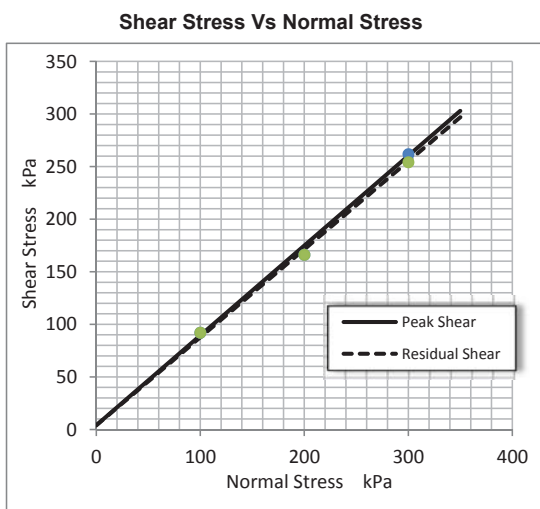
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7132	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH18 2.00 - 2.50m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 4-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.411	Normal Stress (kPa) 100 200 300
Mosture Content %	19.39	Mass of specimen (g) 192.07 192.05 192.07
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 2.176 3.326 3.607
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.993 3.199 3.255
Av. Bulk density (Mg/m ³)	2.668	Dry Density (Mg/m ³) 2.507 2.680 2.726
		Intial Void Ratio 0.08 0.08 0.08
		Void ratio at end of consolidation -0.04 -0.10 -0.12
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 92.1 166.2 261.9
		Residual Shear Stress (kPa) 92.1 166.2 254.2

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	4.0	4.0
Angle of internal Friction,	Ø	40.5	39.9

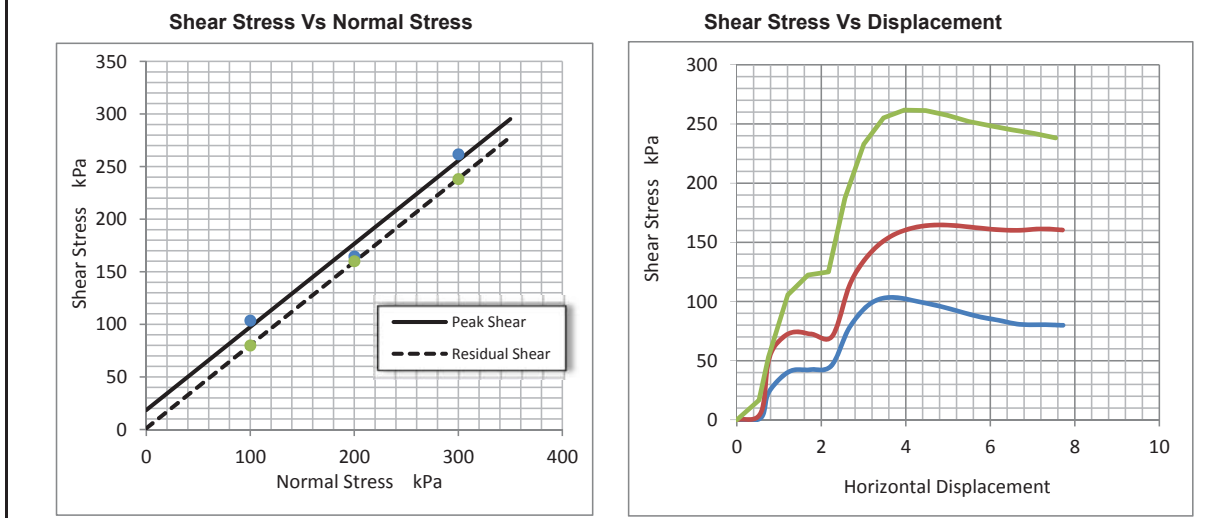
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7139	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH18 7.40 - 8.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 12-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.527	Normal Stress (kPa) 100 200 300
Mosture Content %	19.26	Mass of specimen (g) 128.3 128.86 128.72
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.983 1.755 2.303
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 1.978 1.962 2.020
Av. Bulk density (Mg/m ³)	1.786	Dry Density (Mg/m ³) 1.659 1.645 1.694
		Intial Void Ratio 0.69 0.68 0.69
		Void ratio at end of consolidation 0.52 0.54 0.49
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 103.6 164.6 261.7
		Residual Shear Stress (kPa) 79.9 160.1 238.2

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	18.4	1.1
Angle of internal Friction,	Ø	38.3	38.4

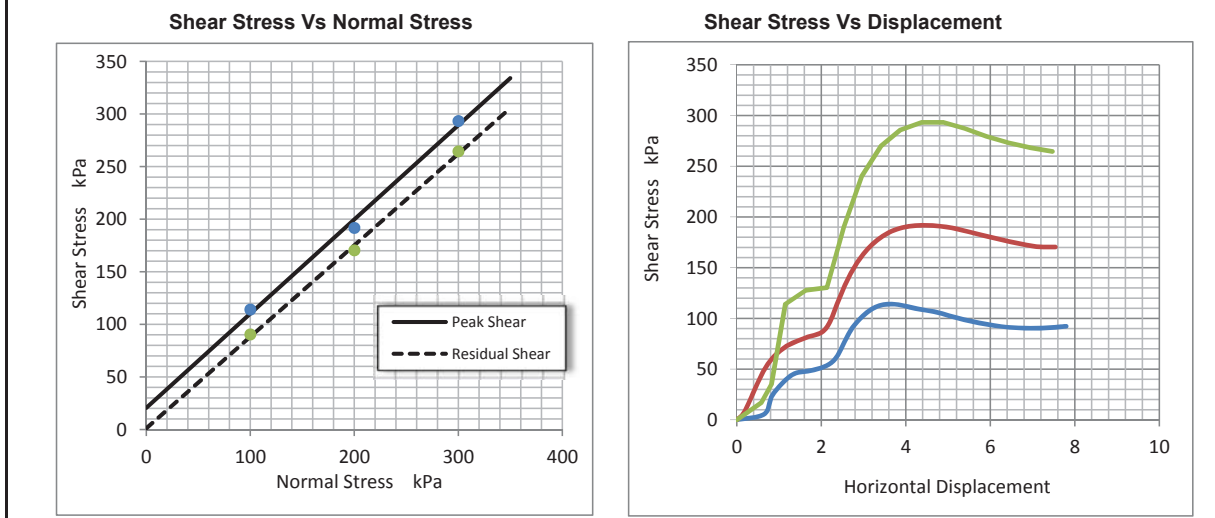
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7365	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	BH20 15.50 - 16.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 12-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.464	Normal Stress (kPa) 100 200 300
Mosture Content %	17.64	Mass of specimen (g) 164.87 164.62 164.72
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.322 2.273 1.123
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.452 2.580 2.424
Av. Bulk density (Mg/m ³)	2.288	Dry Density (Mg/m ³) 2.084 2.193 2.060
		Intial Void Ratio 0.27 0.27 0.27
		Void ratio at end of consolidation 0.18 0.12 0.20
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 114.1 191.7 293.3
		Residual Shear Stress (kPa) 90.5 170.4 264.6

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	20.5	1.1
Angle of internal Friction,	Ø	41.9	41.0

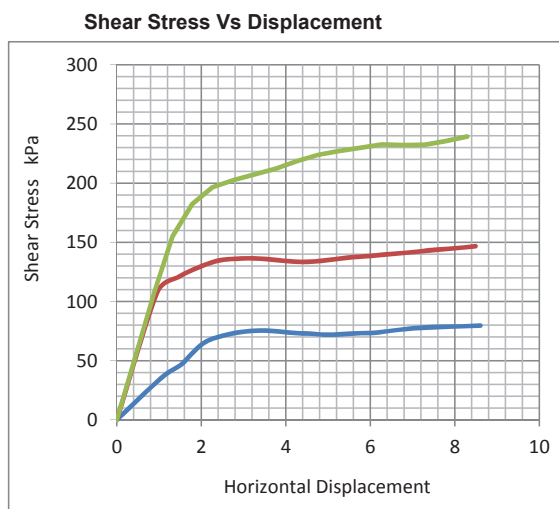
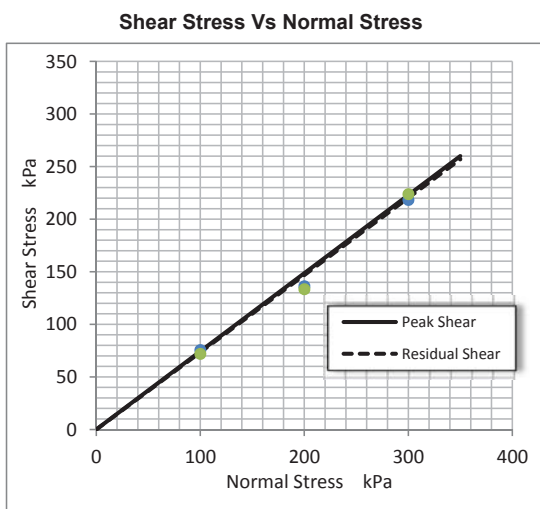
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7234	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	MS1 6.50 - 7.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 9-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.521	Normal Stress (kPa) 100 200 300
Mosture Content %	22.10	Mass of specimen (g) 135.56 136.26 135.45
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 2.184 2.118 2.464
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.114 2.117 2.146
Av. Bulk density (Mg/m ³)	1.886	Dry Density (Mg/m ³) 1.731 1.734 1.757
		Intial Void Ratio 0.63 0.63 0.64
		Void ratio at end of consolidation 0.46 0.45 0.43
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 75.5 136.3 218.4
		Residual Shear Stress (kPa) 71.9 133.5 223.8

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	0.0	0.0
Angle of internal Friction,	Ø	36.6	36.3

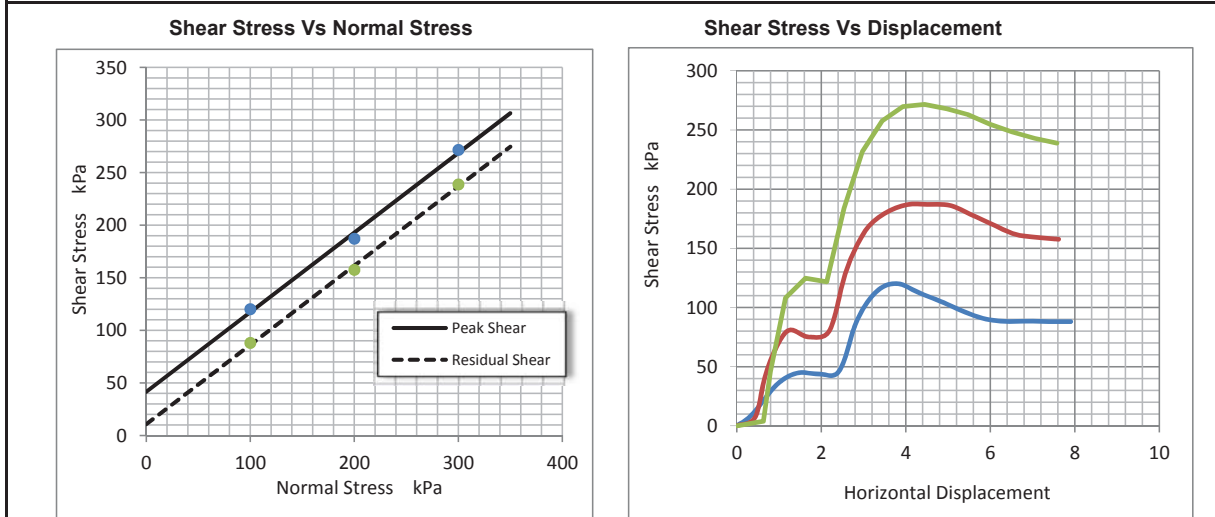
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test


FORM No	7238	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	MS1 9.50 - 10.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 11-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.471	Normal Stress (kPa) 100 200 300
Mosture Content %	16.31	Mass of specimen (g) 156.75 156.8 156.78
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.75 2.175 2.084
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.386 2.444 2.431
Av. Bulk density (Mg/m ³)	2.177	Dry Density (Mg/m ³) 2.051 2.101 2.090
		Intial Void Ratio 0.32 0.32 0.32
		Void ratio at end of consolidation 0.20 0.18 0.18
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 120.2 187.1 271.6
		Residual Shear Stress (kPa) 88.1 157.7 238.8

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	41.5	10.8
Angle of internal Friction,	Ø	37.1	37.0

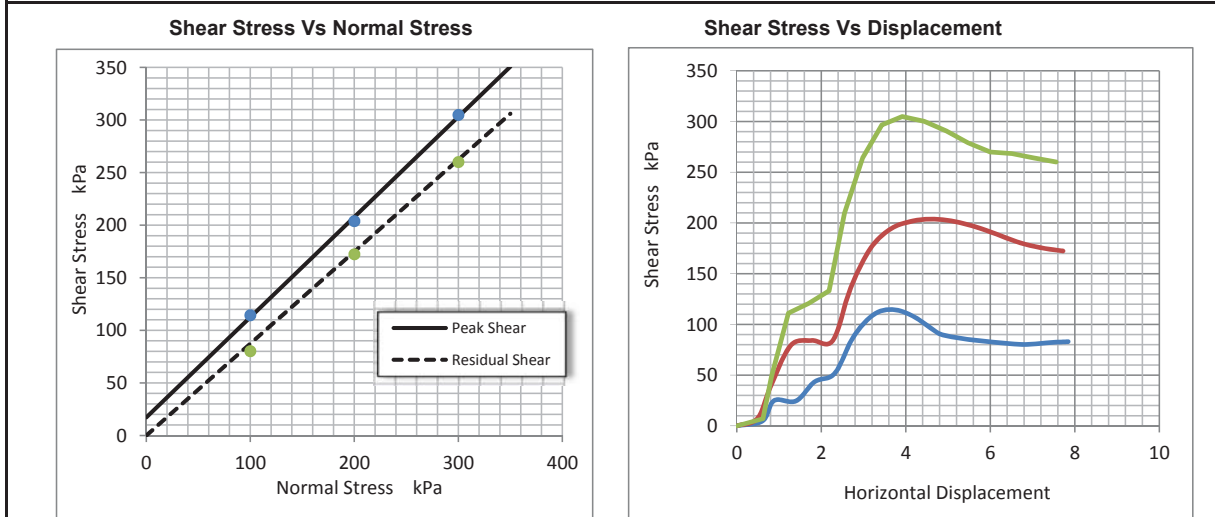
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7242	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	MS1 12.50 - 13.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 8-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.498	Normal Stress (kPa) 100 200 300
Mosture Content %	28.19	Mass of specimen (g) 163.45 163.4 163.44
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.252 1.846 2.15
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.422 2.500 2.543
Av. Bulk density (Mg/m ³)	2.270	Dry Density (Mg/m ³) 1.889 1.950 1.984
		Intial Void Ratio 0.41 0.41 0.41
		Void ratio at end of consolidation 0.32 0.28 0.26
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 114.4 203.9 305.0
		Residual Shear Stress (kPa) 80.2 172.4 260.2

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	17.2	0.0
Angle of internal Friction,	Ø	43.6	41.2

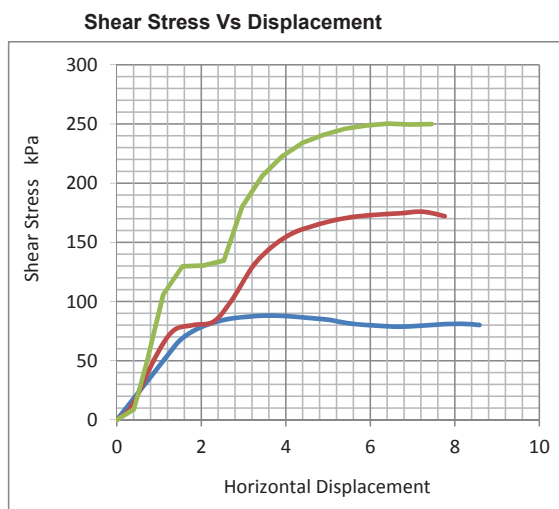
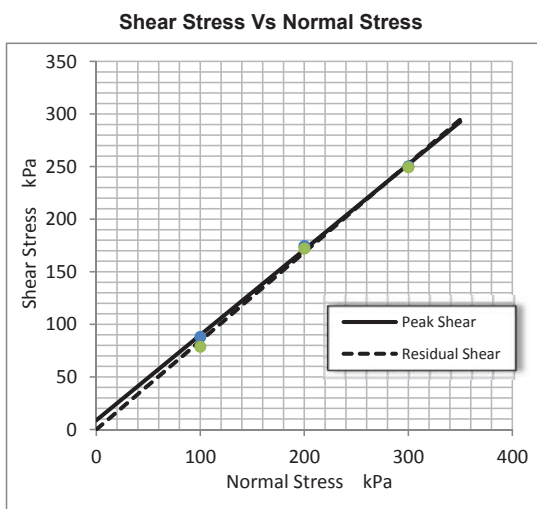
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Shear Shear Test

FORM No	7276	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	CHECKED jn
SOURCE/ LOCATION	MS2 8.00 - 9.00m	DATE Feb-16
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE 11-Feb-2016
		APPROVED
		DATE

Type of Specimen	Disturbed	Material Description
	Initially	
		Test 1 Test 2 Test 3
Specific gravity	2.462	Normal Stress (kPa) 100 200 300
Mosture Content %	28.08	Mass of specimen (g) 157.68 157.69 157.96
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 2.464 2.357 2.885
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.498 2.483 2.564
Av. Bulk density (Mg/m ³)	2.191	Dry Density (Mg/m ³) 1.950 1.938 2.002
		Intial Void Ratio 0.44 0.44 0.44
		Void ratio at end of consolidation 0.26 0.27 0.23
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 88.1 174.6 250.4
		Residual Shear Stress (kPa) 78.8 172.1 249.5

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	8.7	0.0
Angle of internal Friction,	Ø	39.1	40.1

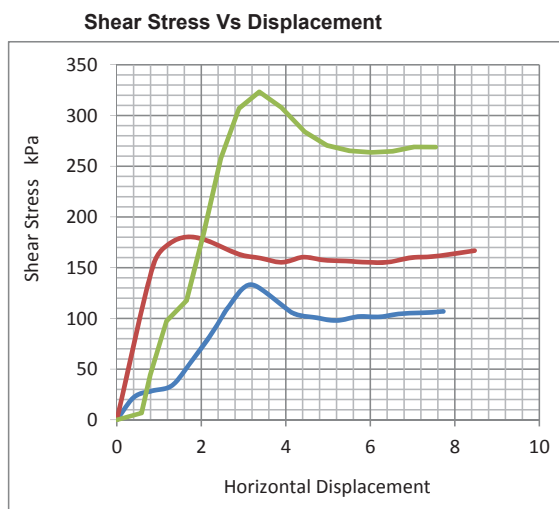
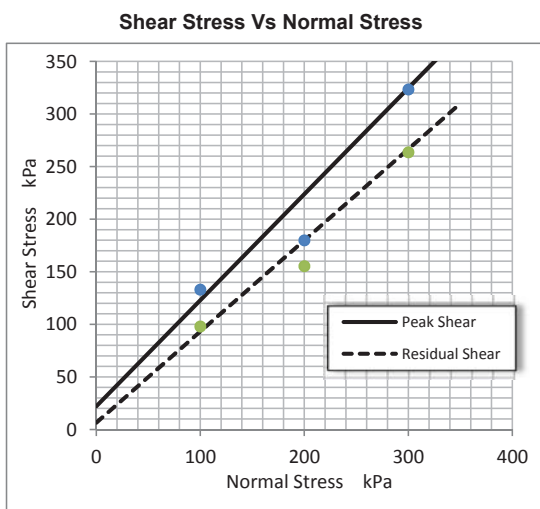
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7169	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	MZ 02 1.50 - 2.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 21-Jan-2016
		CHECKED: jn DATE: Feb-16 APPROVED: _____ DATE: _____

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.521	Normal Stress (kPa) 100 200 300
Moisture Content %	20.11	Mass of specimen (g) 164.21 165.83 167.51
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 2.626 2.079 2.626
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 2.625 2.570 2.678
Av. Bulk density (Mg/m ³)	2.303	Dry Density (Mg/m ³) 2.186 2.140 2.230
		Initial Void Ratio 0.33 0.31 0.30
		Void ratio at end of consolidation 0.15 0.18 0.13
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 133.1 180.0 323.3
		Residual Shear Stress (kPa) 97.9 155.3 263.6

Plot of Results



Shear Strength Parameters at Failure

		Peak Shear	Residual Shear
Cohesion	C	22.0	6.5
Angle of internal Friction,	Ø	45.2	40.9

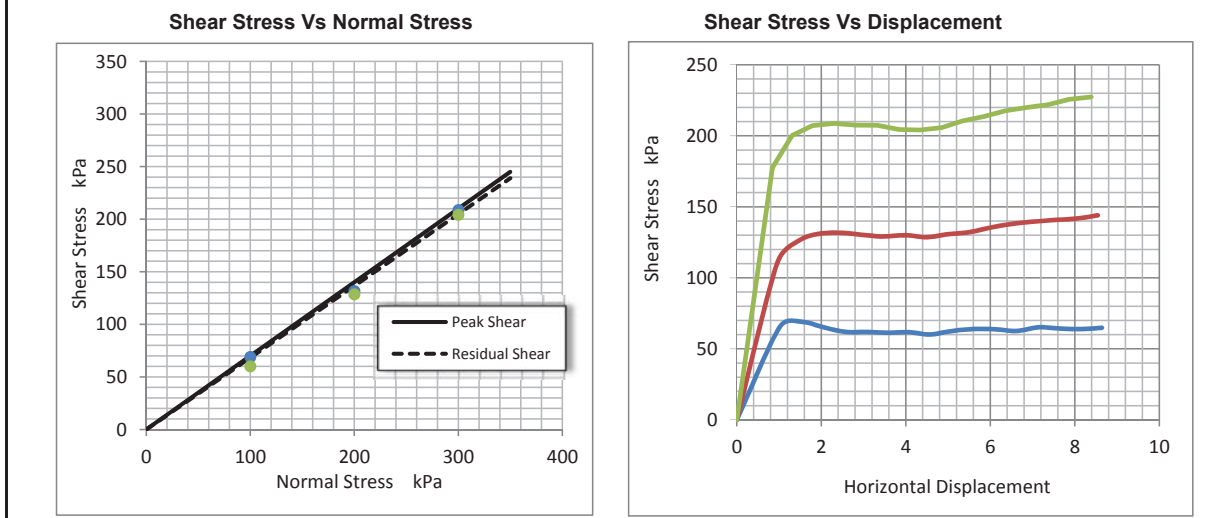
 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
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Direct Shear Test

FORM No	7171	BS 1377: Part 7: 1990
PROJECT	CENTRAL RAILWAYS JICA STUDY. KILOSA GULWE SECTION	
SOURCE/ LOCATION	MZ 02 3.50 - 4.00m	
TESTED BY	Lawrance	CLIENT: PADECO CO. LTD
DATE OF SAMPLING		TESTING DATE: 20-Jan-2016

Type of Specimen	Disturbed	Material Description
	Initially	Test 1 Test 2 Test 3
Specific gravity	2.575	Normal Stress (kPa) 100 200 300
Moisture Content %	18.70	Mass of specimen (g) 129.66 132.07 134.09
Area (mm ²)	3600	Initial vertical reading (mm) 0 0 0
Height of specimen (mm)	20	V. reading at End of Consolid.(mm) 1.338 2.667 2.544
Volume (mm ³)	72000	Bulk Density (Mg/m ³) 1.930 2.117 2.134
Av. Bulk density (Mg/m ³)	1.833	Dry Density (Mg/m ³) 1.626 1.783 1.798
		Initial Void Ratio 0.70 0.67 0.64
		Void ratio at end of consolidation 0.58 0.44 0.43
Test Conditions		Rate of Displacement (mm/min) 1.00 1.00 1.00
1. Saturated for 15min		Peak Shear Stress (kPa) 69.0 131.7 208.7
		Residual Shear Stress (kPa) 60.1 128.6 204.1

Plot of Results



Shear Strength Parameters at Failure		Peak Shear	Residual Shear
Cohesion	C	0.0	0.0
Angle of internal Friction,	Ø	35.0	34.3

POINT LOAD TEST

Date 15/1/2016

Project Kilosa Gulwe, JICA Study, Phase II

Operator Calvin



Box 34325 Dar, es salaam

Sample Number	Source	Depth	Loading direction	D, mm	L, mm	L/W	P, kN	De ²	I _s = P/De ² Mpa	Is(50) = (De/50) ^{0.45} * I _s Mpa	Type of Failure
	BH 15	25.06	Diam	43.66	49.25	1.13	3.88	1906.2	2.04	1.91	ai
	BH 15	26.00	Diam	43.93	64.69	1.47	1.52	1929.8	0.79	0.74	ai
	BH 15	26.14	Diam	44.57	77.3	1.73	2.38	1986.5	1.20	1.14	ai
	BH 15	25.37	Diam	41.15	50.99	1.24	10.61	1693.3	6.27	5.74	ai
	BH 14	2.93	Diam	41.61	60.87	1.46	5.62	1731.4	3.25	2.99	e
	BH 14	18.62	Diam	44.89	81.02	1.8	1.73	2015.1	0.86	0.82	ai
	BH 14	18.75	Diam	44.25	59.54	1.35	1.57	1958.1	0.80	0.76	ai
	BH 14	18.95	Diam	42.87	91.24	2.13	1.57	1837.8	0.85	0.8	ai
	BH 18	9.25	Diam	44.14	82.96	1.88	1.9	1948.3	0.98	0.92	ai
	BH 18	12.98	Diam	44.5	64.9	1.46	4.21	1980.3	2.13	2.02	ai
	BH 18	14.07	Diam	44.75	67.85	1.52	2.41	2002.6	1.20	1.14	ai
	BH 18	15.00	Diam	43.52	67.84	1.56	3.22	1894.0	1.70	1.6	ai
	BH 18	16.70	Diam	41.95	61.39	1.46	1.28	1759.8	0.73	0.67	ai

Loading Direction = Axial / Diametrical / Irregular Shape / Block

D = Distance between platen contacts, and is most of the time the smallest dimension of the specimen

W = Smallest width perpendicular to direction of loading. Or if sides are not parallel, the average of several readings

P = Failure Load

De² = Equivalent core diameter = D for diametrical tests and = 4A/π for axial block and lump tests

A = minimum cross sectional area through platen contact points = W * D

I_s = Uncorrected point load strength

POINT LOAD TEST



Box 34325 Dar, es salaam

Date 3/2/2016

Project Kilosa Gulwe, JICA Study, Phase II

Operator Calvin

Sample Number	Source	Depth	Loading direction	D, mm	L, mm	L/W	P, kN	De ²	I _s = P/De ² Mpa	Is(50) = (De/50) ^{0.45} * I _s Mpa	Type of Failure
BH 19		34.87	Diam	60.95	51.07	0.84	1.36	3714.9	0.37	0.4	ai
BH 19		35.68	Diam	64.67	28.36	0.44	2.85	4182.2	0.68	0.76	e
BH 19		36.24	Diam	64.59	81.71	1.27	2.93	4171.9	0.70	0.79	ai
BH 20		31.75	Diam	63.05	65.27	1.04	9.8	3975.3	2.47	2.74	ai
BH 20		28.44	Diam	59.67	62.79	1.05	5.11	3560.5	1.44	1.55	ai
BH 20		29.70	Diam	60.66	75.6	1.25	3.61	3679.6	0.98	1.07	e
MS-3		12.72	Diam	60.88	77.92	1.28	4.21	3706.4	1.14	1.24	b
MS-3		15.70	Diam	46.2	65.27	1.41	10.91	2134.4	5.11	4.93	ai
MS-3		18.73	Diam	45.56	74.22	1.63	2.34	2075.7	1.13	1.08	ai
MS-3		18.90	Diam	45.95	100.8	2.19	4.97	2111.4	2.35	2.27	ai

Loading Direction = Axial / Diametrical / Irregular Shape / Block

D = Distance between platen contacts, and is most of the time the smallest dimension of the specimen

W = Smallest width perpendicular to direction of loading. Or if sides are not parallel, the average of several readings

P = Failure Load

De² = Equivalent core diameter = D for diametrical tests and = 4A/π for axial block and lump tests

A = minimum cross sectional area through platen contact points = W * D

I_s = Uncorrected point load strength

POINT LOAD TEST



Box 34325 Dar, es salaam

Date 6/2/2016

Project Kilosa Gulwe, JICA Study, Phase II

Operator Calvin

Sample Number	Source	Depth	Loading direction	D, mm	L, mm	L/W	P, kN	De ²	I _s = P/De ² Mpa	Is(50) = (De/50) ^{0.45} * I _s Mpa	Type of Failure
	BH 12	9.18	Diam	57.11	68.82	1.21	16	3261.6	4.91	5.21	ai
	BH 12	10.60	Diam	57.12	54.36	0.95	1.2	3262.7	0.37	0.39	ai
	BH 12	10.37	Diam	57.61	35.8	0.62	3.04	3318.9	0.92	0.98	ai
	BH 12	12.20	Diam	59.41	67.7	1.14	4.76	3529.5	1.35	1.46	e
	BH 12	11.84	Diam	58.55	73.14	1.25	1.14	3428.1	0.33	0.36	ai
	BH 12	13.20	Diam	60.19	48.05	0.8	7.47	3622.8	2.06	2.24	ai
	BH 12	14.55	Diam	59.25	73.93	1.25	31	3510.6	8.83	9.53	e
	BH 12	16.32	Diam	60.41	61.08	1.01	34	3649.4	9.32	10.14	e
	BH 12	17.50	Diam	59.6	33.73	0.57	2.32	3552.2	0.65	0.71	e
	BH 12	18.23	Diam	61.08	72.12	1.18	41	3730.8	10.99	12.03	e
	MZ-01	26.25	Diam	57.02	53.29	0.93	35.85	3251.3	11.03	11.7	e
	MZ-01	27.00	Block	62.41	67.85	1.09	13.4	3895.0	3.44	3.8	a1

Loading Direction = Axial / Diametrical / Irregular Shape / Block

D = Distance between platen contacts, and is most of the time the smallest dimension of the specimen



W = Smallest width perpendicular to direction of loading. Or if sides are not parallel, the average of several readings

P = Failure Load

De² = Equivalent core diameter = D for diametrical tests and = 4A/π for axial block and lump tests

A = minimum cross sectional area through platen contact points = W * D

I_s = Uncorrected point load strength

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate		SOURCE: BH 13 [13.40m]		
A	Weight of oven-dry sample in air	g	52.2	52.5	
B	Weight of saturated-surface dry sample in air	g	52.6	53.1	
C	Weight of saturated sample in water	g	34.4	33.2	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.870	2.640	2.755
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.888	2.668	2.778
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.923	2.718	2.820
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.6	1.1	0.9

3	Coarse Aggregate		SOURCE: BH 13 [22.55m]		
A	Weight of oven-dry sample in air	g	42.1	110.1	
B	Weight of saturated-surface dry sample in air	g	42.3	110.4	
C	Weight of saturated sample in water	g	25.7	69.0	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.536	2.658	2.597
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.549	2.666	2.608
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.570	2.678	2.624
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.5	0.3	0.4

3	Coarse Aggregate		SOURCE: BH 13 [25.18m]		
A	Weight of oven-dry sample in air	g	20.8	54.1	
B	Weight of saturated-surface dry sample in air	g	20.9	54.3	
C	Weight of saturated sample in water	g	12.4	33.3	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.438	2.579	2.509
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.451	2.589	2.520
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.470	2.604	2.537
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.5	0.4	0.4

4	Coarse Aggregate		SOURCE:		
A	Weight of oven-dry sample in air	g			
B	Weight of saturated-surface dry sample in air	g			
C	Weight of saturated sample in water	g			AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$			
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$			
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$			
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$			

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH 14 [18.20m]		
A	Weight of oven-dry sample in air	g	107.8	
B	Weight of saturated-surface dry sample in air	g	107.9	
C	Weight of saturated sample in water	g	66.4	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.597	2.597
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.599	2.599
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.602	2.602
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.1

3	Coarse Aggregate	SOURCE: BH 14 [18.70m]		
A	Weight of oven-dry sample in air	g	24.5	18.8
B	Weight of saturated-surface dry sample in air	g	24.6	18.9
C	Weight of saturated sample in water	g	15.2	11.7
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.595	2.595
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.607	2.610
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.628	2.635
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.5	0.6
				0.5

3	Coarse Aggregate	SOURCE: BH 14 [18.30m]		
A	Weight of oven-dry sample in air	g	76.9	
B	Weight of saturated-surface dry sample in air	g	77.0	
C	Weight of saturated sample in water	g	49.6	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.809	2.809
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.813	2.813
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.819	2.819
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.1

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH 15 [25.85m]		
A	Weight of oven-dry sample in air	g	15.1	20.1
B	Weight of saturated-surface dry sample in air	g	15.2	20.6
C	Weight of saturated sample in water	g	9.3	12.7
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.549	2.526
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.568	2.592
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.597	2.703
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.7	2.6
				1.7

3	Coarse Aggregate	SOURCE: BH 15 [25.93m]		
A	Weight of oven-dry sample in air	g	27.2	85.0
B	Weight of saturated-surface dry sample in air	g	27.3	85.3
C	Weight of saturated sample in water	g	16.5	51.9
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.514	2.547
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.523	2.557
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.537	2.571
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.4	0.4
				0.4

3	Coarse Aggregate	SOURCE: BH 15 [26.06m]		
A	Weight of oven-dry sample in air	g	20.5	29.8
B	Weight of saturated-surface dry sample in air	g	20.6	29.9
C	Weight of saturated sample in water	g	13.6	19.0
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.922	2.724
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.939	2.741
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.972	2.770
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.6	0.6
				0.6

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH MS3 [14.96m]		
A	Weight of oven-dry sample in air	g	50.3	55.5
B	Weight of saturated-surface dry sample in air	g	50.4	55.6
C	Weight of saturated sample in water	g	32.3	35.1
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.768	2.699
				2.734
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.776	2.705
				2.740
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.790	2.714
				2.752
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.3	0.2
				0.2

3	Coarse Aggregate	SOURCE: BH MS3 [17.46m]		
A	Weight of oven-dry sample in air	g	44.2	48.1
B	Weight of saturated-surface dry sample in air	g	44.3	48.2
C	Weight of saturated sample in water	g	27.3	30.1
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.603	2.651
				2.627
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.610	2.658
				2.634
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.622	2.670
				2.646
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.3	0.3
				0.3

3	Coarse Aggregate	SOURCE: BH MS3 [19.83m]		
A	Weight of oven-dry sample in air	g	37.5	35.0
B	Weight of saturated-surface dry sample in air	g	37.6	35.2
C	Weight of saturated sample in water	g	23.0	21.9
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.558	2.646
				2.602
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.566	2.655
				2.610
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.579	2.670
				2.624
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.3	0.3
				0.3

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

 Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH 18 [9.15m]		
A	Weight of oven-dry sample in air	g	22.5	28.1
B	Weight of saturated-surface dry sample in air	g	22.6	28.3
C	Weight of saturated sample in water	g	13.5	16.8
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.487	2.457
				2.472
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.492	2.469
				2.481
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.498	2.488
				2.493
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.2	0.5
				0.3

3	Coarse Aggregate	SOURCE: BH 18 [9.16m]		
A	Weight of oven-dry sample in air	g	27.2	72.9
B	Weight of saturated-surface dry sample in air	g	27.3	73.1
C	Weight of saturated sample in water	g	17.5	46.1
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.776	2.699
				2.738
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.789	2.708
				2.749
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.813	2.723
				2.768
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.5	0.3
				0.4

3	Coarse Aggregate	SOURCE: BH 18 [12.90m]		
A	Weight of oven-dry sample in air	g	43.1	44.7
B	Weight of saturated-surface dry sample in air	g	43.2	45.3
C	Weight of saturated sample in water	g	27.7	29.3
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.772	2.796
				2.784
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.779	2.834
				2.806
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.793	2.905
				2.849
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.3	1.3
				0.8

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

 C.Labs (Tz) <small>Draw, Build, Test</small>	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C.Labs (Tz) <small>Draw, Build, Test</small>
SG.& ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH 19 [34.60m]		
A	Weight of oven-dry sample in air	g	81.3	85.4
B	Weight of saturated-surface dry sample in air	g	81.4	85.5
C	Weight of saturated sample in water	g	49.4	51.9
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.539	2.547
				2.543
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.542	2.550
				2.546
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.545	2.553
				2.549
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.1
				0.1

3	Coarse Aggregate	SOURCE: BH 19 [36.50m]		
A	Weight of oven-dry sample in air	g	46.1	108.4
B	Weight of saturated-surface dry sample in air	g	46.1	108.5
C	Weight of saturated sample in water	g	28.4	67.1
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.598	2.617
				2.607
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.600	2.619
				2.610
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.605	2.622
				2.614
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.1
				0.1

3	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate		SOURCE: BH 20 [32.25m]		
A	Weight of oven-dry sample in air	g	24.6	74.7	
B	Weight of saturated-surface dry sample in air	g	24.7	74.8	
C	Weight of saturated sample in water	g	15.1	45.5	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.563	2.551	2.557
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.569	2.553	2.561
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.579	2.556	2.567
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.2	0.1	0.2

3	Coarse Aggregate		SOURCE: BH 20 [32.00m]		
A	Weight of oven-dry sample in air	g	111.9	202.2	
B	Weight of saturated-surface dry sample in air	g	112.0	202.5	
C	Weight of saturated sample in water	g	68.4	124.8	AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.562	2.602	2.582
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.566	2.606	2.586
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.571	2.614	2.592
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.2	0.2

3	Coarse Aggregate		SOURCE:		
A	Weight of oven-dry sample in air	g			
B	Weight of saturated-surface dry sample in air	g			
C	Weight of saturated sample in water	g			AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$			
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$			
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$			
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$			

4	Coarse Aggregate		SOURCE:		
A	Weight of oven-dry sample in air	g			
B	Weight of saturated-surface dry sample in air	g			
C	Weight of saturated sample in water	g			AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$			
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$			
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$			
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$			

 C Labs (Tz) Draw, Build, Test	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C Labs (Tz) Draw, Build, Test
SG. & ABSORPTION OF AGGREGATES		
Form No		Standard: BS 812 Part 2



PROJECT	GEOTECHNICAL INVESTIGATION WORKS ON THE PREPARATORY SURVEY ON FLOOD PROTECTION MEASURES FOR CENTRAL RAILWAY LINE IN THE UNITED REPUBLIC OF TANZANIA PHASE II		CHECKED BY: YK
SAMPLE DESCRIPTION	ROCK	SIZE: ALL	DATE: 28/2/2016
TECHNICIAN	CALVIN	CLIENT PADECO CO Ltd	APPROVED BY:
DATE OF SAMPLING	December-15	TESTING: 20-Feb-16	DATE:

3	Coarse Aggregate	SOURCE: BH MS2 [23.12m]		
A	Weight of oven-dry sample in air	g	177.8	381.0
B	Weight of saturated-surface dry sample in air	g	178.0	381.2
C	Weight of saturated sample in water	g	101.4	216.8
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$	2.321	2.317
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$	2.323	2.318
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$	2.326	2.320
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$	0.1	0.1
				0.1

3	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

3	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

4	Coarse Aggregate	SOURCE:		
A	Weight of oven-dry sample in air	g		
B	Weight of saturated-surface dry sample in air	g		
C	Weight of saturated sample in water	g		
				AVERAGE
G4	BULK SPECIFIC GRAVITY(oven-dried) :	$\frac{A}{(B-C)}$		
G5	BULK SPECIFIC GRAVITY(sat. Sur.dr) :	$\frac{B}{(B-C)}$		
G6	APPARENT SPECIFIC GRAVITY :	$\frac{A}{(A-C)}$		
W2	WATER ABSORPTION:	$\frac{(B-A)100}{A}$		

	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	W1147-7319	Standard: ASTM D 512 MOHR'S METHOD



	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	BH 13	APPROVED BY:
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Dec-15	TESTED Feb-16
		DATE

Samplpe reference (km) /Test No		1	2		REMARKS	
I	STANDARDISATION OF AgNO₃					
A	Mass of NaCl used	g	0.2004	0.2004	Average	
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900		
C	Final volume of AgNO ₃	ml	38.8000	39.1000		
D	Volume of AgNO ₃ used	ml	35.2000	36.2100		
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10	
II	DETERMINATION OF CHLORIDE CONTENT					
F	Wt of water used	g	50.00	50.00		
G	Density of water	g/cc	1.00	1.00		
H	Volume of water used	ml	50	50.000		
J	pH of water	pH	8.33	8.66		
K	Initial Volume of AgNO ₃	ml	7.2	7.7		
L	Final volume of AgNO ₃	ml	7.7	8.3		
M	Titre AgNO ₃	ml	0.5	0.6		
N	Concentration of Water	M	0.0010	0.0012		
O	Chloride content	mg/l	35.5	42.5		
P	Average chloride content	mg/l	39.0			

E = A/(0.05844)D
E : Normality of AgNO₃ solution
A:Mass of NaCl used for titration in grams
D:Volume of AgNO₃ used for titration in ml

O = N x 35.45X 1000

Signed by (Materials Engineer/Manager)	Received by :
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	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	w0020-1341	Standard: ASTM D 512 MOHR'S METHOD



	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	BH 14	APPROVED BY: DATE
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Dec-15 TESTED Mar-16	

Samplpe reference (km) /Test No		1	2		REMARKS	
I	STANDARDISATION OF AgNO₃					
A	Mass of NaCl used	g	0.2004	0.2004	Average	
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900		
C	Final volume of AgNO ₃	ml	38.8000	39.1000		
D	Volume of AgNO ₃ used	ml	35.2000	36.2100		
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10	
II	DETERMINATION OF CHLORIDE CONTENT					
F	Wt of water used	g	50.00	50.00		
G	Density of water	g/cc	1.00	1.00		
H	Volume of water used	ml	50	50.000		
J	pH of water	pH	8.40	8.50		
K	Initial Volume of AgNO ₃	ml	1.5	5.1		
L	Final volume of AgNO ₃	ml	2.7	6.4		
M	Titre AgNO ₃	ml	1.2	1.3		
N	Concentration of Water	M	0.0024	0.0026		
O	Chloride content	mg/l	85.1	92.2		
P	Average chloride content	mg/l	88.6			

E = A/(0.05844)D
E : Normality of AgNO₃ solution
A:Mass of NaCl used for titration in grams
D:Volume of AgNO₃ used for titration in ml

O = N x 35.45X 1000

Signed by (Materials Engineer/Manager)	Received by :
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 C-Labs(Tz) a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C-Labs(Tz) a credible test result
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	w0020-1342	Standard: ASTM D 512 MOHR'S METHOD



	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	BH 15	APPROVED BY: DATE
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Dec-15 TESTED Mar-16	

Samplpe reference (km) /Test No		1	2		REMARKS
I	STANDARDISATION OF AgNO₃				
A	Mass of NaCl used	g	0.2004	0.2004	Average
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900	
C	Final volume of AgNO ₃	ml	38.8000	39.1000	
D	Volume of AgNO ₃ used	ml	35.2000	36.2100	
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10
II	DETERMINATION OF CHLORIDE CONTENT				
F	Wt of water used	g	50.00	50.00	
G	Density of water	g/cc	1.00	1.00	
H	Volume of water used	ml	50	50.000	
J	pH of water	pH	8.36	8.63	
K	Initial Volume of AgNO ₃	ml	10.5	11.6	
L	Final volume of AgNO ₃	ml	11.8	12.9	
M	Titre AgNO ₃	ml	1.3	1.3	
N	Concentration of Water	M	0.0026	0.0026	
O	Chloride content	mg/l	92.2	92.2	
P	Average chloride content	mg/l	92.2		

E = A/(0.05844)D
E : Normality of AgNO₃ solution
A:Mass of NaCl used for titration in grams
D:Volume of AgNO₃ used for titration in ml

O = N x 35.45X 1000

Signed by (Materials Engineer/Manager)	Received by :
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 C-Labs(Tz) a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C-Labs(Tz) a credible test result
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	w0020-1345	Standard: ASTM D 512 MOHR'S METHOD



	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	BH 18	APPROVED BY: DATE
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Dec-15 TESTED Mar-16	

Samplpe reference (km) /Test No			1	2		REMARKS
I	STANDARDISATION OF AgNO₃					
A	Mass of NaCl used	g	0.2004	0.2004	Average	
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900		
C	Final volume of AgNO ₃	ml	38.8000	39.1000		
D	Volume of AgNO ₃ used	ml	35.2000	36.2100		
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10	
II	DETERMINATION OF CHLORIDE CONTENT					
F	Wt of water used	g	50.00	50.00		
G	Density of water	g/cc	1.00	1.00		
H	Volume of water used	ml	50	50.000		
J	pH of water	pH	8.30	8.37		
K	Initial Volume of AgNO ₃	ml	19.0	17.4		
L	Final volume of AgNO ₃	ml	20.7	19		
M	Titre AgNO ₃	ml	1.7	1.6		
N	Concentration of Water	M	0.0034	0.0032		
O	Chloride content	mg/l	120.5	113.4		
P	Average chloride content	mg/l	117.0			

E = A/(0.05844)D
E : Normality of AgNO₃ solution
A:Mass of NaCl used for titration in grams
D:Volume of AgNO₃ used for titration in ml

O = N x 35.45X 1000



Signed by (Materials Engineer/Manager)	Received by :
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 C-Labs(Tz) a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C-Labs(Tz) a credible test result
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	w0020-1343	Standard: ASTM D 512 MOHR'S METHOD

	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	MZ 01	APPROVED BY: DATE
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Jan-16 TESTED Mar-16	

Samplpe reference (km) /Test No		1	2		REMARKS	
I	STANDARDISATION OF AgNO₃					
A	Mass of NaCl used	g	0.2004	0.2004	Average	
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900		
C	Final volume of AgNO ₃	ml	38.8000	39.1000		
D	Volume of AgNO ₃ used	ml	35.2000	36.2100		
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10	
II	DETERMINATION OF CHLORIDE CONTENT					
F	Wt of water used	g	50.00	50.00		
G	Density of water	g/cc	1.00	1.00		
H	Volume of water used	ml	50	50.000		
J	pH of water	pH	8.63	8.39		
K	Initial Volume of AgNO ₃	ml	12.9	15		
L	Final volume of AgNO ₃	ml	15	17		
M	Titre AgNO ₃	ml	2.1	2		
N	Concentration of Water	M	0.0042	0.0040		
O	Chloride content	mg/l	148.9	141.8		
P	Average chloride content	mg/l	145.3			
$E = A / (0.05844) D$ <p>E : Normality of AgNO₃ solution</p> <p>A: Mass of NaCl used for titration in grams</p> <p>D: Volume of AgNO₃ used for titration in ml</p> $O = N \times 35.45 \times 1000$						

Signed by (Materials Engineer/Manager)	Received by :
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 C-Labs(Tz) a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 C-Labs(Tz) a credible test result
DETERMINATION OF CHLORIDE IN WATER SAMPLES		
Form No	w0020-1344	Standard: ASTM D 512 MOHR'S METHOD



	CENTRAL RAILWAYS JICA STUDY. KILOSA - GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO	DATE Feb 2016
LOCATION	BH MZ 02	APPROVED BY: DATE
TESTED BY	VICTOR/LAURENCE	
DATE OF SAMPLING	Dec-15 TESTED Mar-16	

Sample reference (km) / Test No		1	2		REMARKS	
I	STANDARDISATION OF AgNO₃					
A	Mass of NaCl used	g	0.2004	0.2004	Average	
B	Initial Volume of AgNO ₃	ml	3.6000	2.8900		
C	Final volume of AgNO ₃	ml	38.8000	39.1000		
D	Volume of AgNO ₃ used	ml	35.2000	36.2100		
E	Concentration of Standardised AgNO ₃	N	0.100	0.100	0.10	
II	DETERMINATION OF CHLORIDE CONTENT					
F	Wt of water used	g	50.00	50.00		
G	Density of water	g/cc	1.00	1.00		
H	Volume of water used	ml	50	50.000		
J	pH of water	pH	8.00	8.80		
K	Initial Volume of AgNO ₃	ml	6.4	8.5		
L	Final volume of AgNO ₃	ml	8.5	10.5		
M	Titre AgNO ₃	ml	2.1	2		
N	Concentration of Water	M	0.0042	0.0040		
O	Chloride content	mg/l	148.9	141.8		
P	Average chloride content	mg/l	145.3			

E = A / (0.05844) D
E : Normality of AgNO₃ solution
A: Mass of NaCl used for titration in grams
D: Volume of AgNO₃ used for titration in ml

O = N x 35.45 x 1000



Signed by (Materials Engineer/Manager)	Received by :
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 a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 a credible test result
Determination of Sulphate Content on Water Samples		
Form No	W1147-7319	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO CO. Ltd	DATE: Feb-16
TESTED BY	VICTOR/LAURENCE BH 13	APPROVED BY:
DATE OF SAMPLING	December-15 TESTING Mar-16	DATE:

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	E	C
D	Wt of crucible	gm	33.2845	30.4163
E	Wt of crucible + ashless filter after ignition	gm	33.3075	30.4395
F	Wt of sulphate salt collected (F-E)	gm	0.0230	0.0232
G	Sulphate content = 411500 x F/B	mg/L	189.3	190.9
H	Average sulphate content	mg/L	190.1	



COMMENTS:

 a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 a credible test result
Determination of Sulphate Content on Water Samples		
Form No	W0020-1341	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY:	vs
CLIENT	PADECO CO. Ltd	DATE:	Feb-16
TESTED BY	VICTOR/LAURENCE BH 14	APPROVED BY:	
DATE OF SAMPLING	December-15 TESTING Mar-16	DATE:	

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	MZ	LJ
D	Wt of crucible	gm	29.6164	24.8644
E	Wt of crucible + ashless filter after ignition	gm	29.6440	24.8925
F	Wt of sulphate salt collected (F-E)	gm	0.0276	0.0281
G	Sulphate content = 411500 x F/B	mg/L	227.1	231.3
H	Average sulphate content	mg/L	229.2	



COMMENTS:

 a credible test result	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	 a credible test result
Determination of Sulphate Content on Water Samples		
Form No	W0020-1342	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO CO. Ltd	DATE: Feb-16
TESTED BY	VICTOR/LAURENCE BH 15	APPROVED BY:
DATE OF SAMPLING	December-15 TESTING Mar-16	DATE:

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	D	Y
D	Wt of crucible	gm	30.4170	25.8769
E	Wt of crucible + ashless filter after ignition	gm	30.4388	25.8976
F	Wt of sulphate salt collected (F-E)	gm	0.0218	0.0207
G	Sulphate content = $411500 \times F/B$	mg/L	179.4	170.4
H	Average sulphate content	mg/L	174.9	



COMMENTS:

	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	
Determination of Sulphate Content on Water Samples		
Form No	W0020-1345	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY: vs
CLIENT	PADECO CO. Ltd	DATE: Feb-16
TESTED BY	VICTOR/LAURENCE BH 18	APPROVED BY:
DATE OF SAMPLING	December-15 TESTING Mar-16	DATE:

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	Q	N
D	Wt of crucible	gm	29.1640	32.1289
E	Wt of crucible + ashless filter after ignition	gm	29.2369	32.2025
F	Wt of sulphate salt collected (F-E)	gm	0.0729	0.0736
G	Sulphate content = $411500 \times F/B$	mg/L	600.0	605.7
H	Average sulphate content	mg/L	602.8	



COMMENTS:

	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	
Determination of Sulphate Content on Water Samples		
Form No	W0020-1343	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY:	vs
CLIENT	PADECO CO. Ltd	DATE:	Feb-16
TESTED BY	VICTOR/LAURENCE BH MZ 01	APPROVED BY:	
DATE OF SAMPLING	January-16 TESTING Mar-16	DATE:	

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	E	G
D	Wt of crucible	gm	33.2885	30.4849
E	Wt of crucible + ashless filter after ignition	gm	33.3663	30.5619
F	Wt of sulphate salt collected (F-E)	gm	0.0778	0.0770
G	Sulphate content = $411500 \times F/B$	mg/L	640.3	633.7
H	Average sulphate content	mg/L	637.0	

COMMENTS:

	CIVIL ENGINEERING LABORATORY DAR ES SALAAM TANZANIA	
Determination of Sulphate Content on Water Samples		
Form No	W0020-1344	ASTM D 516 -07 / BS 1377 Part 3:1990

PROJECT	CENTRAL RAILWAY JICA STUDY. KILOSA GULWE SECTION	CHECKED BY:	vs
CLIENT	PADECO CO. Ltd	DATE:	Feb-16
TESTED BY	VICTOR/LAURENCE BH MZ 02	APPROVED BY:	
DATE OF SAMPLING	December-15 TESTING Mar-16	DATE:	

	Sample Description		1	2
A	Test No			
B	Volume of water sample used	ml	50.000	50.000
C	Crucible reference	No	A	X
D	Wt of crucible	gm	30.6486	23.2913
E	Wt of crucible + ashless filter after ignition	gm	30.9306	23.5732
F	Wt of sulphate salt collected (F-E)	gm	0.2820	0.2819
G	Sulphate content = $411500 \times F/B$	mg/L	2320.9	2320.0
H	Average sulphate content	mg/L	2320.4	

COMMENTS:

APPENDIX AA

PATTERN OF TRAIN OPERATIONS AND LENGTH OF SECTION BY INUNDATION DURING DESIGN FLOODS

1) List of Pattern of Train Operations during Design Floods

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
283500	T	
283520	T	
283540	T	
283560	T	
283580	T	
283600	T	
283620	T	
283640	T	
283660	T	
283680	T	
283700	T	
283720	T	
283740	T	
283760	T	
283780	T	
283800	T	
283820	T	
283840	T	
283860	T	
283880	T	
283900	T	
283920	T	
283940	T	
283960	T	
283980	T	
284000	T	
284020	T	
284040	T	
284060	T	
284080	T	
284100	T	
284120	T	
284140	T	
284160	T	
284180	T	
284200	T	
284220	T	
284240	T	
284260	T	
284280	T	
284300	T	
284320	T	
284340	T	
284360	T	
284380	T	
284400	T	
284420	T	
284440	T	
284460	T	
284480	T	
284500	T	
284520	T	
284540	T	
284560	T	
284580	T	
284600	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
284620	T	
284640	T	
284660	T	
284680	T	
284700	T	
284720	T	
284740	T	
284760	T	
284780	T	
284800	T	
284820	T	
284840	T	
284860	T	
284880	T	
284900	T	
284920	T	
284940	T	
284960	T	
284980	T	
285000	T	
285020	T	
285040	T	
285060	T	
285080	T	
285100	T	
285120	T	
285140	T	
285160	T	
285180	T	
285200	T	
285220	T	
285240	T	
285260	T	
285280	T	
285300	T	
285320	T	
285340	T	
285360	T	
285380	T	
285400	T	
285420	T	
285440	T	
285460	T	
285480	T	
285500	T	
285520	T	
285540	T	
285560	T	
285580	T	
285600	T	
285620	T	
285640	T	
285660	T	
285680	T	
285700	T	
285720	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
285740	T	
285760	T	
285780	T	
285800	T	
285820	T	
285840	T	
285860	T	
285880	T	
285900	T	
285920	T	
285940	T	
285960	T	
285980	T	
286000	T	
286020	T	
286040	T	
286060	T	
286080	T	
286100	T	
286120	T	
286140	T	
286160	T	
286180	T	
286200	T	
286220	T	
286240	T	
286260	T	
286280	T	
286300	T	
286320	T	
286340	T	
286360	T	
286380	T	
286400	T	
286420	T	
286440	T	
286460	T	
286480	T	
286500	T	
286520	T	
286540	T	
286560	F	
286580	F	
286600	F	
286620	F	
286640	F	
286660	F	
286680	F	
286700	F	
286720	F	
286740	F	
286760	F	
286780	F	
286800	F	
286820	F	
286840	F	
286860	F	
286880	F	
286900	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
286920	F	
286940	F	
286960	F	
286980	F	
287000	F	
287020	F	
287040	F	
287060	F	
287080	T	
287100	T	
287120	T	
287140	T	
287160	T	
287180	T	
287200	T	
287220	T	
287240	T	
287260	T	
287280	T	
287300	T	
287320	T	
287340	T	
287360	T	
287380	T	
287400	T	
287420	T	
287440	T	
287460	T	
287480	T	
287500	T	
287520	T	
287540	T	
287560	T	
287580	T	
287600	T	
287620	T	
287640	T	
287660	T	
287680	T	
287700	T	
287720	T	
287740	T	
287760	T	
287780	T	
287800	T	
287820	T	
287840	T	
287860	T	
287880	T	
287900	T	
287920	T	
287940	T	
287960	T	
287980	T	
288000	T	
288020	T	
288040	T	
288060	T	
288080	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
288100	T	
288120	T	
288140	T	
288160	T	
288180	T	
288200	T	
288220	T	
288240	T	
288260	T	
288280	T	
288300	T	
288320	T	
288340	T	
288360	T	
288380	T	
288400	F	
288420	F	
288440	F	
288460	F	
288480	F	
288500	F	
288520	F	
288540	F	
288560	F	
288580	F	
288600	F	
288620	F	
288640	F	
288660	F	
288680	F	
288700	F	
288720	F	
288740	F	
288760	F	
288780	F	
288800	F	
288820	F	
288840	F	
288860	F	
288880	F	
288900	F	
288920	F	
288940	F	
288960	F	
288980	F	
289000	F	
289020	F	
289040	F	
289060	F	
289080	F	
289100	F	
289120	F	
289140	T	
289160	T	
289180	T	
289200	T	
289220	T	
289240	T	
289260	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
289280	T	
289300	T	
289320	T	
289340	T	
289360	T	
289380	T	
289400	T	
289420	T	
289440	T	
289460	T	
289480	T	
289500	T	
289520	T	
289540	T	
289560	T	
289580	T	
289600	T	
289620	T	
289640	T	
289660	T	
289680	T	
289700	T	
289720	T	
289740	T	
289760	T	
289780	T	
289800	T	
289820	T	
289840	T	
289860	T	
289880	T	
289900	T	
289920	F	
289940	F	
289960	F	
289980	F	
290000	F	
290020	F	
290040	F	
290060	F	
290080	T	
290100	T	
290120	T	
290140	T	
290160	T	
290180	T	
290200	T	
290220	T	
290240	T	
290260	T	
290280	T	
290300	T	
290320	T	
290340	T	
290360	T	
290380	T	
290400	T	
290420	T	
290440	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
290460	T	
290480	T	
290500	T	
290520	T	
290540	T	
290560	T	
290580	T	
290600	T	
290620	T	
290640	T	
290660	T	
290680	T	
290700	T	
290720	T	
290740	T	
290760	T	
290780	T	
290800	T	
290820	T	
290840	T	
290860	T	
290880	T	
290900	T	
290920	T	
290940	T	
290960	T	
290980	T	
291000	T	
291020	T	
291040	T	
291060	T	
291080	T	
291100	T	
291120	T	
291140	T	
291160	T	
291180	T	
291200	T	
291220	T	
291240	T	
291260	T	
291280	T	
291300	T	
291320	T	
291340	F	
291360	F	
291380	F	
291400	T	
291420	T	
291440	T	
291460	F	
291480	F	
291500	T	
291520	T	
291540	T	
291560	T	
291580	T	
291600	T	
291620	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
291640	T	
291660	T	
291680	T	
291700	T	
291720	T	
291740	T	
291760	T	
291780	T	
291800	T	
291820	T	
291840	T	
291860	T	
291880	T	
291900	T	
291920	T	
291940	T	
291960	T	
291980	T	
292000	T	
292020	T	
292040	T	
292060	T	
292080	T	
292100	T	
292120	T	
292140	T	
292160	T	
292180	T	
292200	T	
292220	T	
292240	T	
292260	T	
292280	T	
292300	T	
292320	T	
292340	F	
292360	F	
292380	F	
292400	F	
292420	F	
292440	F	
292460	F	
292480	F	
292500	F	
292520	F	
292540	F	
292560	F	
292580	T	
292600	T	
292620	T	
292640	T	
292660	F	
292680	F	
292700	F	
292720	F	
292740	F	
292760	F	
292780	F	
292800	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
292820	F	
292840	F	
292860	F	
292880	F	
292900	T	
292920	T	
292940	T	
292960	T	
292980	T	
293000	T	
293020	T	
293040	T	
293060	T	
293080	T	
293100	T	
293120	T	
293140	T	
293160	T	
293180	T	
293200	T	
293220	T	
293240	T	
293260	T	
293280	T	
293300	T	
293320	T	
293340	T	
293360	T	
293380	T	
293400	T	
293420	T	
293440	F	
293460	F	
293480	F	
293500	F	
293520	F	
293540	F	
293560	F	
293580	F	
293600	F	
293620	F	
293640	F	
293660	F	
293680	F	
293700	F	Section 1
293720	F	4
293740	F	4
293760	F	4
293780	F	4
293800	F	4
293820	F	4
293840	F	4
293860	F	1
293880	F	1
293900	F	1
293920	F	1
293940	F	1
293960	F	1
293980	F	1

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
294000	F	4
294020	F	4
294040	F	4
294060	F	4
294080	F	4
294100	F	4
294120	F	1
294140	F	1
294160	F	1
294180	F	1
294200	F	1
294220	F	4
294240	F	4
294260	F	4
294280	F	4
294300	F	4
294320	F	4
294340	F	4
294360	F	4
294380	F	4
294400	F	1
294420	F	1
294440	F	1
294460	F	1
294480	F	1
294500	F	1
294520	F	1
294540	F	1
294560	F	1
294580	F	1
294600	F	1
294620	F	1
294640	F	1
294660	F	1
294680	F	1
294700	F	1
294720	F	1
294740	F	1
294760	F	1
294780	F	1
294800	F	1
294820	F	1
294840	F	1
294860	F	1
294880	F	1
294900	F	2
294920	F	2
294940	F	2
294960	F	2
294980	F	2
295000	F	5
295020	F	5
295040	F	4
295060	F	4
295080	F	4
295100	F	4
295120	F	1
295140	F	1
295160	F	1

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
295180	F	1
295200	F	1
295220	F	1
295240	F	1
295260	F	1
295280	F	1
295300	F	1
295320	F	4
295340	F	4
295360	F	1
295380	F	1
295400	F	1
295420	F	1
295440	F	4
295460	F	4
295480	F	1
295500	F	4
295520	F	4
295540	F	4
295560	F	4
295580	F	4
295600	F	
295620	F	
295640	F	
295660	F	
295680	F	
295700	F	
295720	F	
295740	F	
295760	F	
295780	F	
295800	F	
295820	F	
295840	F	
295860	F	
295880	F	
295900	F	
295920	F	
295940	F	
295960	F	
295980	F	
296000	F	
296020	F	
296040	F	
296060	F	
296080	F	
296100	F	
296120	F	
296140	F	
296160	F	
296180	F	
296200	F	
296220	F	
296240	F	
296260	F	
296280	F	
296300	F	
296320	F	
296340	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
296360	F	
296380	F	
296400	F	
296420	F	
296440	F	
296460	F	
296480	F	
296500	F	
296520	F	
296540	F	
296560	F	
296580	F	
296600	F	
296620	F	
296640	F	
296660	F	
296680	T	
296700	T	
296720	T	
296740	T	
296760	T	
296780	T	
296800	T	
296820	T	
296840	T	
296860	T	
296880	T	
296900	T	
296920	T	
296940	T	
296960	T	
296980	T	
297000	F	
297020	F	
297040	F	
297060	F	
297080	F	
297100	F	
297120	F	
297140	F	
297160	F	
297180	F	
297200	F	
297220	F	
297240	F	
297260	F	
297280	F	
297300	F	
297320	F	
297340	F	
297360	F	
297380	F	
297400	F	
297420	F	
297440	F	
297460	F	
297480	F	
297500	F	
297520	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
297540	F	
297560	F	
297580	F	
297600	F	
297620	F	
297640	F	
297660	F	
297680	F	
297700	F	
297720	F	
297740	F	
297760	F	
297780	F	
297800	F	
297820	F	
297840	F	
297860	F	
297880	F	
297900	F	
297920	F	
297940	T	
297960	T	
297980	T	
298000	T	
298020	T	
298040	T	
298060	T	
298080	T	
298100	T	
298120	T	
298140	T	
298160	T	
298180	T	
298200	T	
298220	T	
298240	T	
298260	T	
298280	T	
298300	T	
298320	T	
298340	T	
298360	T	
298380	T	
298400	T	
298420	T	
298440	T	
298460	T	
298480	T	
298500	T	
298520	T	
298540	T	
298560	T	
298580	T	
298600	T	
298620	T	
298640	T	
298660	F	
298680	F	
298700	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
298720	F	
298740	F	
298760	F	
298780	F	
298800	F	
298820	F	
298840	F	
298860	F	
298880	F	
298900	F	
298920	F	
298940	F	
298960	F	
298980	F	
299000	F	
299020	F	
299040	F	
299060	F	
299080	F	
299100	F	
299120	F	
299140	F	
299160	F	
299180	F	
299200	F	
299220	F	
299240	F	
299260	F	
299280	F	
299300	F	
299320	F	
299340	F	
299360	F	
299380	F	
299400	F	
299420	F	
299440	F	
299460	F	
299480	F	
299500	F	
299520	F	
299540	F	
299560	F	
299580	F	
299600	F	
299620	F	
299640	F	
299660	F	
299680	F	
299700	F	
299720	F	
299740	F	
299760	F	
299780	F	
299800	F	
299820	F	
299840	F	
299860	F	
299880	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
299900	F	
299920	F	
299940	F	
299960	F	
299980	F	
300000	F	
300020	F	
300040	F	
300060	F	
300080	F	
300100	F	
300120	F	
300140	F	
300160	F	
300180	F	
300200	F	
300220	F	
300240	F	
300260	F	
300280	F	
300300	F	
300320	F	
300340	F	
300360	F	
300380	F	
300400	F	
300420	F	
300440	F	
300460	F	
300480	F	
300500	F	
300520	F	
300540	F	
300560	F	
300580	F	
300600	F	
300620	F	
300640	F	
300660	F	
300680	F	
300700	F	
300720	F	
300740	F	
300760	F	
300780	F	
300800	F	
300820	F	
300840	F	
300860	F	
300880	F	
300900	F	
300920	F	
300940	F	
300960	F	
300980	F	
301000	T	
301020	T	
301040	T	
301060	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
301080	T	
301100	T	
301120	T	
301140	T	
301160	T	
301180	T	
301200	T	
301220	T	
301240	T	
301260	T	
301280	T	
301300	T	
301320	T	
301340	T	
301360	T	
301380	T	
301400	T	
301420	T	
301440	T	
301460	T	
301480	T	
301500	T	
301520	T	
301540	T	
301560	T	
301580	T	
301600	T	
301620	T	
301640	T	
301660	T	
301680	T	
301700	T	
301720	T	
301740	T	
301760	T	
301780	T	
301800	T	
301820	T	
301840	T	
301860	T	
301880	T	
301900	T	
301920	T	
301940	T	
301960	T	Section 2
301980	T	4
302000	T	4
302020	T	4
302040	T	4
302060	T	4
302080	T	1
302100	T	1
302120	T	1
302140	T	1
302160	T	1
302180	T	1
302200	T	1
302220	T	1
302240	T	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
302260	T	2
302280	T	2
302300	T	2
302320	T	2
302340	T	2
302360	T	2
302380	T	2
302400	T	2
302420	T	2
302440	T	5
302460	T	5
302480	T	5
302500	T	5
302520	T	5
302540	T	3
302560	T	3
302580	T	3
302600	T	3
302620	T	5
302640	T	5
302660	T	5
302680	T	5
302700	T	5
302720	T	5
302740	T	5
302760	F	2
302780	F	2
302800	F	2
302820	F	2
302840	F	2
302860	F	2
302880	F	2
302900	F	2
302920	F	2
302940	F	2
302960	F	2
302980	F	2
303000	F	2
303020	F	5
303040	F	5
303060	F	5
303080	F	5
303100	F	5
303120	F	5
303140	F	5
303160	F	5
303180	F	5
303200	F	5
303220	F	2
303240	F	2
303260	F	2
303280	F	2
303300	F	2
303320	F	2
303340	F	2
303360	F	2
303380	F	2
303400	F	2
303420	F	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
303440	F	2
303460	F	2
303480	F	2
303500	F	5
303520	F	3
303540	F	3
303560	F	5
303580	F	3
303600	F	3
303620	F	3
303640	F	5
303660	F	5
303680	F	5
303700	F	5
303720	F	5
303740	F	5
303760	F	5
303780	F	5
303800	F	5
303820	F	5
303840	F	5
303860	F	5
303880	F	2
303900	F	2
303920	T	2
303940	T	2
303960	T	5
303980	T	5
304000	T	5
304020	T	5
304040	T	5
304060	T	5
304080	T	5
304100	T	5
304120	T	5
304140	T	5
304160	T	5
304180	T	5
304200	T	5
304220	T	5
304240	T	3
304260	T	2
304280	T	2
304300	T	2
304320	T	2
304340	T	2
304360	T	2
304380	T	2
304400	T	2
304420	T	2
304440	T	2
304460	T	2
304480	T	2
304500	T	2
304520	T	3
304540	T	2
304560	T	5
304580	T	5
304600	T	5

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
304620	T	5
304640	T	5
304660	T	5
304680	T	5
304700	T	3
304720	T	2
304740	T	2
304760	T	2
304780	T	2
304800	T	2
304820	T	2
304840	T	2
304860	T	5
304880	T	5
304900	T	5
304920	T	5
304940	T	5
304960	T	5
304980	T	5
305000	T	5
305020	T	5
305040	T	3
305060	T	3
305080	T	2
305100	T	2
305120	T	2
305140	T	3
305160	T	3
305180	T	5
305200	T	5
305220	T	5
305240	T	5
305260	T	5
305280	T	5
305300	T	5
305320	T	5
305340	T	5
305360	T	5
305380	T	5
305400	T	5
305420	T	5
305440	F	5
305460	F	5
305480	F	5
305500	F	5
305520	F	3
305540	F	2
305560	F	2
305580	F	2
305600	F	2
305620	F	2
305640	F	2
305660	F	2
305680	F	3
305700	F	3
305720	F	5
305740	F	5
305760	F	5
305780	F	5

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
305800	F	5
305820	F	5
305840	F	5
305860	F	3
305880	F	3
305900	F	5
305920	F	5
305940	F	5
305960	F	5
305980	F	5
306000	F	5
306020	F	5
306040	F	5
306060	F	5
306080	F	5
306100	F	5
306120	F	5
306140	F	5
306160	F	5
306180	F	5
306200	F	5
306220	F	3
306240	F	2
306260	F	2
306280	F	2
306300	F	2
306320	F	2
306340	F	2
306360	F	2
306380	F	2
306400	F	2
306420	F	2
306440	F	2
306460	F	2
306480	F	2
306500	F	2
306520	F	2
306540	F	2
306560	F	2
306580	F	5
306600	F	5
306620	F	5
306640	F	5
306660	F	5
306680	F	5
306700	F	5
306720	F	5
306740	F	5
306760	F	5
306780	F	5
306800	F	2
306820	F	2
306840	F	2
306860	F	5
306880	F	5
306900	F	5
306920	F	5
306940	F	5
306960	F	5

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
306980	F	5
307000	F	2
307020	F	2
307040	F	2
307060	F	2
307080	F	2
307100	F	2
307120	F	2
307140	F	2
307160	F	2
307180	F	2
307200	F	2
307220	F	2
307240	F	2
307260	F	2
307280	F	2
307300	F	5
307320	F	5
307340	F	5
307360	F	5
307380	F	5
307400	F	5
307420	F	5
307440	F	5
307460	F	5
307480	F	5
307500	F	5
307520	F	5
307540	F	2
307560	F	1
307580	F	1
307600	F	4
307620	F	4
307640	F	4
307660	F	4
307680	F	4
307700	F	4
307720	F	4
307740	F	4
307760	F	4
307780	F	4
307800	F	4
307820	F	4
307840	F	4
307860	F	4
307880	F	4
307900	F	4
307920	F	4
307940	F	4
307960	F	4
307980	F	
308000	F	
308020	F	
308040	F	
308060	F	
308080	F	
308100	F	
308120	F	
308140	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
308160	F	
308180	F	
308200	F	
308220	F	
308240	F	
308260	F	
308280	F	
308300	F	
308320	F	
308340	F	
308360	F	
308380	F	
308400	F	
308420	F	
308440	F	
308460	F	
308480	F	
308500	F	
308520	F	
308540	F	
308560	F	
308580	F	
308600	F	
308620	F	
308640	F	
308660	F	
308680	F	
308700	F	
308720	F	
308740	F	
308760	F	
308780	F	
308800	F	
308820	F	
308840	F	
308860	F	
308880	F	
308900	F	
308920	F	
308940	F	
308960	F	
308980	F	
309000	F	
309020	F	
309040	F	
309060	F	
309080	F	
309100	F	
309120	F	
309140	F	
309160	F	
309180	F	
309200	F	
309220	F	
309240	F	
309260	F	
309280	F	
309300	F	
309320	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
309340	F	
309360	F	
309380	F	
309400	F	
309420	F	
309440	F	
309460	F	
309480	F	
309500	F	
309520	F	
309540	F	
309560	F	
309580	F	
309600	F	
309620	F	
309640	F	
309660	F	
309680	F	
309700	F	
309720	F	
309740	F	
309760	F	
309780	F	
309800	F	
309820	F	
309840	F	
309860	F	
309880	F	
309900	F	
309920	F	
309940	F	
309960	F	
309980	F	
310000	F	
310020	F	
310040	F	
310060	F	
310080	F	
310100	T	
310120	T	
310140	T	
310160	T	
310180	T	
310200	T	
310220	T	
310240	T	
310260	T	
310280	T	
310300	T	
310320	T	
310340	T	
310360	T	
310380	T	
310400	T	
310420	T	
310440	T	
310460	T	
310480	T	
310500	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
310520	T	
310540	T	
310560	T	
310580	T	
310600	T	
310620	T	
310640	T	
310660	T	
310680	T	
310700	T	
310720	T	
310740	T	
310760	T	
310780	T	
310800	T	
310820	T	
310840	T	
310860	T	
310880	T	
310900	T	
310920	T	
310940	T	
310960	T	
310980	T	
311000	T	
311020	T	
311040	T	
311060	T	
311080	T	
311100	T	
311120	T	
311140	T	
311160	T	
311180	T	
311200	T	
311220	T	
311240	T	
311260	T	
311280	T	
311300	T	
311320	T	
311340	T	
311360	T	
311380	T	
311400	T	
311420	T	
311440	T	
311460	T	
311480	T	
311500	T	
311520	T	
311540	T	
311560	T	
311580	T	
311600	T	
311620	T	
311640	T	
311660	T	
311680	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
311700	T	
311720	T	
311740	T	
311760	T	
311780	T	
311800	T	
311820	T	
311840	T	
311860	T	
311880	T	
311900	T	
311920	T	
311940	T	
311960	T	
311980	T	
312000	T	
312020	T	
312040	T	
312060	T	
312080	T	
312100	T	
312120	T	
312140	T	
312160	T	
312180	T	
312200	T	
312220	T	
312240	T	
312260	T	
312280	T	
312300	T	
312320	T	
312340	T	
312360	T	
312380	T	
312400	T	
312420	T	
312440	T	
312460	T	
312480	T	
312500	T	
312520	T	
312540	T	
312560	T	
312580	T	
312600	T	
312620	T	
312640	T	
312660	T	
312680	T	
312700	T	
312720	T	
312740	T	
312760	T	
312780	T	
312800	T	
312820	T	
312840	T	
312860	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
312880	T	
312900	T	
312920	T	
312940	T	
312960	T	
312980	T	
313000	T	
313020	T	
313040	T	
313060	T	
313080	T	
313100	T	
313120	T	
313140	T	
313160	T	
313180	T	
313200	T	
313220	T	
313240	T	
313260	T	
313280	T	Section 3
313300	T	5
313320	T	5
313340	T	5
313360	T	5
313380	T	5
313400	T	5
313420	T	5
313440	T	5
313460	T	5
313480	T	5
313500	T	5
313520	T	5
313540	T	5
313560	T	5
313580	T	5
313600	T	5
313620	T	5
313640	T	5
313660	T	5
313680	T	5
313700	T	5
313720	T	5
313740	T	5
313760	T	5
313780	T	5
313800	T	5
313820	T	5
313840	T	5
313860	T	5
313880	T	5
313900	T	5
313920	T	5
313940	T	5
313960	T	5
313980	T	5
314000	T	3
314020	T	2
314040	T	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
314060	T	2
314080	T	2
314100	T	2
314120	T	2
314140	T	2
314160	T	2
314180	T	2
314200	T	2
314220	T	2
314240	T	2
314260	T	2
314280	T	2
314300	T	2
314320	T	2
314340	T	2
314360	F	3
314380	F	5
314400	F	5
314420	F	5
314440	F	5
314460	F	5
314480	F	5
314500	F	5
314520	F	5
314540	F	5
314560	F	5
314580	F	5
314600	F	5
314620	F	5
314640	F	5
314660	F	5
314680	F	5
314700	F	5
314720	F	5
314740	F	5
314760	F	5
314780	F	5
314800	F	5
314820	F	3
314840	F	2
314860	F	5
314880	F	5
314900	F	5
314920	F	5
314940	F	5
314960	F	5
314980	F	5
315000	F	5
315020	F	5
315040	F	5
315060	F	5
315080	F	5
315100	F	5
315120	F	5
315140	F	5
315160	F	5
315180	F	5
315200	F	5
315220	F	5

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
315240	F	5
315260	F	5
315280	F	5
315300	F	5
315320	F	5
315340	F	5
315360	F	5
315380	F	5
315400	F	5
315420	F	2
315440	F	2
315460	F	2
315480	F	2
315500	F	2
315520	F	2
315540	F	2
315560	F	1
315580	F	1
315600	F	1
315620	F	1
315640	F	1
315660	F	1
315680	F	1
315700	F	1
315720	F	1
315740	F	1
315760	F	1
315780	F	1
315800	F	1
315820	F	4
315840	F	4
315860	F	4
315880	F	4
315900	F	4
315920	F	4
315940	F	4
315960	F	4
315980	F	4
316000	F	4
316020	F	4
316040	F	4
316060	F	4
316080	F	
316100	F	
316120	F	
316140	F	
316160	F	
316180	F	
316200	F	
316220	F	
316240	F	
316260	F	
316280	F	
316300	F	
316320	F	
316340	F	
316360	F	
316380	F	
316400	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
316420	F	
316440	F	
316460	F	
316480	F	
316500	F	
316520	F	
316540	F	
316560	F	
316580	F	
316600	F	
316620	F	
316640	F	
316660	F	
316680	F	
316700	F	
316720	F	
316740	F	
316760	F	
316780	F	
316800	F	
316820	F	
316840	F	
316860	F	
316880	F	
316900	F	
316920	F	
316940	F	
316960	F	
316980	F	
317000	F	
317020	F	
317040	F	
317060	F	
317080	F	
317100	F	
317120	F	
317140	F	
317160	F	
317180	F	
317200	F	
317220	F	
317240	F	
317260	F	
317280	F	
317300	F	
317320	F	
317340	F	
317360	F	
317380	F	
317400	F	
317420	F	
317440	F	
317460	F	
317480	F	
317500	F	
317520	F	
317540	F	
317560	F	
317580	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
317600	F	
317620	F	
317640	F	
317660	F	
317680	F	
317700	F	
317720	F	
317740	F	
317760	F	
317780	F	
317800	F	
317820	F	
317840	F	
317860	F	
317880	F	
317900	F	
317920	F	
317940	F	
317960	F	
317980	F	
318000	F	
318020	F	
318040	F	
318060	F	
318080	F	
318100	F	
318120	F	
318140	F	
318160	F	
318180	F	
318200	F	
318220	F	
318240	F	
318260	F	
318280	F	
318300	F	
318320	F	
318340	F	
318360	F	
318380	F	
318400	F	
318420	F	
318440	F	
318460	F	
318480	F	
318500	F	
318520	F	
318540	F	
318560	F	
318580	F	
318600	F	
318620	F	
318640	F	
318660	F	
318680	F	
318700	F	
318720	F	
318740	F	
318760	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
318780	F	
318800	F	
318820	F	
318840	F	
318860	F	
318880	F	
318900	F	
318920	F	
318940	F	
318960	F	
318980	F	
319000	T	
319020	T	
319040	T	
319060	T	
319080	T	
319100	T	
319120	T	
319140	T	
319160	T	
319180	T	
319200	T	
319220	T	
319240	T	
319260	T	
319280	T	
319300	T	
319320	T	
319340	T	
319360	T	
319380	T	
319400	T	
319420	T	
319440	T	
319460	T	
319480	T	
319500	T	
319520	T	
319540	T	
319560	T	
319580	T	
319600	T	
319620	T	
319640	T	
319660	T	
319680	T	
319700	T	
319720	T	
319740	T	
319760	T	
319780	T	
319800	T	
319820	T	
319840	T	
319860	T	
319880	T	
319900	T	
319920	T	
319940	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
319960	T	
319980	T	
320000	T	
320020	T	
320040	T	
320060	T	
320080	T	
320100	T	
320120	T	
320140	T	
320160	T	
320180	T	
320200	T	
320220	T	
320240	F	
320260	F	
320280	F	
320300	F	
320320	F	
320340	F	
320360	F	
320380	F	
320400	F	
320420	F	
320440	F	
320460	F	
320480	F	
320500	F	
320520	F	
320540	F	
320560	F	
320580	F	
320600	F	
320620	F	
320640	F	
320660	F	
320680	F	
320700	F	
320720	F	
320740	F	
320760	F	
320780	F	
320800	F	
320820	F	
320840	T	
320860	T	
320880	T	
320900	T	
320920	T	
320940	T	
320960	T	
320980	T	
321000	T	
321020	T	
321040	T	
321060	T	
321080	T	
321100	T	
321120	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
321140	F	
321160	F	
321180	F	
321200	F	
321220	F	
321240	F	
321260	F	
321280	F	
321300	F	
321320	F	
321340	F	
321360	F	
321380	F	
321400	F	
321420	F	
321440	F	
321460	F	
321480	F	
321500	F	
321520	F	
321540	F	
321560	F	
321580	F	
321600	F	
321620	F	
321640	F	
321660	F	
321680	F	
321700	F	
321720	F	
321740	T	
321760	T	
321780	T	
321800	T	
321820	T	
321840	T	
321860	T	
321880	T	
321900	T	
321920	T	
321940	T	
321960	T	
321980	T	
322000	T	
322020	T	
322040	T	
322060	T	
322080	T	
322100	T	
322120	T	
322140	T	
322160	T	
322180	T	
322200	T	
322220	T	
322240	T	
322260	T	
322280	T	
322300	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
322320	T	
322340	T	
322360	T	
322380	T	
322400	T	
322420	T	
322440	T	
322460	T	
322480	T	
322500	T	
322520	T	
322540	T	
322560	T	
322580	T	
322600	T	
322620	T	
322640	T	
322660	T	
322680	T	
322700	T	
322720	T	
322740	T	
322760	T	
322780	T	
322800	T	
322820	T	
322840	T	
322860	T	
322880	T	
322900	T	
322920	T	
322940	T	
322960	T	
322980	T	
323000	T	
323020	T	
323040	T	
323060	T	
323080	T	
323100	T	
323120	T	
323140	T	
323160	T	
323180	T	
323200	T	
323220	T	
323240	T	
323260	T	
323280	T	
323300	T	
323320	T	
323340	T	
323360	T	
323380	T	
323400	T	
323420	T	
323440	T	
323460	T	
323480	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
323500	T	
323520	T	
323540	T	
323560	T	
323580	T	
323600	T	
323620	T	
323640	T	
323660	T	
323680	T	
323700	T	
323720	T	
323740	T	
323760	T	
323780	T	
323800	T	
323820	T	
323840	T	
323860	T	
323880	T	
323900	T	
323920	T	
323940	T	
323960	T	
323980	T	
324000	T	
324020	T	
324040	T	
324060	T	
324080	T	
324100	T	
324120	T	
324140	T	
324160	T	
324180	T	
324200	T	
324220	T	
324240	T	
324260	T	
324280	T	
324300	T	
324320	T	
324340	T	
324360	T	
324380	T	
324400	T	
324420	T	
324440	T	
324460	T	
324480	T	
324500	T	
324520	T	
324540	T	
324560	T	
324580	T	
324600	T	
324620	T	
324640	T	
324660	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
324680	T	
324700	T	
324720	T	
324740	T	
324760	T	
324780	T	
324800	T	
324820	T	
324840	T	
324860	T	
324880	T	
324900	T	
324920	T	
324940	T	
324960	T	
324980	T	
325000	T	
325020	T	
325040	T	
325060	T	
325080	T	
325100	T	
325120	T	
325140	T	
325160	T	
325180	T	
325200	T	
325220	T	
325240	T	
325260	T	
325280	T	
325300	T	
325320	T	
325340	T	
325360	T	
325380	T	
325400	T	
325420	T	
325440	T	
325460	T	
325480	T	
325500	T	
325520	T	
325540	T	
325560	T	
325580	T	
325600	T	
325620	T	
325640	T	
325660	T	
325680	T	
325700	T	
325720	T	
325740	T	
325760	T	
325780	T	
325800	T	
325820	T	
325840	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
325860	T	
325880	T	
325900	T	
325920	T	
325940	T	
325960	T	
325980	T	
326000	T	
326020	T	
326040	T	
326060	T	
326080	T	
326100	T	
326120	T	
326140	T	
326160	T	
326180	T	
326200	T	
326220	T	
326240	T	
326260	T	
326280	T	
326300	T	
326320	T	
326340	T	
326360	T	
326380	T	
326400	T	
326420	T	
326440	T	
326460	T	
326480	T	
326500	T	
326520	T	
326540	T	
326560	T	
326580	T	
326600	T	
326620	T	
326640	T	
326660	T	
326680	T	
326700	T	
326720	T	
326740	T	
326760	T	
326780	T	
326800	T	
326820	T	
326840	T	
326860	T	
326880	T	
326900	T	
326920	T	
326940	T	
326960	T	
326980	T	
327000	T	
327020	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
327040	T	
327060	T	
327080	T	
327100	T	
327120	T	
327140	T	
327160	T	
327180	T	
327200	T	
327220	T	
327240	T	
327260	T	
327280	T	
327300	T	
327320	T	
327340	T	
327360	T	
327380	T	
327400	T	
327420	T	
327440	T	
327460	T	
327480	T	
327500	T	
327520	T	
327540	T	
327560	T	
327580	T	
327600	T	
327620	T	
327640	T	
327660	T	
327680	T	
327700	T	
327720	T	
327740	T	
327760	T	
327780	T	
327800	T	
327820	T	
327840	T	
327860	T	
327880	T	
327900	T	
327920	T	
327940	T	
327960	T	
327980	T	
328000	T	
328020	T	
328040	T	
328060	T	
328080	T	
328100	T	
328120	T	
328140	T	
328160	T	
328180	T	
328200	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
328220	T	
328240	T	
328260	T	
328280	T	
328300	T	
328320	T	
328340	T	
328360	T	
328380	T	
328400	T	
328420	T	
328440	T	
328460	T	
328480	T	
328500	T	
328520	T	
328540	T	
328560	T	
328580	T	
328600	T	
328620	T	
328640	T	
328660	T	
328680	T	
328700	T	
328720	T	
328740	T	
328760	T	
328780	T	
328800	T	
328820	T	
328840	T	
328860	T	
328880	T	
328900	T	
328920	T	
328940	T	
328960	T	
328980	T	
329000	T	
329020	T	
329040	T	
329060	T	
329080	T	
329100	T	
329120	T	
329140	T	
329160	T	
329180	T	
329200	T	
329220	T	
329240	T	
329260	T	
329280	T	
329300	T	
329320	T	
329340	T	
329360	T	
329380	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
329400	T	
329420	T	
329440	T	
329460	T	
329480	T	
329500	T	
329520	T	
329540	T	
329560	T	
329580	T	
329600	T	
329620	T	
329640	T	
329660	T	
329680	T	
329700	T	
329720	T	
329740	T	
329760	T	
329780	T	
329800	T	
329820	T	
329840	T	
329860	T	
329880	T	
329900	T	
329920	T	
329940	T	
329960	T	
329980	T	
330000	T	
330020	T	
330040	T	
330060	T	
330080	T	
330100	T	
330120	T	
330140	T	
330160	T	
330180	T	
330200	T	
330220	T	
330240	T	
330260	T	
330280	T	
330300	T	
330320	T	
330340	T	
330360	T	
330380	T	
330400	T	
330420	T	
330440	T	
330460	T	
330480	T	
330500	T	
330520	T	
330540	T	
330560	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
330580	T	
330600	T	
330620	T	
330640	T	
330660	T	
330680	T	
330700	T	
330720	T	
330740	T	
330760	T	
330780	T	
330800	T	
330820	T	
330840	T	
330860	T	
330880	T	
330900	T	
330920	T	
330940	T	
330960	T	
330980	T	
331000	T	
331020	T	
331040	T	
331060	T	
331080	T	
331100	T	
331120	T	
331140	T	
331160	T	
331180	T	
331200	T	
331220	T	
331240	T	
331260	T	
331280	T	
331300	T	
331320	T	
331340	T	
331360	T	
331380	T	
331400	T	
331420	T	
331440	T	
331460	T	
331480	T	
331500	T	
331520	T	
331540	T	
331560	T	
331580	T	
331600	F	
331620	F	
331640	F	
331660	F	
331680	F	
331700	F	
331720	F	
331740	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
331760	F	
331780	F	
331800	F	
331820	F	
331840	F	
331860	F	
331880	T	
331900	T	
331920	T	
331940	T	
331960	T	
331980	T	
332000	T	
332020	T	
332040	T	
332060	T	
332080	T	
332100	T	
332120	T	
332140	T	
332160	T	
332180	T	
332200	T	
332220	T	
332240	T	
332260	T	
332280	T	
332300	T	
332320	T	
332340	T	
332360	T	
332380	T	
332400	T	
332420	T	
332440	T	
332460	T	
332480	T	
332500	T	
332520	T	
332540	T	
332560	T	
332580	T	
332600	T	
332620	T	
332640	T	
332660	T	
332680	T	
332700	T	
332720	T	
332740	T	
332760	T	
332780	T	
332800	T	
332820	T	
332840	T	
332860	T	
332880	T	
332900	T	
332920	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
332940	T	
332960	T	
332980	T	
333000	T	
333020	T	
333040	T	
333060	T	
333080	T	
333100	T	
333120	T	
333140	T	
333160	T	
333180	T	
333200	T	
333220	T	
333240	T	
333260	T	
333280	T	
333300	T	
333320	T	
333340	T	
333360	T	
333380	T	
333400	T	
333420	T	
333440	T	
333460	T	
333480	T	
333500	T	
333520	T	
333540	T	
333560	T	
333580	T	
333600	T	
333620	T	
333640	T	
333660	T	
333680	T	
333700	T	
333720	T	
333740	T	
333760	T	
333780	T	
333800	T	
333820	T	
333840	T	
333860	T	
333880	T	
333900	T	
333920	T	
333940	T	
333960	T	
333980	T	
334000	T	
334020	T	
334040	T	
334060	T	
334080	T	
334100	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
334120	T	
334140	T	
334160	T	
334180	T	
334200	T	
334220	T	
334240	T	
334260	T	
334280	T	
334300	T	
334320	T	
334340	T	
334360	T	
334380	T	
334400	T	
334420	T	
334440	T	
334460	T	
334480	T	
334500	T	
334520	T	
334540	T	
334560	T	
334580	T	
334600	T	
334620	T	
334640	T	
334660	T	
334680	T	
334700	T	
334720	T	
334740	T	
334760	T	
334780	T	
334800	T	
334820	T	
334840	T	
334860	T	
334880	T	
334900	T	
334920	T	
334940	T	
334960	T	
334980	T	
335000	T	
335020	T	
335040	T	
335060	T	
335080	T	
335100	T	
335120	T	
335140	T	
335160	T	
335180	T	
335200	T	
335220	T	
335240	T	
335260	T	
335280	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
335300	T	
335320	T	
335340	T	
335360	T	
335380	T	
335400	T	
335420	T	
335440	T	
335460	T	
335480	T	
335500	T	
335520	T	
335540	T	
335560	T	
335580	T	
335600	T	
335620	T	
335640	T	
335660	T	
335680	T	
335700	T	
335720	T	
335740	T	
335760	T	
335780	T	
335800	T	
335820	T	
335840	T	
335860	T	
335880	T	
335900	T	
335920	T	
335940	T	
335960	T	
335980	T	
336000	T	
336020	T	
336040	T	
336060	T	
336080	T	
336100	T	
336120	T	
336140	T	
336160	T	
336180	T	
336200	T	
336220	T	
336240	T	
336260	T	
336280	T	
336300	T	
336320	T	
336340	T	
336360	T	
336380	T	
336400	T	
336420	T	
336440	T	
336460	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
336480	T	
336500	T	
336520	T	
336540	T	
336560	T	
336580	T	
336600	T	
336620	T	
336640	T	
336660	T	
336680	F	
336700	F	
336720	F	
336740	F	
336760	F	
336780	F	
336800	F	
336820	F	
336840	F	
336860	F	
336880	F	
336900	F	
336920	F	
336940	F	
336960	F	
336980	F	
337000	F	
337020	F	
337040	F	
337060	F	
337080	F	
337100	F	
337120	F	
337140	F	
337160	F	
337180	F	
337200	F	
337220	F	
337240	F	
337260	F	
337280	F	Section 5
337300	F	4
337320	F	4
337340	F	1
337360	F	1
337380	F	1
337400	F	1
337420	F	1
337440	F	1
337460	F	1
337480	F	1
337500	F	1
337520	F	1
337540	F	1
337560	F	1
337580	F	4
337600	F	4
337620	F	4
337640	F	4

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
337660	F	4
337680	F	4
337700	F	4
337720	F	4
337740	F	4
337760	F	4
337780	F	4
337800	F	4
337820	F	4
337840	F	4
337860	F	4
337880	F	5
337900	F	5
337920	F	5
337940	F	5
337960	T	5
337980	T	5
338000	T	5
338020	T	5
338040	T	5
338060	T	5
338080	T	5
338100	T	5
338120	T	5
338140	T	5
338160	T	5
338180	T	5
338200	T	5
338220	T	5
338240	T	5
338260	T	5
338280	T	5
338300	T	5
338320	T	5
338340	T	5
338360	T	5
338380	T	5
338400	T	5
338420	T	5
338440	T	5
338460	T	5
338480	T	3
338500	T	5
338520	T	5
338540	T	3
338560	T	5
338580	T	3
338600	T	5
338620	T	5
338640	T	5
338660	T	5
338680	T	5
338700	T	5
338720	T	3
338740	T	3
338760	T	3
338780	T	3
338800	T	3
338820	T	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
338840	T	2
338860	T	2
338880	T	3
338900	T	5
338920	T	5
338940	T	5
338960	T	5
338980	T	5
339000	T	5
339020	T	5
339040	T	4
339060	T	4
339080	T	
339100	T	
339120	T	
339140	T	
339160	T	
339180	T	
339200	T	
339220	T	
339240	T	
339260	T	
339280	T	
339300	T	
339320	T	
339340	T	
339360	T	
339380	T	
339400	T	
339420	T	
339440	T	
339460	T	
339480	T	
339500	T	
339520	T	
339540	T	
339560	T	
339580	T	
339600	T	
339620	T	
339640	T	
339660	T	
339680	T	
339700	T	
339720	T	
339740	T	
339760	T	
339780	T	
339800	T	
339820	T	
339840	T	
339860	T	
339880	T	
339900	T	
339920	T	
339940	T	
339960	T	
339980	T	
340000	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
340020	T	
340040	T	
340060	T	
340080	T	
340100	T	
340120	T	
340140	T	
340160	T	
340180	T	
340200	T	
340220	T	
340240	T	
340260	T	
340280	T	
340300	T	
340320	T	
340340	T	
340360	T	
340380	T	
340400	T	
340420	T	
340440	T	
340460	T	
340480	T	
340500	T	
340520	T	
340540	T	
340560	T	
340580	T	
340600	T	
340620	T	
340640	T	
340660	T	
340680	T	
340700	T	
340720	T	
340740	T	
340760	T	
340780	T	
340800	T	
340820	T	
340840	T	
340860	T	
340880	T	
340900	T	
340920	T	
340940	T	
340960	T	
340980	T	
341000	T	
341020	T	
341040	T	
341060	T	
341080	T	
341100	T	
341120	T	
341140	T	
341160	T	
341180	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
341200	T	
341220	T	
341240	T	
341260	F	
341280	F	
341300	F	
341320	F	
341340	F	
341360	F	
341380	F	
341400	F	
341420	F	
341440	F	
341460	F	
341480	F	
341500	F	
341520	F	
341540	F	
341560	F	
341580	F	
341600	F	
341620	F	
341640	F	
341660	F	
341680	F	
341700	F	
341720	F	
341740	F	
341760	F	
341780	F	
341800	F	
341820	F	
341840	F	
341860	F	
341880	F	
341900	F	
341920	F	
341940	F	
341960	F	
341980	F	
342000	F	
342020	F	
342040	F	
342060	F	
342080	F	
342100	F	
342120	F	
342140	F	
342160	F	
342180	F	
342200	F	
342220	F	
342240	F	
342260	F	
342280	F	
342300	F	
342320	F	
342340	F	
342360	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
342380	F	
342400	F	
342420	F	
342440	F	
342460	F	
342480	F	
342500	F	
342520	F	
342540	F	
342560	F	
342580	F	
342600	F	
342620	F	
342640	F	
342660	F	
342680	F	
342700	F	
342720	F	
342740	F	
342760	F	
342780	F	
342800	F	
342820	F	
342840	F	
342860	F	
342880	F	
342900	F	
342920	F	
342940	F	
342960	F	
342980	F	
343000	F	
343020	F	
343040	F	
343060	F	
343080	F	
343100	F	
343120	F	
343140	F	
343160	F	
343180	F	
343200	F	
343220	F	
343240	F	
343260	F	
343280	F	
343300	F	
343320	F	
343340	F	
343360	F	
343380	F	
343400	F	
343420	F	
343440	F	
343460	F	
343480	F	
343500	F	
343520	F	
343540	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
343560	F	
343580	F	
343600	F	
343620	F	
343640	F	
343660	F	
343680	F	
343700	F	
343720	F	
343740	F	
343760	F	
343780	F	
343800	F	
343820	F	
343840	F	
343860	F	
343880	F	
343900	F	
343920	F	
343940	F	
343960	F	
343980	F	
344000	F	
344020	F	
344040	F	
344060	F	
344080	F	
344100	F	
344120	F	
344140	F	
344160	F	
344180	F	
344200	F	
344220	F	
344240	T	
344260	T	
344280	T	
344300	T	
344320	T	
344340	T	
344360	T	
344380	T	
344400	T	
344420	T	
344440	T	
344460	T	
344480	T	
344500	T	
344520	T	
344540	T	
344560	T	
344580	T	
344600	T	
344620	T	
344640	T	
344660	T	
344680	T	
344700	T	
344720	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
344740	T	
344760	T	
344780	T	
344800	T	
344820	T	
344840	T	
344860	T	
344880	T	
344900	T	
344920	T	
344940	T	
344960	T	
344980	T	
345000	T	
345020	T	
345040	T	
345060	T	
345080	T	
345100	T	
345120	T	
345140	T	
345160	T	
345180	T	
345200	T	
345220	T	
345240	T	
345260	T	
345280	T	
345300	T	
345320	T	
345340	T	
345360	T	
345380	T	
345400	T	
345420	T	
345440	T	
345460	T	
345480	T	
345500	T	
345520	T	
345540	T	
345560	T	
345580	T	
345600	T	
345620	T	
345640	T	
345660	T	
345680	T	
345700	T	
345720	T	
345740	T	
345760	T	
345780	T	
345800	T	
345820	T	
345840	T	
345860	T	
345880	T	
345900	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
345920	T	
345940	T	
345960	T	
345980	T	
346000	T	
346020	T	
346040	T	
346060	T	
346080	T	
346100	T	
346120	T	
346140	T	
346160	T	
346180	T	
346200	T	
346220	T	
346240	T	Section 7
346260	T	4
346280	T	5
346300	T	5
346320	T	3
346340	T	5
346360	T	5
346380	T	5
346400	T	5
346420	T	3
346440	T	5
346460	T	5
346480	T	5
346500	T	5
346520	T	5
346540	T	5
346560	T	5
346580	T	5
346600	T	5
346620	T	5
346640	T	5
346660	T	5
346680	T	5
346700	T	5
346720	T	5
346740	T	5
346760	T	5
346780	T	5
346800	T	5
346820	T	5
346840	T	5
346860	T	5
346880	T	5
346900	T	5
346920	T	5
346940	T	5
346960	T	5
346980	T	5
347000	T	5
347020	T	5
347040	T	5
347060	T	5
347080	T	5

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
347100	T	5
347120	T	5
347140	T	5
347160	T	5
347180	T	3
347200	T	3
347220	T	3
347240	T	3
347260	T	3
347280	T	3
347300	T	5
347320	T	5
347340	T	5
347360	T	5
347380	T	5
347400	T	5
347420	T	5
347440	T	5
347460	T	5
347480	T	5
347500	T	5
347520	T	5
347540	T	5
347560	T	5
347580	T	5
347600	T	5
347620	T	5
347640	F	5
347660	F	5
347680	F	5
347700	F	5
347720	F	5
347740	F	5
347760	F	5
347780	F	5
347800	F	5
347820	F	4
347840	F	4
347860	F	4
347880	F	4
347900	F	4
347920	F	4
347940	F	4
347960	F	4
347980	F	4
348000	F	4
348020	F	4
348040	F	4
348060	F	4
348080	F	4
348100	F	4
348120	F	4
348140	F	
348160	F	
348180	F	
348200	F	
348220	F	
348240	F	
348260	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
348280	F	
348300	F	
348320	F	
348340	F	
348360	F	
348380	F	
348400	F	
348420	F	
348440	F	
348460	F	
348480	F	
348500	F	
348520	F	
348540	F	
348560	F	
348580	F	
348600	F	
348620	F	
348640	F	
348660	F	
348680	F	
348700	F	
348720	F	
348740	F	
348760	F	
348780	F	
348800	F	
348820	F	
348840	F	
348860	F	
348880	F	
348900	F	
348920	F	
348940	F	
348960	F	
348980	F	
349000	F	
349020	F	
349040	F	
349060	F	
349080	F	
349100	F	
349120	F	
349140	F	
349160	F	
349180	F	
349200	F	
349220	F	
349240	F	
349260	F	
349280	F	
349300	F	
349320	F	
349340	F	
349360	F	
349380	F	
349400	F	
349420	F	
349440	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
349460	F	
349480	F	
349500	F	
349520	F	
349540	F	
349560	F	
349580	F	
349600	F	
349620	F	
349640	F	
349660	F	
349680	F	
349700	F	
349720	F	
349740	F	
349760	F	
349780	F	
349800	F	
349820	F	
349840	F	
349860	F	
349880	F	
349900	F	
349920	F	
349940	F	
349960	F	
349980	F	
350000	F	
350020	F	
350040	F	
350060	F	
350080	F	
350100	F	
350120	F	
350140	F	
350160	F	
350180	F	
350200	F	
350220	F	
350240	F	
350260	F	
350280	F	
350300	F	
350320	F	
350340	F	
350360	F	
350380	F	
350400	F	
350420	F	
350440	F	
350460	T	
350480	T	
350500	T	
350520	T	
350540	T	
350560	T	
350580	T	
350600	T	
350620	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
350640	T	
350660	T	
350680	T	
350700	T	
350720	T	
350740	T	
350760	T	
350780	T	
350800	T	
350820	T	
350840	T	
350860	T	
350880	T	
350900	T	
350920	T	
350940	T	
350960	T	
350980	T	
351000	T	
351020	T	Section 8
351040	T	5
351060	T	5
351080	T	5
351100	T	5
351120	T	3
351140	T	3
351160	T	3
351180	T	3
351200	T	3
351220	T	3
351240	T	3
351260	T	3
351280	T	3
351300	T	3
351320	T	3
351340	T	3
351360	T	3
351380	T	3
351400	T	3
351420	T	3
351440	T	3
351460	T	3
351480	T	5
351500	T	3
351520	T	3
351540	T	3
351560	T	3
351580	T	3
351600	T	3
351620	T	3
351640	T	3
351660	T	3
351680	T	3
351700	T	3
351720	T	3
351740	T	3
351760	T	3
351780	T	3
351800	T	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
351820	T	3
351840	T	3
351860	T	3
351880	T	3
351900	T	3
351920	T	3
351940	T	3
351960	T	3
351980	T	3
352000	T	3
352020	T	3
352040	T	3
352060	T	3
352080	T	3
352100	T	3
352120	T	3
352140	T	3
352160	T	3
352180	T	3
352200	T	3
352220	T	3
352240	T	3
352260	T	3
352280	T	3
352300	T	3
352320	T	3
352340	T	3
352360	T	3
352380	T	3
352400	T	3
352420	T	3
352440	T	3
352460	T	3
352480	T	3
352500	T	3
352520	T	3
352540	T	3
352560	T	3
352580	T	3
352600	T	3
352620	T	3
352640	T	3
352660	T	3
352680	T	3
352700	T	3
352720	T	3
352740	T	3
352760	T	5
352780	T	5
352800	T	5
352820	T	5
352840	T	5
352860	T	
352880	T	
352900	T	
352920	T	
352940	T	
352960	T	
352980	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
353000	T	
353020	T	
353040	T	
353060	T	
353080	T	
353100	T	
353120	T	
353140	T	
353160	T	
353180	T	
353200	T	
353220	T	
353240	T	
353260	T	
353280	T	
353300	T	
353320	T	
353340	T	
353360	T	
353380	T	
353400	T	
353420	T	
353440	T	
353460	T	
353480	T	
353500	T	
353520	T	
353540	T	
353560	T	
353580	T	
353600	T	
353620	T	
353640	T	
353660	T	
353680	T	
353700	T	
353720	T	
353740	T	
353760	T	
353780	T	
353800	T	
353820	T	
353840	T	
353860	T	
353880	T	
353900	T	
353920	T	
353940	T	
353960	T	
353980	T	
354000	T	
354020	T	
354040	T	
354060	T	
354080	T	
354100	T	
354120	T	
354140	T	
354160	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
354180	T	
354200	T	
354220	T	
354240	T	
354260	T	
354280	T	
354300	T	
354320	T	
354340	T	
354360	T	
354380	T	
354400	T	
354420	T	
354440	T	
354460	T	
354480	T	
354500	T	
354520	T	
354540	T	
354560	T	
354580	T	
354600	T	
354620	T	
354640	T	
354660	T	
354680	T	
354700	T	
354720	T	
354740	T	
354760	T	
354780	T	
354800	T	
354820	T	
354840	T	
354860	T	
354880	T	
354900	T	
354920	T	
354940	T	
354960	T	
354980	T	
355000	T	
355020	T	
355040	T	
355060	T	
355080	T	
355100	T	
355120	T	
355140	T	
355160	T	
355180	T	
355200	T	
355220	T	
355240	T	
355260	T	
355280	T	
355300	T	
355320	T	
355340	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
355360	T	
355380	T	
355400	T	
355420	T	
355440	T	
355460	T	
355480	T	
355500	T	
355520	T	
355540	T	
355560	T	
355580	T	
355600	T	
355620	T	
355640	T	
355660	T	
355680	T	
355700	T	
355720	T	
355740	T	
355760	T	
355780	T	
355800	T	
355820	T	
355840	T	
355860	T	
355880	T	
355900	T	
355920	T	
355940	T	
355960	T	
355980	T	
356000	T	
356020	T	
356040	T	
356060	T	
356080	T	
356100	T	
356120	T	
356140	T	
356160	T	
356180	T	
356200	T	
356220	T	
356240	T	
356260	T	
356280	T	
356300	F	
356320	F	
356340	F	
356360	F	
356380	F	
356400	F	
356420	F	
356440	F	
356460	F	
356480	F	
356500	F	
356520	F	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
356540	F	
356560	F	
356580	F	
356600	F	
356620	F	
356640	F	
356660	F	
356680	F	
356700	F	
356720	F	
356740	F	
356760	F	
356780	F	
356800	F	
356820	F	
356840	F	
356860	F	
356880	F	
356900	F	
356920	F	
356940	F	
356960	F	
356980	F	
357000	F	
357020	F	
357040	F	
357060	F	
357080	F	
357100	F	
357120	F	
357140	F	
357160	F	
357180	F	
357200	F	
357220	F	
357240	F	
357260	F	
357280	F	
357300	F	
357320	F	
357340	T	
357360	T	
357380	T	
357400	T	
357420	T	
357440	T	
357460	T	
357480	T	
357500	T	
357520	T	
357540	T	
357560	T	
357580	T	
357600	T	
357620	T	
357640	T	
357660	T	
357680	T	
357700	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
357720	T	
357740	T	
357760	T	
357780	T	
357800	T	
357820	T	
357840	T	
357860	T	
357880	T	
357900	T	
357920	T	
357940	T	
357960	T	
357980	T	
358000	T	
358020	T	
358040	T	
358060	T	
358080	T	
358100	T	
358120	T	
358140	T	
358160	T	
358180	T	
358200	T	
358220	T	
358240	T	
358260	T	
358280	T	
358300	T	
358320	T	
358340	T	
358360	T	
358380	T	
358400	T	
358420	T	
358440	T	
358460	T	
358480	T	
358500	T	
358520	T	
358540	T	
358560	T	
358580	T	
358600	T	
358620	T	
358640	T	
358660	T	
358680	T	
358700	T	
358720	T	
358740	T	
358760	T	
358780	T	
358800	T	
358820	T	
358840	T	
358860	T	
358880	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
358900	T	
358920	T	
358940	T	
358960	T	
358980	T	
359000	T	
359020	T	
359040	T	
359060	T	
359080	T	
359100	T	
359120	T	
359140	T	
359160	T	
359180	T	
359200	T	
359220	T	
359240	T	
359260	T	
359280	T	
359300	T	
359320	T	
359340	T	
359360	T	
359380	T	
359400	T	
359420	T	
359440	T	
359460	T	
359480	T	
359500	T	
359520	T	
359540	T	
359560	T	
359580	T	
359600	T	
359620	T	
359640	T	
359660	T	
359680	T	
359700	T	
359720	T	
359740	T	
359760	T	
359780	T	
359800	T	
359820	T	
359840	T	
359860	T	
359880	T	
359900	T	
359920	T	
359940	T	
359960	T	
359980	T	
360000	T	
360020	T	
360040	T	
360060	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
360080	T	
360100	T	
360120	T	
360140	T	
360160	T	
360180	T	
360200	T	
360220	T	
360240	T	
360260	T	
360280	T	
360300	T	
360320	T	
360340	T	
360360	T	
360380	T	
360400	T	
360420	T	
360440	T	
360460	T	
360480	T	
360500	T	
360520	T	
360540	T	
360560	T	
360580	T	
360600	T	
360620	T	
360640	T	
360660	T	
360680	T	
360700	T	
360720	T	
360740	T	
360760	T	
360780	T	
360800	T	
360820	T	
360840	T	
360860	T	
360880	T	
360900	T	
360920	T	
360940	T	
360960	T	
360980	T	
361000	T	
361020	T	
361040	T	
361060	T	
361080	T	
361100	T	
361120	T	
361140	T	
361160	T	
361180	T	
361200	T	
361220	T	
361240	T	

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
361260	T	
361280	T	
361300	T	
361320	T	
361340	T	
361360	T	
361380	T	
361400	T	
361420	T	
361440	T	
361460	T	
361480	T	
361500	T	
361520	T	
361540	T	
361560	T	
361580	T	
361600	T	
361620	T	
361640	T	
361660	T	
361680	T	
361700	T	
361720	T	
361740	T	
361760	T	
361780	T	
361800	T	
361820	T	
361840	T	
361860	T	
361880	T	
361900	T	
361920	T	
361940	T	
361960	T	
361980	T	
362000	T	
362020	T	
362040	T	
362060	T	
362080	T	
362100	T	
362120	T	
362140	T	
362160	T	
362180	T	
362200	T	
362220	T	
362240	T	
362260	T	
362280	T	
362300	T	
362320	T	
362340	T	
362360	T	
362380	T	Section 9
362400	T	4
362420	T	4

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
362440	T	4
362460	T	1
362480	T	1
362500	T	1
362520	T	1
362540	T	1
362560	T	1
362580	T	1
362600	T	2
362620	T	2
362640	T	2
362660	T	3
362680	T	2
362700	T	2
362720	T	2
362740	F	2
362760	F	3
362780	F	5
362800	T	3
362820	T	3
362840	T	3
362860	T	3
362880	T	3
362900	T	3
362920	T	3
362940	T	3
362960	T	3
362980	T	5
363000	T	5
363020	T	5
363040	T	5
363060	T	5
363080	T	3
363100	T	3
363120	T	3
363140	T	3
363160	T	3
363180	T	3
363200	T	3
363220	T	3
363240	T	3
363260	T	5
363280	T	5
363300	T	5
363320	T	5
363340	T	3
363360	T	3
363380	T	3
363400	T	3
363420	T	3
363440	T	3
363460	T	3
363480	T	3
363500	T	3
363520	T	3
363540	T	3
363560	T	3
363580	T	3
363600	T	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
363620	F	3
363640	F	3
363660	F	3
363680	F	3
363700	F	3
363720	T	5
363740	T	5
363760	T	5
363780	T	5
363800	T	5
363820	T	5
363840	T	3
363860	T	3
363880	T	3
363900	T	3
363920	T	3
363940	T	3
363960	T	3
363980	T	3
364000	T	3
364020	T	3
364040	T	2
364060	T	3
364080	T	2
364100	T	2
364120	T	3
364140	T	3
364160	T	3
364180	T	3
364200	T	3
364220	T	3
364240	T	3
364260	T	3
364280	T	3
364300	T	3
364320	T	3
364340	T	3
364360	T	3
364380	T	3
364400	T	3
364420	T	3
364440	T	3
364460	T	3
364480	T	3
364500	T	3
364520	T	3
364540	T	3
364560	T	3
364580	T	3
364600	T	5
364620	T	3
364640	T	3
364660	T	3
364680	T	3
364700	T	3
364720	T	3
364740	T	3
364760	T	3
364780	T	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
364800	F	3
364820	F	3
364840	F	3
364860	F	3
364880	F	3
364900	F	3
364920	F	3
364940	F	2
364960	F	2
364980	F	2
365000	F	2
365020	F	2
365040	F	2
365060	F	2
365080	F	3
365100	F	3
365120	F	3
365140	F	5
365160	F	5
365180	F	5
365200	F	5
365220	F	5
365240	F	5
365260	F	5
365280	F	5
365300	F	5
365320	F	5
365340	F	5
365360	F	5
365380	F	5
365400	F	3
365420	F	3
365440	F	3
365460	F	2
365480	F	2
365500	F	2
365520	F	2
365540	F	3
365560	F	3
365580	F	3
365600	F	3
365620	F	3
365640	F	3
365660	F	3
365680	F	3
365700	F	3
365720	F	3
365740	F	3
365760	F	3
365780	F	3
365800	F	3
365820	F	3
365840	F	3
365860	F	3
365880	F	3
365900	F	3
365920	F	3
365940	F	3
365960	F	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
365980	F	3
366000	F	3
366020	F	3
366040	F	3
366060	F	3
366080	F	3
366100	F	3
366120	F	3
366140	F	3
366160	F	3
366180	F	3
366200	F	3
366220	F	3
366240	F	3
366260	F	3
366280	F	3
366300	F	3
366320	F	5
366340	F	5
366360	F	5
366380	F	5
366400	F	5
366420	F	5
366440	F	3
366460	F	3
366480	F	3
366500	F	3
366520	F	3
366540	F	3
366560	F	3
366580	F	3
366600	F	3
366620	F	3
366640	F	3
366660	F	3
366680	F	3
366700	F	3
366720	F	3
366740	F	3
366760	F	3
366780	F	3
366800	F	3
366820	F	3
366840	F	3
366860	F	3
366880	F	3
366900	F	3
366920	F	3
366940	F	3
366960	F	3
366980	F	3
367000	F	3
367020	F	3
367040	F	3
367060	F	3
367080	F	3
367100	F	3
367120	F	3
367140	F	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
367160	F	3
367180	F	3
367200	F	3
367220	F	3
367240	F	3
367260	F	3
367280	F	3
367300	F	3
367320	F	3
367340	F	3
367360	F	3
367380	F	3
367400	F	3
367420	F	3
367440	F	3
367460	F	3
367480	F	3
367500	F	3
367520	F	3
367540	F	3
367560	F	3
367580	F	3
367600	F	3
367620	F	3
367640	F	3
367660	F	3
367680	F	3
367700	F	3
367720	F	3
367740	F	3
367760	F	3
367780	F	5
367800	F	5
367820	F	5
367840	F	5
367860	F	5
367880	F	5
367900	F	5
367920	F	3
367940	F	3
367960	F	3
367980	F	3
368000	F	3
368020	F	3
368040	F	3
368060	F	3
368080	F	5
368100	F	5
368120	F	5
368140	F	5
368160	F	5
368180	F	5
368200	F	5
368220	F	5
368240	F	3
368260	F	3
368280	F	2
368300	F	2
368320	F	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
368340	F	2
368360	F	2
368380	F	2
368400	F	2
368420	F	2
368440	F	2
368460	F	2
368480	F	2
368500	F	2
368520	F	2
368540	F	3
368560	F	3
368580	F	3
368600	F	3
368620	F	3
368640	F	3
368660	F	2
368680	T	2
368700	T	2
368720	T	2
368740	T	2
368760	T	2
368780	T	2
368800	T	2
368820	T	2
368840	T	3
368860	T	3
368880	T	2
368900	T	3
368920	T	3
368940	T	3
368960	T	3
368980	T	2
369000	T	2
369020	T	3
369040	T	3
369060	T	3
369080	T	3
369100	T	3
369120	T	3
369140	T	3
369160	T	3
369180	T	3
369200	T	3
369220	T	3
369240	T	3
369260	T	3
369280	T	3
369300	T	3
369320	T	3
369340	T	3
369360	T	3
369380	T	3
369400	T	3
369420	T	3
369440	T	3
369460	T	3
369480	T	3
369500	T	3

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
369520	T	3
369540	T	3
369560	T	2
369580	T	3
369600	T	2
369620	T	2
369640	T	2
369660	T	2
369680	T	2
369700	T	2
369720	T	2
369740	T	2
369760	T	2
369780	T	2
369800	T	2
369820	F	2
369840	F	2
369860	F	2
369880	F	2
369900	F	2
369920	F	2
369940	F	2
369960	F	2
369980	F	2
370000	F	2
370020	F	2
370040	F	2
370060	F	2
370080	F	2
370100	F	2
370120	F	2
370140	F	2
370160	F	2
370180	F	2
370200	F	2
370220	F	2
370240	F	2
370260	F	2
370280	F	2
370300	F	2
370320	F	2
370340	F	2
370360	F	2
370380	F	2
370400	F	2
370420	F	2
370440	F	2
370460	F	2
370480	F	2
370500	F	2
370520	F	2
370540	F	2
370560	F	2
370580	F	2
370600	F	2
370620	F	2
370640	F	2
370660	F	2
370680	F	2

New Kilometerage	Existing Line	Rerouting Line
	F : DHWL > RL T : RL > DHWL	[Embankment] 1 : RDL > FL 2 : FL > RDL 3 : GL > RDL [Cutting] 4 : RDL > FL 5 : FL > RDL
370700	F	2
370720	F	2
370740	F	2
370760	F	2
370780	F	2
370800	F	2
370820	F	2
370840	F	2
370860	F	2
370880	F	2
370900	F	1
370920	F	1
370940	F	1
370960	F	1
370980	F	1
371000	F	1
371020	F	1
371040	F	1
371060	F	1
371080	F	1
371100	F	1
371120	F	1
371140	F	1
371160	F	1
371180	F	1
371200	F	4
371220	F	4
371240	F	4
371260	F	4
371280	F	4
371300	F	4
371320	F	4
371340	F	4
371360	F	4
371380	F	4
371400	F	4
371420	F	4
371440	F	4
371460	F	4
371480	F	
371500	F	
371520	F	
371540	F	
371560	F	

2) List of Length of Section by Inundation/Overtopping during Design Floods

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
283500	T	
283520	T	
283540	T	
283560	T	
283580	T	
283600	T	
283620	T	
283640	T	
283660	T	
283680	T	
283700	T	
283720	T	
283740	T	
283760	T	
283780	T	
283800	T	
283820	T	
283840	T	
283860	T	
283880	T	
283900	T	
283920	T	
283940	T	
283960	T	
283980	T	
284000	T	
284020	T	
284040	T	
284060	T	
284080	T	
284100	T	
284120	T	
284140	T	
284160	T	
284180	T	
284200	T	
284220	T	
284240	T	
284260	T	
284280	T	
284300	T	
284320	T	
284340	T	
284360	T	
284380	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
284400	T	
284420	T	
284440	T	
284460	T	
284480	T	
284500	T	
284520	T	
284540	T	
284560	T	
284580	T	
284600	T	
284620	T	
284640	T	
284660	T	
284680	T	
284700	T	
284720	T	
284740	T	
284760	T	
284780	T	
284800	T	
284820	T	
284840	T	
284860	T	
284880	T	
284900	T	
284920	T	
284940	T	
284960	T	
284980	T	
285000	T	
285020	T	
285040	T	
285060	T	
285080	T	
285100	T	
285120	T	
285140	T	
285160	T	
285180	T	
285200	T	
285220	T	
285240	T	
285260	T	
285280	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
285300	T	
285320	T	
285340	T	
285360	T	
285380	T	
285400	T	
285420	T	
285440	T	
285460	T	
285480	T	
285500	T	
285520	T	
285540	T	
285560	T	
285580	T	
285600	T	
285620	T	
285640	T	
285660	T	
285680	T	
285700	T	
285720	T	
285740	T	
285760	T	
285780	T	
285800	T	
285820	T	
285840	T	
285860	T	
285880	T	
285900	T	
285920	T	
285940	T	
285960	T	
285980	T	
286000	T	
286020	T	
286040	T	
286060	T	
286080	T	
286100	T	
286120	T	
286140	T	
286160	T	
286180	T	
286200	T	
286220	T	
286240	T	
286260	T	
286280	T	
286300	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
286320	T	
286340	T	
286360	T	
286380	T	
286400	T	
286420	T	
286440	T	
286460	T	
286480	T	
286500	T	
286520	T	
286540	T	
286560	F1	
286580	F1	
286600	F1	
286620	F2	
286640	F2	
286660	F3	
286680	F3	
286700	F3	
286720	F3	
286740	F3	
286760	F3	
286780	F4	
286800	F4	
286820	F4	
286840	F4	
286860	F4	
286880	F4	
286900	F3	
286920	F3	
286940	F3	
286960	F3	
286980	F2	
287000	F2	
287020	F1	
287040	F1	
287060	F1	
287080	T	
287100	T	
287120	T	
287140	T	
287160	T	
287180	T	
287200	T	
287220	T	
287240	T	
287260	T	
287280	T	
287300	T	
287320	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
287340	T	
287360	T	
287380	T	
287400	T	
287420	T	
287440	T	
287460	T	
287480	T	
287500	T	
287520	T	
287540	T	
287560	T	
287580	T	
287600	T	
287620	T	
287640	T	
287660	T	
287680	T	
287700	T	
287720	T	
287740	T	
287760	T	
287780	T	
287800	T	
287820	T	
287840	T	
287860	T	
287880	T	
287900	T	
287920	T	
287940	T	
287960	T	
287980	T	
288000	T	
288020	T	
288040	T	
288060	T	
288080	T	
288100	T	
288120	T	
288140	T	
288160	T	
288180	T	
288200	T	
288220	T	
288240	T	
288260	T	
288280	T	
288300	T	
288320	T	
288340	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
288360	T	
288380	T	
288400	F1	
288420	F2	
288440	F2	
288460	F2	
288480	F3	
288500	F3	
288520	F3	
288540	F3	
288560	F3	
288580	F3	
288600	F3	
288620	F3	
288640	F3	
288660	F3	
288680	F3	
288700	F3	
288720	F2	
288740	F2	
288760	F2	
288780	F2	
288800	F2	
288820	F2	
288840	F2	
288860	F2	
288880	F2	
288900	F2	
288920	F2	
288940	F1	
288960	F1	
288980	F1	
289000	F1	
289020	F1	
289040	F1	
289060	F1	
289080	F1	
289100	F1	
289120	F1	
289140	T	
289160	T	
289180	T	
289200	T	
289220	T	
289240	T	
289260	T	
289280	T	
289300	T	
289320	T	
289340	T	
289360	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
289380	T	
289400	T	
289420	T	
289440	T	
289460	T	
289480	T	
289500	T	
289520	T	
289540	T	
289560	T	
289580	T	
289600	T	
289620	T	
289640	T	
289660	T	
289680	T	
289700	T	
289720	T	
289740	T	
289760	T	
289780	T	
289800	T	
289820	T	
289840	T	
289860	T	
289880	T	
289900	T	
289920	F1	
289940	F1	
289960	F1	
289980	F1	
290000	F1	
290020	F1	
290040	F1	
290060	F1	
290080	T	
290100	T	
290120	T	
290140	T	
290160	T	
290180	T	
290200	T	
290220	T	
290240	T	
290260	T	
290280	T	
290300	T	
290320	T	
290340	T	
290360	T	
290380	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
290400	T	
290420	T	
290440	T	
290460	T	
290480	T	
290500	T	
290520	T	
290540	T	
290560	T	
290580	T	
290600	T	
290620	T	
290640	T	
290660	T	
290680	T	
290700	T	
290720	T	
290740	T	
290760	T	
290780	T	
290800	T	
290820	T	
290840	T	
290860	T	
290880	T	
290900	T	
290920	T	
290940	T	
290960	T	
290980	T	
291000	T	
291020	T	
291040	T	
291060	T	
291080	T	
291100	T	
291120	T	
291140	T	
291160	T	
291180	T	
291200	T	
291220	T	
291240	T	
291260	T	
291280	T	
291300	T	
291320	T	
291340	F1	
291360	F1	
291380	F1	
291400	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
291420	T	
291440	T	
291460	F1	
291480	F1	
291500	T	
291520	T	
291540	T	
291560	T	
291580	T	
291600	T	
291620	T	
291640	T	
291660	T	
291680	T	
291700	T	
291720	T	
291740	T	
291760	T	
291780	T	
291800	T	
291820	T	
291840	T	
291860	T	
291880	T	
291900	T	
291920	T	
291940	T	
291960	T	
291980	T	
292000	T	
292020	T	
292040	T	
292060	T	
292080	T	
292100	T	
292120	T	
292140	T	
292160	T	
292180	T	
292200	T	
292220	T	
292240	T	
292260	T	
292280	T	
292300	T	
292320	T	
292340	F1	
292360	F1	
292380	F1	
292400	F2	
292420	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
292440	F2	
292460	F2	
292480	F1	
292500	F1	
292520	F1	
292540	F1	
292560	F1	
292580	T	
292600	T	
292620	T	
292640	T	
292660	F1	
292680	F1	
292700	F1	
292720	F1	
292740	F1	
292760	F1	
292780	F1	
292800	F1	
292820	F1	
292840	F1	
292860	F1	
292880	F1	
292900	T	
292920	T	
292940	T	
292960	T	
292980	T	
293000	T	
293020	T	
293040	T	
293060	T	
293080	T	
293100	T	
293120	T	
293140	T	
293160	T	
293180	T	
293200	T	
293220	T	
293240	T	
293260	T	
293280	T	
293300	T	
293320	T	
293340	T	
293360	T	
293380	T	
293400	T	
293420	T	
293440	F1	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
293460	F1	
293480	F1	
293500	F1	
293520	F2	
293540	F2	
293560	F2	
293580	F2	
293600	F2	
293620	F3	
293640	F3	
293660	F3	
293680	F3	
293700	F3	Section 1
293720	F4	4-1
293740	F4	4-4
293760	F4	4-5
293780	F4	4-5
293800	F4	4-5
293820	F4	4-5
293840	F4	4-5
293860	F4	1-5
293880	F5	1-5
293900	F5	1-5
293920	F5	1-5
293940	F5	1-5
293960	F5	1-5
293980	F5	1-5
294000	F5	4-5
294020	F5	4-5
294040	F5	4-5
294060	F5	4-5
294080	F5	4-5
294100	F5	4-5
294120	F5	1-5
294140	F5	1-5
294160	F5	1-5
294180	F5	1-5
294200	F5	1-5
294220	F5	4-5
294240	F5	4-5
294260	F5	4-5
294280	F5	4-5
294300	F5	4-5
294320	F5	4-5
294340	F5	4-5
294360	F5	4-4
294380	F5	4-4
294400	F5	1-4
294420	F5	1-4
294440	F5	1-4
294460	F5	1-3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
294480	F5	1-3
294500	F5	1-3
294520	F5	1-3
294540	F5	1-3
294560	F5	1-2
294580	F5	1-2
294600	F5	1-2
294620	F5	1-2
294640	F5	1-1
294660	F5	1-1
294680	F5	1-1
294700	F5	2
294720	F5	2
294740	F5	2
294760	F5	2
294780	F5	2
294800	F5	2
294820	F5	2
294840	F5	2
294860	F5	2
294880	F5	2
294900	F5	2
294920	F5	2
294940	F5	2
294960	F5	2
294980	F5	2
295000	F5	5
295020	F5	5
295040	F5	5
295060	F5	5
295080	F5	5
295100	F5	5
295120	F5	2
295140	F5	1-1
295160	F5	1-1
295180	F5	1-1
295200	F5	1-2
295220	F5	1-2
295240	F5	1-3
295260	F5	1-3
295280	F5	1-4
295300	F5	1-4
295320	F5	4-5
295340	F5	4-5
295360	F5	1-5
295380	F5	1-5
295400	F5	1-5
295420	F5	1-5
295440	F5	4-5
295460	F5	4-5
295480	F5	1-5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
295500	F5	4-5
295520	F5	4-5
295540	F5	4-5
295560	F5	4-5
295580	F5	4-5
295600	F5	
295620	F5	
295640	F5	
295660	F5	
295680	F5	
295700	F5	
295720	F5	
295740	F5	
295760	F5	
295780	F5	
295800	F5	
295820	F5	
295840	F5	
295860	F5	
295880	F5	
295900	F5	
295920	F5	
295940	F5	
295960	F5	
295980	F5	
296000	F5	
296020	F5	
296040	F5	
296060	F5	
296080	F5	
296100	F5	
296120	F5	
296140	F5	
296160	F5	
296180	F5	
296200	F5	
296220	F5	
296240	F4	
296260	F4	
296280	F4	
296300	F4	
296320	F3	
296340	F3	
296360	F3	
296380	F3	
296400	F3	
296420	F3	
296440	F3	
296460	F3	
296480	F3	
296500	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
296520	F2	
296540	F2	
296560	F2	
296580	F1	
296600	F1	
296620	F1	
296640	F1	
296660	F1	
296680	T	
296700	T	
296720	T	
296740	T	
296760	T	
296780	T	
296800	T	
296820	T	
296840	T	
296860	T	
296880	T	
296900	T	
296920	T	
296940	T	
296960	T	
296980	T	
297000	F1	
297020	F1	
297040	F1	
297060	F1	
297080	F1	
297100	F2	
297120	F2	
297140	F2	
297160	F2	
297180	F2	
297200	F2	
297220	F2	
297240	F2	
297260	F2	
297280	F2	
297300	F2	
297320	F2	
297340	F1	
297360	F1	
297380	F1	
297400	F1	
297420	F1	
297440	F1	
297460	F1	
297480	F1	
297500	F1	
297520	F1	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
297540	F1	
297560	F1	
297580	F1	
297600	F1	
297620	F1	
297640	F1	
297660	F1	
297680	F1	
297700	F1	
297720	F1	
297740	F1	
297760	F1	
297780	F1	
297800	F1	
297820	F1	
297840	F1	
297860	F1	
297880	F1	
297900	F1	
297920	F1	
297940	T	
297960	T	
297980	T	
298000	T	
298020	T	
298040	T	
298060	T	
298080	T	
298100	T	
298120	T	
298140	T	
298160	T	
298180	T	
298200	T	
298220	T	
298240	T	
298260	T	
298280	T	
298300	T	
298320	T	
298340	T	
298360	T	
298380	T	
298400	T	
298420	T	
298440	T	
298460	T	
298480	T	
298500	T	
298520	T	
298540	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
298560	T	
298580	T	
298600	T	
298620	T	
298640	T	
298660	F1	
298680	F1	
298700	F1	
298720	F1	
298740	F2	
298760	F2	
298780	F2	
298800	F3	
298820	F3	
298840	F3	
298860	F3	
298880	F3	
298900	F3	
298920	F3	
298940	F4	
298960	F4	
298980	F4	
299000	F4	
299020	F4	
299040	F4	
299060	F4	
299080	F5	
299100	F5	
299120	F5	
299140	F5	
299160	F4	
299180	F4	
299200	F4	
299220	F4	
299240	F4	
299260	F4	
299280	F4	
299300	F4	
299320	F4	
299340	F4	
299360	F4	
299380	F4	
299400	F4	
299420	F4	
299440	F4	
299460	F4	
299480	F4	
299500	F4	
299520	F4	
299540	F4	
299560	F4	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
299580	F3	
299600	F3	
299620	F3	
299640	F3	
299660	F3	
299680	F3	
299700	F3	
299720	F3	
299740	F3	
299760	F3	
299780	F3	
299800	F3	
299820	F3	
299840	F3	
299860	F2	
299880	F2	
299900	F2	
299920	F1	
299940	F1	
299960	F1	
299980	F1	
300000	F1	
300020	F2	
300040	F2	
300060	F2	
300080	F2	
300100	F2	
300120	F2	
300140	F2	
300160	F2	
300180	F2	
300200	F2	
300220	F2	
300240	F2	
300260	F2	
300280	F2	
300300	F2	
300320	F2	
300340	F2	
300360	F2	
300380	F1	
300400	F1	
300420	F1	
300440	F1	
300460	F1	
300480	F1	
300500	F1	
300520	F1	
300540	F1	
300560	F2	
300580	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
300600	F2	
300620	F2	
300640	F2	
300660	F2	
300680	F1	
300700	F1	
300720	F1	
300740	F1	
300760	F1	
300780	F1	
300800	F1	
300820	F1	
300840	F1	
300860	F1	
300880	F1	
300900	F1	
300920	F1	
300940	F1	
300960	F1	
300980	F1	
301000	T	
301020	T	
301040	T	
301060	T	
301080	T	
301100	T	
301120	T	
301140	T	
301160	T	
301180	T	
301200	T	
301220	T	
301240	T	
301260	T	
301280	T	
301300	T	
301320	T	
301340	T	
301360	T	
301380	T	
301400	T	
301420	T	
301440	T	
301460	T	
301480	T	
301500	T	
301520	T	
301540	T	
301560	T	
301580	T	
301600	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
301620	T	
301640	T	
301660	T	
301680	T	
301700	T	
301720	T	
301740	T	
301760	T	
301780	T	
301800	T	
301820	T	
301840	T	
301860	T	
301880	T	
301900	T	
301920	T	
301940	T	
301960	T	Section 2
301980	T	4-1
302000	T	5
302020	T	5
302040	T	5
302060	T	5
302080	T	3
302100	T	3
302120	T	3
302140	T	3
302160	T	2
302180	T	3
302200	T	3
302220	T	3
302240	T	3
302260	T	2
302280	T	3
302300	T	3
302320	T	2
302340	T	3
302360	T	2
302380	T	2
302400	T	2
302420	T	3
302440	T	5
302460	T	5
302480	T	5
302500	T	5
302520	T	5
302540	T	3
302560	T	3
302580	T	3
302600	T	3
302620	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
302640	T	5
302660	T	5
302680	T	5
302700	T	5
302720	T	5
302740	T	5
302760	F1	3
302780	F1	2
302800	F1	2
302820	F1	2
302840	F1	2
302860	F1	2
302880	F1	2
302900	F2	2
302920	F2	2
302940	F2	2
302960	F2	2
302980	F2	2
303000	F2	3
303020	F2	5
303040	F3	5
303060	F3	5
303080	F3	5
303100	F3	5
303120	F3	5
303140	F3	5
303160	F3	5
303180	F3	5
303200	F3	5
303220	F3	2
303240	F3	2
303260	F3	2
303280	F3	2
303300	F3	2
303320	F3	2
303340	F3	2
303360	F3	2
303380	F3	2
303400	F2	2
303420	F2	2
303440	F2	2
303460	F2	2
303480	F2	2
303500	F2	5
303520	F2	3
303540	F2	3
303560	F2	5
303580	F2	3
303600	F2	3
303620	F2	3
303640	F2	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
303660	F2	5
303680	F2	5
303700	F1	5
303720	F1	5
303740	F1	5
303760	F1	5
303780	F1	5
303800	F1	5
303820	F1	5
303840	F1	5
303860	F1	5
303880	F1	2
303900	F1	2
303920	T	2
303940	T	3
303960	T	5
303980	T	5
304000	T	5
304020	T	5
304040	T	5
304060	T	5
304080	T	5
304100	T	5
304120	T	5
304140	T	5
304160	T	5
304180	T	5
304200	T	5
304220	T	5
304240	T	3
304260	T	2
304280	T	2
304300	T	3
304320	T	3
304340	T	3
304360	T	2
304380	T	2
304400	T	2
304420	T	2
304440	T	2
304460	T	2
304480	T	2
304500	T	2
304520	T	3
304540	T	2
304560	T	5
304580	T	5
304600	T	5
304620	T	5
304640	T	5
304660	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
304680	T	5
304700	T	3
304720	T	2
304740	T	2
304760	T	2
304780	T	2
304800	T	2
304820	T	2
304840	T	3
304860	T	5
304880	T	5
304900	T	5
304920	T	5
304940	T	5
304960	T	5
304980	T	5
305000	T	5
305020	T	5
305040	T	3
305060	T	3
305080	T	3
305100	T	2
305120	T	3
305140	T	3
305160	T	3
305180	T	5
305200	T	5
305220	T	5
305240	T	5
305260	T	5
305280	T	5
305300	T	5
305320	T	5
305340	T	5
305360	T	5
305380	T	5
305400	T	5
305420	T	5
305440	F1	5
305460	F1	5
305480	F1	5
305500	F1	5
305520	F1	3
305540	F2	3
305560	F2	2
305580	F2	2
305600	F2	2
305620	F2	2
305640	F1	2
305660	F1	3
305680	F1	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
305700	F1	3
305720	F1	5
305740	F1	5
305760	F2	5
305780	F2	5
305800	F2	5
305820	F2	5
305840	F2	5
305860	F2	3
305880	F2	3
305900	F2	5
305920	F2	5
305940	F2	5
305960	F2	5
305980	F3	5
306000	F3	5
306020	F3	5
306040	F3	5
306060	F3	5
306080	F2	5
306100	F2	5
306120	F2	5
306140	F2	5
306160	F2	5
306180	F2	5
306200	F2	5
306220	F2	3
306240	F2	2
306260	F3	2
306280	F3	2
306300	F3	2
306320	F3	2
306340	F3	2
306360	F3	2
306380	F3	3
306400	F3	2
306420	F4	3
306440	F4	3
306460	F4	3
306480	F4	2
306500	F4	3
306520	F4	3
306540	F4	3
306560	F4	3
306580	F4	5
306600	F4	5
306620	F4	5
306640	F5	5
306660	F5	5
306680	F5	5
306700	F5	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
306720	F5	5
306740	F5	5
306760	F5	5
306780	F5	5
306800	F5	3
306820	F5	3
306840	F5	3
306860	F5	5
306880	F5	5
306900	F5	5
306920	F5	5
306940	F5	5
306960	F5	5
306980	F5	5
307000	F5	3
307020	F5	2
307040	F5	3
307060	F5	3
307080	F5	3
307100	F5	3
307120	F5	2
307140	F5	2
307160	F5	2
307180	F5	2
307200	F5	2
307220	F5	2
307240	F5	2
307260	F5	2
307280	F4	3
307300	F4	5
307320	F4	5
307340	F4	5
307360	F4	5
307380	F4	5
307400	F4	5
307420	F4	5
307440	F4	5
307460	F4	5
307480	F4	5
307500	F4	5
307520	F4	5
307540	F3	3
307560	F3	3
307580	F3	3
307600	F3	5
307620	F2	5
307640	F2	5
307660	F2	5
307680	F2	5
307700	F2	4-1
307720	F3	4-1

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
307740	F2	4-1
307760	F2	4-1
307780	F2	4-1
307800	F2	4-2
307820	F2	4-2
307840	F2	4-2
307860	F2	4-2
307880	F2	4-2
307900	F2	4-2
307920	F2	4-2
307940	F2	4-2
307960	F2	4-2
307980	F2	
308000	F2	
308020	F2	
308040	F2	
308060	F2	
308080	F2	
308100	F2	
308120	F2	
308140	F2	
308160	F2	
308180	F2	
308200	F2	
308220	F2	
308240	F2	
308260	F2	
308280	F2	
308300	F2	
308320	F2	
308340	F2	
308360	F3	
308380	F2	
308400	F2	
308420	F2	
308440	F2	
308460	F2	
308480	F2	
308500	F2	
308520	F2	
308540	F3	
308560	F3	
308580	F3	
308600	F3	
308620	F3	
308640	F3	
308660	F3	
308680	F3	
308700	F3	
308720	F3	
308740	F3	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
308760	F3	
308780	F3	
308800	F3	
308820	F3	
308840	F3	
308860	F3	
308880	F3	
308900	F4	
308920	F4	
308940	F4	
308960	F4	
308980	F4	
309000	F4	
309020	F4	
309040	F4	
309060	F4	
309080	F3	
309100	F3	
309120	F3	
309140	F3	
309160	F3	
309180	F3	
309200	F3	
309220	F3	
309240	F4	
309260	F4	
309280	F4	
309300	F4	
309320	F5	
309340	F5	
309360	F5	
309380	F5	
309400	F4	
309420	F4	
309440	F4	
309460	F4	
309480	F4	
309500	F4	
309520	F4	
309540	F4	
309560	F4	
309580	F4	
309600	F4	
309620	F4	
309640	F4	
309660	F4	
309680	F3	
309700	F3	
309720	F3	
309740	F3	
309760	F3	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
309780	F3	
309800	F3	
309820	F3	
309840	F2	
309860	F2	
309880	F2	
309900	F2	
309920	F2	
309940	F2	
309960	F2	
309980	F2	
310000	F2	
310020	F2	
310040	F1	
310060	F1	
310080	F1	
310100	T	
310120	T	
310140	T	
310160	T	
310180	T	
310200	T	
310220	T	
310240	T	
310260	T	
310280	T	
310300	T	
310320	T	
310340	T	
310360	T	
310380	T	
310400	T	
310420	T	
310440	T	
310460	T	
310480	T	
310500	T	
310520	T	
310540	T	
310560	T	
310580	T	
310600	T	
310620	T	
310640	T	
310660	T	
310680	T	
310700	T	
310720	T	
310740	T	
310760	T	
310780	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
310800	T	
310820	T	
310840	T	
310860	T	
310880	T	
310900	T	
310920	T	
310940	T	
310960	T	
310980	T	
311000	T	
311020	T	
311040	T	
311060	T	
311080	T	
311100	T	
311120	T	
311140	T	
311160	T	
311180	T	
311200	T	
311220	T	
311240	T	
311260	T	
311280	T	
311300	T	
311320	T	
311340	T	
311360	T	
311380	T	
311400	T	
311420	T	
311440	T	
311460	T	
311480	T	
311500	T	
311520	T	
311540	T	
311560	T	
311580	T	
311600	T	
311620	T	
311640	T	
311660	T	
311680	T	
311700	T	
311720	T	
311740	T	
311760	T	
311780	T	
311800	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
311820	T	
311840	T	
311860	T	
311880	T	
311900	T	
311920	T	
311940	T	
311960	T	
311980	T	
312000	T	
312020	T	
312040	T	
312060	T	
312080	T	
312100	T	
312120	T	
312140	T	
312160	T	
312180	T	
312200	T	
312220	T	
312240	T	
312260	T	
312280	T	
312300	T	
312320	T	
312340	T	
312360	T	
312380	T	
312400	T	
312420	T	
312440	T	
312460	T	
312480	T	
312500	T	
312520	T	
312540	T	
312560	T	
312580	T	
312600	T	
312620	T	
312640	T	
312660	T	
312680	T	
312700	T	
312720	T	
312740	T	
312760	T	
312780	T	
312800	T	
312820	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
312840	T	
312860	T	
312880	T	
312900	T	
312920	T	
312940	T	
312960	T	
312980	T	
313000	T	
313020	T	
313040	T	
313060	T	
313080	T	
313100	T	
313120	T	
313140	T	
313160	T	
313180	T	
313200	T	
313220	T	
313240	T	
313260	T	
313280	T	Section 3
313300	T	4-2
313320	T	5
313340	T	5
313360	T	5
313380	T	5
313400	T	5
313420	T	5
313440	T	5
313460	T	5
313480	T	5
313500	T	5
313520	T	5
313540	T	5
313560	T	5
313580	T	5
313600	T	5
313620	T	5
313640	T	5
313660	T	5
313680	T	5
313700	T	5
313720	T	5
313740	T	5
313760	T	5
313780	T	5
313800	T	5
313820	T	5
313840	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
313860	T	5
313880	T	5
313900	T	5
313920	T	5
313940	T	5
313960	T	5
313980	T	5
314000	T	3
314020	T	2
314040	T	2
314060	T	2
314080	T	2
314100	T	2
314120	T	2
314140	T	2
314160	T	2
314180	T	2
314200	T	2
314220	T	2
314240	T	2
314260	T	2
314280	T	2
314300	T	2
314320	T	2
314340	T	3
314360	F1	3
314380	F1	5
314400	F1	5
314420	F1	5
314440	F1	5
314460	F1	5
314480	F1	5
314500	F1	5
314520	F2	5
314540	F2	5
314560	F2	5
314580	F2	5
314600	F2	5
314620	F2	5
314640	F2	5
314660	F2	5
314680	F3	5
314700	F3	5
314720	F3	5
314740	F4	5
314760	F4	5
314780	F5	5
314800	F5	5
314820	F5	3
314840	F5	3
314860	F5	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
314880	F5	5
314900	F5	5
314920	F5	5
314940	F5	5
314960	F5	5
314980	F5	5
315000	F5	5
315020	F5	5
315040	F5	5
315060	F5	5
315080	F5	5
315100	F5	5
315120	F5	5
315140	F5	5
315160	F5	5
315180	F5	5
315200	F5	5
315220	F5	5
315240	F5	5
315260	F5	5
315280	F5	5
315300	F5	5
315320	F5	5
315340	F5	5
315360	F5	5
315380	F5	5
315400	F5	5
315420	F5	2
315440	F5	2
315460	F5	2
315480	F5	2
315500	F5	2
315520	F5	2
315540	F5	2
315560	F5	2
315580	F5	2
315600	F5	2
315620	F5	2
315640	F5	2
315660	F5	1-1
315680	F5	1-2
315700	F5	1-2
315720	F5	1-3
315740	F5	1-3
315760	F5	1-4
315780	F5	1-4
315800	F5	1-5
315820	F5	4-5
315840	F5	4-5
315860	F5	4-5
315880	F5	4-5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
315900	F4	4-5
315920	F4	4-5
315940	F4	4-5
315960	F4	4-5
315980	F4	4-5
316000	F4	4-5
316020	F4	4-5
316040	F4	4-5
316060	F4	4-5
316080	F4	
316100	F4	
316120	F3	
316140	F3	
316160	F3	
316180	F3	
316200	F3	
316220	F2	
316240	F3	
316260	F3	
316280	F3	
316300	F3	
316320	F3	
316340	F3	
316360	F3	
316380	F3	
316400	F3	
316420	F3	
316440	F3	
316460	F3	
316480	F3	
316500	F3	
316520	F3	
316540	F4	
316560	F4	
316580	F4	
316600	F4	
316620	F4	
316640	F4	
316660	F4	
316680	F4	
316700	F5	
316720	F5	
316740	F4	
316760	F4	
316780	F4	
316800	F4	
316820	F4	
316840	F3	
316860	F3	
316880	F3	
316900	F3	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
316920	F3	
316940	F3	
316960	F3	
316980	F3	
317000	F3	
317020	F3	
317040	F3	
317060	F3	
317080	F3	
317100	F3	
317120	F3	
317140	F3	
317160	F2	
317180	F2	
317200	F2	
317220	F2	
317240	F2	
317260	F2	
317280	F2	
317300	F2	
317320	F2	
317340	F2	
317360	F2	
317380	F2	
317400	F2	
317420	F2	
317440	F2	
317460	F2	
317480	F2	
317500	F2	
317520	F2	
317540	F2	
317560	F2	
317580	F2	
317600	F2	
317620	F2	
317640	F1	
317660	F1	
317680	F1	
317700	F1	
317720	F1	
317740	F2	
317760	F2	
317780	F2	
317800	F2	
317820	F2	
317840	F2	
317860	F2	
317880	F2	
317900	F2	
317920	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
317940	F2	
317960	F2	
317980	F1	
318000	F1	
318020	F1	
318040	F1	
318060	F1	
318080	F1	
318100	F1	
318120	F1	
318140	F2	
318160	F2	
318180	F2	
318200	F2	
318220	F2	
318240	F2	
318260	F2	
318280	F2	
318300	F2	
318320	F2	
318340	F2	
318360	F2	
318380	F2	
318400	F2	
318420	F2	
318440	F2	
318460	F2	
318480	F2	
318500	F2	
318520	F2	
318540	F2	
318560	F2	
318580	F2	
318600	F2	
318620	F2	
318640	F2	
318660	F2	
318680	F2	
318700	F2	
318720	F2	
318740	F2	
318760	F2	
318780	F2	
318800	F2	
318820	F2	
318840	F2	
318860	F1	
318880	F1	
318900	F1	
318920	F1	
318940	F1	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
318960	F1	
318980	F1	
319000	T	
319020	T	
319040	T	
319060	T	
319080	T	
319100	T	
319120	T	
319140	T	
319160	T	
319180	T	
319200	T	
319220	T	
319240	T	
319260	T	
319280	T	
319300	T	
319320	T	
319340	T	
319360	T	
319380	T	
319400	T	
319420	T	
319440	T	
319460	T	
319480	T	
319500	T	
319520	T	
319540	T	
319560	T	
319580	T	
319600	T	
319620	T	
319640	T	
319660	T	
319680	T	
319700	T	
319720	T	
319740	T	
319760	T	
319780	T	
319800	T	
319820	T	
319840	T	
319860	T	
319880	T	
319900	T	
319920	T	
319940	T	
319960	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
319980	T	
320000	T	
320020	T	
320040	T	
320060	T	
320080	T	
320100	T	
320120	T	
320140	T	
320160	T	
320180	T	
320200	T	
320220	T	
320240	F1	
320260	F1	
320280	F1	
320300	F1	
320320	F1	
320340	F1	
320360	F1	
320380	F1	
320400	F1	
320420	F1	
320440	F1	
320460	F1	
320480	F1	
320500	F1	
320520	F1	
320540	F1	
320560	F1	
320580	F1	
320600	F1	
320620	F1	
320640	F1	
320660	F1	
320680	F1	
320700	F1	
320720	F1	
320740	F1	
320760	F1	
320780	F1	
320800	F1	
320820	F1	
320840	T	
320860	T	
320880	T	
320900	T	
320920	T	
320940	T	
320960	T	
320980	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
321000	T	
321020	T	
321040	T	
321060	T	
321080	T	
321100	T	
321120	F1	
321140	F1	
321160	F1	
321180	F1	
321200	F1	
321220	F1	
321240	F2	
321260	F2	
321280	F2	
321300	F2	
321320	F3	
321340	F3	
321360	F3	
321380	F3	
321400	F3	
321420	F3	
321440	F3	
321460	F3	
321480	F3	
321500	F3	
321520	F3	
321540	F3	
321560	F3	
321580	F3	
321600	F3	
321620	F2	
321640	F2	
321660	F2	
321680	F1	
321700	F1	
321720	F1	
321740	T	
321760	T	
321780	T	
321800	T	
321820	T	
321840	T	
321860	T	
321880	T	
321900	T	
321920	T	
321940	T	
321960	T	
321980	T	
322000	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
322020	T	
322040	T	
322060	T	
322080	T	
322100	T	
322120	T	
322140	T	
322160	T	
322180	T	
322200	T	
322220	T	
322240	T	
322260	T	
322280	T	
322300	T	
322320	T	
322340	T	
322360	T	
322380	T	
322400	T	
322420	T	
322440	T	
322460	T	
322480	T	
322500	T	
322520	T	
322540	T	
322560	T	
322580	T	
322600	T	
322620	T	
322640	T	
322660	T	
322680	T	
322700	T	
322720	T	
322740	T	
322760	T	
322780	T	
322800	T	
322820	T	
322840	T	
322860	T	
322880	T	
322900	T	
322920	T	
322940	T	
322960	T	
322980	T	
323000	T	
323020	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
323040	T	
323060	T	
323080	T	
323100	T	
323120	T	
323140	T	
323160	T	
323180	T	
323200	T	
323220	T	
323240	T	
323260	T	
323280	T	
323300	T	
323320	T	
323340	T	
323360	T	
323380	T	
323400	T	
323420	T	
323440	T	
323460	T	
323480	T	
323500	T	
323520	T	
323540	T	
323560	T	
323580	T	
323600	T	
323620	T	
323640	T	
323660	T	
323680	T	
323700	T	
323720	T	
323740	T	
323760	T	
323780	T	
323800	T	
323820	T	
323840	T	
323860	T	
323880	T	
323900	T	
323920	T	
323940	T	
323960	T	
323980	T	
324000	T	
324020	T	
324040	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
324060	T	
324080	T	
324100	T	
324120	T	
324140	T	
324160	T	
324180	T	
324200	T	
324220	T	
324240	T	
324260	T	
324280	T	
324300	T	
324320	T	
324340	T	
324360	T	
324380	T	
324400	T	
324420	T	
324440	T	
324460	T	
324480	T	
324500	T	
324520	T	
324540	T	
324560	T	
324580	T	
324600	T	
324620	T	
324640	T	
324660	T	
324680	T	
324700	T	
324720	T	
324740	T	
324760	T	
324780	T	
324800	T	
324820	T	
324840	T	
324860	T	
324880	T	
324900	T	
324920	T	
324940	T	
324960	T	
324980	T	
325000	T	
325020	T	
325040	T	
325060	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
325080	T	
325100	T	
325120	T	
325140	T	
325160	T	
325180	T	
325200	T	
325220	T	
325240	T	
325260	T	
325280	T	
325300	T	
325320	T	
325340	T	
325360	T	
325380	T	
325400	T	
325420	T	
325440	T	
325460	T	
325480	T	
325500	T	
325520	T	
325540	T	
325560	T	
325580	T	
325600	T	
325620	T	
325640	T	
325660	T	
325680	T	
325700	T	
325720	T	
325740	T	
325760	T	
325780	T	
325800	T	
325820	T	
325840	T	
325860	T	
325880	T	
325900	T	
325920	T	
325940	T	
325960	T	
325980	T	
326000	T	
326020	T	
326040	T	
326060	T	
326080	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
326100	T	
326120	T	
326140	T	
326160	T	
326180	T	
326200	T	
326220	T	
326240	T	
326260	T	
326280	T	
326300	T	
326320	T	
326340	T	
326360	T	
326380	T	
326400	T	
326420	T	
326440	T	
326460	T	
326480	T	
326500	T	
326520	T	
326540	T	
326560	T	
326580	T	
326600	T	
326620	T	
326640	T	
326660	T	
326680	T	
326700	T	
326720	T	
326740	T	
326760	T	
326780	T	
326800	T	
326820	T	
326840	T	
326860	T	
326880	T	
326900	T	
326920	T	
326940	T	
326960	T	
326980	T	
327000	T	
327020	T	
327040	T	
327060	T	
327080	T	
327100	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
327120	T	
327140	T	
327160	T	
327180	T	
327200	T	
327220	T	
327240	T	
327260	T	
327280	T	
327300	T	
327320	T	
327340	T	
327360	T	
327380	T	
327400	T	
327420	T	
327440	T	
327460	T	
327480	T	
327500	T	
327520	T	
327540	T	
327560	T	
327580	T	
327600	T	
327620	T	
327640	T	
327660	T	
327680	T	
327700	T	
327720	T	
327740	T	
327760	T	
327780	T	
327800	T	
327820	T	
327840	T	
327860	T	
327880	T	
327900	T	
327920	T	
327940	T	
327960	T	
327980	T	
328000	T	
328020	T	
328040	T	
328060	T	
328080	T	
328100	T	
328120	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
328140	T	
328160	T	
328180	T	
328200	T	
328220	T	
328240	T	
328260	T	
328280	T	
328300	T	
328320	T	
328340	T	
328360	T	
328380	T	
328400	T	
328420	T	
328440	T	
328460	T	
328480	T	
328500	T	
328520	T	
328540	T	
328560	T	
328580	T	
328600	T	
328620	T	
328640	T	
328660	T	
328680	T	
328700	T	
328720	T	
328740	T	
328760	T	
328780	T	
328800	T	
328820	T	
328840	T	
328860	T	
328880	T	
328900	T	
328920	T	
328940	T	
328960	T	
328980	T	
329000	T	
329020	T	
329040	T	
329060	T	
329080	T	
329100	T	
329120	T	
329140	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
329160	T	
329180	T	
329200	T	
329220	T	
329240	T	
329260	T	
329280	T	
329300	T	
329320	T	
329340	T	
329360	T	
329380	T	
329400	T	
329420	T	
329440	T	
329460	T	
329480	T	
329500	T	
329520	T	
329540	T	
329560	T	
329580	T	
329600	T	
329620	T	
329640	T	
329660	T	
329680	T	
329700	T	
329720	T	
329740	T	
329760	T	
329780	T	
329800	T	
329820	T	
329840	T	
329860	T	
329880	T	
329900	T	
329920	T	
329940	T	
329960	T	
329980	T	
330000	T	
330020	T	
330040	T	
330060	T	
330080	T	
330100	T	
330120	T	
330140	T	
330160	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
330180	T	
330200	T	
330220	T	
330240	T	
330260	T	
330280	T	
330300	T	
330320	T	
330340	T	
330360	T	
330380	T	
330400	T	
330420	T	
330440	T	
330460	T	
330480	T	
330500	T	
330520	T	
330540	T	
330560	T	
330580	T	
330600	T	
330620	T	
330640	T	
330660	T	
330680	T	
330700	T	
330720	T	
330740	T	
330760	T	
330780	T	
330800	T	
330820	T	
330840	T	
330860	T	
330880	T	
330900	T	
330920	T	
330940	T	
330960	T	
330980	T	
331000	T	
331020	T	
331040	T	
331060	T	
331080	T	
331100	T	
331120	T	
331140	T	
331160	T	
331180	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
331200	T	
331220	T	
331240	T	
331260	T	
331280	T	
331300	T	
331320	T	
331340	T	
331360	T	
331380	T	
331400	T	
331420	T	
331440	T	
331460	T	
331480	T	
331500	T	
331520	T	
331540	T	
331560	T	
331580	T	
331600	F1	
331620	F1	
331640	F1	
331660	F1	
331680	F1	
331700	F1	
331720	F1	
331740	F1	
331760	F1	
331780	F1	
331800	F1	
331820	F1	
331840	F1	
331860	F1	
331880	T	
331900	T	
331920	T	
331940	T	
331960	T	
331980	T	
332000	T	
332020	T	
332040	T	
332060	T	
332080	T	
332100	T	
332120	T	
332140	T	
332160	T	
332180	T	
332200	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
332220	T	
332240	T	
332260	T	
332280	T	
332300	T	
332320	T	
332340	T	
332360	T	
332380	T	
332400	T	
332420	T	
332440	T	
332460	T	
332480	T	
332500	T	
332520	T	
332540	T	
332560	T	
332580	T	
332600	T	
332620	T	
332640	T	
332660	T	
332680	T	
332700	T	
332720	T	
332740	T	
332760	T	
332780	T	
332800	T	
332820	T	
332840	T	
332860	T	
332880	T	
332900	T	
332920	T	
332940	T	
332960	T	
332980	T	
333000	T	
333020	T	
333040	T	
333060	T	
333080	T	
333100	T	
333120	T	
333140	T	
333160	T	
333180	T	
333200	T	
333220	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
333240	T	
333260	T	
333280	T	
333300	T	
333320	T	
333340	T	
333360	T	
333380	T	
333400	T	
333420	T	
333440	T	
333460	T	
333480	T	
333500	T	
333520	T	
333540	T	
333560	T	
333580	T	
333600	T	
333620	T	
333640	T	
333660	T	
333680	T	
333700	T	
333720	T	
333740	T	
333760	T	
333780	T	
333800	T	
333820	T	
333840	T	
333860	T	
333880	T	
333900	T	
333920	T	
333940	T	
333960	T	
333980	T	
334000	T	
334020	T	
334040	T	
334060	T	
334080	T	
334100	T	
334120	T	
334140	T	
334160	T	
334180	T	
334200	T	
334220	T	
334240	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
334260	T	
334280	T	
334300	T	
334320	T	
334340	T	
334360	T	
334380	T	
334400	T	
334420	T	
334440	T	
334460	T	
334480	T	
334500	T	
334520	T	
334540	T	
334560	T	
334580	T	
334600	T	
334620	T	
334640	T	
334660	T	
334680	T	
334700	T	
334720	T	
334740	T	
334760	T	
334780	T	
334800	T	
334820	T	
334840	T	
334860	T	
334880	T	
334900	T	
334920	T	
334940	T	
334960	T	
334980	T	
335000	T	
335020	T	
335040	T	
335060	T	
335080	T	
335100	T	
335120	T	
335140	T	
335160	T	
335180	T	
335200	T	
335220	T	
335240	T	
335260	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
335280	T	
335300	T	
335320	T	
335340	T	
335360	T	
335380	T	
335400	T	
335420	T	
335440	T	
335460	T	
335480	T	
335500	T	
335520	T	
335540	T	
335560	T	
335580	T	
335600	T	
335620	T	
335640	T	
335660	T	
335680	T	
335700	T	
335720	T	
335740	T	
335760	T	
335780	T	
335800	T	
335820	T	
335840	T	
335860	T	
335880	T	
335900	T	
335920	T	
335940	T	
335960	T	
335980	T	
336000	T	
336020	T	
336040	T	
336060	T	
336080	T	
336100	T	
336120	T	
336140	T	
336160	T	
336180	T	
336200	T	
336220	T	
336240	T	
336260	T	
336280	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
336300	T	
336320	T	
336340	T	
336360	T	
336380	T	
336400	T	
336420	T	
336440	T	
336460	T	
336480	T	
336500	T	
336520	T	
336540	T	
336560	T	
336580	T	
336600	T	
336620	T	
336640	T	
336660	T	
336680	F1	
336700	F1	
336720	F1	
336740	F1	
336760	F1	
336780	F1	
336800	F1	
336820	F1	
336840	F1	
336860	F1	
336880	F2	
336900	F2	
336920	F2	
336940	F2	
336960	F2	
336980	F2	
337000	F2	
337020	F2	
337040	F2	
337060	F2	
337080	F2	
337100	F2	
337120	F2	
337140	F2	
337160	F3	
337180	F3	
337200	F3	
337220	F3	
337240	F3	
337260	F3	
337280	F3	
337300	F3	Section 5 4-1

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
337320	F3	4-4
337340	F4	1-4
337360	F4	1-4
337380	F4	1-3
337400	F4	1-3
337420	F4	1-3
337440	F4	1-3
337460	F4	1-3
337480	F4	1-3
337500	F4	1-3
337520	F4	1-3
337540	F4	1-2
337560	F4	1-2
337580	F4	4-2
337600	F4	4-2
337620	F4	4-1
337640	F4	4-1
337660	F4	4-1
337680	F4	4-1
337700	F3	5
337720	F3	5
337740	F3	5
337760	F3	5
337780	F3	5
337800	F2	5
337820	F2	5
337840	F2	5
337860	F2	5
337880	F1	5
337900	F1	5
337920	F1	5
337940	F1	5
337960	T	5
337980	T	5
338000	T	5
338020	T	5
338040	T	5
338060	T	5
338080	T	5
338100	T	5
338120	T	5
338140	T	5
338160	T	5
338180	T	5
338200	T	5
338220	T	5
338240	T	5
338260	T	5
338280	T	5
338300	T	5
338320	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
338340	T	5
338360	T	5
338380	T	5
338400	T	5
338420	T	5
338440	T	5
338460	T	5
338480	T	3
338500	T	5
338520	T	5
338540	T	3
338560	T	5
338580	T	3
338600	T	5
338620	T	5
338640	T	5
338660	T	5
338680	T	5
338700	T	5
338720	T	3
338740	T	3
338760	T	3
338780	T	3
338800	T	3
338820	T	3
338840	T	3
338860	T	3
338880	T	3
338900	T	5
338920	T	5
338940	T	5
338960	T	5
338980	T	5
339000	T	5
339020	T	5
339040	T	5
339060	T	5
339080	T	
339100	T	
339120	T	
339140	T	
339160	T	
339180	T	
339200	T	
339220	T	
339240	T	
339260	T	
339280	T	
339300	T	
339320	T	
339340	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
339360	T	
339380	T	
339400	T	
339420	T	
339440	T	
339460	T	
339480	T	
339500	T	
339520	T	
339540	T	
339560	T	
339580	T	
339600	T	
339620	T	
339640	T	
339660	T	
339680	T	
339700	T	
339720	T	
339740	T	
339760	T	
339780	T	
339800	T	
339820	T	
339840	T	
339860	T	
339880	T	
339900	T	
339920	T	
339940	T	
339960	T	
339980	T	
340000	T	
340020	T	
340040	T	
340060	T	
340080	T	
340100	T	
340120	T	
340140	T	
340160	T	
340180	T	
340200	T	
340220	T	
340240	T	
340260	T	
340280	T	
340300	T	
340320	T	
340340	T	
340360	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
340380	T	
340400	T	
340420	T	
340440	T	
340460	T	
340480	T	
340500	T	
340520	T	
340540	T	
340560	T	
340580	T	
340600	T	
340620	T	
340640	T	
340660	T	
340680	T	
340700	T	
340720	T	
340740	T	
340760	T	
340780	T	
340800	T	
340820	T	
340840	T	
340860	T	
340880	T	
340900	T	
340920	T	
340940	T	
340960	T	
340980	T	
341000	T	
341020	T	
341040	T	
341060	T	
341080	T	
341100	T	
341120	T	
341140	T	
341160	T	
341180	T	
341200	T	
341220	T	
341240	T	
341260	F1	
341280	F1	
341300	F1	
341320	F1	
341340	F1	
341360	F1	
341380	F1	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
341400	F1	
341420	F2	
341440	F2	
341460	F2	
341480	F2	
341500	F2	
341520	F2	
341540	F2	
341560	F2	
341580	F3	
341600	F3	
341620	F3	
341640	F3	
341660	F3	
341680	F3	
341700	F3	
341720	F4	
341740	F4	
341760	F4	
341780	F4	
341800	F4	
341820	F4	
341840	F4	
341860	F4	
341880	F3	
341900	F3	
341920	F3	
341940	F3	
341960	F3	
341980	F3	
342000	F3	
342020	F2	
342040	F2	
342060	F2	
342080	F2	
342100	F2	
342120	F2	
342140	F3	
342160	F3	
342180	F3	
342200	F3	
342220	F3	
342240	F3	
342260	F3	
342280	F3	
342300	F3	
342320	F3	
342340	F2	
342360	F2	
342380	F2	
342400	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
342420	F2	
342440	F2	
342460	F1	
342480	F1	
342500	F1	
342520	F1	
342540	F1	
342560	F1	
342580	F1	
342600	F1	
342620	F1	
342640	F1	
342660	F1	
342680	F1	
342700	F1	
342720	F2	
342740	F2	
342760	F2	
342780	F1	
342800	F1	
342820	F1	
342840	F1	
342860	F1	
342880	F1	
342900	F1	
342920	F1	
342940	F1	
342960	F1	
342980	F1	
343000	F1	
343020	F1	
343040	F1	
343060	F1	
343080	F1	
343100	F1	
343120	F1	
343140	F1	
343160	F1	
343180	F1	
343200	F1	
343220	F1	
343240	F1	
343260	F1	
343280	F1	
343300	F1	
343320	F1	
343340	F1	
343360	F1	
343380	F2	
343400	F2	
343420	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
343440	F2	
343460	F2	
343480	F2	
343500	F2	
343520	F2	
343540	F2	
343560	F2	
343580	F2	
343600	F2	
343620	F2	
343640	F2	
343660	F2	
343680	F2	
343700	F2	
343720	F2	
343740	F2	
343760	F2	
343780	F3	
343800	F3	
343820	F3	
343840	F3	
343860	F3	
343880	F3	
343900	F3	
343920	F3	
343940	F3	
343960	F3	
343980	F2	
344000	F2	
344020	F2	
344040	F2	
344060	F2	
344080	F1	
344100	F1	
344120	F1	
344140	F1	
344160	F1	
344180	F1	
344200	F1	
344220	F1	
344240	T	
344260	T	
344280	T	
344300	T	
344320	T	
344340	T	
344360	T	
344380	T	
344400	T	
344420	T	
344440	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
344460	T	
344480	T	
344500	T	
344520	T	
344540	T	
344560	T	
344580	T	
344600	T	
344620	T	
344640	T	
344660	T	
344680	T	
344700	T	
344720	T	
344740	T	
344760	T	
344780	T	
344800	T	
344820	T	
344840	T	
344860	T	
344880	T	
344900	T	
344920	T	
344940	T	
344960	T	
344980	T	
345000	T	
345020	T	
345040	T	
345060	T	
345080	T	
345100	T	
345120	T	
345140	T	
345160	T	
345180	T	
345200	T	
345220	T	
345240	T	
345260	T	
345280	T	
345300	T	
345320	T	
345340	T	
345360	T	
345380	T	
345400	T	
345420	T	
345440	T	
345460	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
345480	T	
345500	T	
345520	T	
345540	T	
345560	T	
345580	T	
345600	T	
345620	T	
345640	T	
345660	T	
345680	T	
345700	T	
345720	T	
345740	T	
345760	T	
345780	T	
345800	T	
345820	T	
345840	T	
345860	T	
345880	T	
345900	T	
345920	T	
345940	T	
345960	T	
345980	T	
346000	T	
346020	T	
346040	T	
346060	T	
346080	T	
346100	T	
346120	T	
346140	T	
346160	T	
346180	T	
346200	T	
346220	T	
346240	T	Section 7
346260	T	4-1
346280	T	5
346300	T	5
346320	T	3
346340	T	5
346360	T	5
346380	T	5
346400	T	5
346420	T	3
346440	T	5
346460	T	5
346480	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
346500	T	5
346520	T	5
346540	T	5
346560	T	5
346580	T	5
346600	T	5
346620	T	5
346640	T	5
346660	T	5
346680	T	5
346700	T	5
346720	T	5
346740	T	5
346760	T	5
346780	T	5
346800	T	5
346820	T	5
346840	T	5
346860	T	5
346880	T	5
346900	T	5
346920	T	5
346940	T	5
346960	T	5
346980	T	5
347000	T	5
347020	T	5
347040	T	5
347060	T	5
347080	T	5
347100	T	5
347120	T	5
347140	T	5
347160	T	5
347180	T	3
347200	T	3
347220	T	3
347240	T	3
347260	T	3
347280	T	3
347300	T	5
347320	T	5
347340	T	5
347360	T	5
347380	T	5
347400	T	5
347420	T	5
347440	T	5
347460	T	5
347480	T	5
347500	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
347520	T	5
347540	T	5
347560	T	5
347580	T	5
347600	T	5
347620	T	5
347640	F1	5
347660	F1	5
347680	F1	5
347700	F1	5
347720	F2	5
347740	F2	5
347760	F2	5
347780	F2	5
347800	F3	5
347820	F3	5
347840	F3	5
347860	F3	5
347880	F4	5
347900	F4	4-1
347920	F4	4-1
347940	F5	4-2
347960	F5	4-2
347980	F5	4-3
348000	F5	4-4
348020	F5	4-4
348040	F5	4-5
348060	F5	4-5
348080	F5	4-5
348100	F5	4-5
348120	F5	4-5
348140	F5	
348160	F5	
348180	F5	
348200	F5	
348220	F5	
348240	F5	
348260	F5	
348280	F5	
348300	F5	
348320	F5	
348340	F5	
348360	F5	
348380	F5	
348400	F5	
348420	F5	
348440	F5	
348460	F5	
348480	F5	
348500	F5	
348520	F5	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
348540	F5	
348560	F5	
348580	F5	
348600	F5	
348620	F5	
348640	F5	
348660	F5	
348680	F5	
348700	F5	
348720	F4	
348740	F4	
348760	F4	
348780	F4	
348800	F4	
348820	F3	
348840	F3	
348860	F3	
348880	F3	
348900	F4	
348920	F4	
348940	F4	
348960	F5	
348980	F5	
349000	F4	
349020	F4	
349040	F4	
349060	F4	
349080	F4	
349100	F4	
349120	F4	
349140	F4	
349160	F4	
349180	F5	
349200	F5	
349220	F5	
349240	F5	
349260	F5	
349280	F5	
349300	F5	
349320	F5	
349340	F5	
349360	F5	
349380	F5	
349400	F5	
349420	F5	
349440	F5	
349460	F5	
349480	F5	
349500	F5	
349520	F5	
349540	F5	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
349560	F5	
349580	F5	
349600	F5	
349620	F5	
349640	F5	
349660	F5	
349680	F5	
349700	F5	
349720	F5	
349740	F5	
349760	F5	
349780	F5	
349800	F5	
349820	F5	
349840	F5	
349860	F5	
349880	F5	
349900	F5	
349920	F5	
349940	F5	
349960	F5	
349980	F5	
350000	F5	
350020	F5	
350040	F5	
350060	F5	
350080	F5	
350100	F5	
350120	F5	
350140	F5	
350160	F5	
350180	F5	
350200	F4	
350220	F4	
350240	F4	
350260	F4	
350280	F3	
350300	F3	
350320	F3	
350340	F2	
350360	F2	
350380	F2	
350400	F2	
350420	F1	
350440	F1	
350460	T	
350480	T	
350500	T	
350520	T	
350540	T	
350560	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
350580	T	
350600	T	
350620	T	
350640	T	
350660	T	
350680	T	
350700	T	
350720	T	
350740	T	
350760	T	
350780	T	
350800	T	
350820	T	
350840	T	
350860	T	
350880	T	
350900	T	
350920	T	
350940	T	
350960	T	
350980	T	
351000	T	
351020	T	Section 8
351040	T	4-1
351060	T	5
351080	T	5
351100	T	5
351120	T	3
351140	T	3
351160	T	3
351180	T	3
351200	T	3
351220	T	3
351240	T	3
351260	T	3
351280	T	3
351300	T	3
351320	T	3
351340	T	3
351360	T	3
351380	T	3
351400	T	3
351420	T	3
351440	T	3
351460	T	3
351480	T	5
351500	T	3
351520	T	3
351540	T	3
351560	T	3
351580	T	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
351600	T	3
351620	T	3
351640	T	3
351660	T	3
351680	T	3
351700	T	3
351720	T	3
351740	T	3
351760	T	3
351780	T	3
351800	T	3
351820	T	3
351840	T	3
351860	T	3
351880	T	3
351900	T	3
351920	T	3
351940	T	3
351960	T	3
351980	T	3
352000	T	3
352020	T	3
352040	T	3
352060	T	3
352080	T	3
352100	T	3
352120	T	3
352140	T	3
352160	T	3
352180	T	3
352200	T	3
352220	T	3
352240	T	3
352260	T	3
352280	T	3
352300	T	3
352320	T	3
352340	T	3
352360	T	3
352380	T	3
352400	T	3
352420	T	3
352440	T	3
352460	T	3
352480	T	3
352500	T	3
352520	T	3
352540	T	3
352560	T	3
352580	T	3
352600	T	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
352620	T	3
352640	T	3
352660	T	3
352680	T	3
352700	T	3
352720	T	3
352740	T	3
352760	T	5
352780	T	5
352800	T	5
352820	T	5
352840	T	5
352860	T	
352880	T	
352900	T	
352920	T	
352940	T	
352960	T	
352980	T	
353000	T	
353020	T	
353040	T	
353060	T	
353080	T	
353100	T	
353120	T	
353140	T	
353160	T	
353180	T	
353200	T	
353220	T	
353240	T	
353260	T	
353280	T	
353300	T	
353320	T	
353340	T	
353360	T	
353380	T	
353400	T	
353420	T	
353440	T	
353460	T	
353480	T	
353500	T	
353520	T	
353540	T	
353560	T	
353580	T	
353600	T	
353620	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
353640	T	
353660	T	
353680	T	
353700	T	
353720	T	
353740	T	
353760	T	
353780	T	
353800	T	
353820	T	
353840	T	
353860	T	
353880	T	
353900	T	
353920	T	
353940	T	
353960	T	
353980	T	
354000	T	
354020	T	
354040	T	
354060	T	
354080	T	
354100	T	
354120	T	
354140	T	
354160	T	
354180	T	
354200	T	
354220	T	
354240	T	
354260	T	
354280	T	
354300	T	
354320	T	
354340	T	
354360	T	
354380	T	
354400	T	
354420	T	
354440	T	
354460	T	
354480	T	
354500	T	
354520	T	
354540	T	
354560	T	
354580	T	
354600	T	
354620	T	
354640	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
354660	T	
354680	T	
354700	T	
354720	T	
354740	T	
354760	T	
354780	T	
354800	T	
354820	T	
354840	T	
354860	T	
354880	T	
354900	T	
354920	T	
354940	T	
354960	T	
354980	T	
355000	T	
355020	T	
355040	T	
355060	T	
355080	T	
355100	T	
355120	T	
355140	T	
355160	T	
355180	T	
355200	T	
355220	T	
355240	T	
355260	T	
355280	T	
355300	T	
355320	T	
355340	T	
355360	T	
355380	T	
355400	T	
355420	T	
355440	T	
355460	T	
355480	T	
355500	T	
355520	T	
355540	T	
355560	T	
355580	T	
355600	T	
355620	T	
355640	T	
355660	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
355680	T	
355700	T	
355720	T	
355740	T	
355760	T	
355780	T	
355800	T	
355820	T	
355840	T	
355860	T	
355880	T	
355900	T	
355920	T	
355940	T	
355960	T	
355980	T	
356000	T	
356020	T	
356040	T	
356060	T	
356080	T	
356100	T	
356120	T	
356140	T	
356160	T	
356180	T	
356200	T	
356220	T	
356240	T	
356260	T	
356280	T	
356300	F1	
356320	F1	
356340	F1	
356360	F1	
356380	F1	
356400	F1	
356420	F1	
356440	F1	
356460	F1	
356480	F1	
356500	F1	
356520	F1	
356540	F1	
356560	F1	
356580	F2	
356600	F2	
356620	F2	
356640	F2	
356660	F2	
356680	F2	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
356700	F2	
356720	F2	
356740	F2	
356760	F2	
356780	F2	
356800	F2	
356820	F2	
356840	F2	
356860	F3	
356880	F3	
356900	F3	
356920	F3	
356940	F3	
356960	F3	
356980	F3	
357000	F3	
357020	F3	
357040	F3	
357060	F3	
357080	F3	
357100	F3	
357120	F3	
357140	F2	
357160	F2	
357180	F2	
357200	F2	
357220	F2	
357240	F2	
357260	F1	
357280	F1	
357300	F1	
357320	F1	
357340	T	
357360	T	
357380	T	
357400	T	
357420	T	
357440	T	
357460	T	
357480	T	
357500	T	
357520	T	
357540	T	
357560	T	
357580	T	
357600	T	
357620	T	
357640	T	
357660	T	
357680	T	
357700	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
357720	T	
357740	T	
357760	T	
357780	T	
357800	T	
357820	T	
357840	T	
357860	T	
357880	T	
357900	T	
357920	T	
357940	T	
357960	T	
357980	T	
358000	T	
358020	T	
358040	T	
358060	T	
358080	T	
358100	T	
358120	T	
358140	T	
358160	T	
358180	T	
358200	T	
358220	T	
358240	T	
358260	T	
358280	T	
358300	T	
358320	T	
358340	T	
358360	T	
358380	T	
358400	T	
358420	T	
358440	T	
358460	T	
358480	T	
358500	T	
358520	T	
358540	T	
358560	T	
358580	T	
358600	T	
358620	T	
358640	T	
358660	T	
358680	T	
358700	T	
358720	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
358740	T	
358760	T	
358780	T	
358800	T	
358820	T	
358840	T	
358860	T	
358880	T	
358900	T	
358920	T	
358940	T	
358960	T	
358980	T	
359000	T	
359020	T	
359040	T	
359060	T	
359080	T	
359100	T	
359120	T	
359140	T	
359160	T	
359180	T	
359200	T	
359220	T	
359240	T	
359260	T	
359280	T	
359300	T	
359320	T	
359340	T	
359360	T	
359380	T	
359400	T	
359420	T	
359440	T	
359460	T	
359480	T	
359500	T	
359520	T	
359540	T	
359560	T	
359580	T	
359600	T	
359620	T	
359640	T	
359660	T	
359680	T	
359700	T	
359720	T	
359740	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
359760	T	
359780	T	
359800	T	
359820	T	
359840	T	
359860	T	
359880	T	
359900	T	
359920	T	
359940	T	
359960	T	
359980	T	
360000	T	
360020	T	
360040	T	
360060	T	
360080	T	
360100	T	
360120	T	
360140	T	
360160	T	
360180	T	
360200	T	
360220	T	
360240	T	
360260	T	
360280	T	
360300	T	
360320	T	
360340	T	
360360	T	
360380	T	
360400	T	
360420	T	
360440	T	
360460	T	
360480	T	
360500	T	
360520	T	
360540	T	
360560	T	
360580	T	
360600	T	
360620	T	
360640	T	
360660	T	
360680	T	
360700	T	
360720	T	
360740	T	
360760	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
360780	T	
360800	T	
360820	T	
360840	T	
360860	T	
360880	T	
360900	T	
360920	T	
360940	T	
360960	T	
360980	T	
361000	T	
361020	T	
361040	T	
361060	T	
361080	T	
361100	T	
361120	T	
361140	T	
361160	T	
361180	T	
361200	T	
361220	T	
361240	T	
361260	T	
361280	T	
361300	T	
361320	T	
361340	T	
361360	T	
361380	T	
361400	T	
361420	T	
361440	T	
361460	T	
361480	T	
361500	T	
361520	T	
361540	T	
361560	T	
361580	T	
361600	T	
361620	T	
361640	T	
361660	T	
361680	T	
361700	T	
361720	T	
361740	T	
361760	T	
361780	T	

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
361800	T	
361820	T	
361840	T	
361860	T	
361880	T	
361900	T	
361920	T	
361940	T	
361960	T	
361980	T	
362000	T	
362020	T	
362040	T	
362060	T	
362080	T	
362100	T	
362120	T	
362140	T	
362160	T	
362180	T	
362200	T	
362220	T	
362240	T	
362260	T	
362280	T	
362300	T	
362320	T	
362340	T	
362360	T	
362380	T	Section 9
362400	T	4-1
362420	T	5
362440	T	5
362460	T	3
362480	T	2
362500	T	2
362520	T	2
362540	T	2
362560	T	2
362580	T	2
362600	T	2
362620	T	3
362640	T	3
362660	T	3
362680	T	3
362700	T	2
362720	T	2
362740	F1	2
362760	F1	3
362780	F1	5
362800	T	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
362820	T	3
362840	T	3
362860	T	3
362880	T	3
362900	T	3
362920	T	3
362940	T	3
362960	T	3
362980	T	5
363000	T	5
363020	T	5
363040	T	5
363060	T	5
363080	T	3
363100	T	3
363120	T	3
363140	T	3
363160	T	3
363180	T	3
363200	T	3
363220	T	3
363240	T	3
363260	T	5
363280	T	5
363300	T	5
363320	T	5
363340	T	3
363360	T	3
363380	T	3
363400	T	3
363420	T	3
363440	T	3
363460	T	3
363480	T	3
363500	T	3
363520	T	3
363540	T	3
363560	T	3
363580	T	3
363600	T	3
363620	F1	3
363640	F1	3
363660	F1	3
363680	F1	3
363700	F1	3
363720	T	5
363740	T	5
363760	T	5
363780	T	5
363800	T	5
363820	T	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
363840	T	3
363860	T	3
363880	T	3
363900	T	3
363920	T	3
363940	T	3
363960	T	3
363980	T	3
364000	T	3
364020	T	3
364040	T	3
364060	T	3
364080	T	3
364100	T	3
364120	T	3
364140	T	3
364160	T	3
364180	T	3
364200	T	3
364220	T	3
364240	T	3
364260	T	3
364280	T	3
364300	T	3
364320	T	3
364340	T	3
364360	T	3
364380	T	3
364400	T	3
364420	T	3
364440	T	3
364460	T	3
364480	T	3
364500	T	3
364520	T	3
364540	T	3
364560	T	3
364580	T	3
364600	T	5
364620	T	3
364640	T	3
364660	T	3
364680	T	3
364700	T	3
364720	T	3
364740	T	3
364760	T	3
364780	T	3
364800	F1	3
364820	F1	3
364840	F1	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
364860	F1	3
364880	F1	3
364900	F1	3
364920	F2	3
364940	F1	3
364960	F1	3
364980	F1	3
365000	F1	2
365020	F1	2
365040	F1	2
365060	F1	3
365080	F1	3
365100	F1	3
365120	F1	3
365140	F1	5
365160	F2	5
365180	F2	5
365200	F2	5
365220	F2	5
365240	F2	5
365260	F2	5
365280	F2	5
365300	F2	5
365320	F2	5
365340	F2	5
365360	F2	5
365380	F2	5
365400	F3	3
365420	F3	3
365440	F3	3
365460	F3	3
365480	F3	3
365500	F3	3
365520	F3	3
365540	F3	3
365560	F3	3
365580	F3	3
365600	F3	3
365620	F3	3
365640	F3	3
365660	F3	3
365680	F3	3
365700	F3	3
365720	F3	3
365740	F3	3
365760	F4	3
365780	F4	3
365800	F4	3
365820	F4	3
365840	F4	3
365860	F4	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
365880	F4	3
365900	F4	3
365920	F4	3
365940	F4	3
365960	F4	3
365980	F4	3
366000	F4	3
366020	F4	3
366040	F4	3
366060	F4	3
366080	F4	3
366100	F4	3
366120	F4	3
366140	F4	3
366160	F4	3
366180	F4	3
366200	F4	3
366220	F3	3
366240	F4	3
366260	F4	3
366280	F4	3
366300	F4	3
366320	F4	5
366340	F4	5
366360	F4	5
366380	F4	5
366400	F4	5
366420	F4	5
366440	F4	3
366460	F4	3
366480	F4	3
366500	F4	3
366520	F4	3
366540	F4	3
366560	F5	3
366580	F5	3
366600	F4	3
366620	F4	3
366640	F4	3
366660	F4	3
366680	F5	3
366700	F5	3
366720	F5	3
366740	F5	3
366760	F5	3
366780	F5	3
366800	F5	3
366820	F5	3
366840	F5	3
366860	F5	3
366880	F5	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
366900	F5	3
366920	F5	3
366940	F5	3
366960	F5	3
366980	F5	3
367000	F5	3
367020	F5	3
367040	F5	3
367060	F5	3
367080	F5	3
367100	F5	3
367120	F5	3
367140	F5	3
367160	F5	3
367180	F5	3
367200	F5	3
367220	F5	3
367240	F5	3
367260	F5	3
367280	F5	3
367300	F5	3
367320	F5	3
367340	F5	3
367360	F5	3
367380	F5	3
367400	F5	3
367420	F5	3
367440	F5	3
367460	F5	3
367480	F5	3
367500	F5	3
367520	F5	3
367540	F5	3
367560	F5	3
367580	F5	3
367600	F5	3
367620	F5	3
367640	F5	3
367660	F5	3
367680	F5	3
367700	F5	3
367720	F5	3
367740	F5	3
367760	F5	3
367780	F4	5
367800	F4	5
367820	F4	5
367840	F4	5
367860	F4	5
367880	F4	5
367900	F4	5

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
367920	F4	3
367940	F4	3
367960	F3	3
367980	F3	3
368000	F3	3
368020	F3	3
368040	F3	3
368060	F3	3
368080	F3	5
368100	F3	5
368120	F3	5
368140	F3	5
368160	F3	5
368180	F3	5
368200	F2	5
368220	F2	5
368240	F2	3
368260	F2	3
368280	F2	2
368300	F2	2
368320	F2	2
368340	F2	2
368360	F2	2
368380	F2	2
368400	F2	2
368420	F2	2
368440	F2	2
368460	F2	2
368480	F2	2
368500	F2	2
368520	F2	2
368540	F2	3
368560	F2	3
368580	F2	3
368600	F1	3
368620	F1	3
368640	F1	3
368660	F1	3
368680	T	3
368700	T	3
368720	T	3
368740	T	3
368760	T	3
368780	T	3
368800	T	3
368820	T	3
368840	T	3
368860	T	3
368880	T	3
368900	T	3
368920	T	3

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
368940	T	3
368960	T	3
368980	T	3
369000	T	3
369020	T	3
369040	T	3
369060	T	3
369080	T	3
369100	T	3
369120	T	3
369140	T	3
369160	T	3
369180	T	3
369200	T	3
369220	T	3
369240	T	3
369260	T	3
369280	T	3
369300	T	3
369320	T	3
369340	T	3
369360	T	3
369380	T	3
369400	T	3
369420	T	3
369440	T	3
369460	T	3
369480	T	3
369500	T	3
369520	T	3
369540	T	3
369560	T	3
369580	T	3
369600	T	3
369620	T	3
369640	T	2
369660	T	3
369680	T	3
369700	T	3
369720	T	3
369740	T	3
369760	T	3
369780	T	2
369800	T	2
369820	F1	2
369840	F1	2
369860	F1	2
369880	F1	2
369900	F1	2
369920	F1	2
369940	F1	2

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL>FL(0.0-0.5m) F2:DHWL>FL(0.5-1.0m) F3:DHWL>FL(1.0-1.5m) F4:DHWL>FL(1.5-2.0m) F5:DHWL>FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
369960	F1	2
369980	F1	2
370000	F1	3
370020	F1	3
370040	F1	3
370060	F1	3
370080	F1	3
370100	F2	3
370120	F2	3
370140	F2	3
370160	F2	3
370180	F2	2
370200	F2	2
370220	F2	2
370240	F2	2
370260	F2	3
370280	F2	3
370300	F2	3
370320	F2	3
370340	F2	3
370360	F2	3
370380	F2	3
370400	F2	3
370420	F2	3
370440	F2	3
370460	F2	3
370480	F3	3
370500	F3	3
370520	F3	3
370540	F3	3
370560	F3	3
370580	F2	3
370600	F2	3
370620	F2	3
370640	F2	2
370660	F2	2
370680	F2	2
370700	F2	2
370720	F2	2
370740	F3	2
370760	F3	2
370780	F3	2
370800	F3	2
370820	F3	2
370840	F3	2
370860	F3	2
370880	F3	2
370900	F3	2
370920	F3	2
370940	F3	2
370960	F3	2

New Kilometerage	Existing Line	Retouting Line
	F1:DHWL> FL(0.0-0.5m) F2:DHWL> FL(0.5-1.0m) F3:DHWL> FL(1.0-1.5m) F4:DHWL> FL(1.5-2.0m) F5:DHWL> FL(2.0m-) T :FL>DHWL	[Embankment] 1-1:DHWL>FL(0.0-0.5m) 1-2:DHWL>FL(0.5-1.0m) 1-3:DHWL>FL(1.0-1.5m) 1-4:DHWL>FL(1.5-2.0m) 1-5:DHWL>FL(2.0m-) 2 :FL>DHWL (with Protect) 3 :FL>DHWL(No Protect) [Cutting] 4-1:DHWL>FL(0.0-0.5m) 4-2:DHWL>FL(0.5-1.0m) 4-3:DHWL>FL(1.0-1.5m) 4-4:DHWL>FL(1.5-2.0m) 4-5:DHWL>FL(2.0m-) 5 :FL>DHWL
370980	F3	2
371000	F3	2
371020	F3	2
371040	F3	2
371060	F3	1-1
371080	F3	1-1
371100	F3	1-1
371120	F3	1-2
371140	F2	1-2
371160	F2	1-2
371180	F2	1-3
371200	F2	4-3
371220	F2	4-3
371240	F2	4-3
371260	F2	4-3
371280	F2	4-4
371300	F2	4-4
371320	F2	4-4
371340	F2	4-4
371360	F2	4-4
371380	F2	4-4
371400	F2	4-4
371420	F2	4-4
371440	F2	4-4
371460	F2	4-4
371480	F2	
371500	F2	
371520	F2	
371540	F2	
371560	F3	