

Democratic Socialist Republic of Sri Lanka

Ministry of Defence



National Building Research Organization (NBRO)



Reduction of Landslide Vulnerability by Mitigation Measures Project (RLVMMP)

funded by Asian Infrastructure Investment Bank (AIIB)

(Loan No: L0124A)

DRAWINGS

Rectification of Unstable Slopes at Hillwood College, Kiribathkumbura Swarnajothi College, Sumangala College and Pahala Kadugannawa between Cul. 98/4 and 99/1 -Phase II (Site No. 243, 246, 247, 250) in Kandy and Kegalle Districts Under Package 10S of Reduction of Landslide Vulnerability By Mitigation Measures Project (RLVMMP)

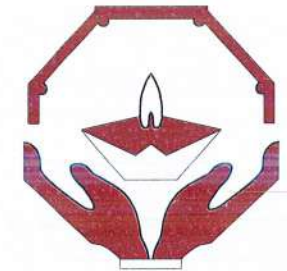
Contract No: RLVMMP/WORKS/10S

July 2026

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE



NATIONAL BUILDING RESEARCH INSTITUTE



REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY

LOCATION 01, LOCATION 02, LOCATION 03 & LOCATION 4

PROJECT NO: RLVMMMP/WORKS/NCB/PHIII/232

DETAILED DESIGN DRAWINGS

MAY 2026



-  ELECTRIC POST (EP)
-  MANSIONRY DRAIN (MDn)
-  PERMANENT BUILDING (P)
-  RETAINING WALL (RW)
-  SCAR
-  TREE
-  REFERENCE POINTS

N	E	Z	PN
5002.54	3989.66	100	1
4990.89	3986.71	100.02	2
4977.19	4012.98	100.103	3

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	REVISION DESCRIPTION	APPROVAL																																									PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT BELOW THE CAR PARK OF PRINCIPAL'S QUARTERS HILLWOOD COLLEGE - KANDY LOCATION -1	<table border="1"> <thead> <tr> <th colspan="2">TITLE</th> <th colspan="2">DESCRIPTION</th> <th>NAME</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td colspan="2" rowspan="3">SURVEY PLAN</td> <td>SURVEYED</td> <td colspan="2">W. L. P. N. N. WIJESINGHE</td> <td></td> </tr> <tr> <td>CHECKED</td> <td colspan="2">R. J. K. P. N. RANATHUNGA</td> <td></td> </tr> <tr> <td> </td> <td colspan="2"> </td> <td> </td> </tr> <tr> <td>SCALE</td> <td>1:250</td> <td>DATE</td> <td colspan="3">27.04.2026</td> </tr> <tr> <td colspan="4">PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L1/DR 01</td> <td>REVISION</td> <td>00</td> </tr> </tbody> </table>	TITLE		DESCRIPTION		NAME	SIGNATURE	SURVEY PLAN		SURVEYED	W. L. P. N. N. WIJESINGHE			CHECKED	R. J. K. P. N. RANATHUNGA							SCALE	1:250	DATE	27.04.2026			PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L1/DR 01				REVISION	00
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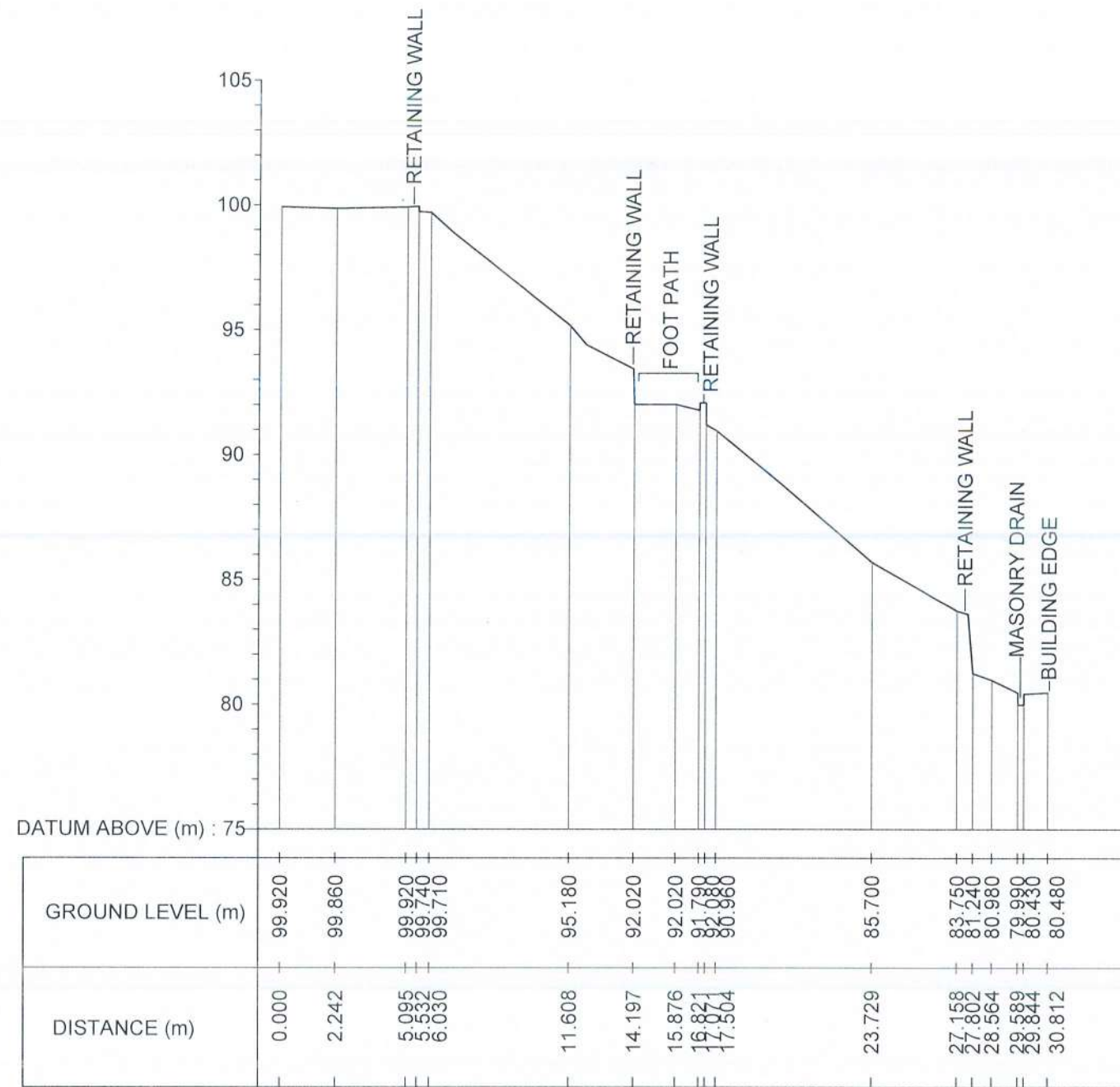


SECTION 1

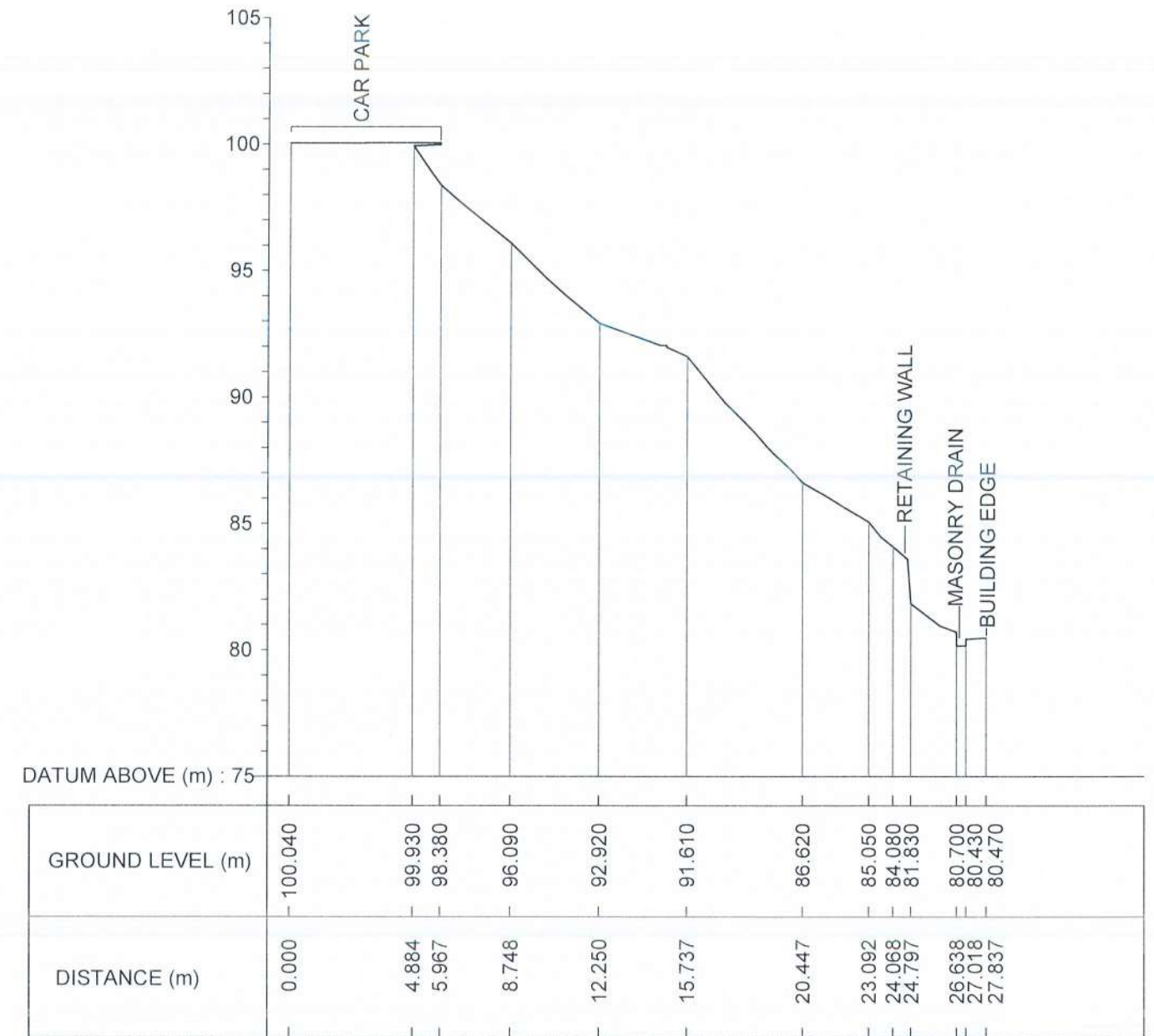


SECTION 2

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 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT BELOW THE CAR PARK OF PRINCIPAL'S QUARTERS HILLWOOD COLLEGE - KANDY LOCATION -1		EXISTING CROSS SECTIONS				SURVEYED		W L P N N.WIJESINGHE			
																		CHECKED		R J K P N.RANATHUNGA			
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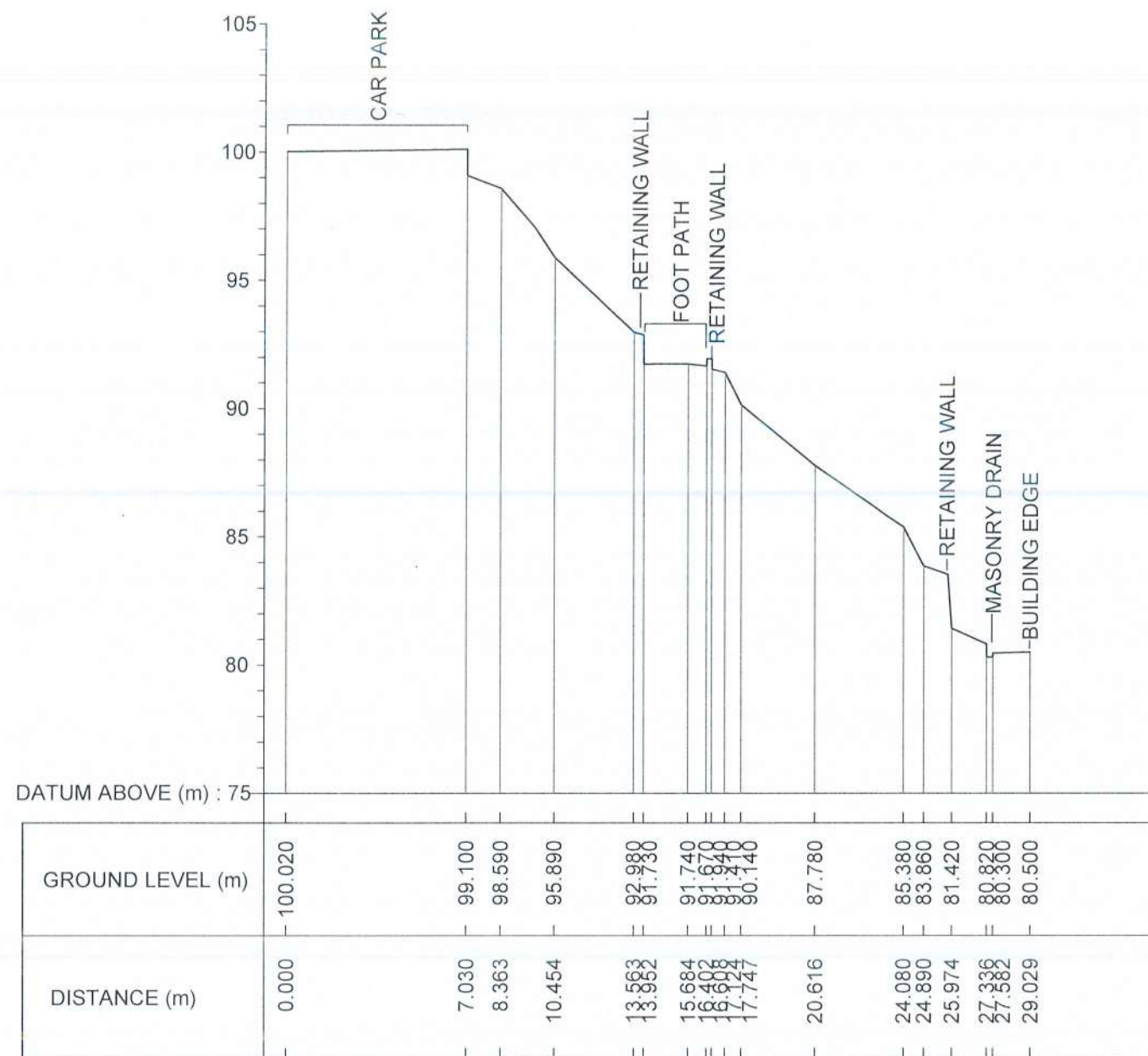


SECTION 3

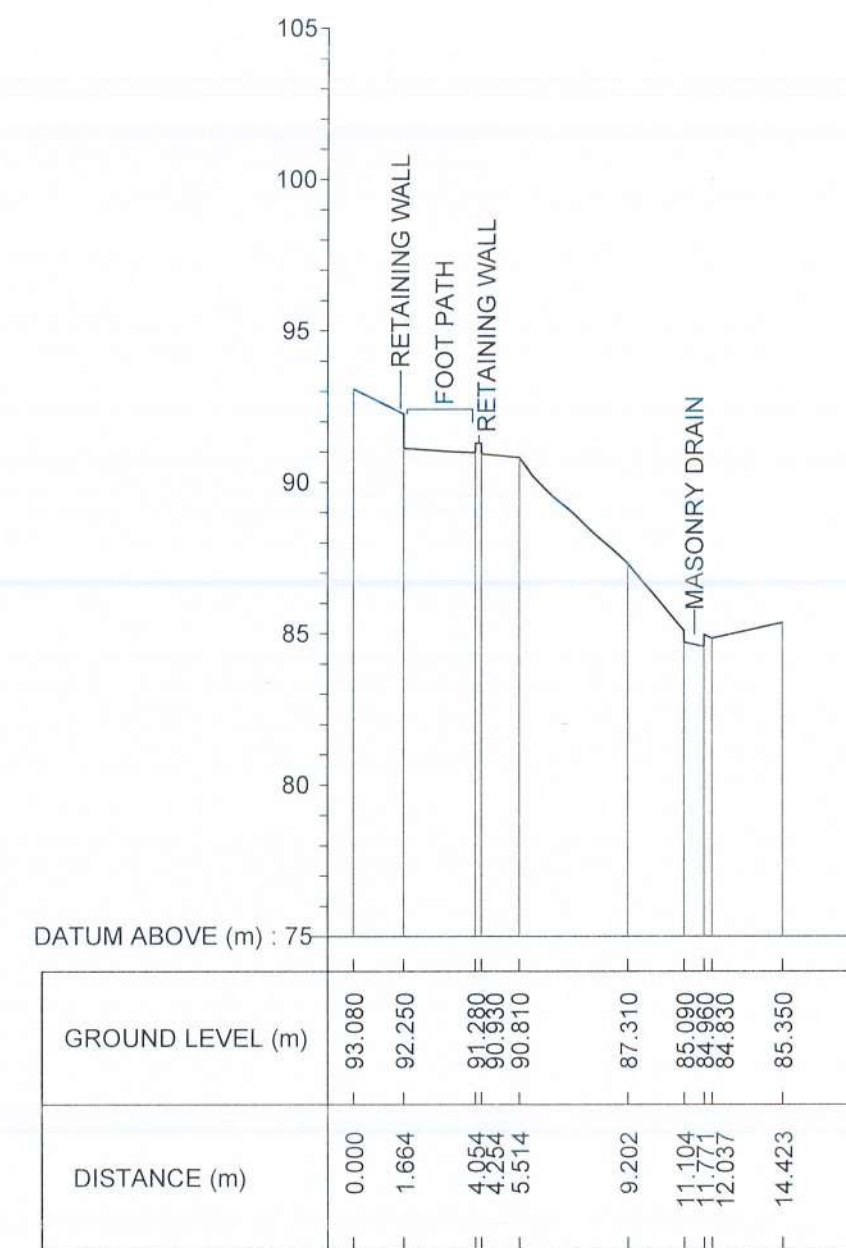


SECTION 4

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									SCALE 1:250			DATE	27.04.2026		
									PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L1/DR 02b			REVISION 00			



SECTION 5



SECTION 6

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 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT BELOW THE CAR PARK OF PRINCIPAL'S QUARTERS HILLWOOD COLLEGE - KANDY LOCATION - 1	EXISTING CROSS SECTIONS	SURVEYED	W. L. P. N. N. WIJESINGHE		
										CHECKED	R. J. K. P. N. RANATHUNGA	
								SCALE 1:250	DATE 27.04.2026			
								PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH III/232/L1/DR 02c	REVISION 00			



REFERENCE

- ELECTRIC POST (EP)
- MANSONRY DRAIN (MDn)
- PERMANENT BUILDING (P)
- RETAINING WALL (RW)
- SCAR
- TREE
- REFERENCE POINTS

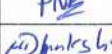
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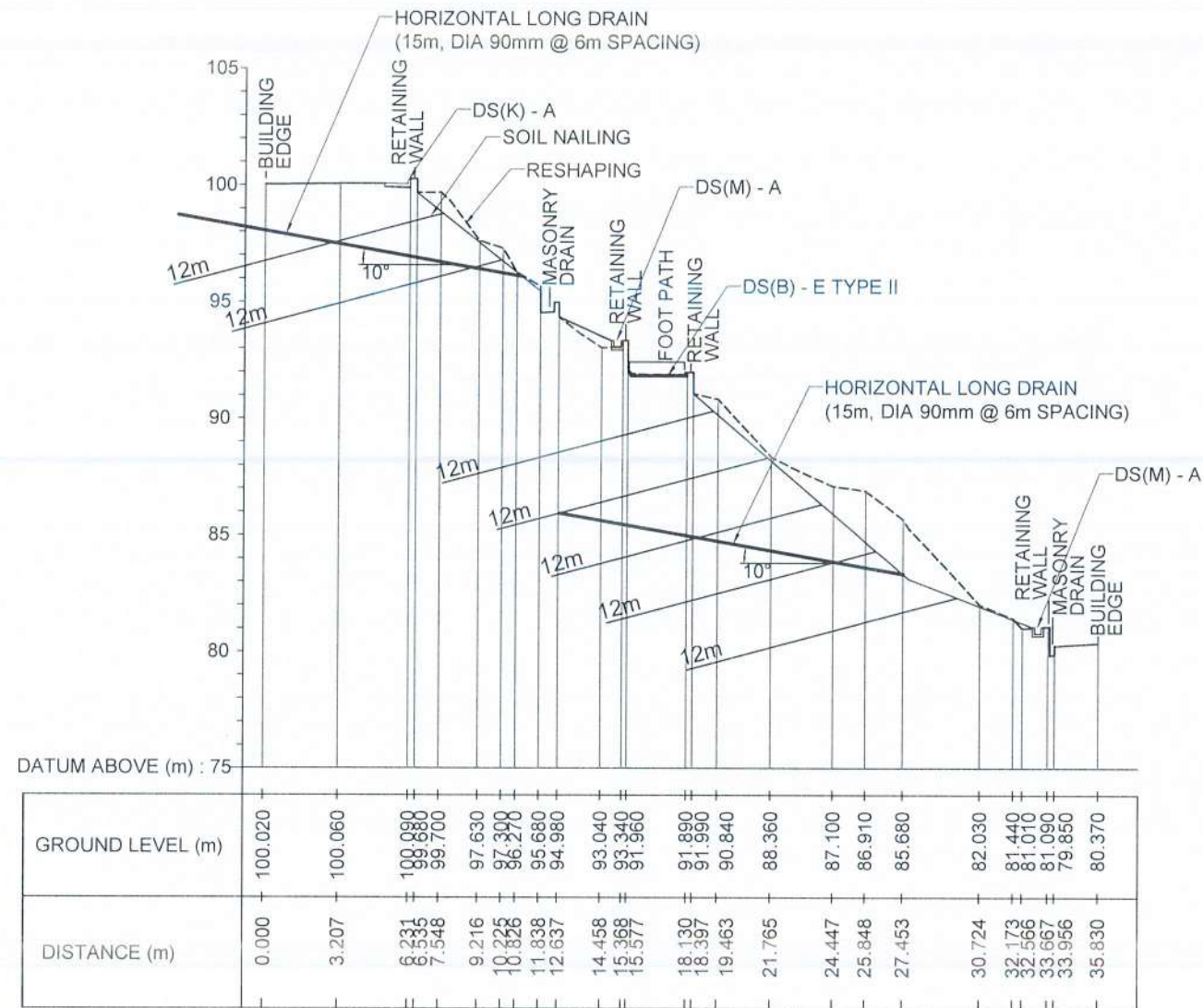
DESIGN NOTATION

- DS(K) - A
- DS(B) - E TYPE II
- DS(M) - A
- L WALL (3m)
- CONCRETE RETAINING WALL (1.5m)
- SOIL NAILING AREA
- RESHAPING AND TURFING

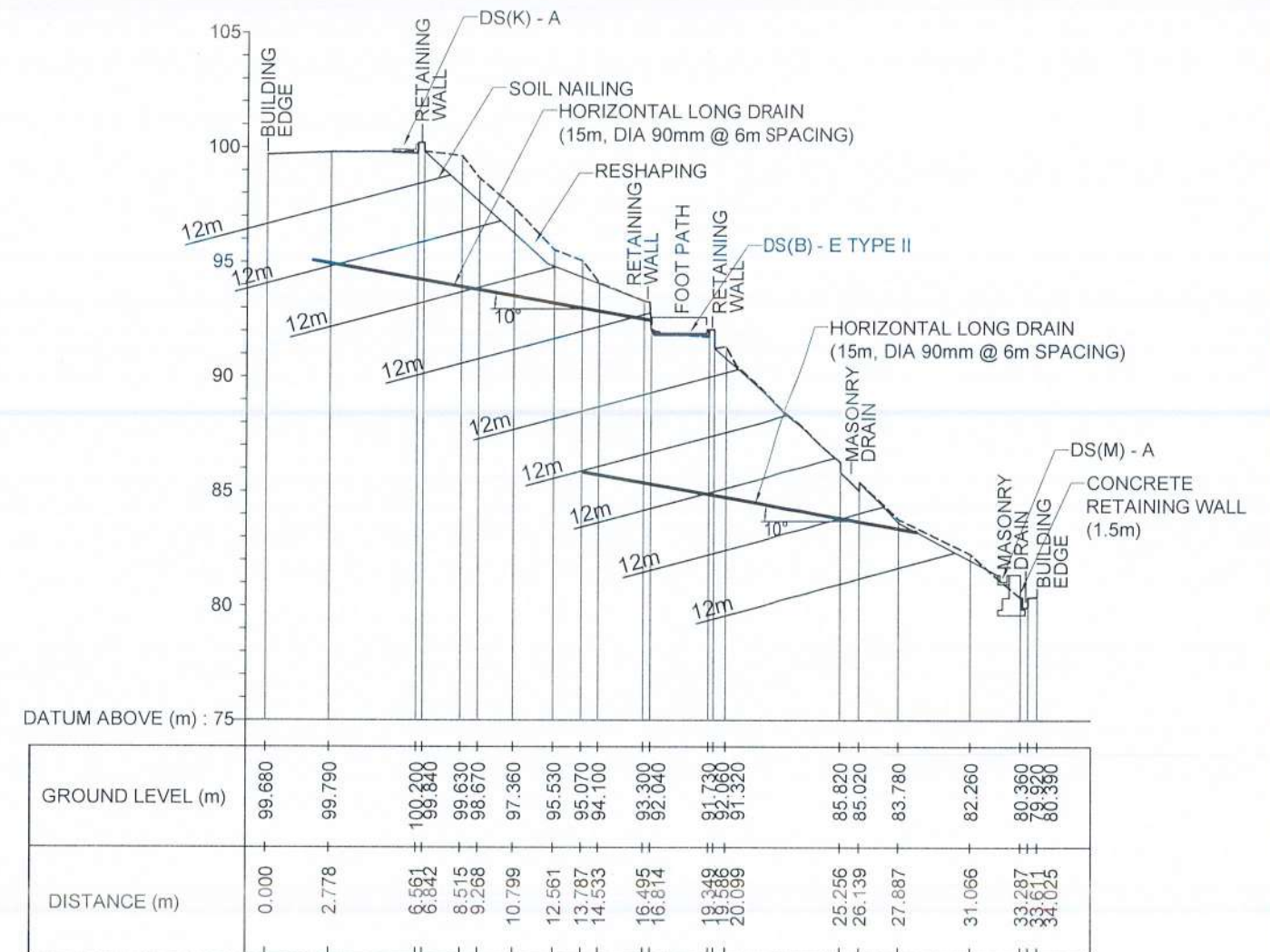
NOTES

- UNSTABLE BOULDERS AND DEBRIS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
- SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
- PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
- LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.
- LOCATION OF THE HORIZONTAL DRAINS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.

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								DESIGNED	R. J. K. P. N. RANATHUNGA	
								CHECKED	I. A. N. D. IDIRIMANNA	
								RECOMMENDED	PROF. S. A. S. KULATHILAKA	
								APPROVED	ENG. (DR). SANCHITHA JAYAKODY	

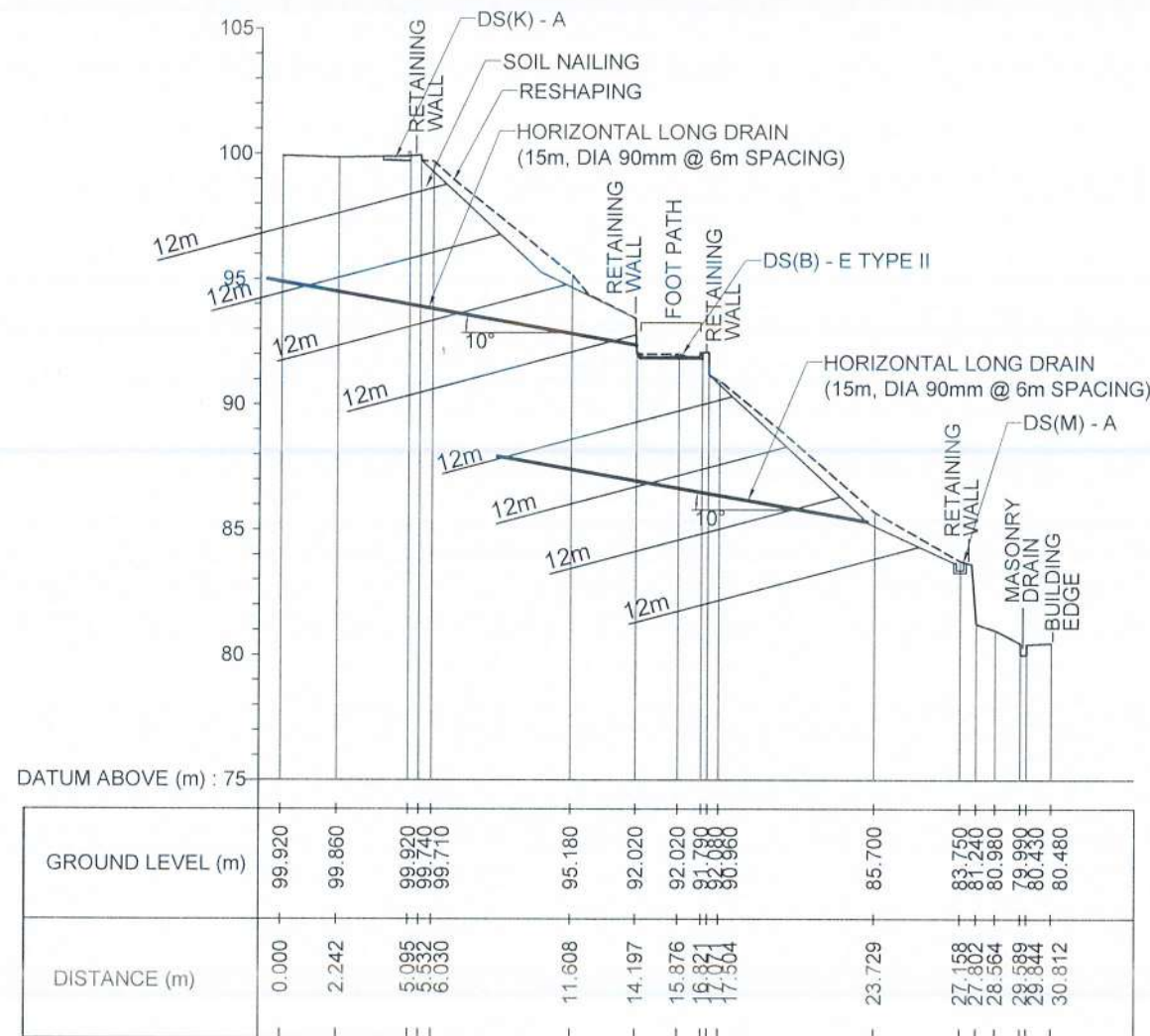


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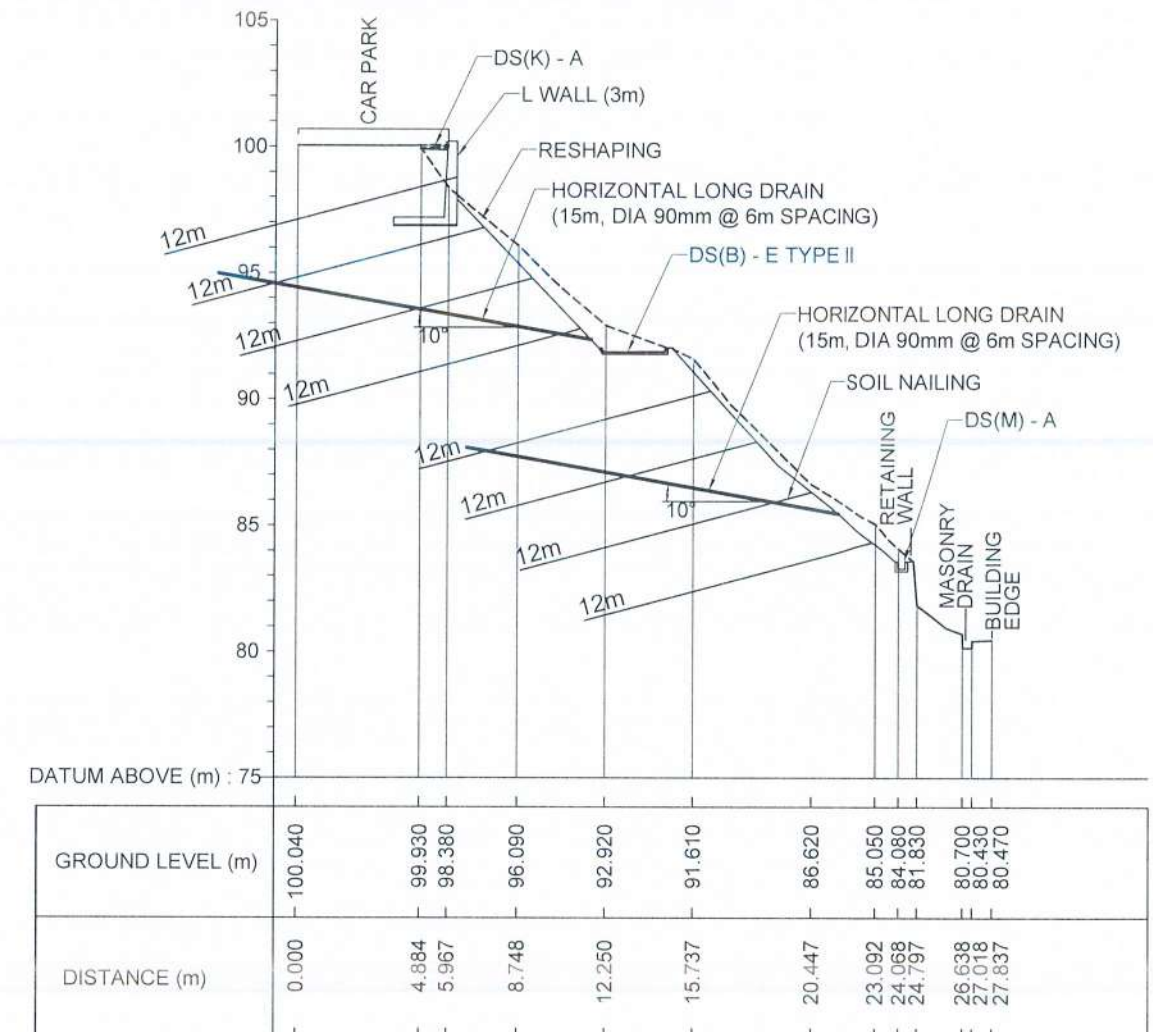


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									SCALE 1:300DATE27.04.2026			RECOMMENDED	PROF. S. A. S. KULATHILAKA		
									PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L1/DR 04a			REVISION 00	APPROVED	ENG. (DR). SANCHITHA JAYAKODY	

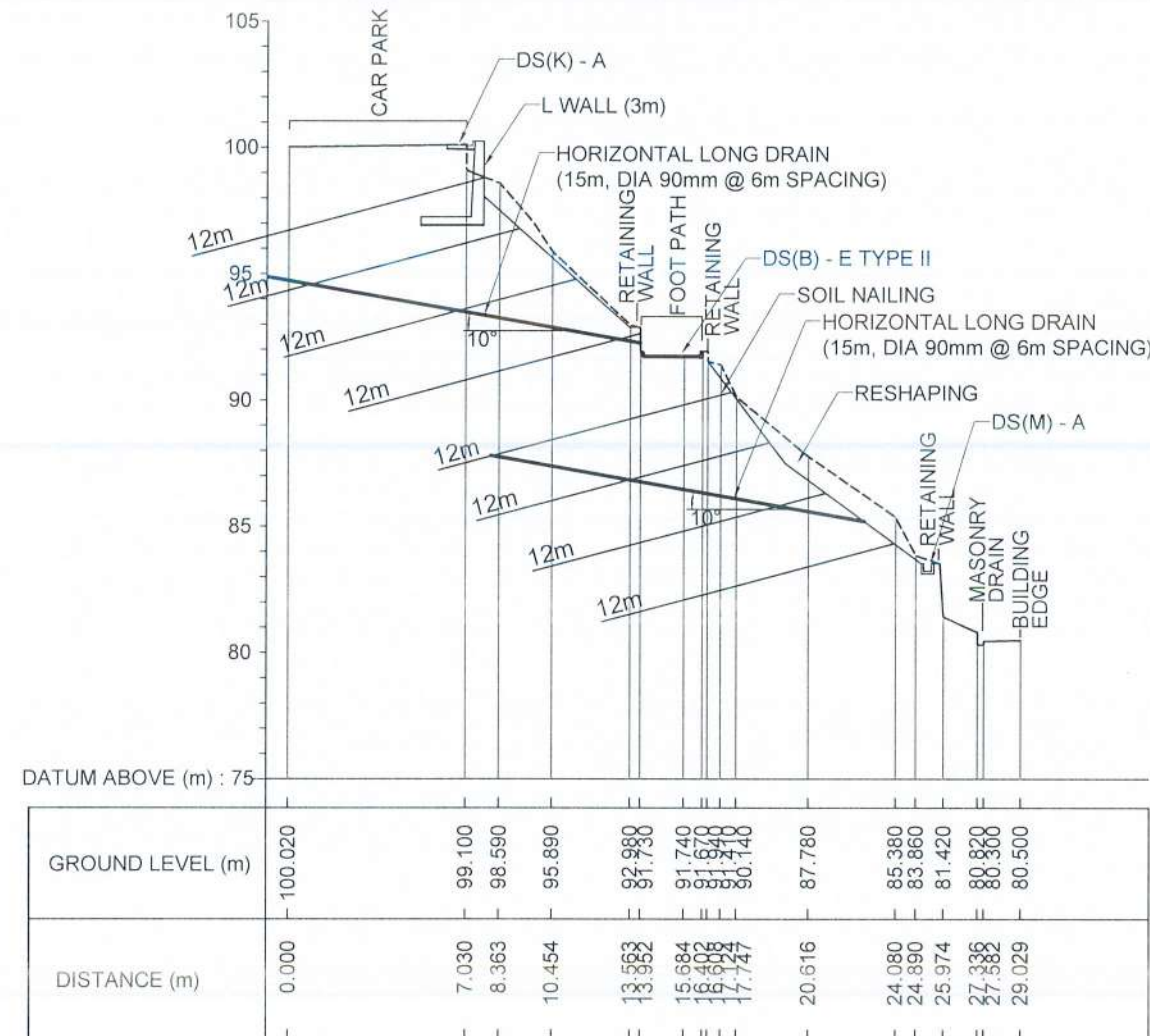


SECTION 3

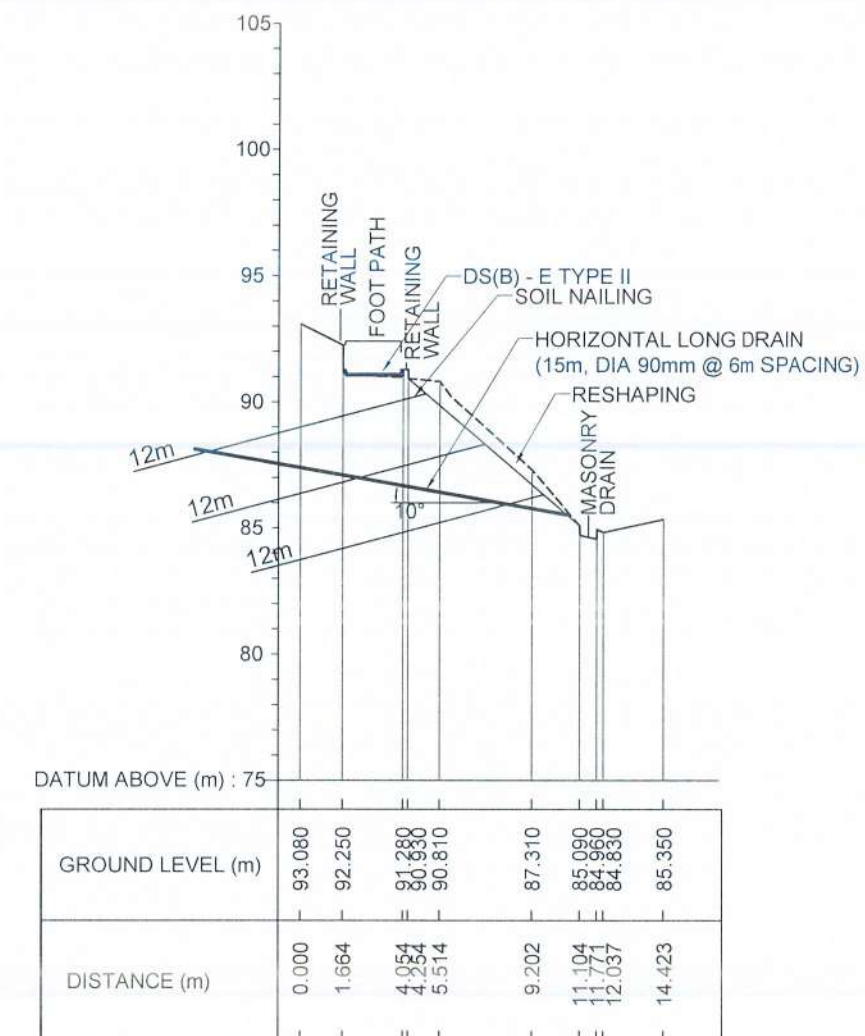


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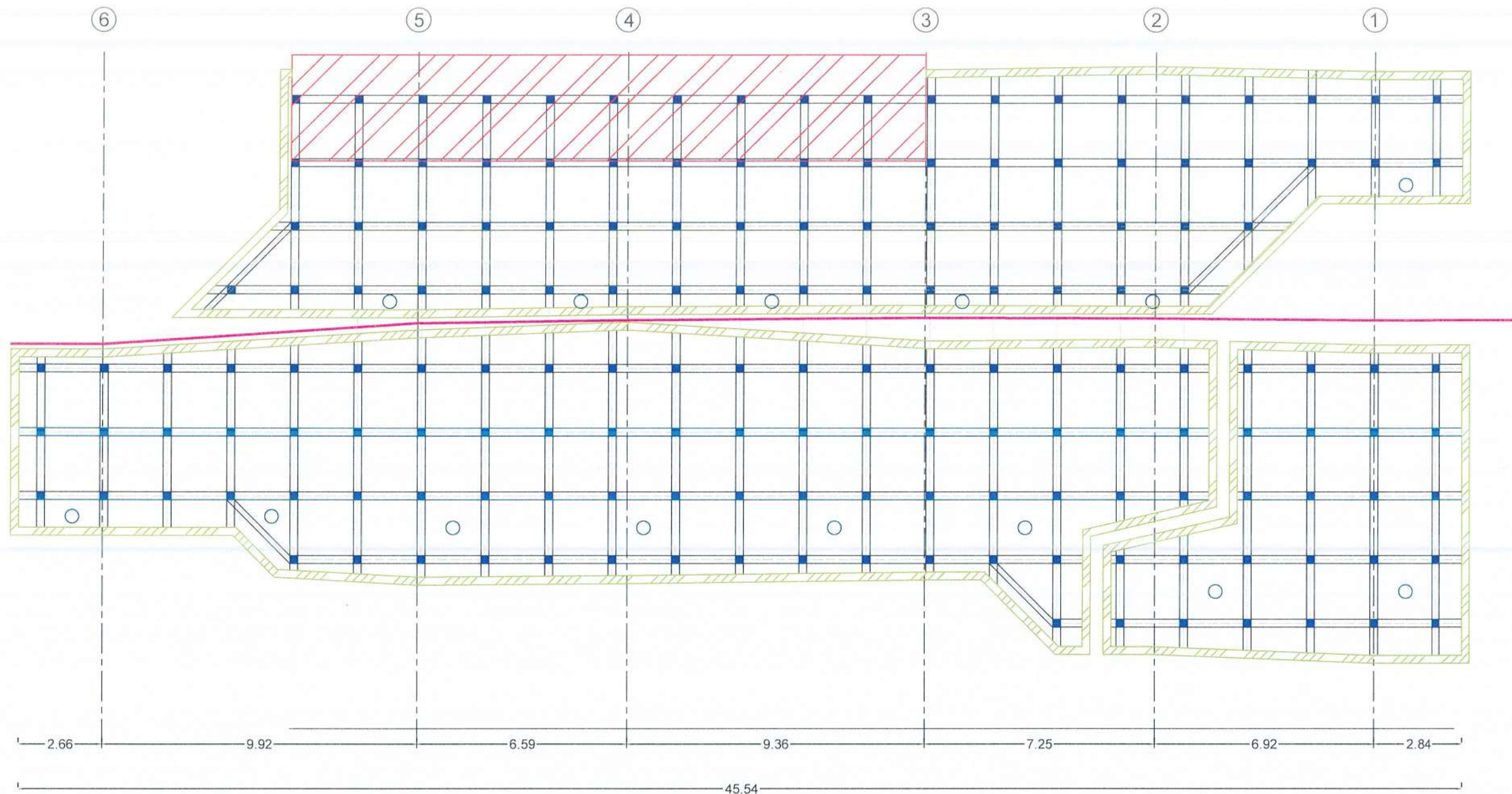


SECTION 5



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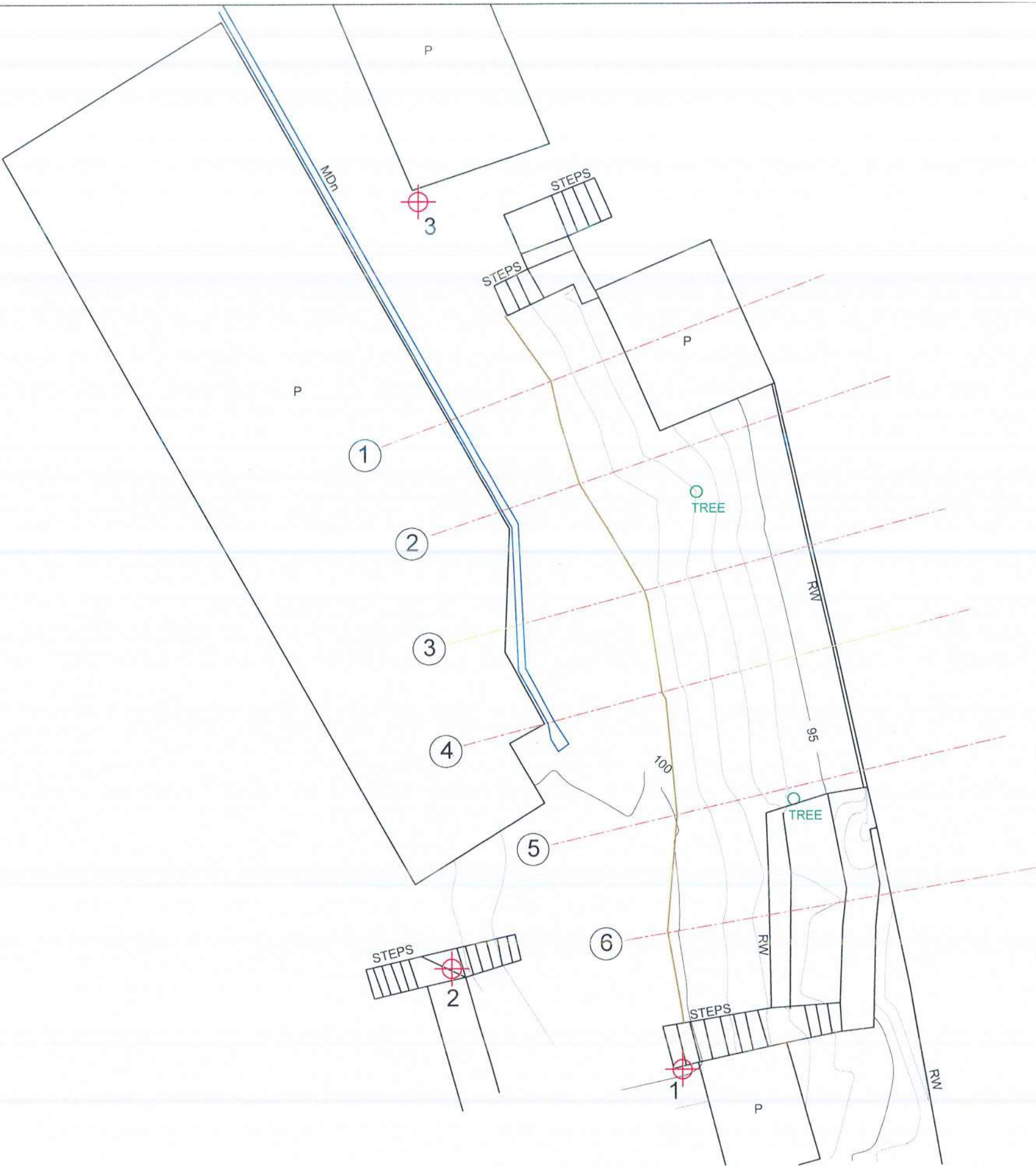


FRONT ELEVATION OF SOIL NAILING AREA

LEGEND

- SOIL NAILING
 - HORIZONTAL LONG DRAIN
 - ▨ L- WALL
 - ▨ BOUNDARY BEAM
 - BERM DRAIN
- TOTAL SOIL NAIL LENGTH = 12 m
 NO OF SOIL NAIL = 165
 REINFORCEMENT DIAMETER = 32 mm
 DIAMETER OF DRILLED HOLE = 125 mm
 NAIL SPACING = 2m (BW)
- HORIZONTAL LONG DRAIN LENGTH = 15 m
 NO'S OF LONG DRAIN = 14
 DIAMETER = 90 mm
 SPACING = 6 m

EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE				DESCRIPTION		NAME		SIGNATURE	
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																		DESIGNED		R. J. K. P. N. RANATHUNGA			
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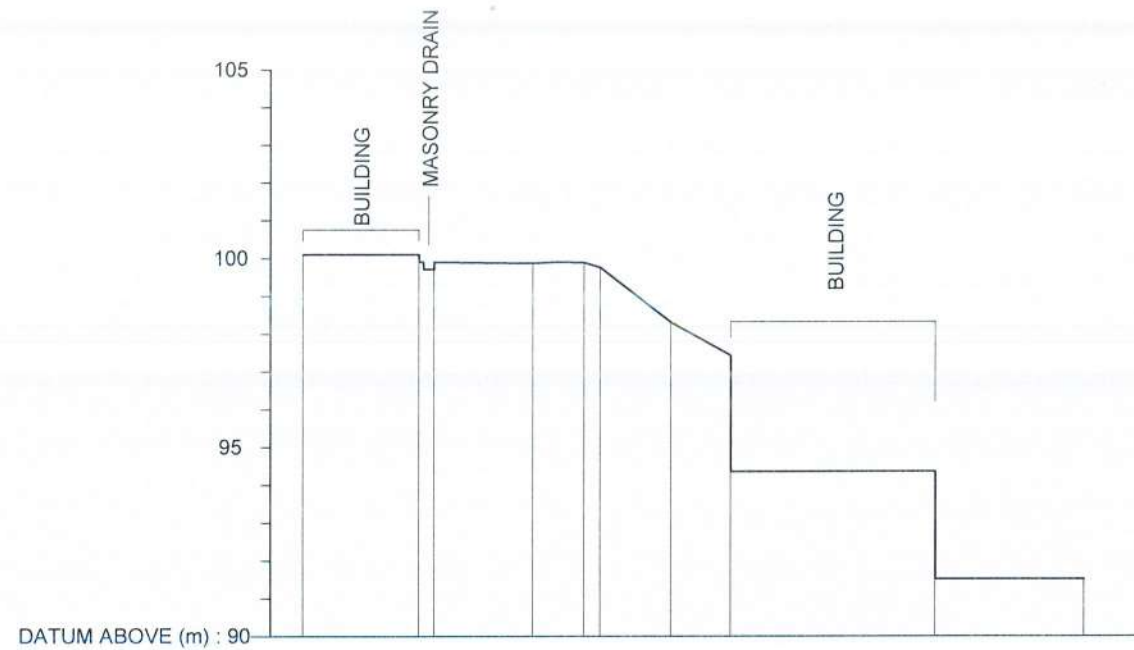


REFERENCE

- BANK TOP
- MASONRY DRAIN MDn
- PERMANENT BUILDING P
- RETAINING WALL RW
- SCAR
- SECTIONS
- TREE
- REFERENCE POINTS

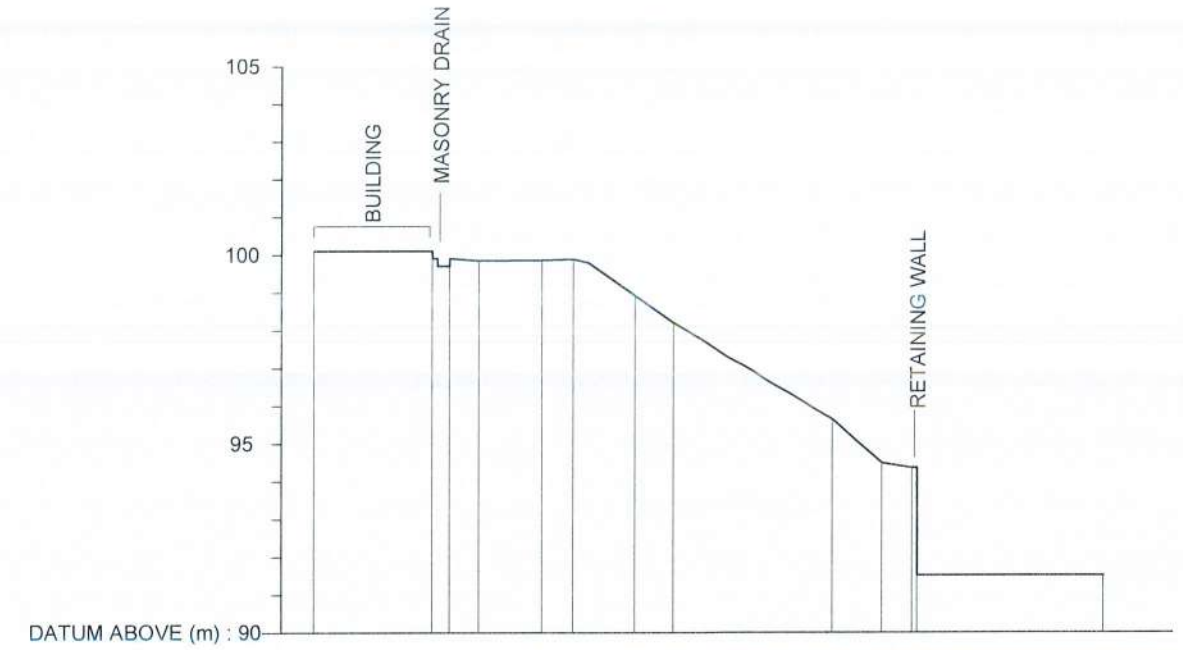
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								HILLWOOD COLLEGE				
								KANDY		SCALE 1:200	DATE 27.04.2026	
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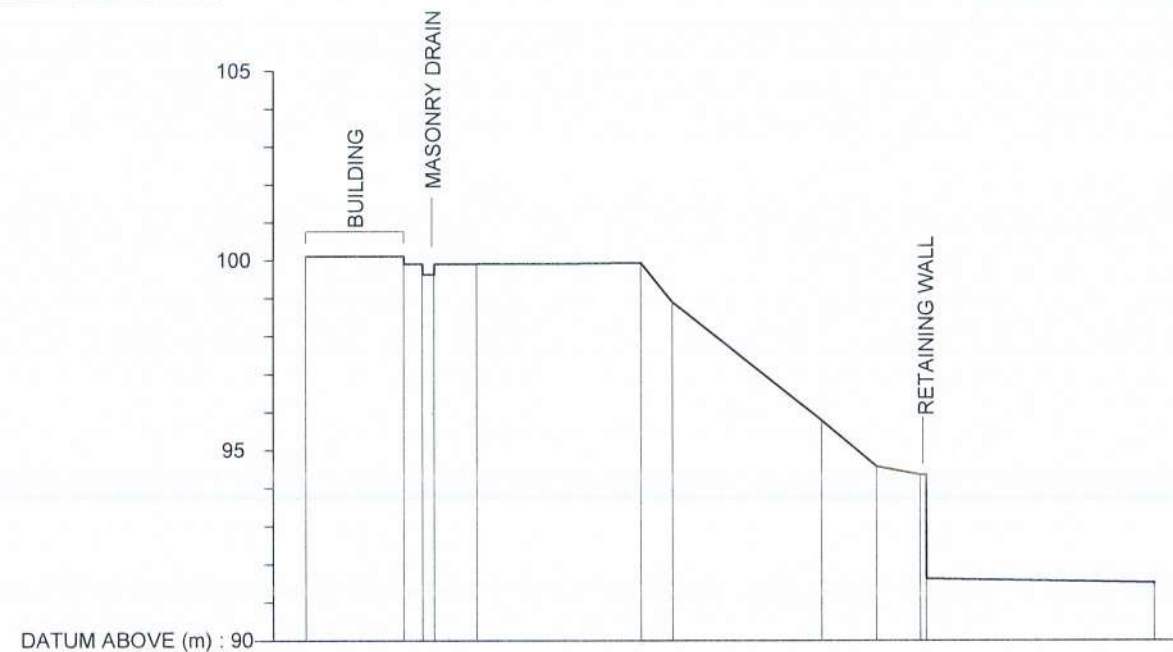
GROUND LEVEL (m)	100.100	99.900	99.710	99.870	99.890	99.760	98.300	97.430	94.360	91.510
DISTANCE (m)	0.000	3.069	3.470	6.099	7.455	7.884	9.741	11.316	16.716	20.640

CS 1



GROUND LEVEL (m)	100.100	99.900	99.700	99.840	99.860	99.890	98.920	98.200	95.640	94.480	94.360	91.510
DISTANCE (m)	0.000	3.137	3.593	4.374	6.029	6.849	8.497	9.530	13.853	15.178	15.990	21.136

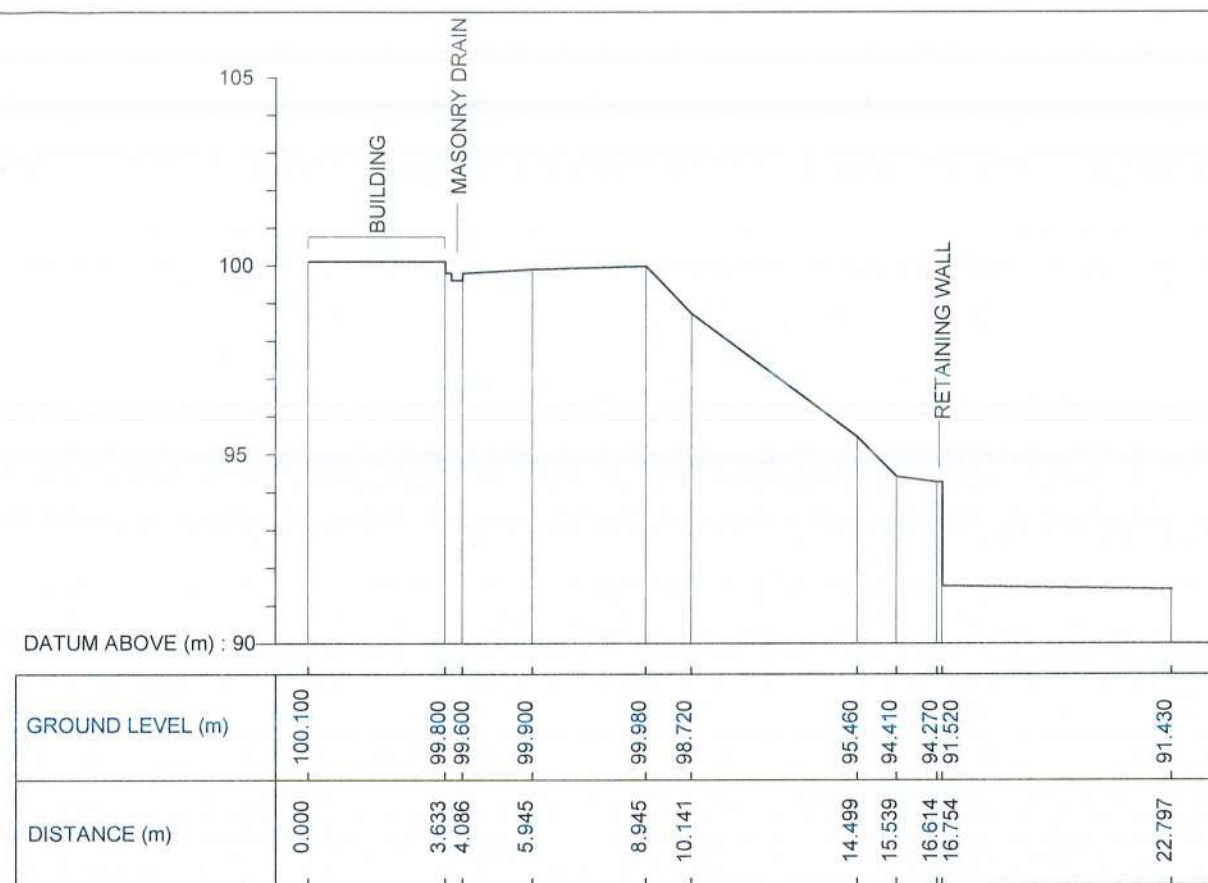
CS 2



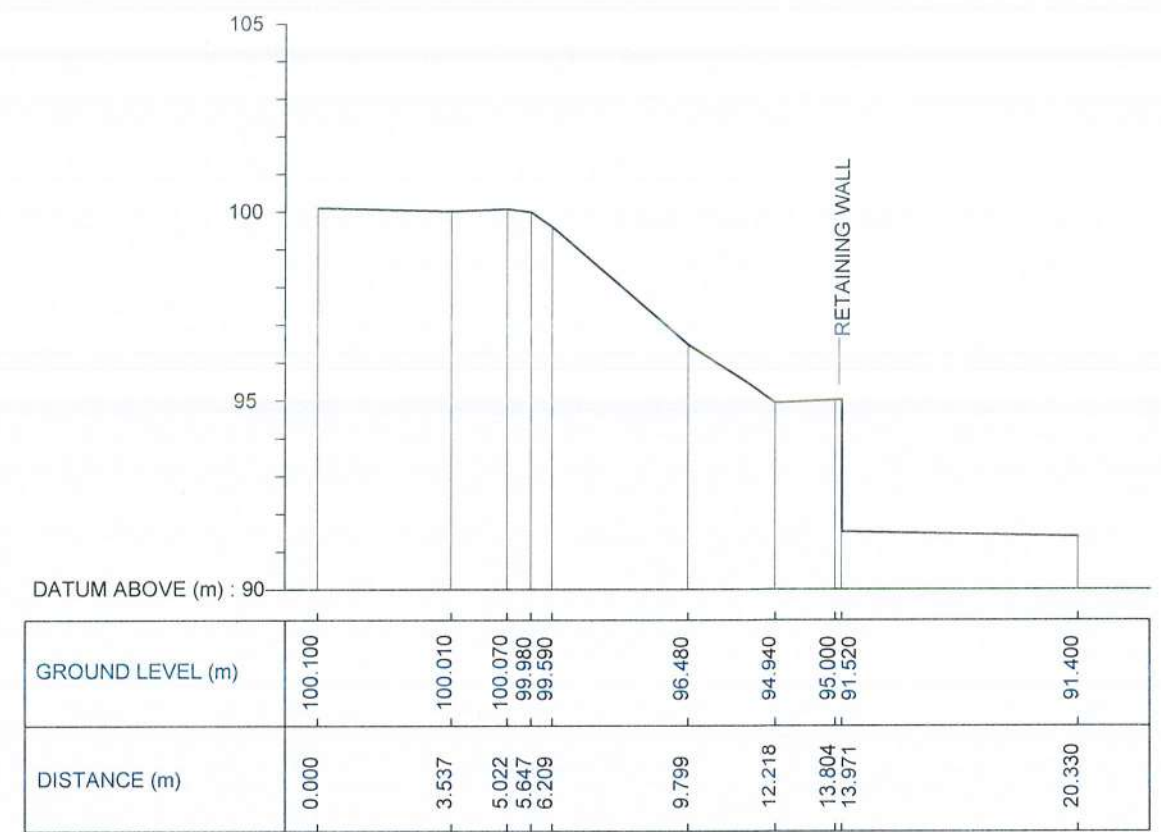
GROUND LEVEL (m)	100.100	99.900	99.820	99.900	99.910	99.930	98.890	95.780	94.570	94.350	91.520	91.510
DISTANCE (m)	0.000	2.593	3.080	3.390	4.521	8.862	9.690	13.645	15.095	16.255	16.404	22.430

CS 3

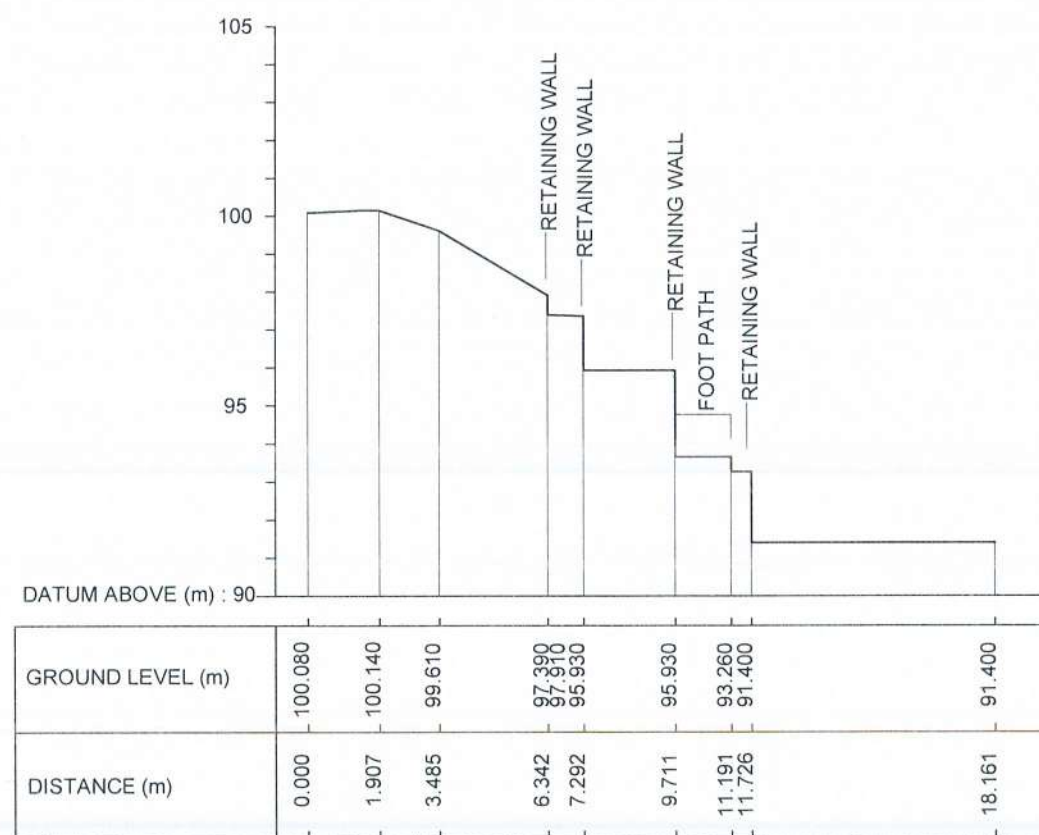
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 02	TITLE EXISTING CROSS SECTIONS	DESCRIPTION	NAME	SIGNATURE
								SURVEYED	W.L.P.N.N. WIJESINGHE	
								CHECKED	R.J.K.P.N. RANATHUNGA	
				SCALE 1:200			DATE 27.04.2026			
				PROJECT / DRAWING No.			REVISION			
		RLVMP/WORKS/NCB/PH II/232/L02/DR 02a								



CS 4

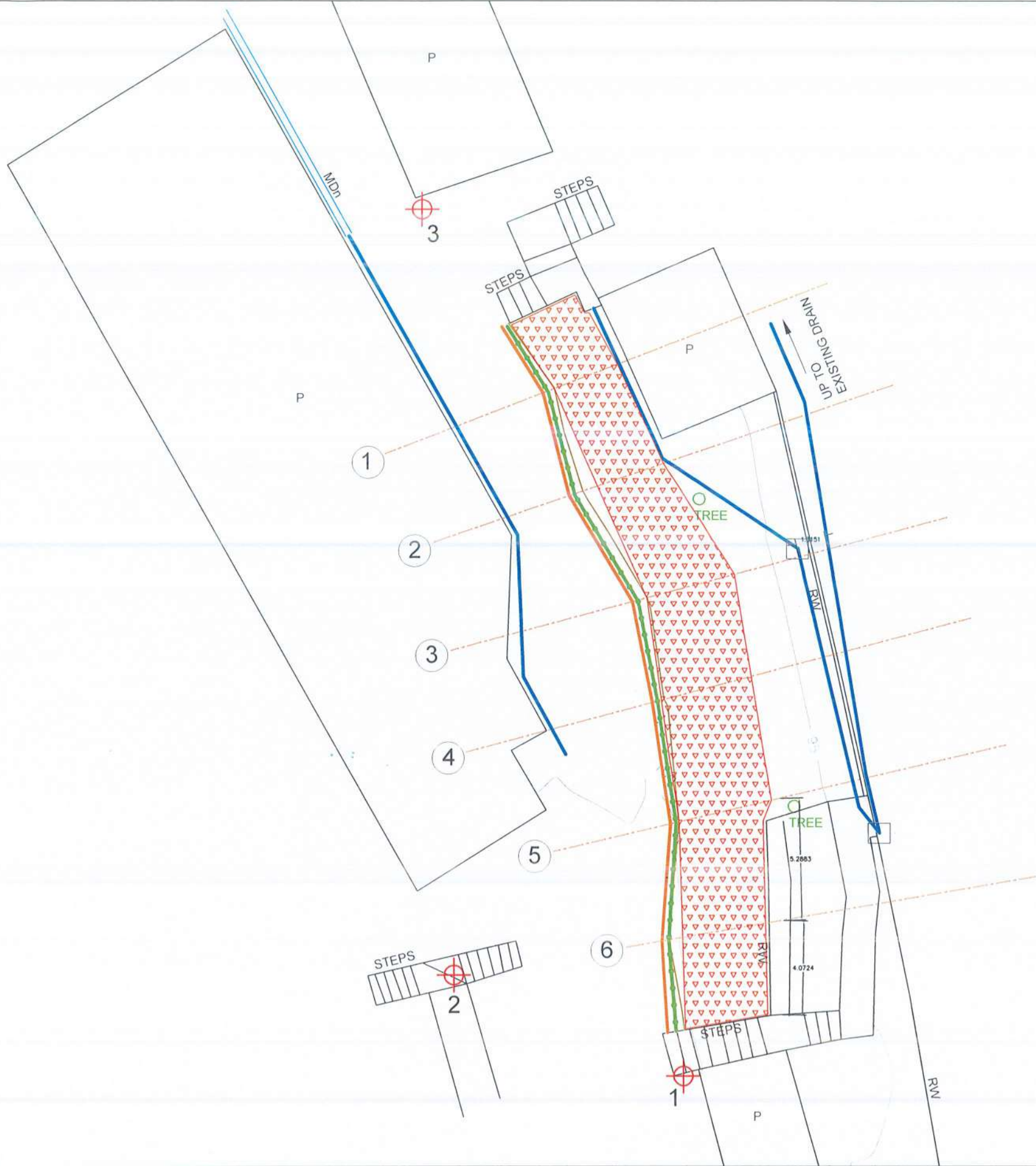


CS 5



CS 6

 EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGNER NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 02	TITLE EXISTING CROSS SECTIONS SCALE 1:200 DATE 27.04.2026 PROJECT / DRAWING No. RLVMMP/WORKS/INCB/PH II/232/L02/DR 02b REVISION	DESCRIPTION	NAME	SIGNATURE
								SURVEYED	W.L.P.N.N. WIJESINGHE	
								CHECKED	R.J.K.P.N. RANATHUNGA	



REFERENCE

	BANK TOP	
	MASONRY DRAIN	MDn
	PERMANENT BUILDING	P
	RETAINING WALL	RW
	SCAR	
	SECTIONS	
	TREE	
	REFERENCE POINTS	

N	E	Z	PN
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2993.427	3991.138	102.433	2
3026.721	3989.741	100	3

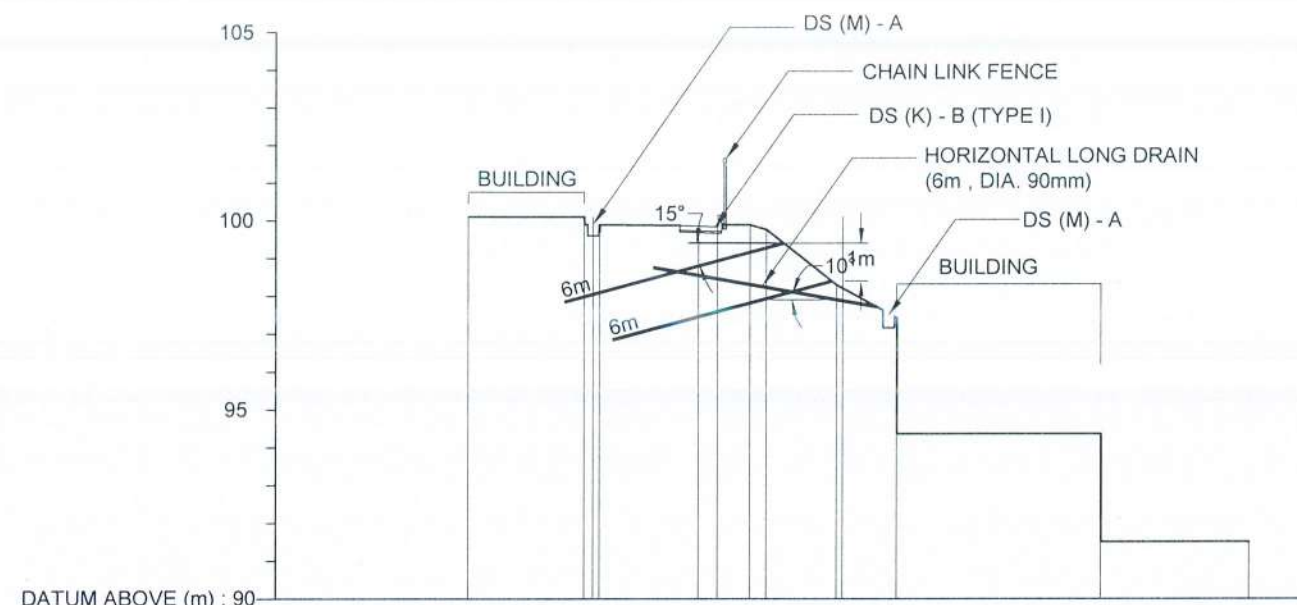
DESIGN NOTATION

	-	DS (K) - B
	-	DS (M) - A
	-	CHAIN LINK FENCE
	-	SOIL NAILING AREA
	-	CATCH PIT

NOTES

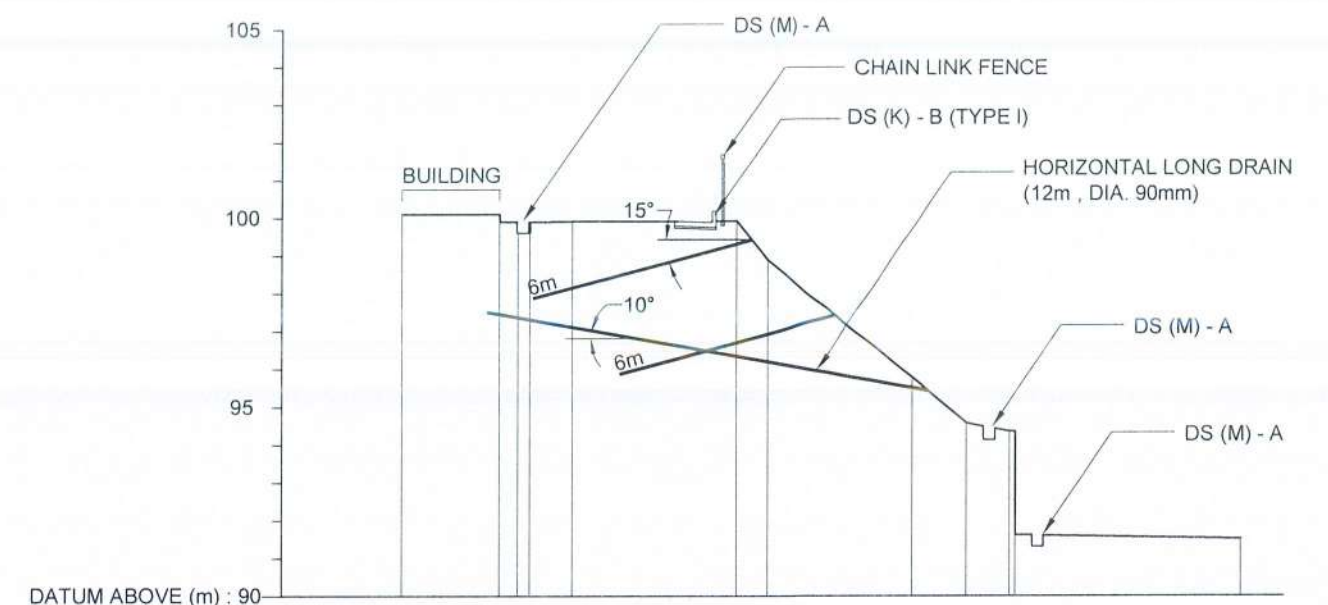
- 1 SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION
- 2 UNSTABLE BOULDERS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER
- 3 PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER
- 4 LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION

 EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGNER NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 02	TITLE PLAN VIEW OF PROPOSED MITIGATION MEASURES	DESCRIPTION	NAME	SIGNATURE
								DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



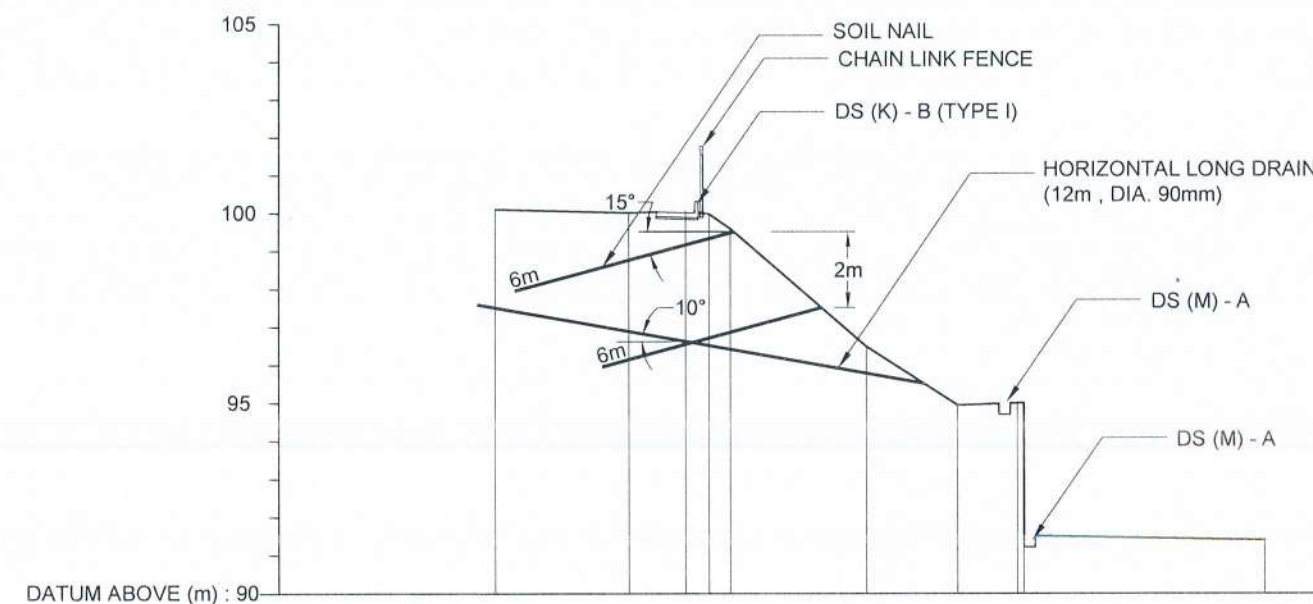
GROUND LEVEL (m)	100.100	99.900	99.710	99.870	99.890	99.760	98.300	97.430	94.360	91.510
DISTANCE (m)	0.000	3.069	3.470	6.099	7.455	7.884	9.741	11.316	16.716	20.640

CS 1



GROUND LEVEL (m)	100.100	99.900	99.820	99.900	99.910	99.930	98.890	95.780	94.570	94.350	91.620	91.510
DISTANCE (m)	0.000	2.593	3.080	3.390	4.521	8.862	9.690	13.645	15.095	16.255	16.404	22.430

CS 3



GROUND LEVEL (m)	100.100	100.010	100.070	99.980	99.590	96.480	94.940	95.000	91.520	91.400
DISTANCE (m)	0.000	3.537	5.022	5.647	6.209	9.799	12.218	13.804	13.971	20.330

CS 5

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 02

TITLE

CROSS SECTION OF
PROPOSED MITIGATION MEASURES

SCALE

1:200

DATE

27.04.2026

PROJECT / DRAWING No.

RLVMMP/WORKS/NCB/PH II/232/L02/DR 04

REVISION

DESCRIPTION

NAME

SIGNATURE

DRAWN

K.M.D. NISHANTHI

[Signature]

DESIGNED

R.J.K.P.N. RANATHUNGA

[Signature]

CHECKED

I.A.N.D. IDIRIMANNA

[Signature]

RECOMMENDED

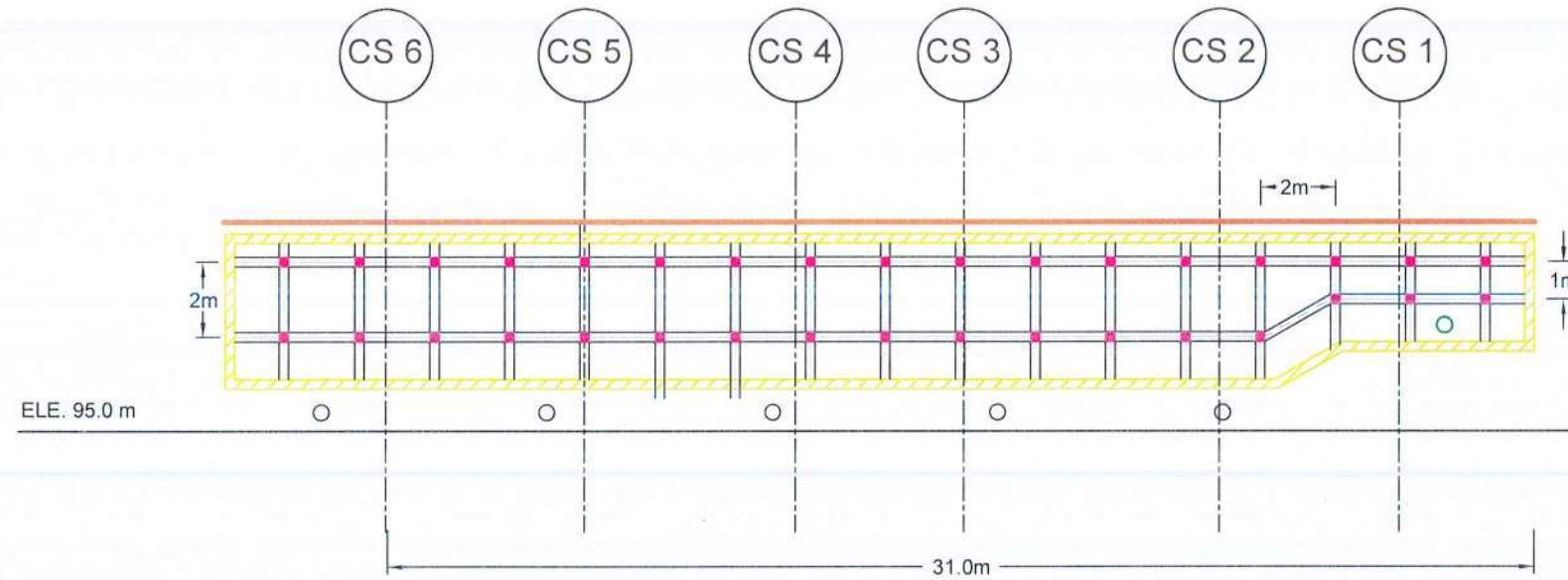
PROF. S.A.S. KULATHILAKA

[Signature]

APPROVED

ENG. (DR.) SANCHITHA JAYAKODY

[Signature]



FRONT ELEVATION OF SOIL NAILING AREA

LEGEND

- SOIL NAILING
- TOTAL SOIL NAIL LENGTH = 6m
NO OF SOIL NAIL = 34
REINFORCEMENT DIAMETER = 32 mm
DIAMETER OF DRILLED HOLE = 125mm
NAIL SPACING = AS SHOWN
- HORIZONTAL LONG DRAIN
- HORIZONTAL LONG DRAIN LENGTH = 15 m
NO'S OF LONG DRAIN = 05
DIAMETER = 90 mm
SPACING = 06 m
- HORIZONTAL LONG DRAIN
- HORIZONTAL LONG DRAIN LENGTH = 6 m
NO'S OF LONG DRAIN = 01
DIAMETER = 90 mm
SPACING = 06 m
- DS (K) - B
- BOUNDARY BEAM

EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE		DESCRIPTION		NAME		SIGNATURE	
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 02		FRONT ELEVATION OF PROPOSED MITIGATION MEASURES		DRAWN		K.M.D. NISHANTHI			
																DESIGNED		R.J.K.P.N. RANATHUNGA			
																CHECKED		I.A.N.D. IDIRIMANNA			
														SCALE 1:200		DATE 27.04.2026		RECOMMENDED		PROF. S.A.S. KULATHILAKA	
														PROJECT / DRAWING No.		REVISION		APPROVED		ENG. (DR.) SANCHITHA JAYAKODY	
														RLVMP/WORKS/NCB/PH II/232/L02/DR 05							



REFERENCE

EARTH DRAIN (EDn)

ELECTRIC POST (EP)

MANSONRY DRAIN (MDn)

PERMANENT BUILDING (P)

RETAINING WALL (RW)

SCAR

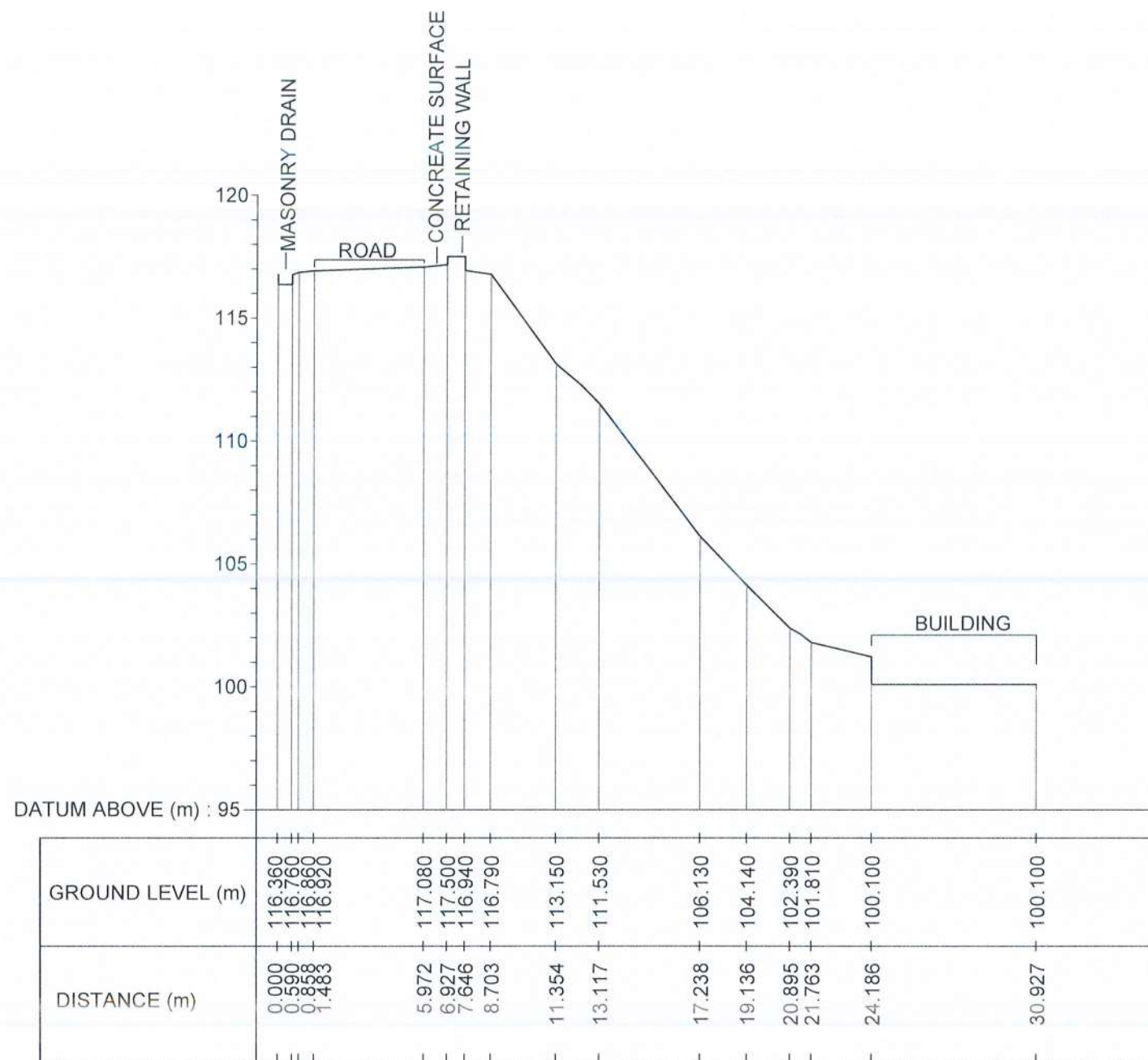
TELEPHONE POST (TP)

TREE

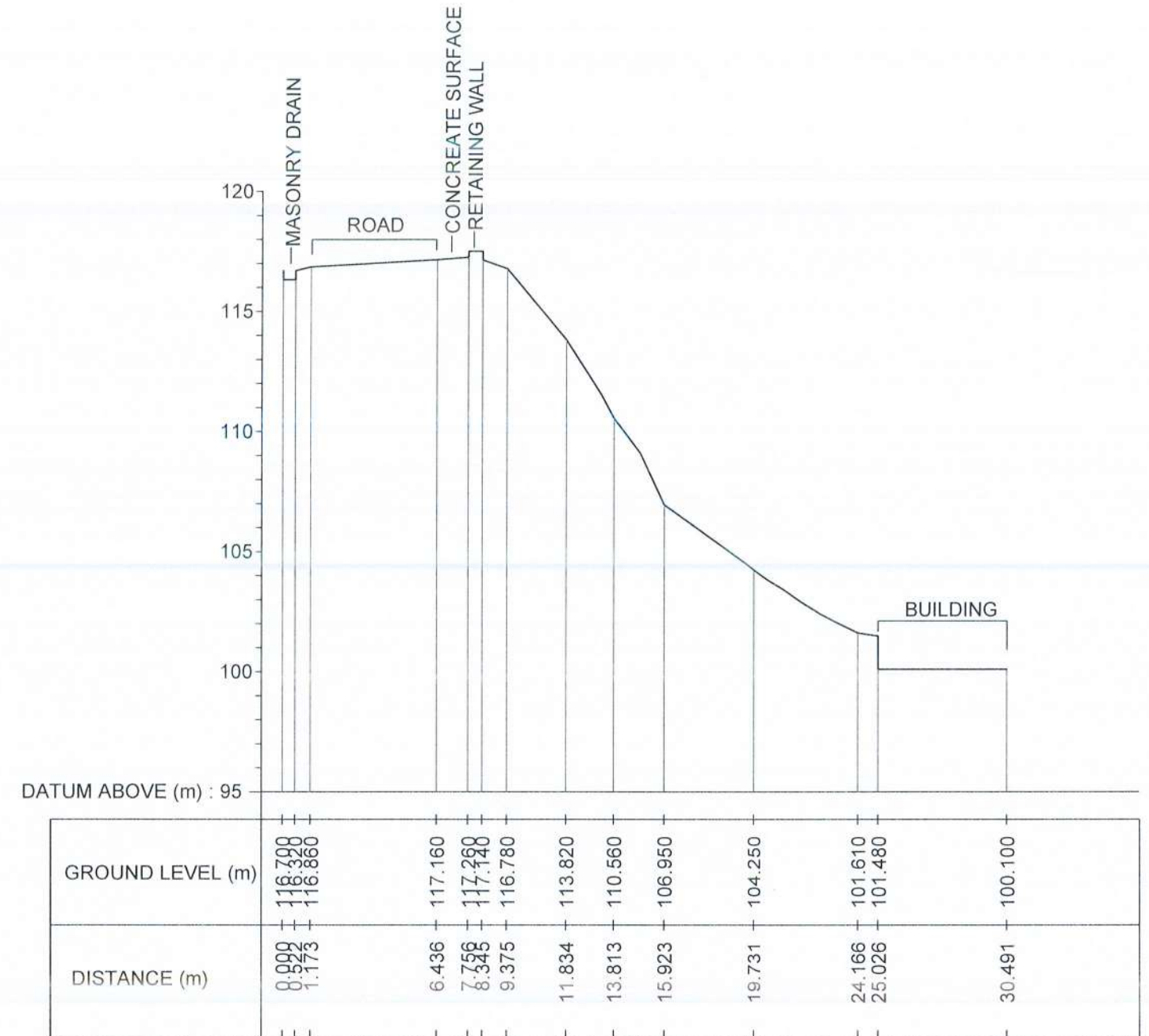
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2993.43	3991.14	102.433	2
3026.72	3989.74	100	3

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION - 3	TITLE SURVEY PLAN			DESCRIPTION	NAME	SIGNATURE	
							SCALE	1:250	DATE	27.04.2026			
							PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L3/DR 01			REVISION 00			

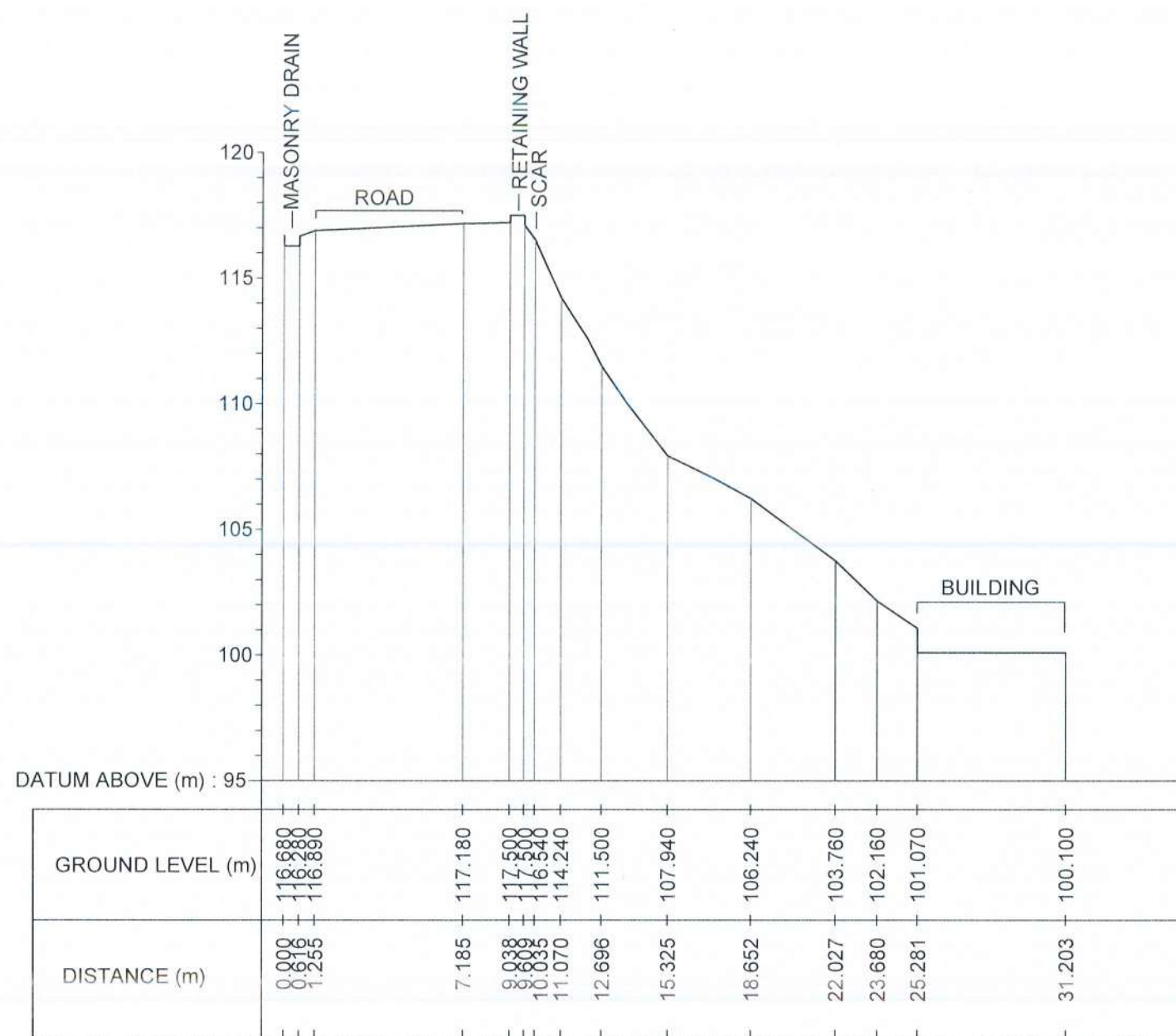


SECTION 1

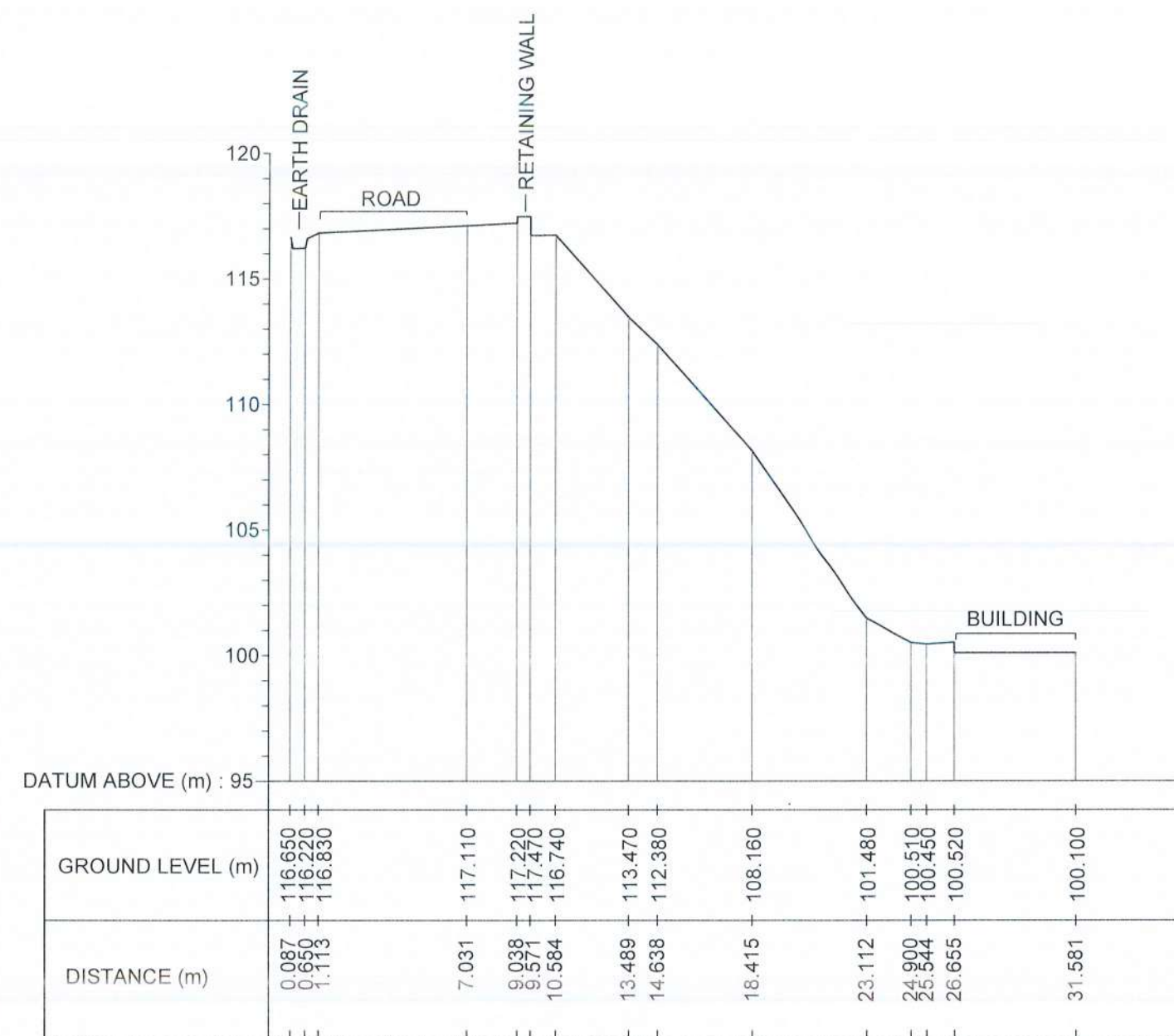


SECTION 2

EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE				DESCRIPTION		NAME		SIGNATURE	
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION -3		EXISTING CROSS SECTIONS				SURVEYED		W. L. P. N. N. WIJESINGHE			
																		CHECKED		R. J. K. P. N. RANATHUNGA			
														SCALE		1:250		DATE		27.04.2026			
														PROJECT / DRAWING No.		RLVMMP/WORKS/NCB/PH III/232/L3/DR 02a		REVISION		00			

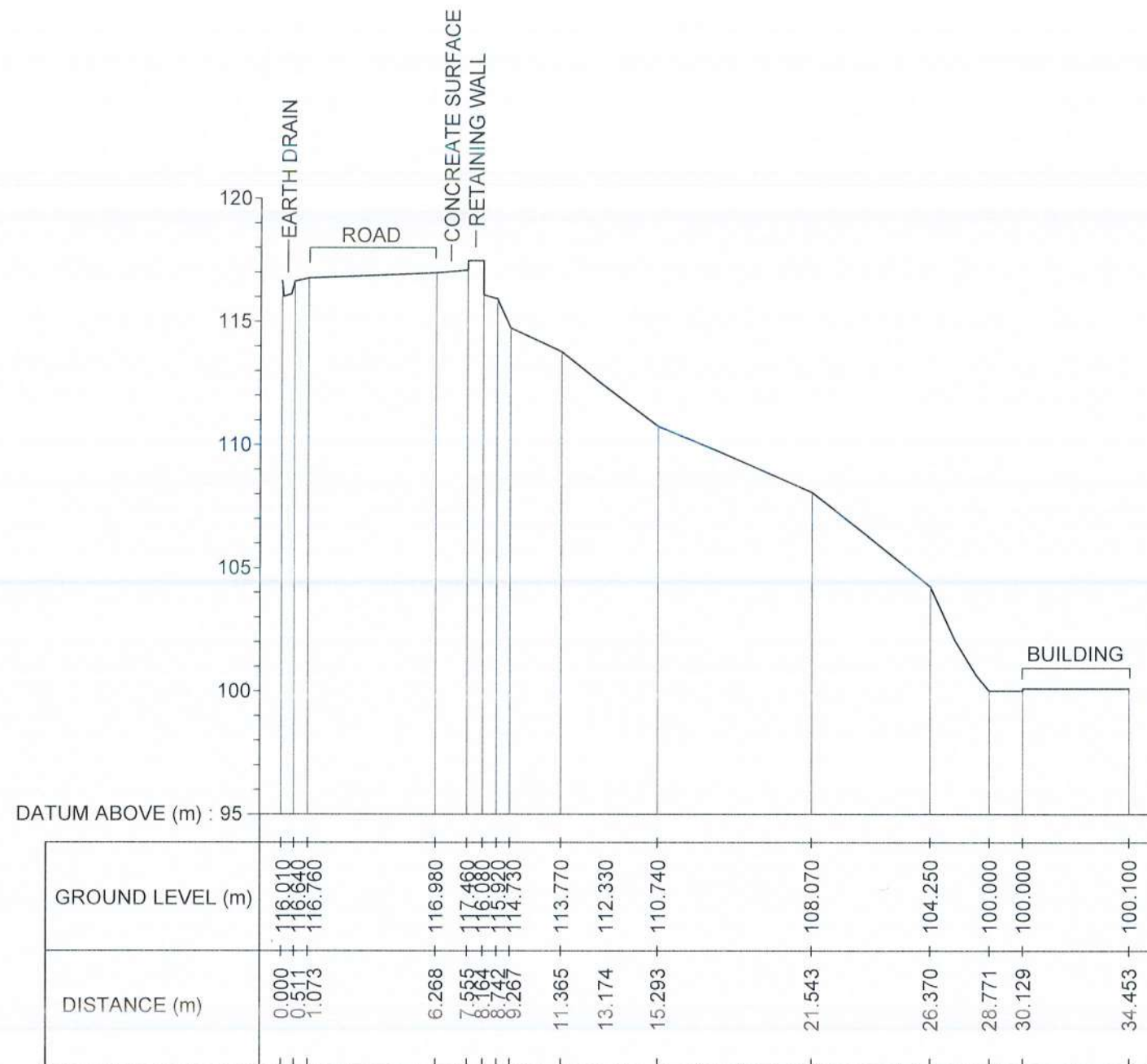


SECTION 3



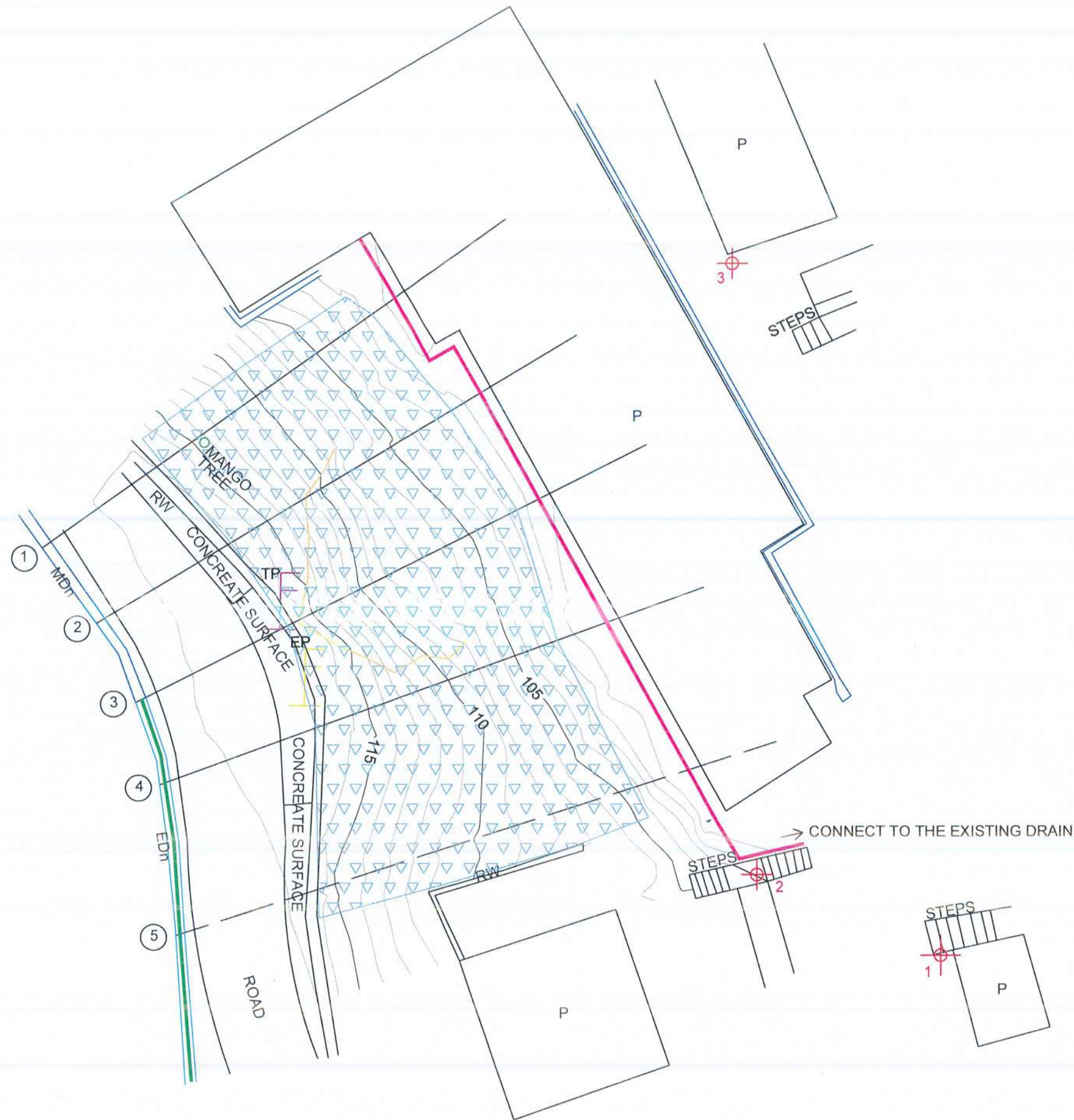
SECTION 4

EMPLOYER		DESIGNER		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE	
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05							REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION -3	EXISTING CROSS SECTIONS			SURVEYED	W. L. P. N. N. WIJESINGHE	
												CHECKED	R. J. K. P. N. RANATHUNGA		
									SCALE 1:250		DATE	27.04.2026			
									PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L 3/DR 02b			REVISION 00			



SECTION 5

EMPLOYER		DESIGNER		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05						REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION - 3	EXISTING CROSS SECTIONS			SURVEYED	W. L. P. N. N. WIJESINGHE	
												CHECKED	R. J. K. P. N. RANATHUNGA	
									SCALE 1:250			DATE	27.04.2026	
									PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L3/DR 02c			REVISION 00		



REFERENCE

■	EARTH DRAIN (EDn)
■	ELECTRIC POST (EP)
■	MANSONRY DRAIN (MDn)
■	PERMANENT BUILDING (P)
■	RETAINING WALL (RW)
■	SCAR
■	TELEPHONE POST (TP)
●	TREE
+	REFERENCE POINTS

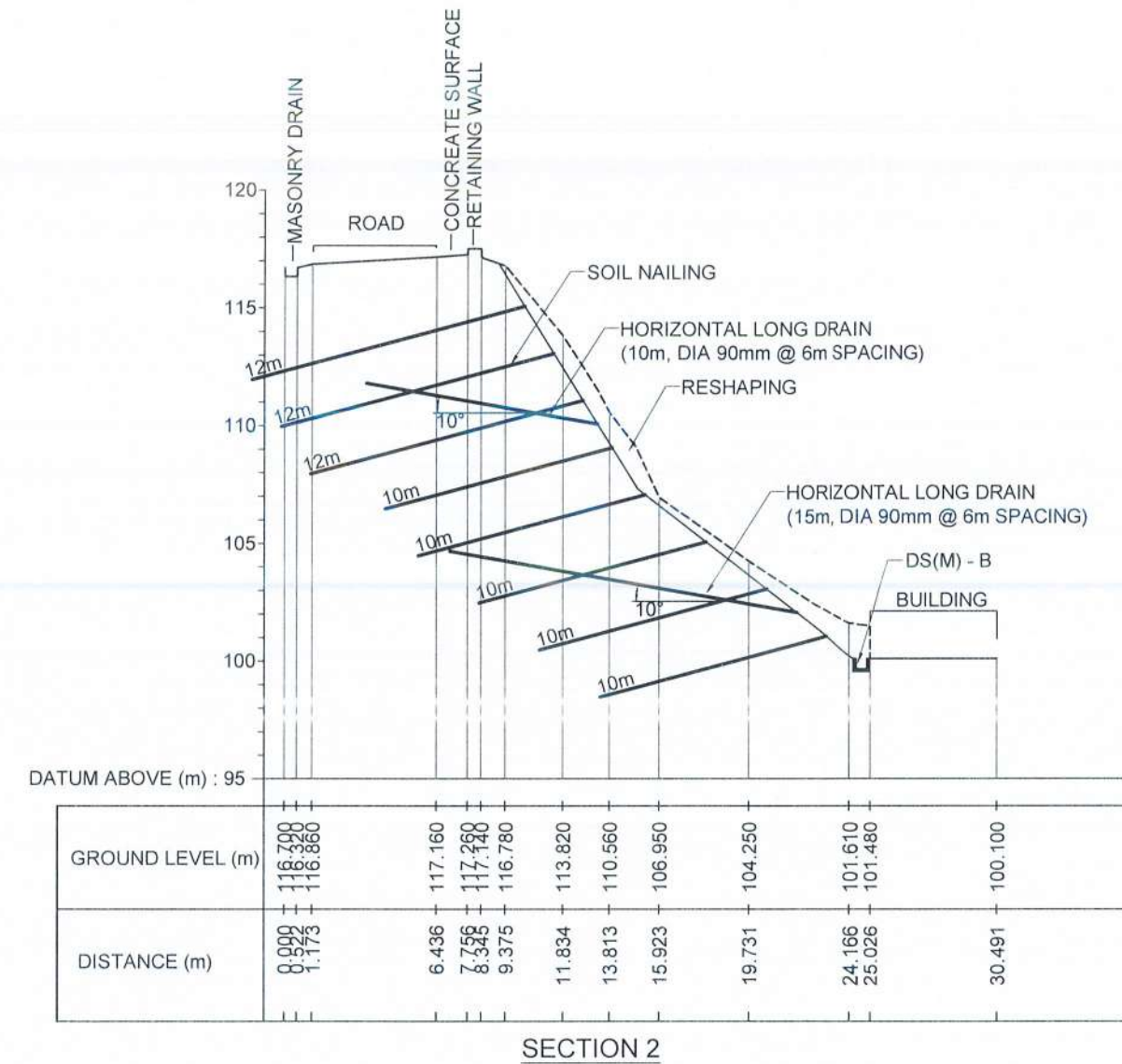
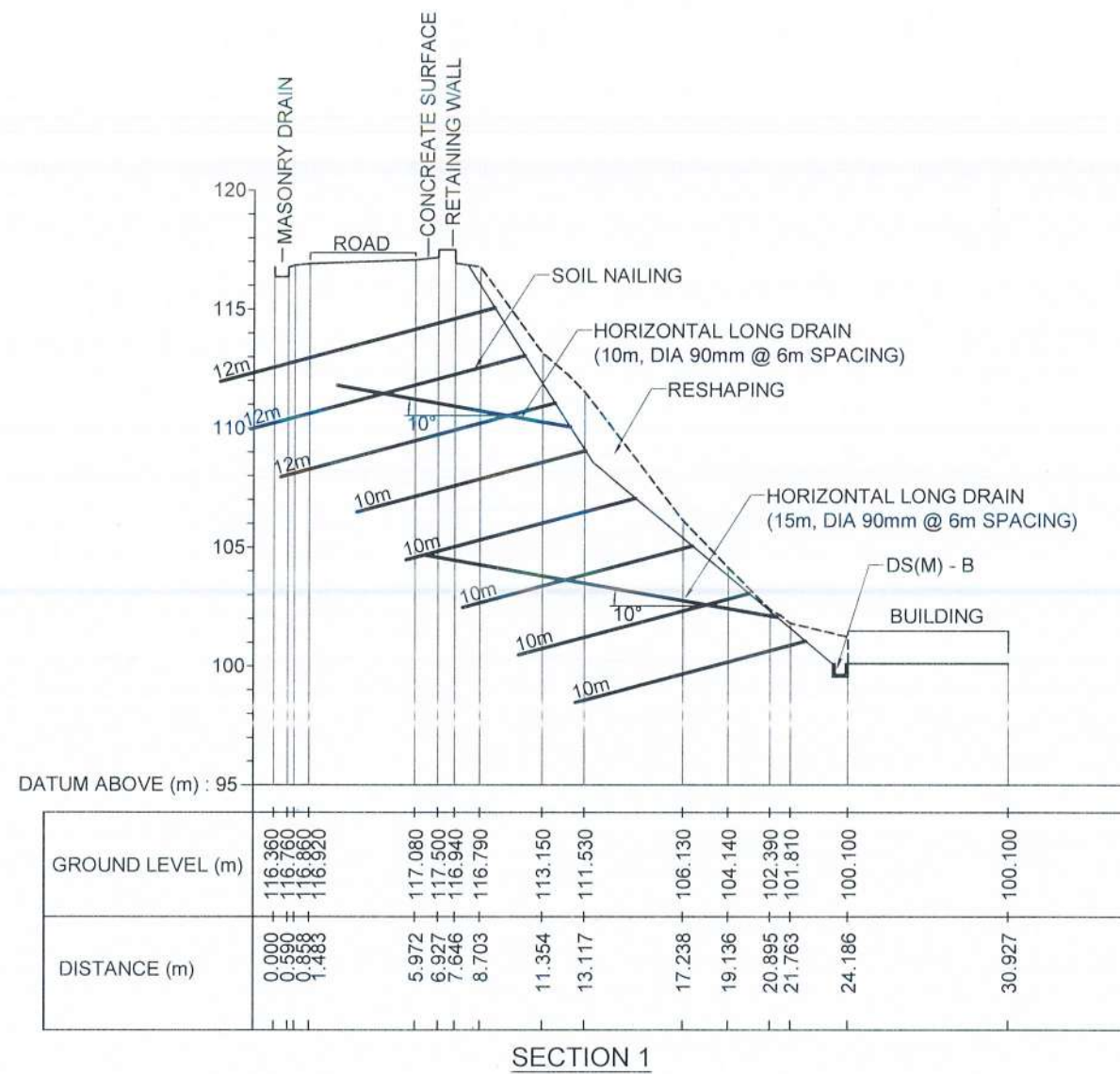
N	E	Z	PN
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2993.43	3991.14	102.433	2
3026.72	3989.74	100	3

DESIGN NOTATION

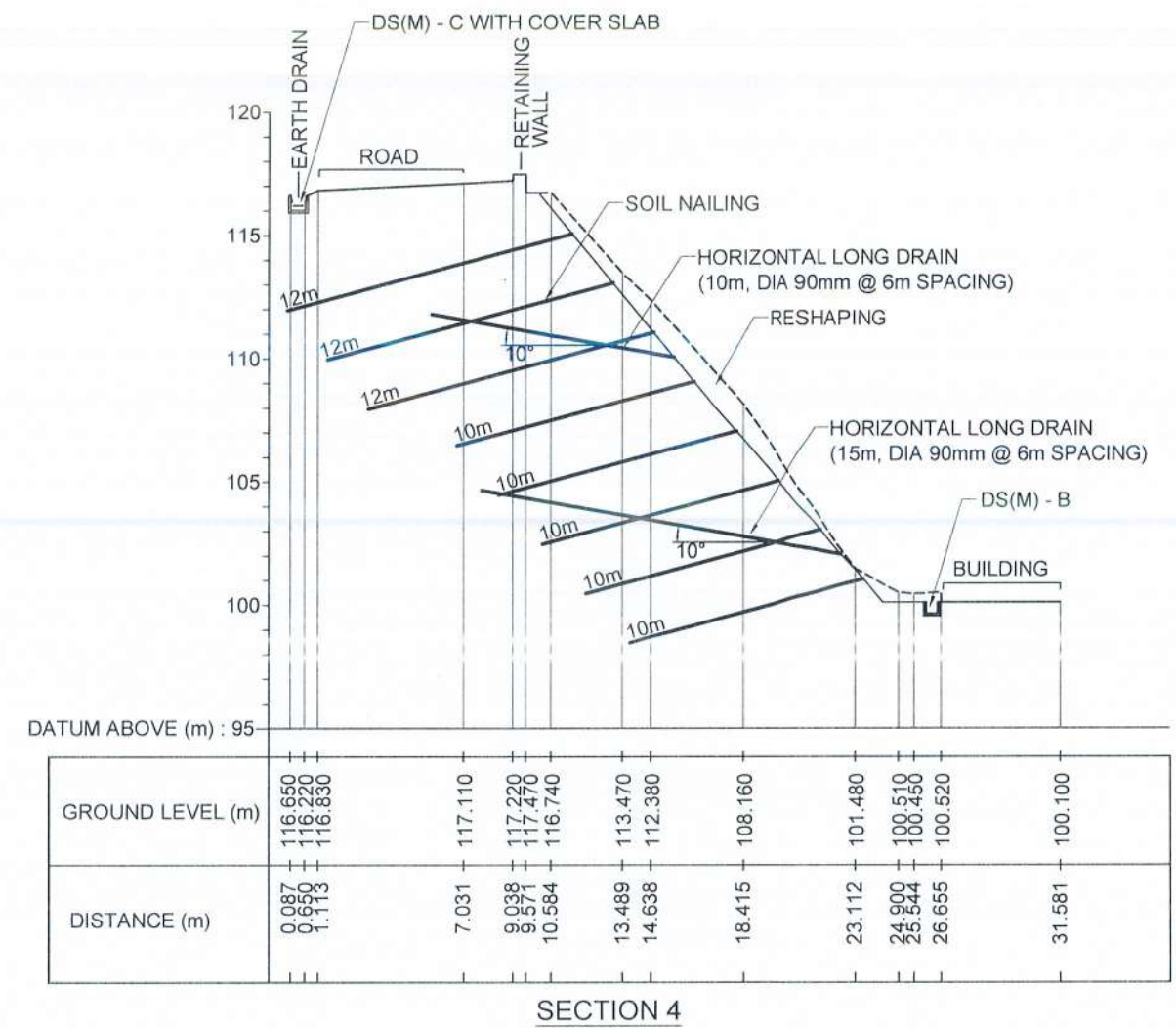
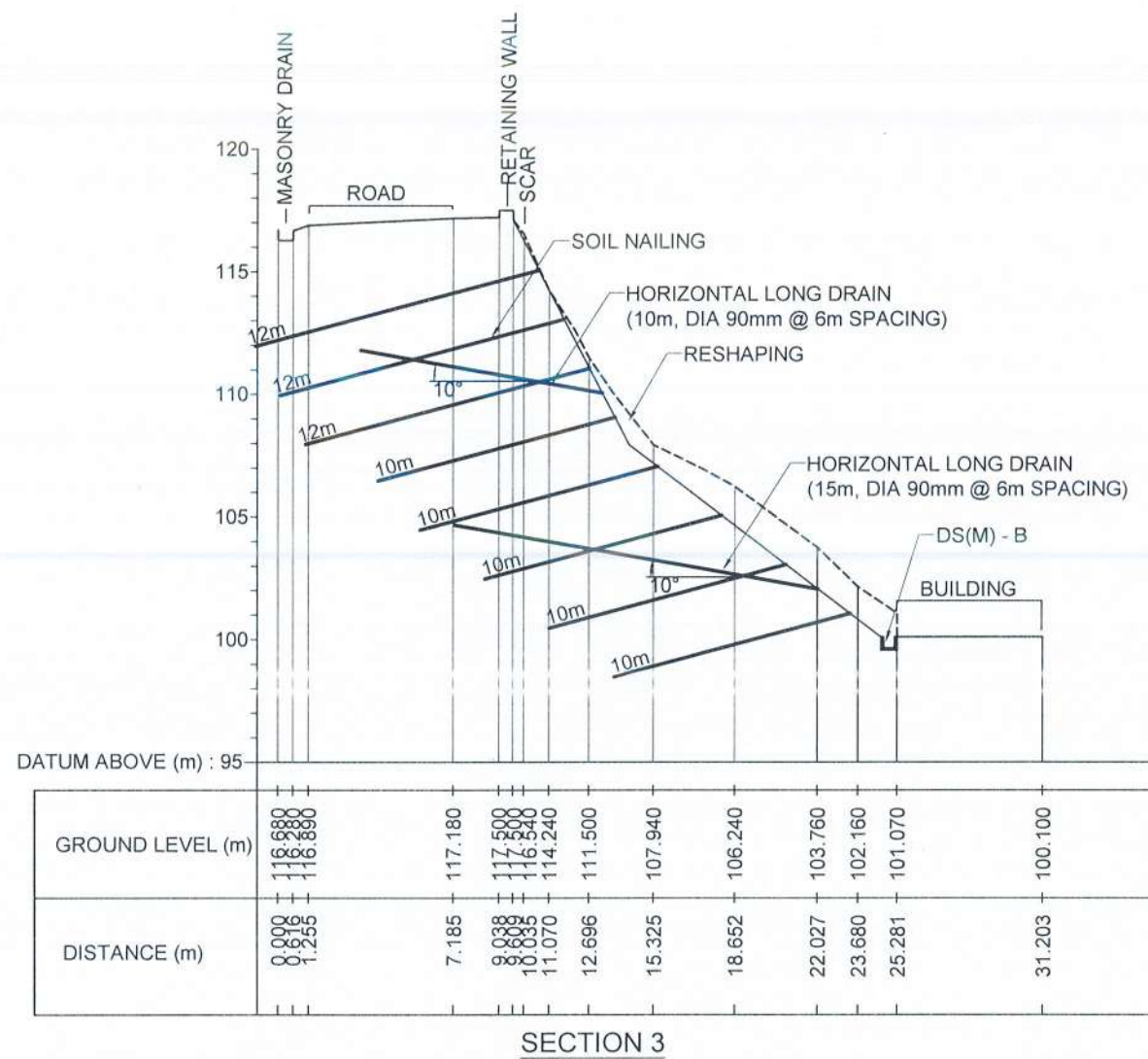
—	DS(M) - B
—	DS(M) - C WITH COVER SLAB
■	SOIL NAILING AREA

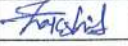
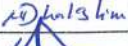
- NOTES
- UNSTABLE BOULDERS AND DEBRIS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
 - SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
 - PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
 - LOCATION OF THE HORIZONTAL DRAINS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.
 - THE COLUMNS OF THE UPPER PARAPET WALL SHALL BE SUPPORTED BY THE BOUNDARY BEAMS.

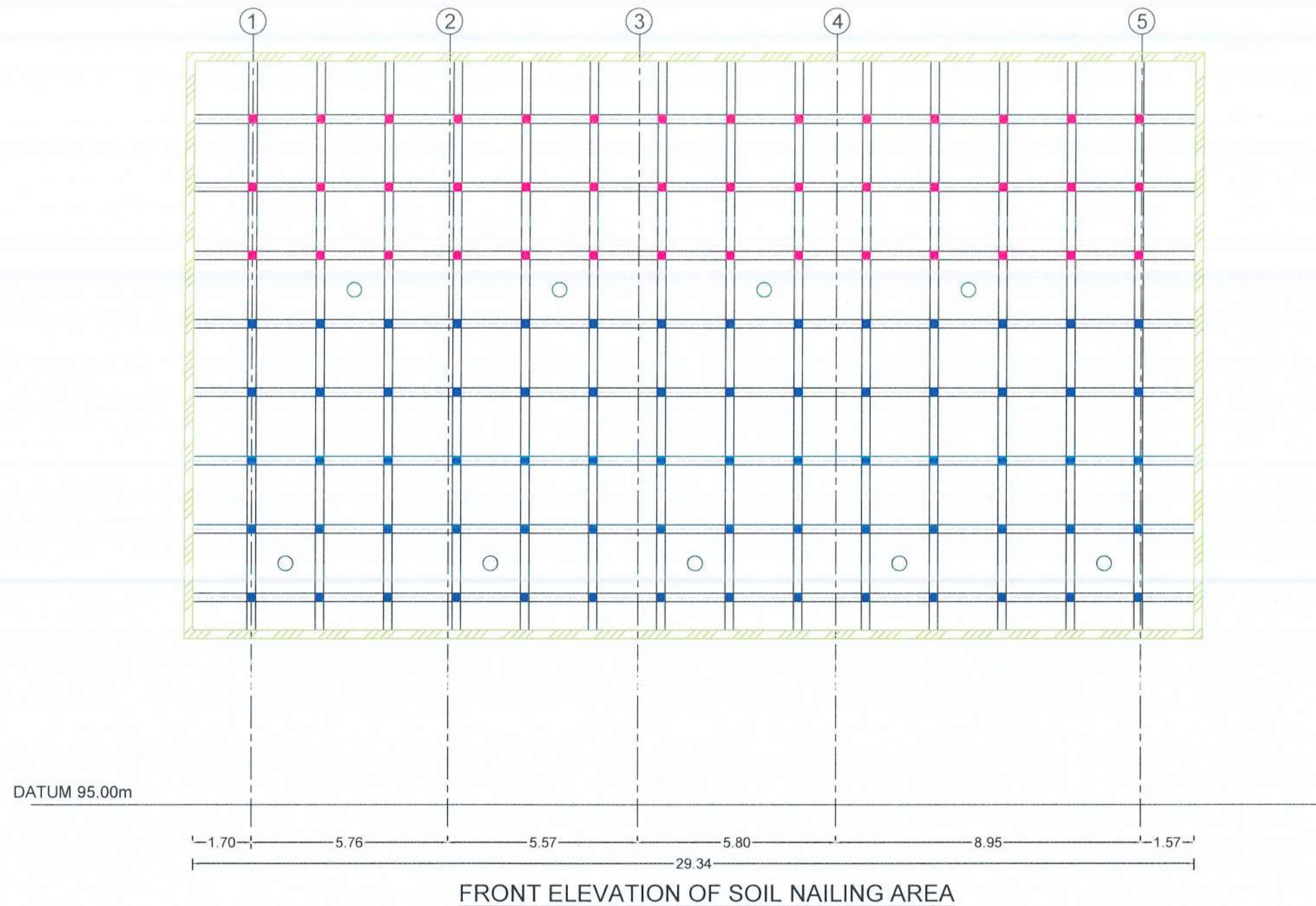
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION -3	TITLE PLAN VIEW OF PROPOSED MITIGATION MEASURES			DESCRIPTION	NAME	SIGNATURE				
										DRAWN	A.K.A.T. NAYOMI					
										DESIGNED	R.J.K.P.N. RANATHUNGA					
										CHECKED	I.A.N.D. IDRIMANNA					
										SCALE	1:250	DATE	27.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA	
										PROJECT / DRAWING No.			REVISION	APPROVED	ENG. (DR). SANCHITHA JAYAKODY	
										RLVMMP/WORKS/NCB/PH III/232/L3/DR 03			00			



EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		<table><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>		REV	DATE	REVISION DESCRIPTION	APPROVAL																													PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION - 3		<table><tr><td colspan="4" rowspan="3">TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES</td><td>DESCRIPTION</td><td>NAME</td><td>SIGNATURE</td></tr><tr><td>DRAWN</td><td>A.K.A.T. NAYOMI</td><td></td></tr><tr><td>DESIGNED</td><td>R.J.K.P.N. RANATHUNGA</td><td></td></tr><tr><td colspan="4">CHECKED</td><td>I.A.N.D. IDIRIMANNA</td><td></td></tr><tr><td>SCALE</td><td>1:300</td><td>DATE</td><td>27.04.2026</td><td>RECOMMENDED</td><td>PROF. S.A.S. KULATHILAKA</td><td></td></tr><tr><td colspan="3">PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L/3/DR-4a</td><td>REVISION 00</td><td>APPROVED</td><td>ENG. (DR). SANCHITHA JAYAKODY</td><td></td></tr></table>				TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES				DESCRIPTION	NAME	SIGNATURE	DRAWN	A.K.A.T. NAYOMI		DESIGNED	R.J.K.P.N. RANATHUNGA		CHECKED				I.A.N.D. IDIRIMANNA		SCALE	1:300	DATE	27.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA		PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L/3/DR-4a			REVISION 00	APPROVED	ENG. (DR). SANCHITHA JAYAKODY	
REV	DATE	REVISION DESCRIPTION	APPROVAL																																																																									
TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES				DESCRIPTION	NAME	SIGNATURE																																																																						
				DRAWN	A.K.A.T. NAYOMI																																																																							
				DESIGNED	R.J.K.P.N. RANATHUNGA																																																																							
CHECKED				I.A.N.D. IDIRIMANNA																																																																								
SCALE	1:300	DATE	27.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA																																																																							
PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/L/3/DR-4a			REVISION 00	APPROVED	ENG. (DR). SANCHITHA JAYAKODY																																																																							



EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION - 3	TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES		DESCRIPTION	NAME	SIGNATURE
									DRAWN	A.K.A.T. NAYOMI	
									DESIGNED	R.J.K.P.N. RANATHUNGA	
									CHECKED	I.A.N.D. IDIRIMANNA	
									RECOMMENDED	PROF. S.A.S. KULATHILAKA	
									APPROVED	ENG. (DR). SANCHITHA JAYAKODY	



LEGEND

- | | | | | | | | |
|--|--------------|---|--|--|-----------------------|---|---|
| | SOIL NAILING | - | TOTAL SOIL NAIL LENGTH = 12 m
NO OF SOIL NAIL = 42
REINFORCEMENT DIAMETER = 32 mm
DIAMETER OF DRILLED HOLE = 125 mm
NAIL SPACING = 2m (BW) | | HORIZONTAL LONG DRAIN | - | HORIZONTAL LONG DRAIN LENGTH = 15 m
NO'S OF LONG DRAIN = 05
DIAMETER = 90 mm
SPACING = 6 m |
| | SOIL NAILING | - | TOTAL SOIL NAIL LENGTH = 10 m
NO OF SOIL NAIL = 70
REINFORCEMENT DIAMETER = 32 mm
DIAMETER OF DRILLED HOLE = 125 mm
NAIL SPACING = 2m (BW) | | HORIZONTAL LONG DRAIN | - | HORIZONTAL LONG DRAIN LENGTH = 10 m
NO'S OF LONG DRAIN = 04
DIAMETER = 90 mm
SPACING = 6 m |
| | | | | | BOUNDARY BEAM | | |

EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT ABOVE THE MIDDLEWOOD HOSTEL HILLWOOD COLLEGE - KANDY LOCATION - 3	FRONT ELEVATION OF PROPOSED MITIGATION MEASURES	DRAWN	A.K.A.T. NAYOMI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR). SANCHITHA JAYAKODY	
							SCALE 1:150	DATE 27.04.2026	REVISION 00	
							PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/232/L3/DR-5			



REFERENCE

	MASONRY DRAIN	MDn
	PERMANENT BUILDING	P
	RETAINING WALL	RW
	ELECTRIC POST	EP
	SCAR	
	SECTIONS	
	TREE	
	REFERENCE POINTS	

N	E	Z	PN
1991.511	2991.577	100	1
2014.813	2983.154	101.562	2
2021.78	2984.271	97.713	3

EMPLOYER

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

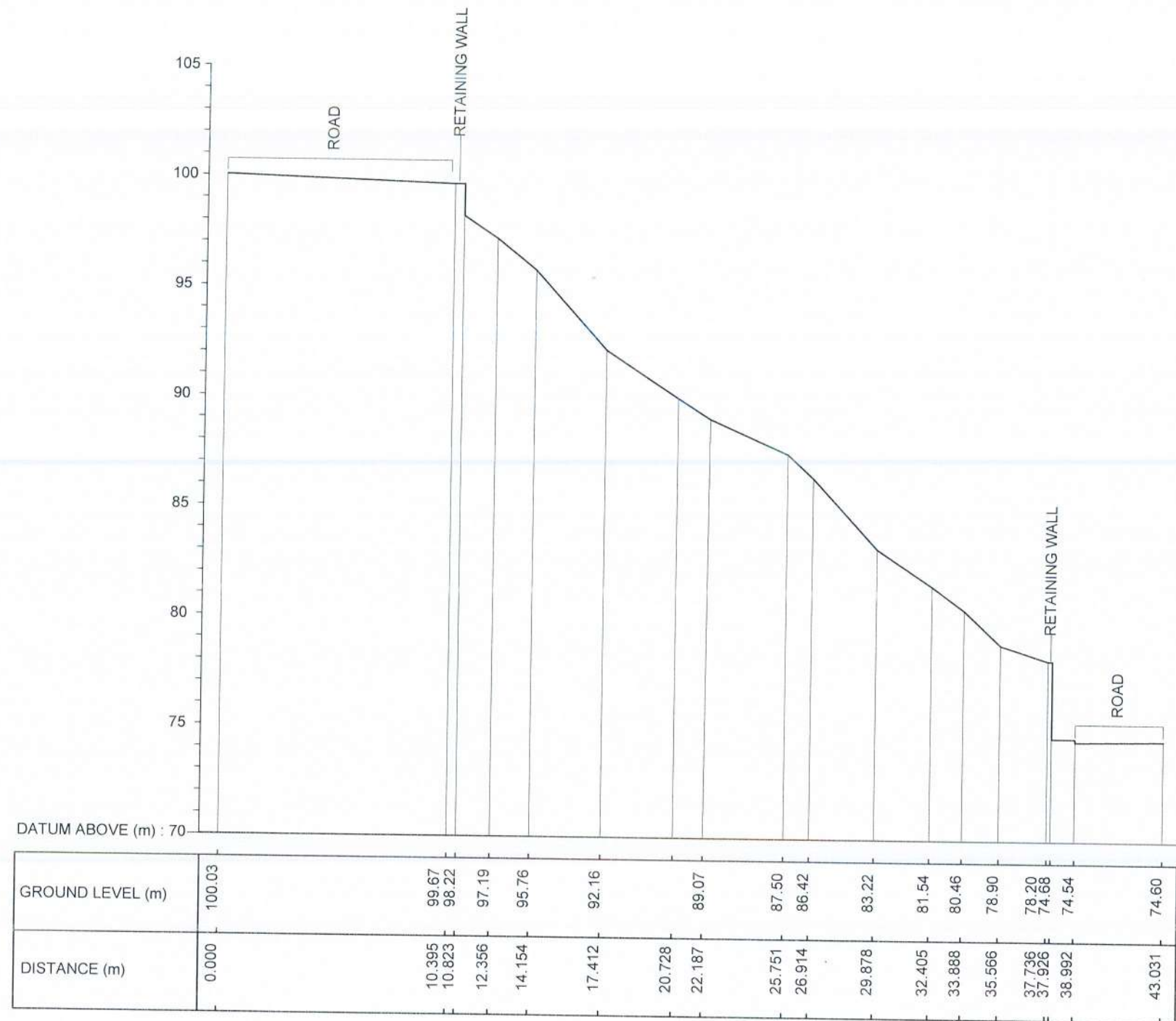
DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE		DESCRIPTION	NAME	SIGNATURE
SURVEY PLAN		SURVEYED	W.L.P.N.N. WIJESINGHE	
		CHECKED	R.J.K.P.N. RANATHUNGA	
SCALE	1:250	DATE	04.05.2026	
PROJECT / DRAWING No.		REVISION		
RLVMMP/WORKS/NCB/PH II/232/L04/DR 01				



CS 1

EMPLOYER



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DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

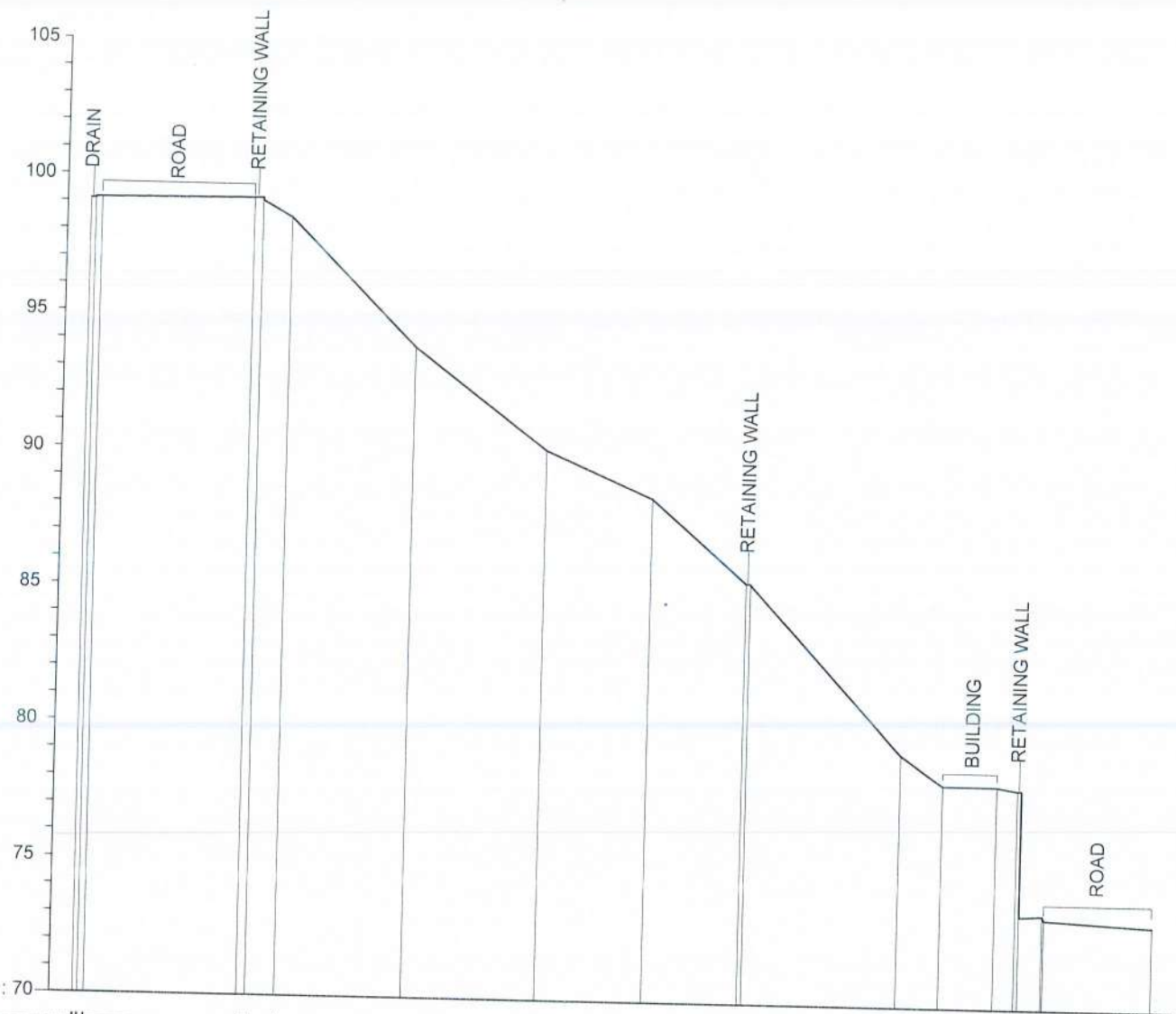
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE

EXISTING CROSS SECTION

SCALE	1:250	DATE	04.05.2026
PROJECT / DRAWING No.	RLVMMP/WORKS/NCB/PH II/232/L04/DR 02a	REVISION	

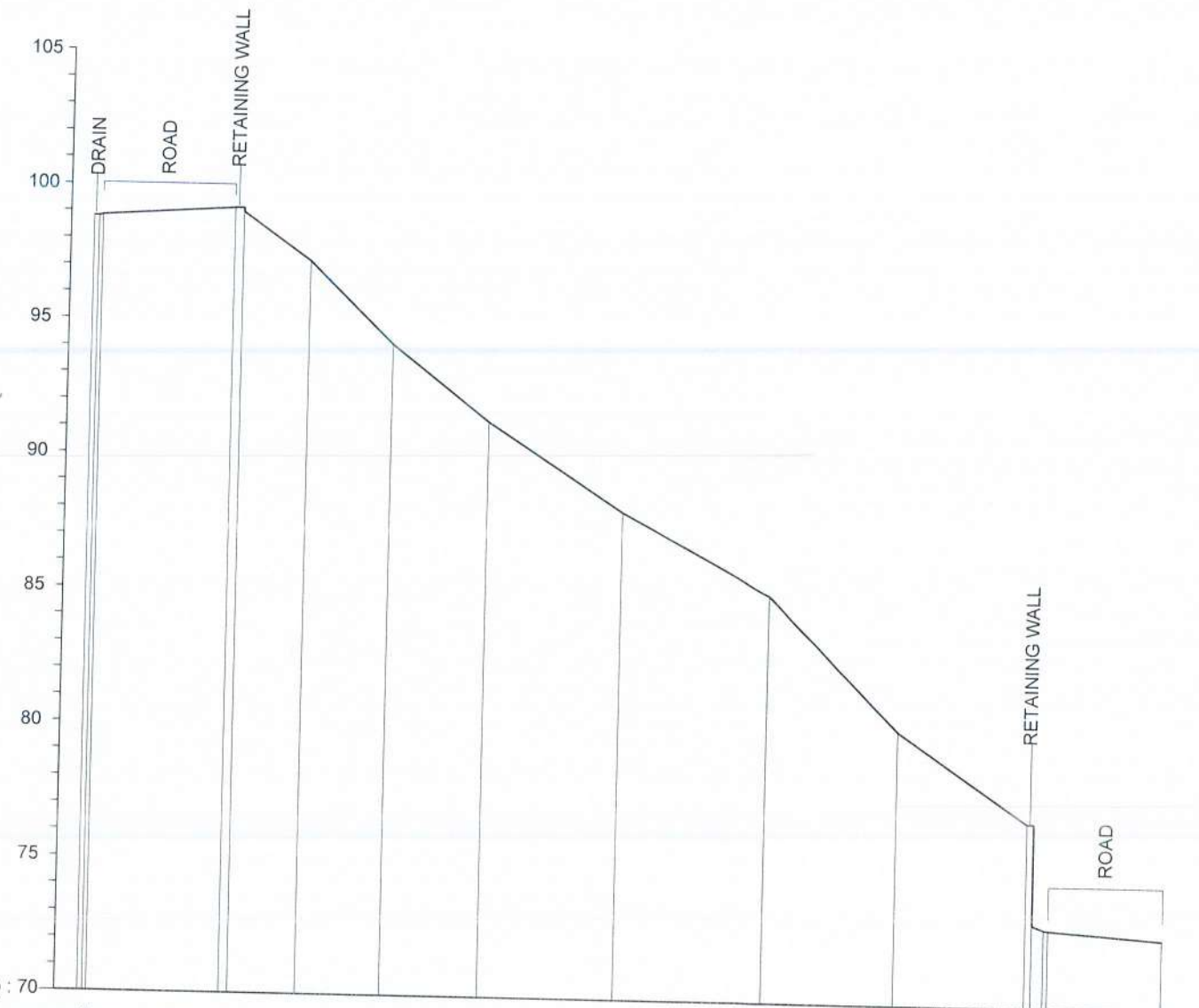
DESCRIPTION	NAME	SIGNATURE
SURVEYED	W.L.P.N.N. WIJESINGHE	
CHECKED	R.J.K.P.N. RANATHUNGA	



DATUM ABOVE (m) : 70

GROUND LEVEL (m)	99.09	99.13	99.21	99.11	98.51	93.84	90.15	88.46	85.41	85.38	79.240	78.149	78.149	73.41	73.46	73.30	73.09
DISTANCE (m)	0.000	0.177	6.012	6.336	7.406	12.059	16.960	20.861	24.362	24.520	30.197	31.756	33.728	34.628	35.493	35.550	39.538

CS 4



DATUM ABOVE (m) : 70

GROUND LEVEL (m)	98.80	98.80	99.17	99.02	97.25	94.20	91.37	88.11	85.10	80.15	76.83	73.09	72.92	72.90	72.59
DISTANCE (m)	0.000	0.177	5.283	5.609	8.124	11.26	14.895	19.966	25.606	30.599	35.554	35.795	36.240	36.405	40.682

CS 5

EMPLOYER



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No. 99/1, JAWATTA ROAD,
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DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE
EXISTING CROSS SECTIONS

SCALE 1:250 DATE 04.05.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/232/L04/DR 02c REVISION

DESCRIPTION	NAME	SIGNATURE
SURVEYED	W.L.P.N.N. WIJESINGHE	
CHECKED	R.J.K.P.N. RANATHUNGA	



REFERENCE

MASONRY DRAIN	MDn
PERMANENT BUILDING	P
RETAINING WALL	RW
ELECTRIC POST	EP
SCAR	
SECTIONS	
TREE	
REFERENCE POINTS	

N	E	Z	PN
1991.511	2991.577	100	1
2014.813	2983.154	101.562	2
2021.78	2984.271	97.713	3

DESIGN NOTATION

DS (B) - D	
DS (C) - A	
DS (M) - A	
DS (M) - A (SLOPE SIDE WALL HEIGHT 0.60m)	
DS (M) - A (WITH GRATING)	
SOIL NAILING AREA	
CATCH PIT	

NOTES

- SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
- UNSTABLE BOULDERS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
- PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
- LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.

EMPLOYER
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No. 99/1, JAWATTA ROAD,
COLOMBO - 05

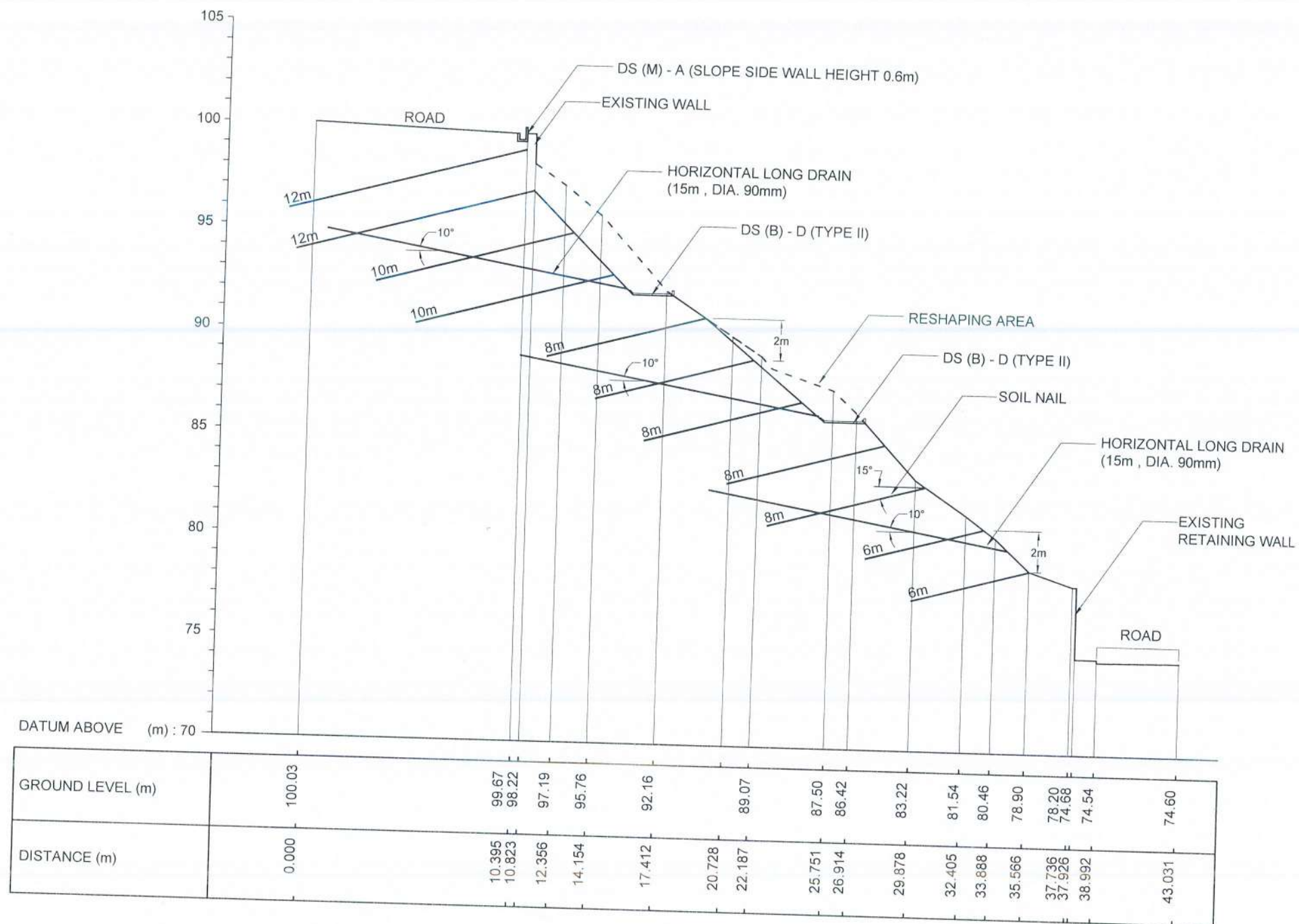
DESIGNER
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

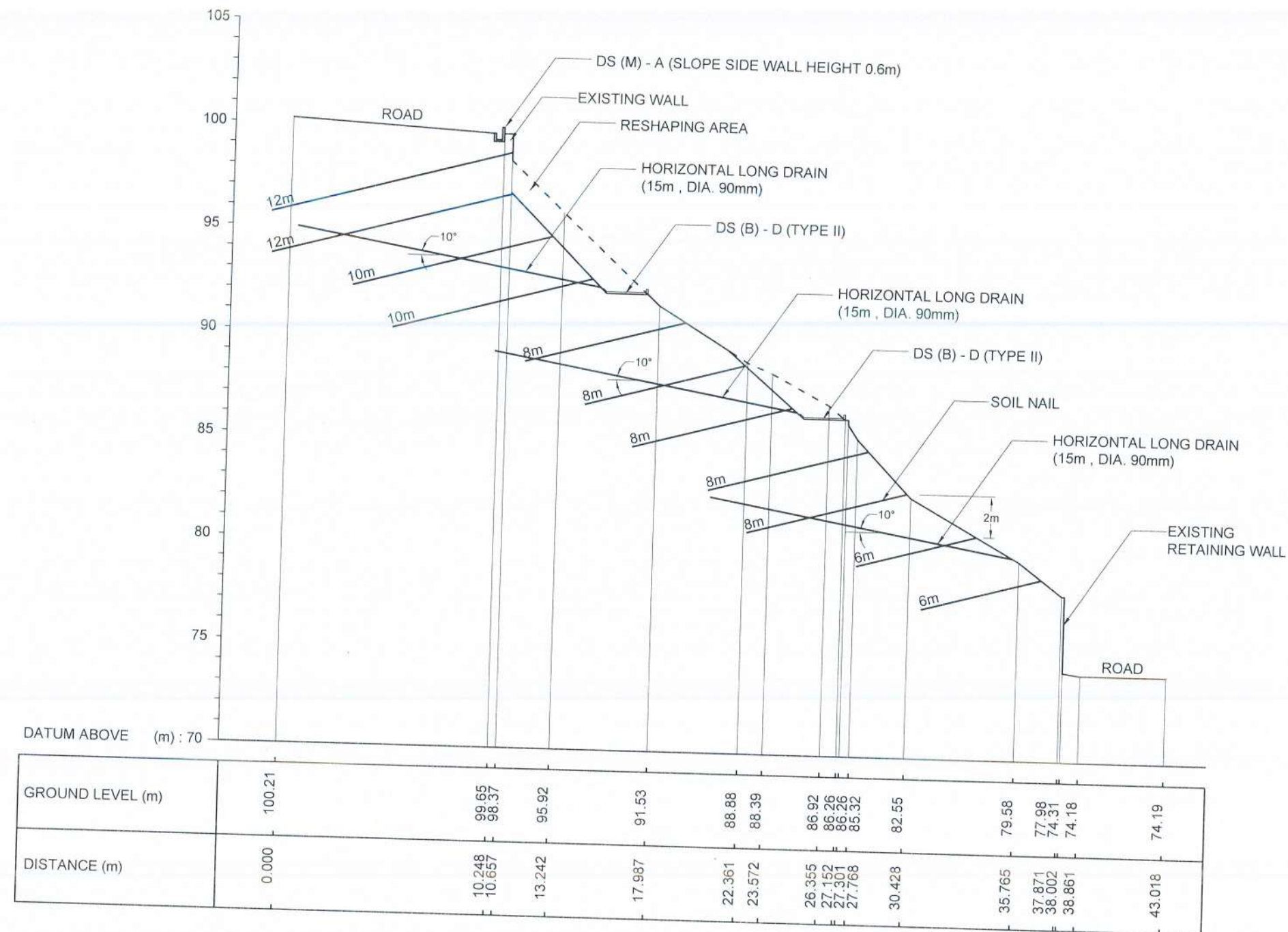
TITLE	DESCRIPTION	NAME	SIGNATURE
PLAN VIEW OF PROPOSED MITIGATION MEASURES	DRAWN	K.M.D. NISHANTHI	
	DESIGNED	R.J.K.P.N. RANATHUNGA	
	CHECKED	I.A.N.D. IDIRIMANNA	
	RECOMMENDED	PROF. S.A.S. KULATHILAKA	
	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE 1:250 DATE 04.05.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/232/L04/DR 03 REVISION



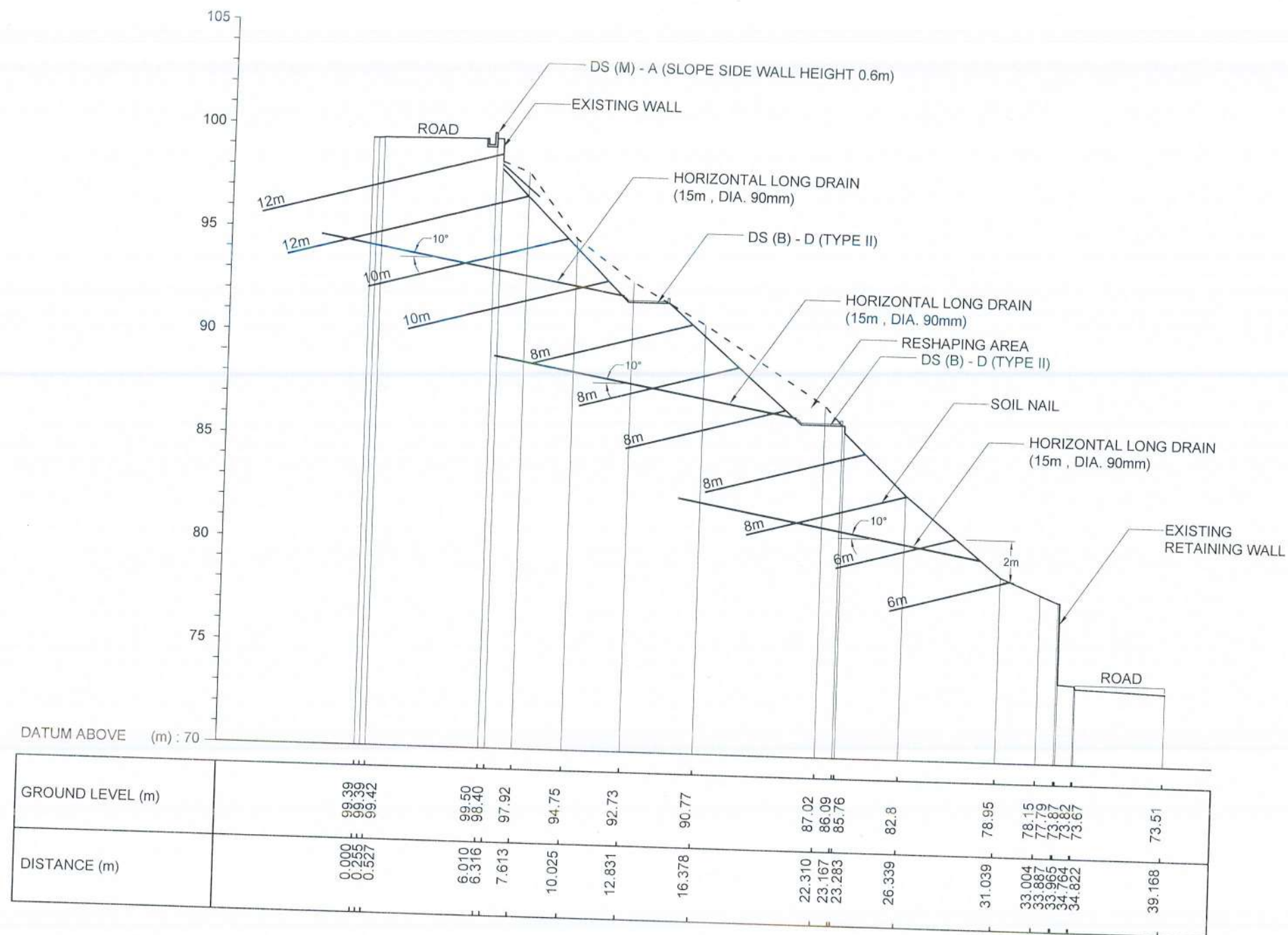
CS 1

EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 04	TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES	DESCRIPTION	NAME	SIGNATURE
						SCALE	1:250	DATE	04.05.2026	
						PROJECT / DRAWING No.	RLVMMPP/WORKS/NCB/PH II/232/L04/DR 04a	REVISION		
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



CS 2

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV DATE REVISION DESCRIPTION APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 04	TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES	DESCRIPTION NAME SIGNATURE
		SCALE 1:250 PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH II/232/L04/DR 04b DATE 04.05.2026 REVISION	DRAWN K.M.D. NISHANTHI DESIGNED R.J.K.P.N. RANATHUNGA CHECKED I.A.N.D. IDIRIMANNA RECOMMENDED PROF. S.A.S. KULATHILAKA APPROVED ENG. (DR.) SANCHITHA JAYAKODY		



CS 3

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE

CROSS SECTIONS OF
PROPOSED MITIGATION MEASURES

SCALE 1:250

PROJECT / DRAWING No.

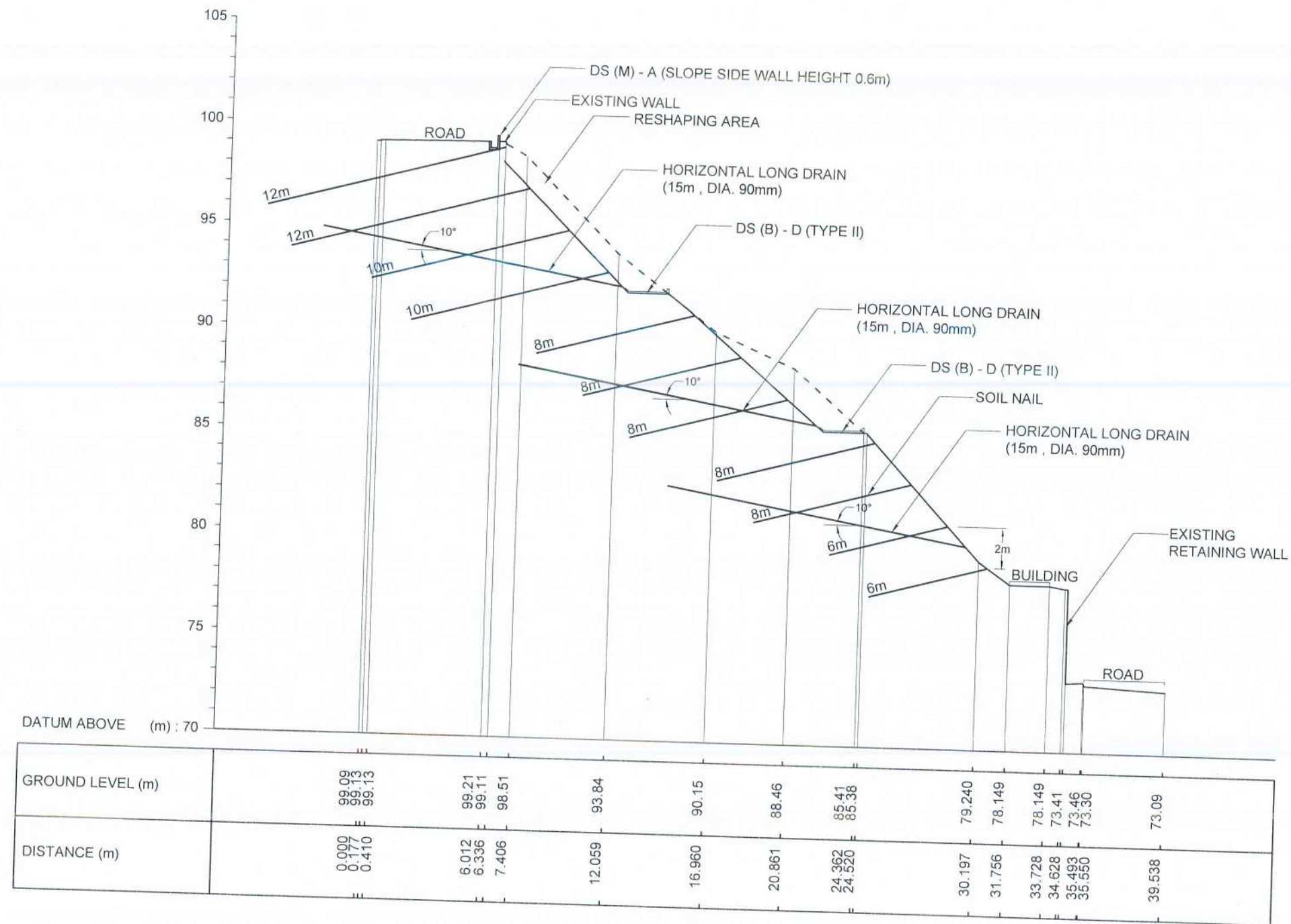
RLVMMP/WORKS/NCB/PH II/232/L04/DR 04c

DATE

04.05.2026

REVISION

DESCRIPTION	NAME	SIGNATURE
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



CS 4

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
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COLOMBO - 05



DESIGNER

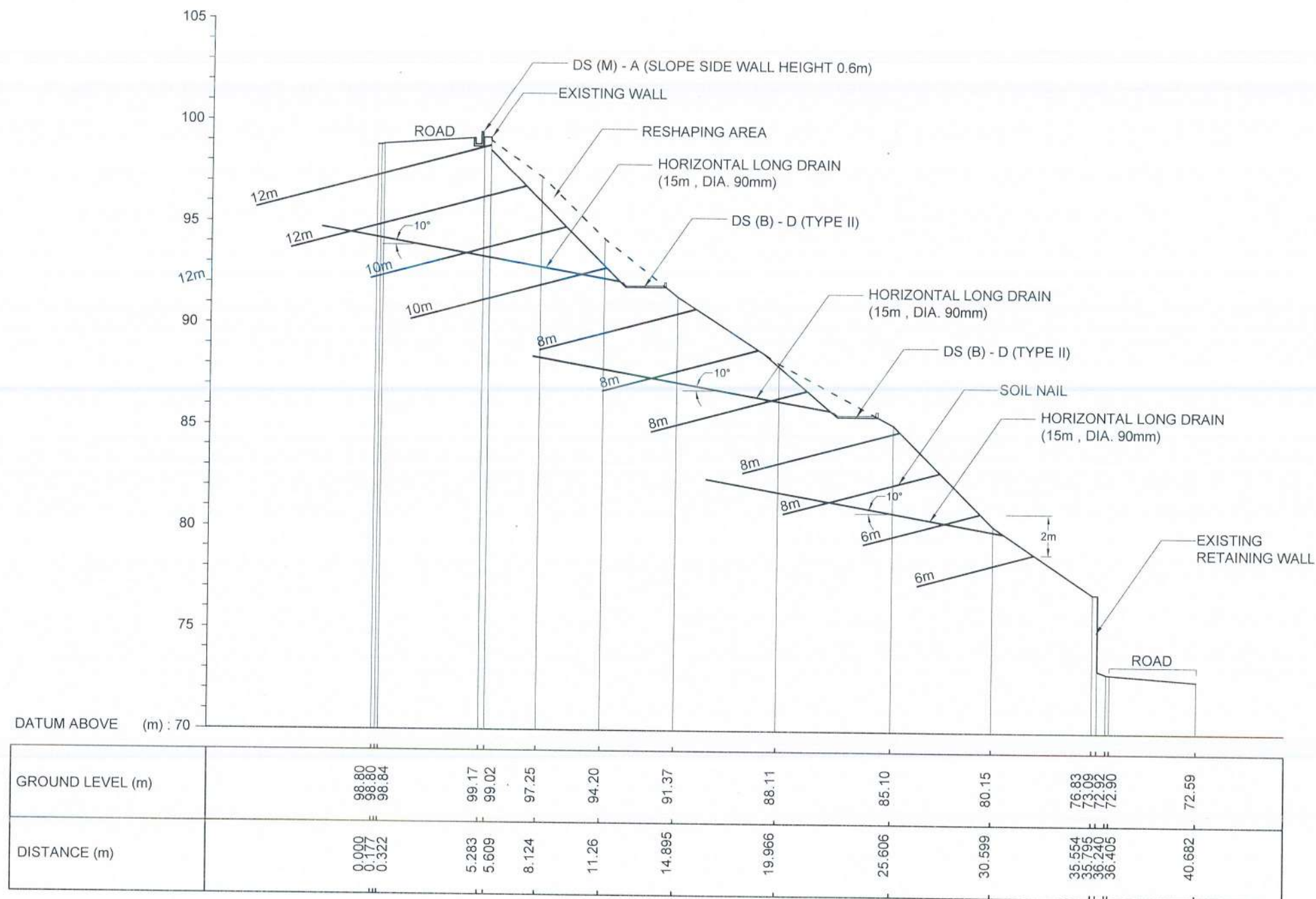
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE	DESCRIPTION	NAME	SIGNATURE
CROSS SECTIONS OF PROPOSED MITIGATION MEASURES	DRAWN	K.M.D. NISHANTHI	
	DESIGNED	R.J.K.P.N. RANATHUNGA	
	CHECKED	I.A.N.D. IDIRIMANNA	
	RECOMMENDED	PROF. S.A.S. KULATHILAKA	
	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE 1:250
DATE 04.05.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/232/L04/DR 04d
REVISION



CS 5

EMPLOYER



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MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

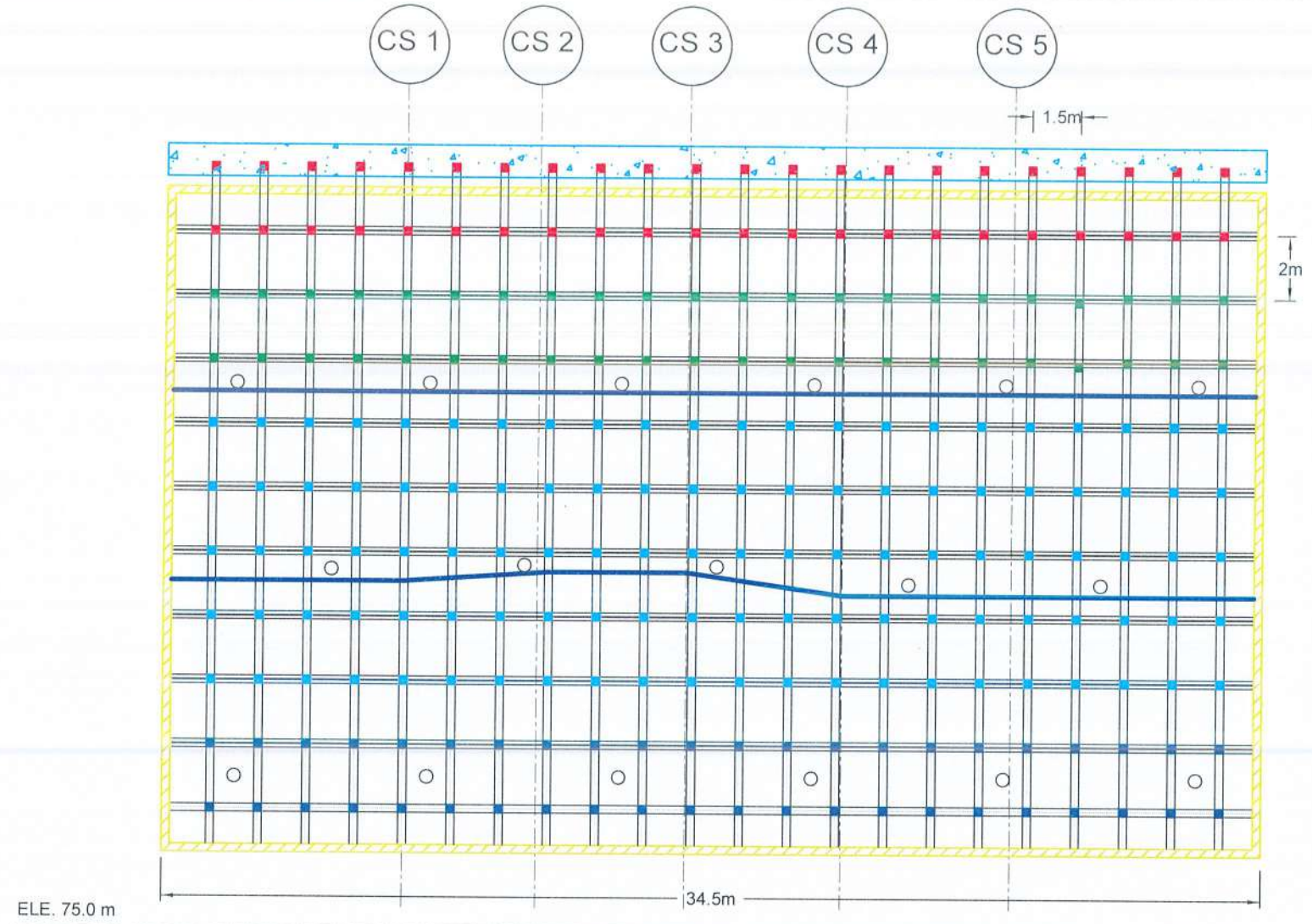
REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY
LOCATION 04

TITLE
CROSS SECTIONS OF
PROPOSED MITIGATION MEASURES

SCALE 1:250 DATE 04.05.2026
PROJECT / DRAWING No. RLVMMPP/WORKS/NCB/PH II/232/L04/DR 04e REVISION

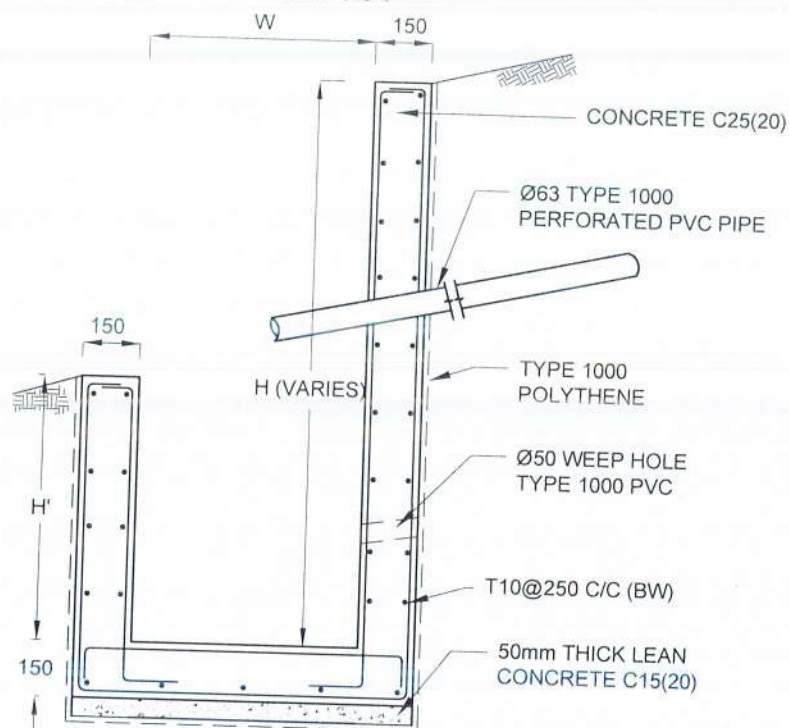
DESCRIPTION	NAME	SIGNATURE
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



FRONT ELEVATION OF SOIL NAILING AREA

LEGEND		
	SOIL NAILING	- SOIL NAIL LENGTH = 12m NO OF SOIL NAIL = 44 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - VERTICAL 2m - HORIZONTAL 1.5m
	SOIL NAILING	- SOIL NAIL LENGTH = 10m NO OF SOIL NAIL = 44 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - VERTICAL 2m - HORIZONTAL 1.5m
	SOIL NAILING	- SOIL NAIL LENGTH = 8m NO OF SOIL NAIL = 110 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - VERTICAL 2m - HORIZONTAL 1.5m
	BOUNDARY BEAM	
	DS (B) - D	
	HORIZONTAL LONG DRAIN	- HORIZONTAL LONG DRAIN LENGTH = 15 m NO'S OF LONG DRAIN = 17 DIAMETER = 90 mm SPACING = 06 m
	EXISTING WALL	

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY LOCATION 04	TITLE FRONT ELEVATION OF PROPOSED MITIGATION MEASURES	DESCRIPTION	NAME	SIGNATURE	
								DRAWN	K.M.D. NISHANTHI		
								DESIGNED	R.J.K.P.N. RANATHUNGA		
								CHECKED	I.A.N.D. IDIRIMANNA		
									RECOMMENDED	PROF. S.A.S. KULATHILAKA	
									APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
									SCALE 1:200	DATE 04.05.2026	
						PROJECT / DRAWING No.		REVISION			
						RLVMMP/WORKS/NCB/PH II/232/L04/DR 05					



DS (M) - L

DS(M) - L	W (mm)	H' (mm)
TYPE I	600	600
TYPE II	800	800

DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (M) - A /P	300	300	100
DS (M) - B/R	450	450	100
DS (M) - C/Q	600	600	100
DS (M) - D	750	750	125
DS (M) - E	900	900	150
DS (M) - F	1000	1000	150

NOTES

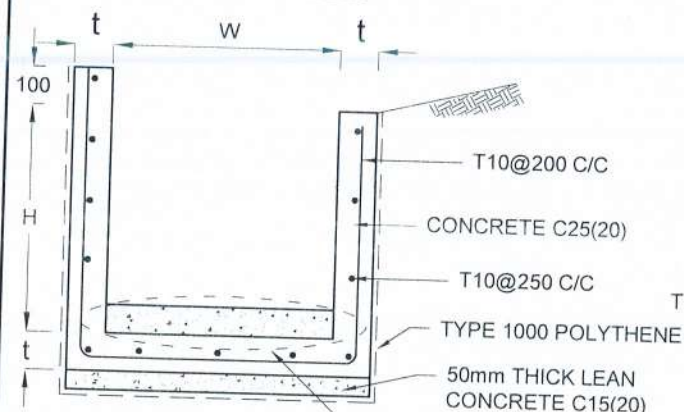
1. DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
2. STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
3. ENERGY BREAKERS SHALL BE CONSTRUCTED AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
6. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.

CONCRETE

7. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE
 - [a] SCREED - C15(20)
 - [b] WALLS / BASE / ENERGY BREAKERS - C25(20)

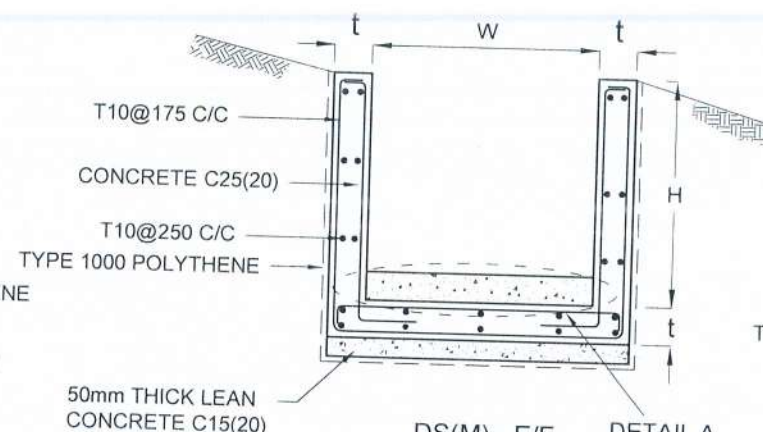
REINFORCEMENT

8. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
9. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
10. ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
11. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
12. COVER TO REINFORCEMENT
 - [a] BURIED FACES AND DRAIN INVERTS - 40 mm
 - [b] ALL OTHER FACES - 25 mm



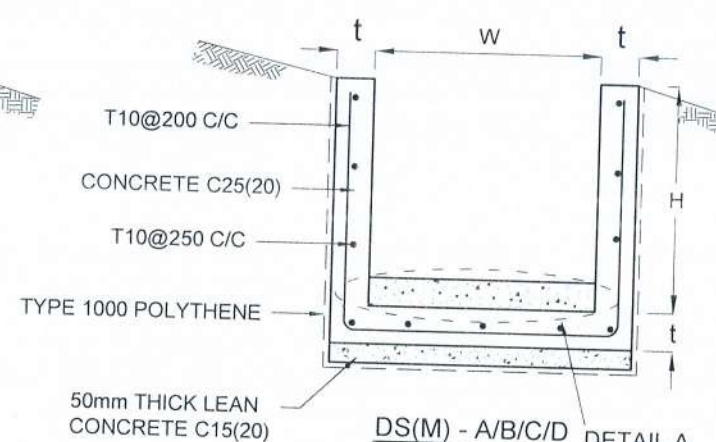
DS(M) - P/R/Q

DETAIL A



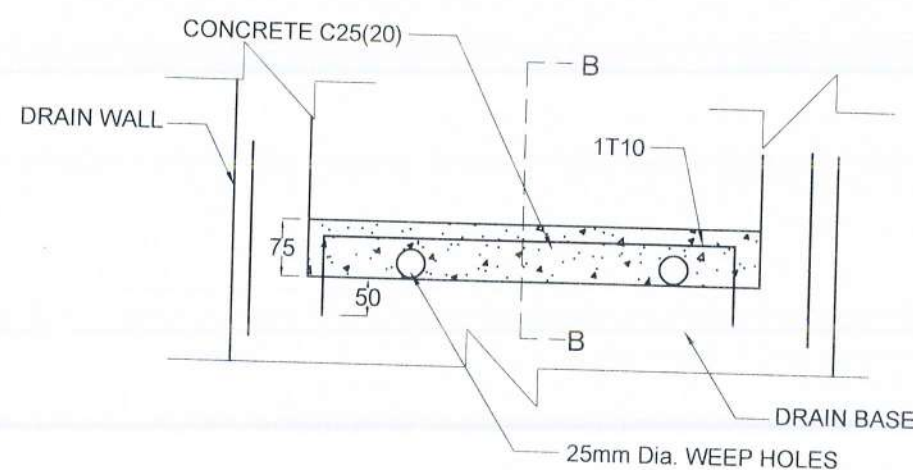
DS(M) - E/F

DETAIL A

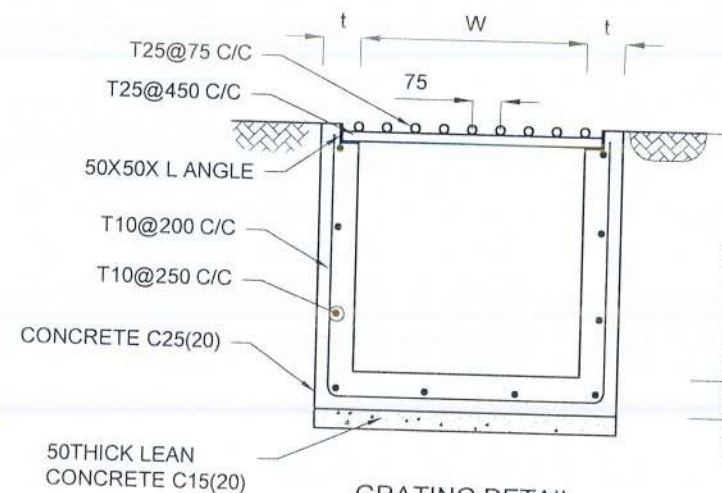


DS(M) - A/B/C/D

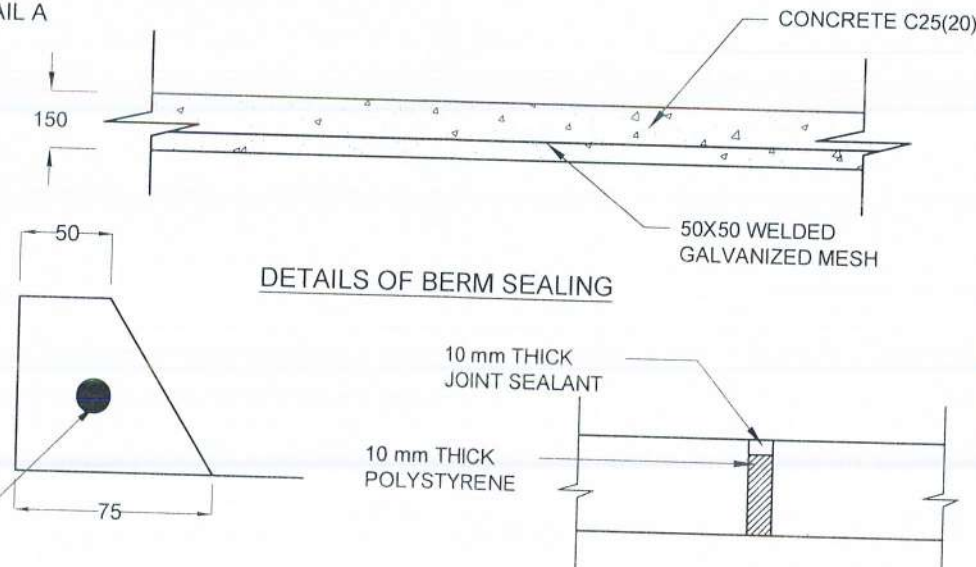
DETAIL A



DETAIL A - (ENERGY BREAKER AT 3M)



GRATING DETAIL



DETAILS OF BERM SEALING

SECTION B-B

EXPANTION JOINT DETAIL

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

DESIGNER



DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
HILLWOOD COLLEGE
KANDY

TITLE

DETAILS OF DRAINS
(SURFACE DRAIN - 1 OF 2)

SCALE N.T.S.

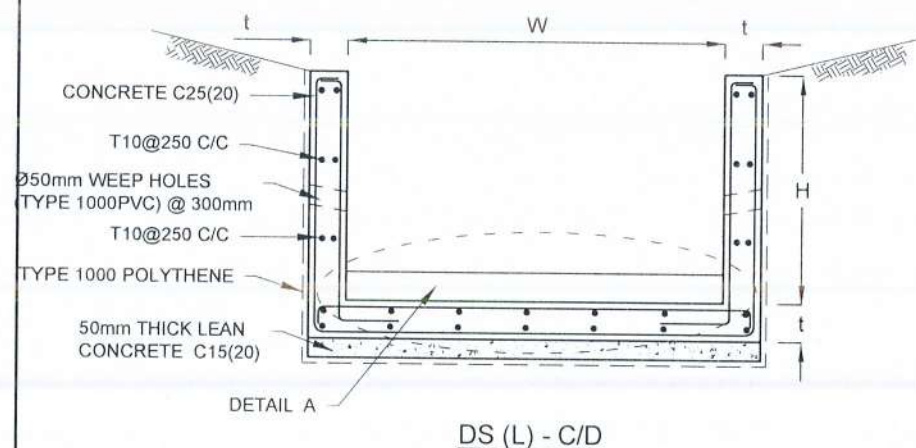
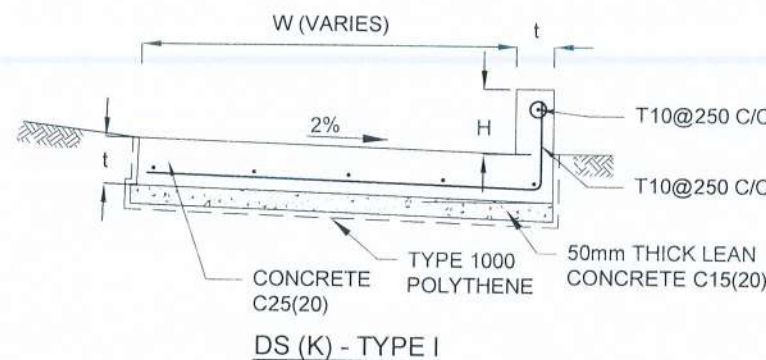
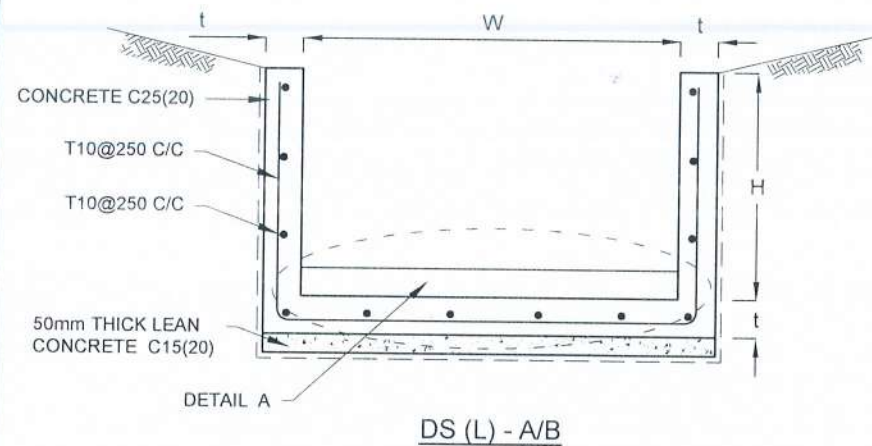
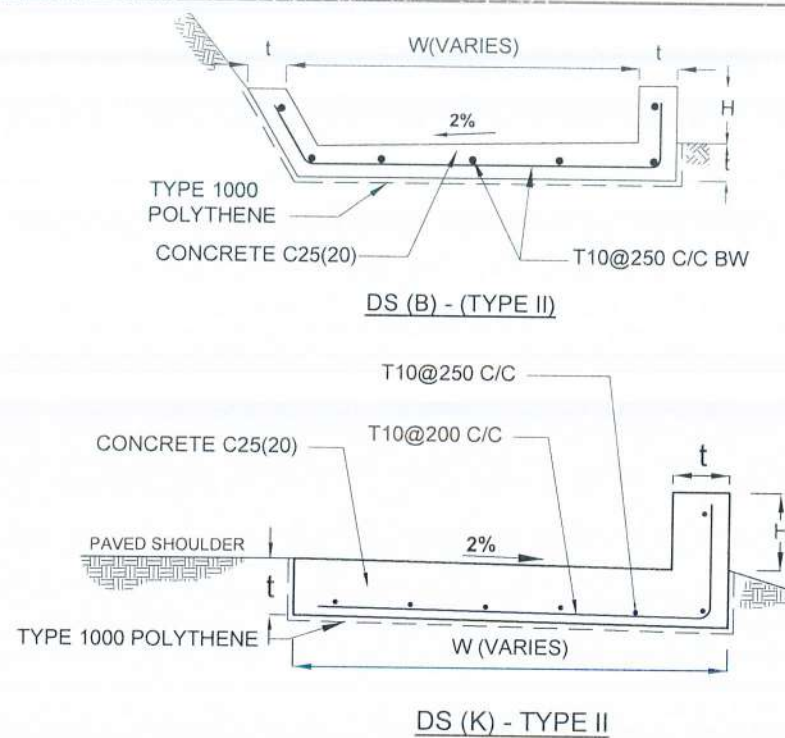
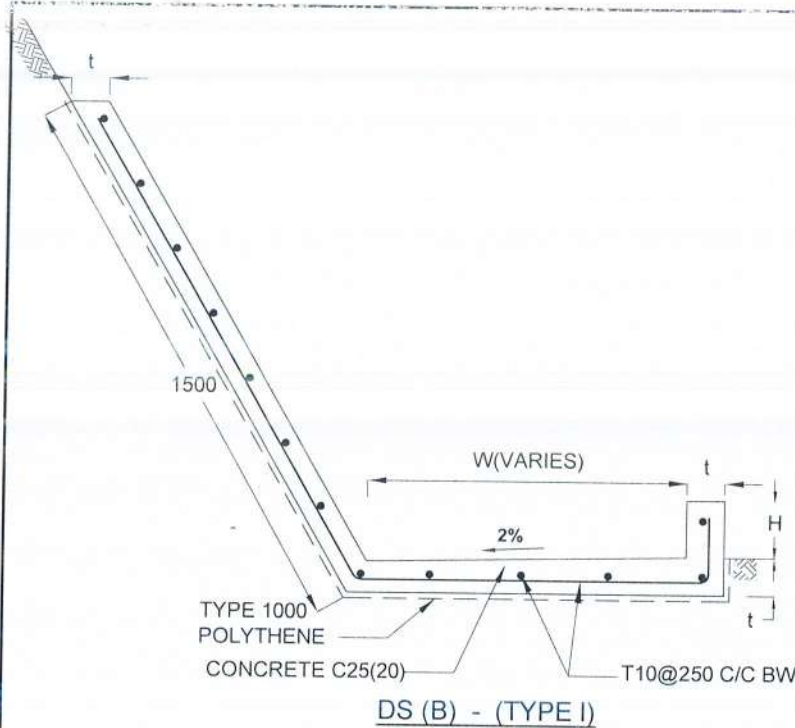
PROJECT / DRAWING No.
RLVMP/WORKS/NCB/PH III/232/A1

DATE

27.04.2025

REVISION
00

DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (B) - A	500	150	100
DS (B) - B	1000	150	100
DS (B) - C	1500	150	100
DS (B) - D	2000	150	100
DS (B) - E	2500	150	100

NOTES

- DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
- STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- ENERGY BREAKERS SHALL BE CONSTRUCTED IN STAGGERED PATTERN AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
- DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLABS NEED TO BE PROVIDED ONLY FOR THE REGIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLAB WIDTH (W_c) SHOULD BE TAKEN AS THE SUM OF DRAIN WIDTH AND $2 \times$ DRAIN WALL THICKNESS. [$W_c = W + 2t$]
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
- 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE
 - SCREED - C15(20)
 - WALLS / BASE / ENERGY BREAKERS - C25(20)

REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- COVER TO REINFORCEMENT
 - BURIED FACES AND DRAIN INVERTS - 40 mm
 - ALL OTHER FACES - 25 mm

DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (K) - A	1000	200	100
DS (K) - B	1000	300	100
DS (K) - C	1150	200	200

DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (L) - A	1000	600	100
DS (L) - B	1000	800	125
DS (L) - C	1000	1000	125
DS (L) - D	2000	2000	150

EMPLOYER

 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

DESIGNER

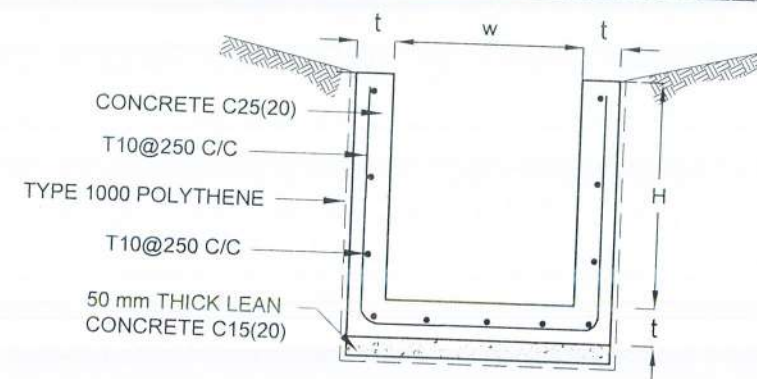
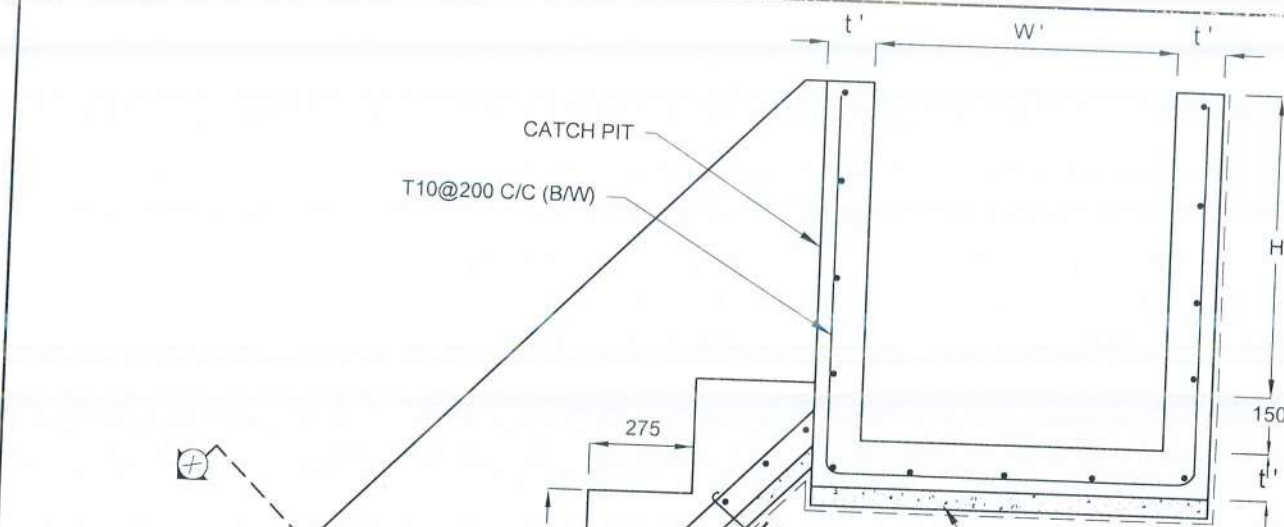
 DESIGN UNIT
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
 REDUCTION OF LANDSLIDE VULNERABILITY
 BY MITIGATION MEASURES PROJECT
 HILLWOOD COLLEGE
 KANDY

TITLE	DESCRIPTION	NAME	SIGNATURE
DETAILS OF DRAINS (SURFACE DRAIN - 2 OF 2)	DRAWN	K. M. D. NISHANTHI	
	DESIGNED	R. J. K. P. N. RANATHUNGA	
	CHECKED	I. A. N. D. IDIRIMANNA	
	RECOMMENDED	PROF. S. A. S. KULATHILAKA	
	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE N.T.S.
 PROJECT / DRAWING No.
 RLVMMP/WORKS/NCB/PH III/232/A2
 DATE 27.04.2026
 REVISION 00



SECTION X-X

NOTES

1. USE EITHER TYPE I OR TYPE II CASCADE DRAIN ACCORDING TO THE ACTUAL GROUND CONDITION AS INSTRUCTED BY THE ENGINEER.
2. LENGTH OF THE STEPS OF CASCADE WILL BE VARIED ACCORDING TO THE SITE CONDITIONS.
3. DEPTH OF EXCAVATION SHALL BE VARIED ACCORDING TO SITE CONDITIONS.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

CONCRETE

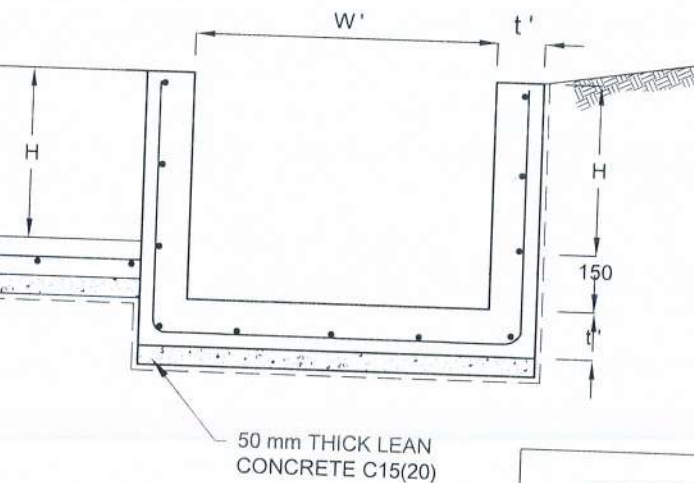
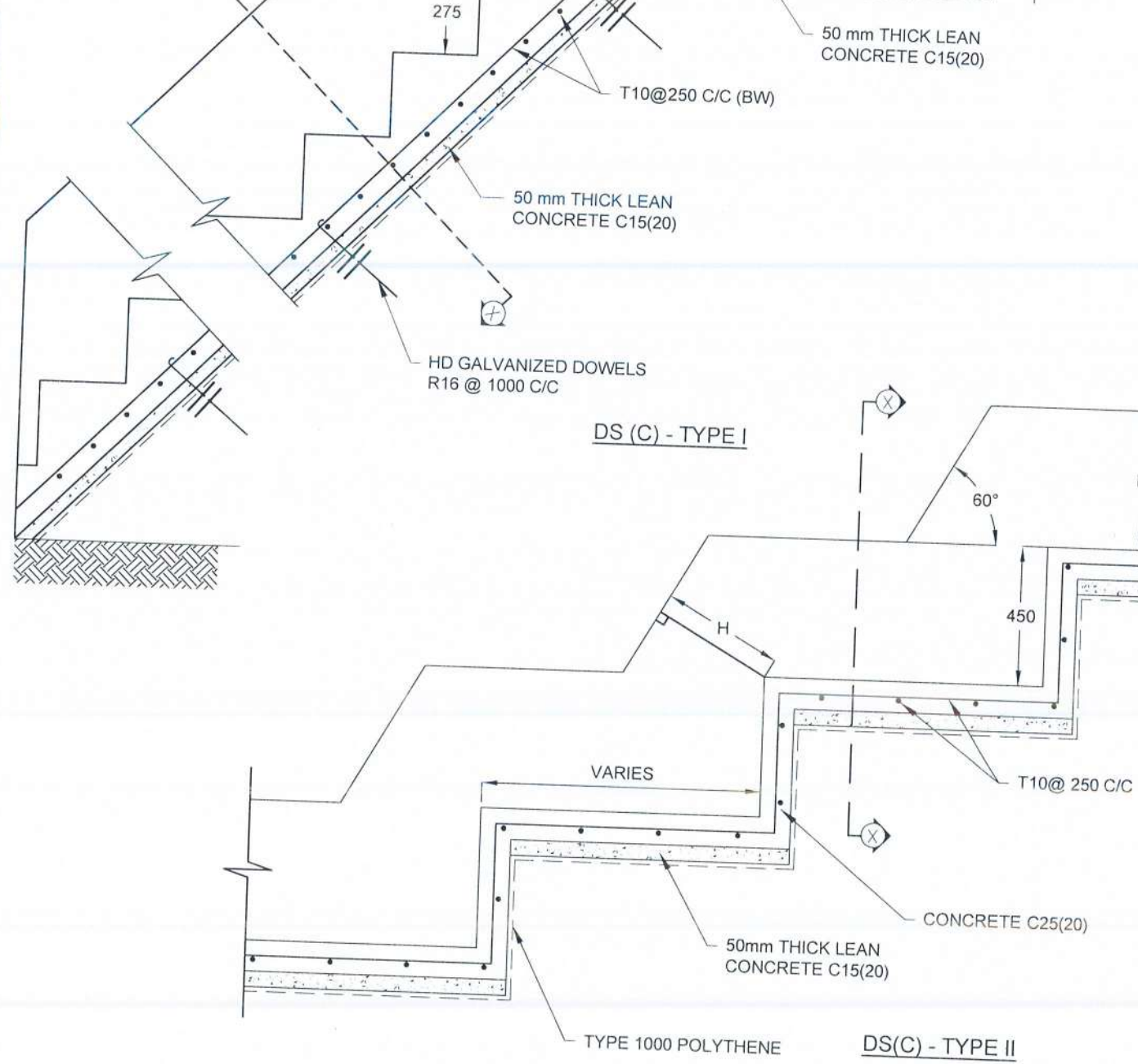
7. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

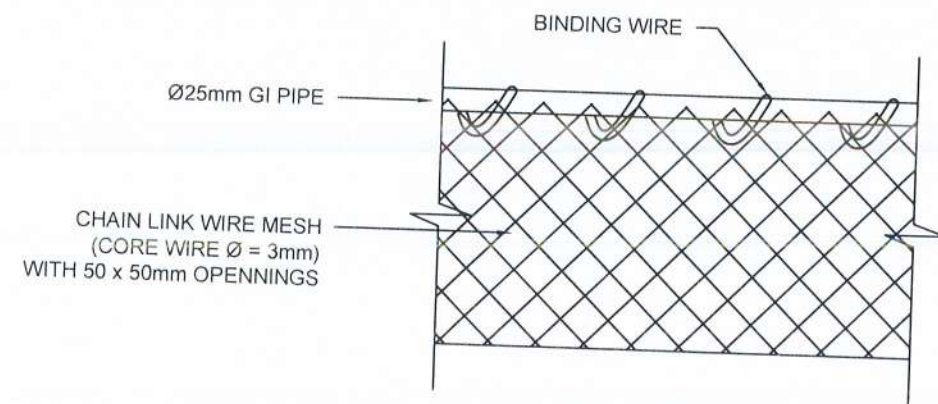
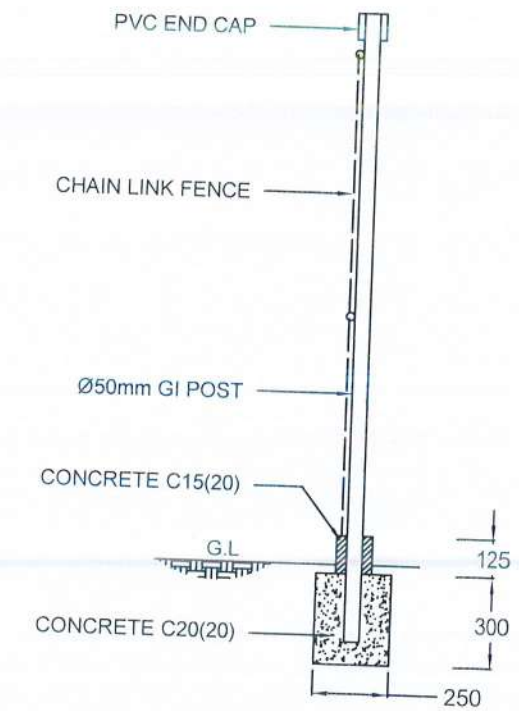
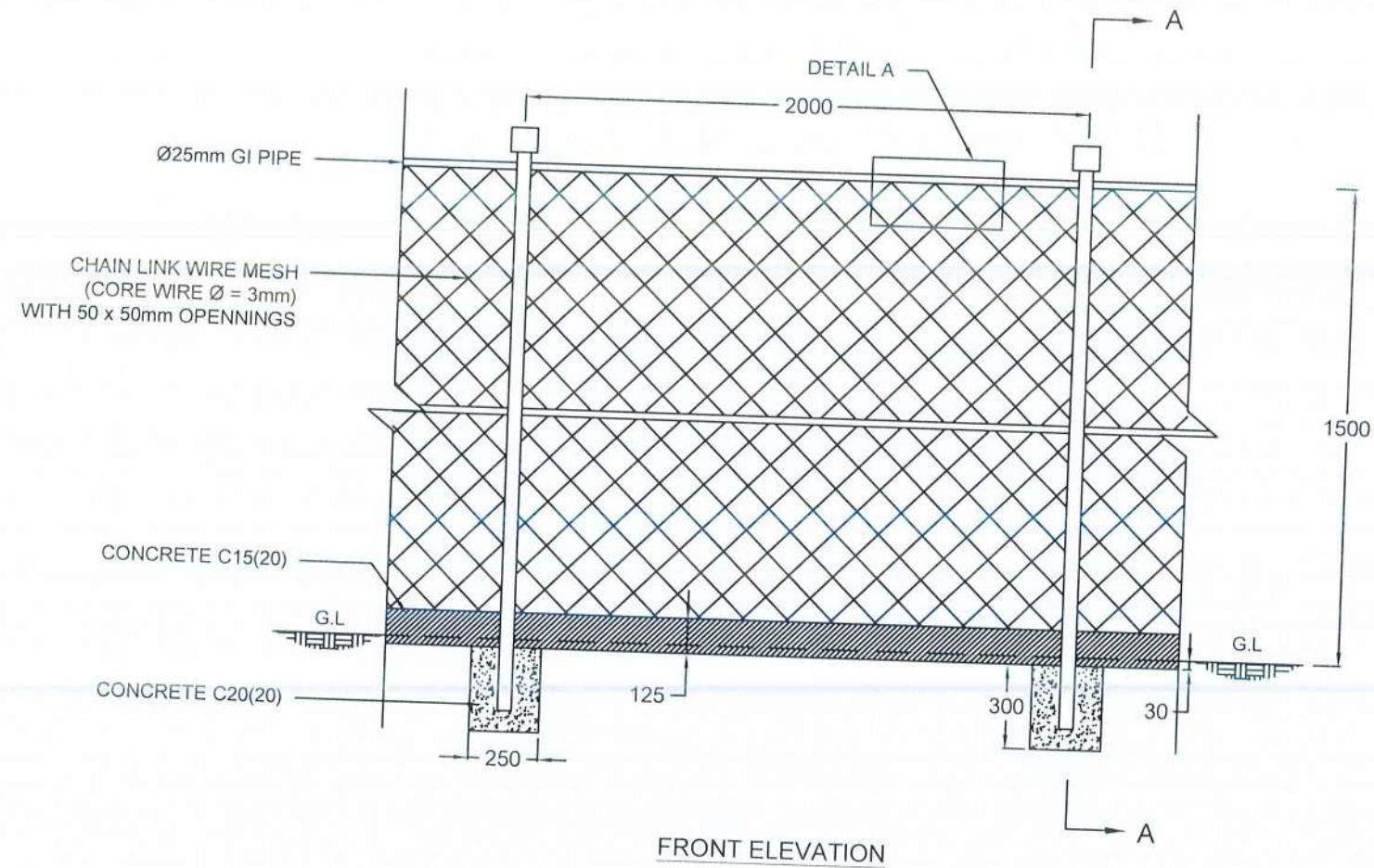
8. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
9. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
10. ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
11. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
12. COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm



DRAIN TYPE	W (mm)	H (mm)	t (mm)	W' (mm)	t' (mm)
DS (C) - A	450	450	100	600	100
DS (C) - B	450	600	100	750	100
DS (C) - C	600	600	100	800	100
DS (C) - D	750	750	100	800	100
DS (C) - E	800	800	125	1000	125
DS (C) - F	1000	750	125	1200	125

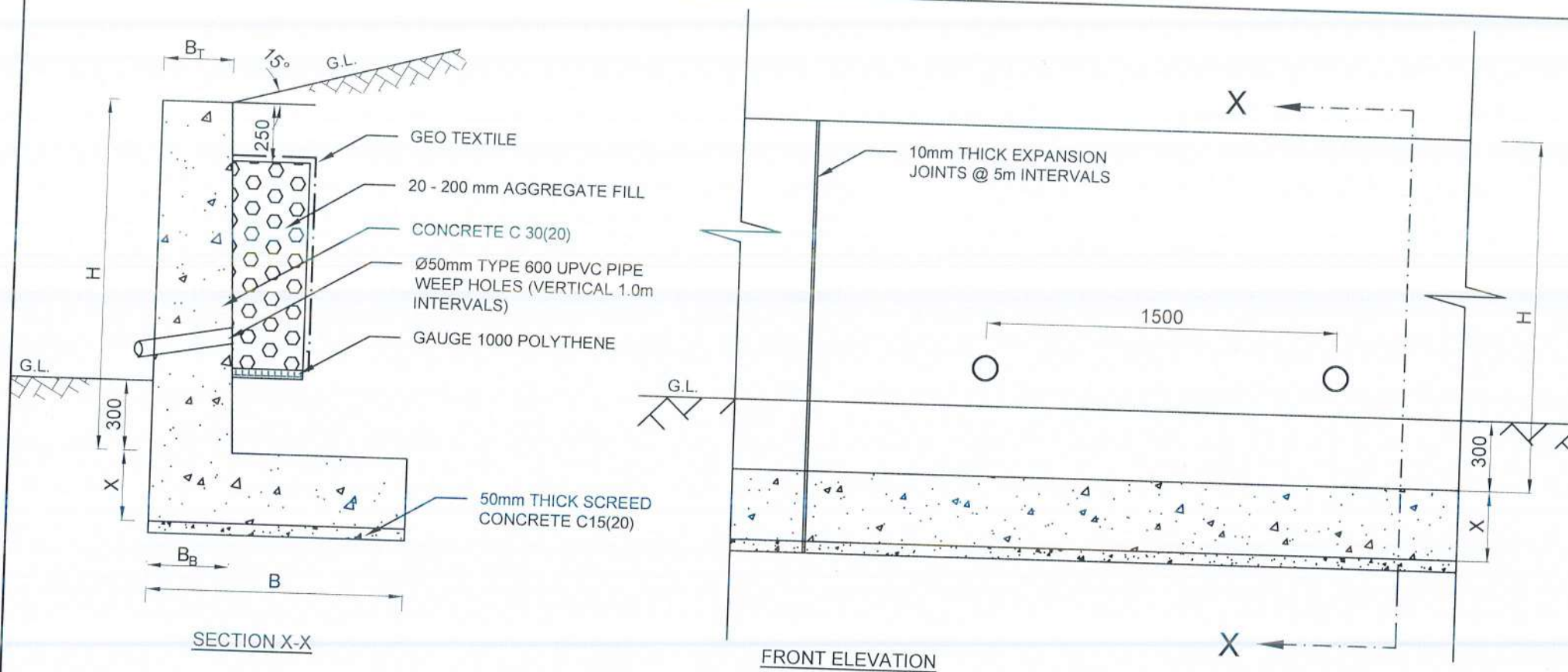
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY	TITLE DETAILS OF DRAINS (CASCADE DRAIN)	DESCRIPTION	NAME	SIGNATURE
						SCALE	N.T.S.	DATE	27.04.2026	
						PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH III/232/A4	REVISION	00	
								RECOMMENDED	PROF. S. A. S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. GI POST SHOULD BE COVERED WITH GREEN COLOUR ANTI-CORROSIVE PAINT.
3. PRIOR APPROVAL IS REQUIRED FOR CHAIN LINK WIRE MESH, GI POST AND PVC CAP.

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 										DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										<table><thead><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>				REV	DATE	REVISION DESCRIPTION	APPROVAL																																					PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY				TITLE DETAILS OF CHAIN LINK FENCE <table><thead><tr><th colspan="2">SCALE</th><th colspan="2">N.T.S.</th><th>DATE</th><th colspan="2">27.04.2026</th><th colspan="2">REVISION</th><th colspan="2">00</th></tr></thead><tbody><tr><td colspan="7">PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/B</td><td colspan="5">APPROVED</td></tr></tbody></table>										SCALE		N.T.S.		DATE	27.04.2026		REVISION		00		PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/B							APPROVED					<table><thead><tr><th>DESCRIPTION</th><th>NAME</th><th>SIGNATURE</th></tr></thead><tbody><tr><td>DRAWN</td><td>K.M.D. NISHANTHI</td><td></td></tr><tr><td>DESIGNED</td><td>R.J.K.P.N. RANATHUNGA</td><td></td></tr><tr><td>CHECKED</td><td>I.A.N.D. IDIRIMANNA</td><td></td></tr><tr><td>RECOMMENDED</td><td>PROF. S.A.S. KULATHILAKA</td><td></td></tr><tr><td>APPROVED</td><td>ENG. (DR.) SANCHITHA JAYAKODY</td><td></td></tr></tbody></table>		DESCRIPTION	NAME	SIGNATURE	DRAWN	K.M.D. NISHANTHI		DESIGNED	R.J.K.P.N. RANATHUNGA		CHECKED	I.A.N.D. IDIRIMANNA		RECOMMENDED	PROF. S.A.S. KULATHILAKA		APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
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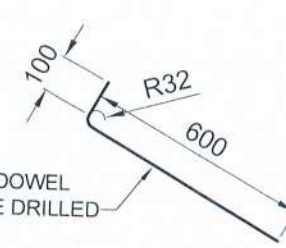
- ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- AGGREGATE BACKFILL AND GEO-TEXTILE SHOULD BE CONFORMED TO THE SPECIFICATIONS PROVIDED.
- HEIGHT OF THE WALL SHALL BE SELECTED CONFORMING TO THE CUT HEIGHT OF THE LOCATION AS PER THE INSTRUCTIONS GIVEN BY ENGINEER.
- TEMPORARY SHORING WILL BE NEEDED DURING THE EXCAVATION FOR THE RETAINING WALLS.
- WALL HEIGHTS SHOULD BE SELECTED TO BE SUITED TO THE CUT HEIGHT AT THE SITE BASED ON THE ACTUAL SITE CONDITION AS PER THE ENGINEERS INSTRUCTIONS.
- DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
- ALLOWABLE BEARING CAPACITY SHALL BE 150 kN/m².
- THE SOIL PROVIDING PASSIVE RESISTANCE AT THE TOE SHALL BE MAINTAINED AT ALL TIMES. ANY ACCIDENTAL EXCAVATION OR REMOVAL OF THIS SOIL WILL ADVERSELY AFFECT WALL STABILITY AND SHALL NOT BE PERMITTED.
- THE FOUNDATION LEVEL SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
- DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS.
- 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED AT EVERY 5m INTERVALS WITH APPROVED MATERIAL.
- 50mm DIAMETER WEEP HOLES SHOULD BE PROVIDED AS GIVEN IN THE DRAWING AND SHOULD BE STAGGERED TO A MINIMUM SLOPE OF 1: 20.

CONCRETE

- THE FOLLOWING CONCRETE GRADES SHOULD BE USED FOR STRUCTURES
 - SCREED CONCRETE - C. 15(20)
 - BASE/WALL - C. 30(20)

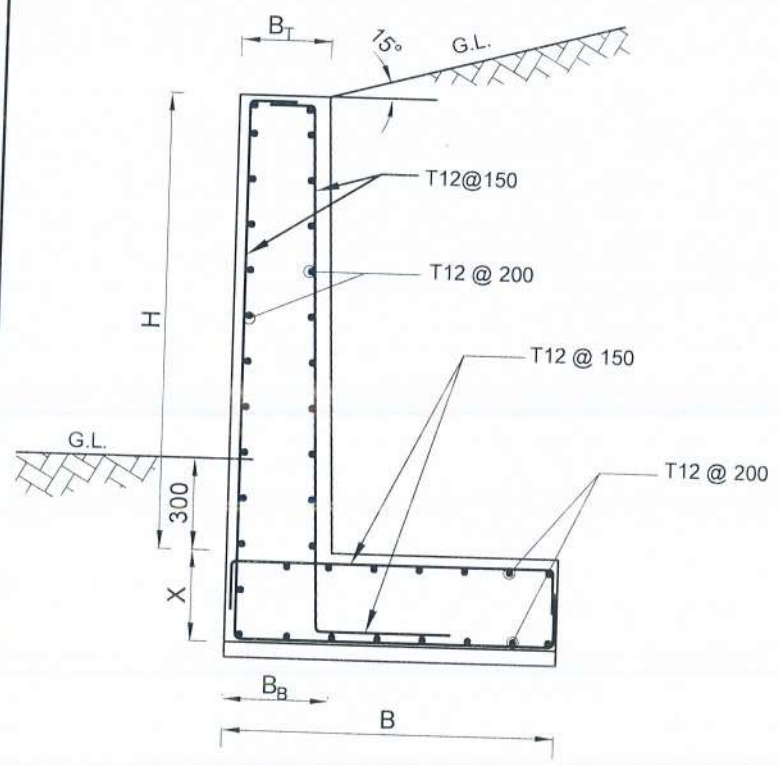
REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY 'T' SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- MINIMUM COVER FOR THE REINFORCEMENT SHOULD BE 50mm.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.



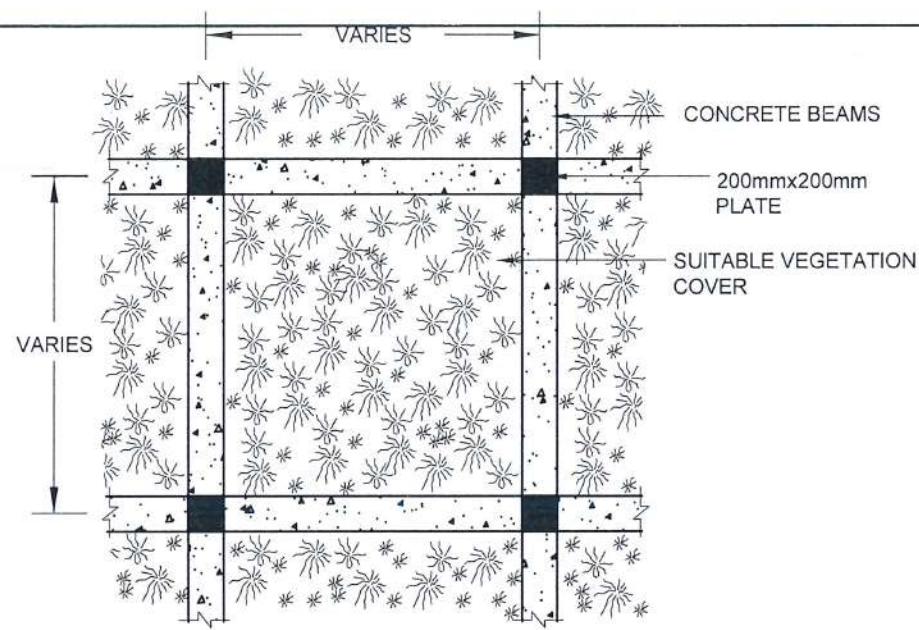
DETAILS OF T12 DOWELS

DIM.	B _T (mm)	B _B (mm)	B (mm)	H (mm)	X (mm)
HEIGHT					
1.5 m	300	350	1100	1500	300
2.0 m	300	450	1450	2000	300
2.5 m	350	500	2200	2500	300
3.0 m	350	500	2500	3000	300

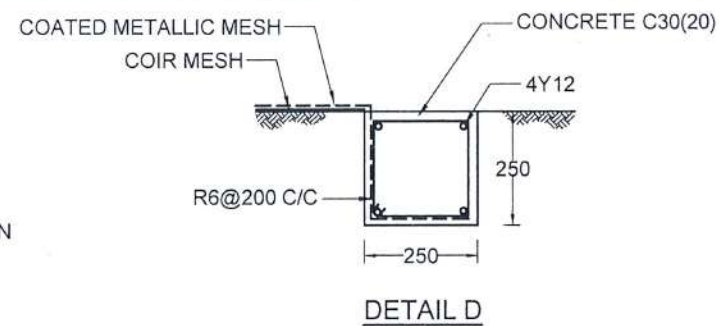


DETAILS OF REINFORCEMENT

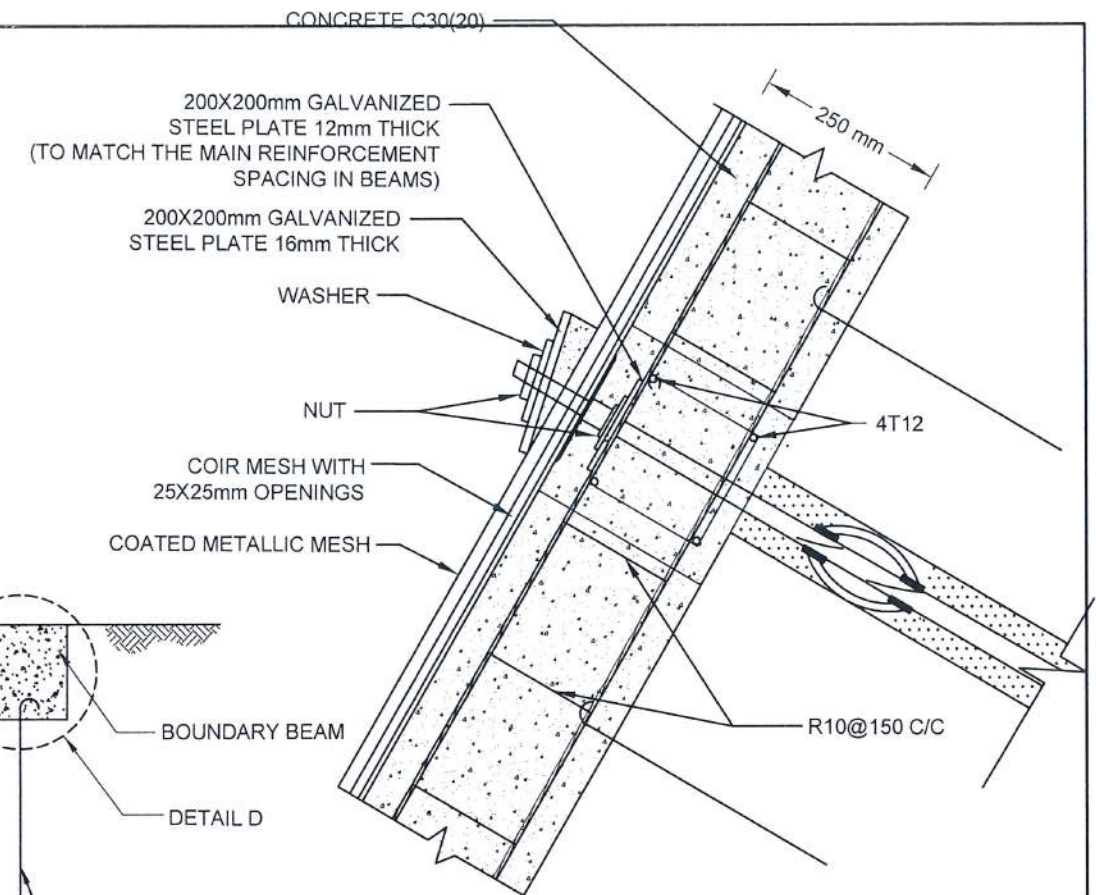
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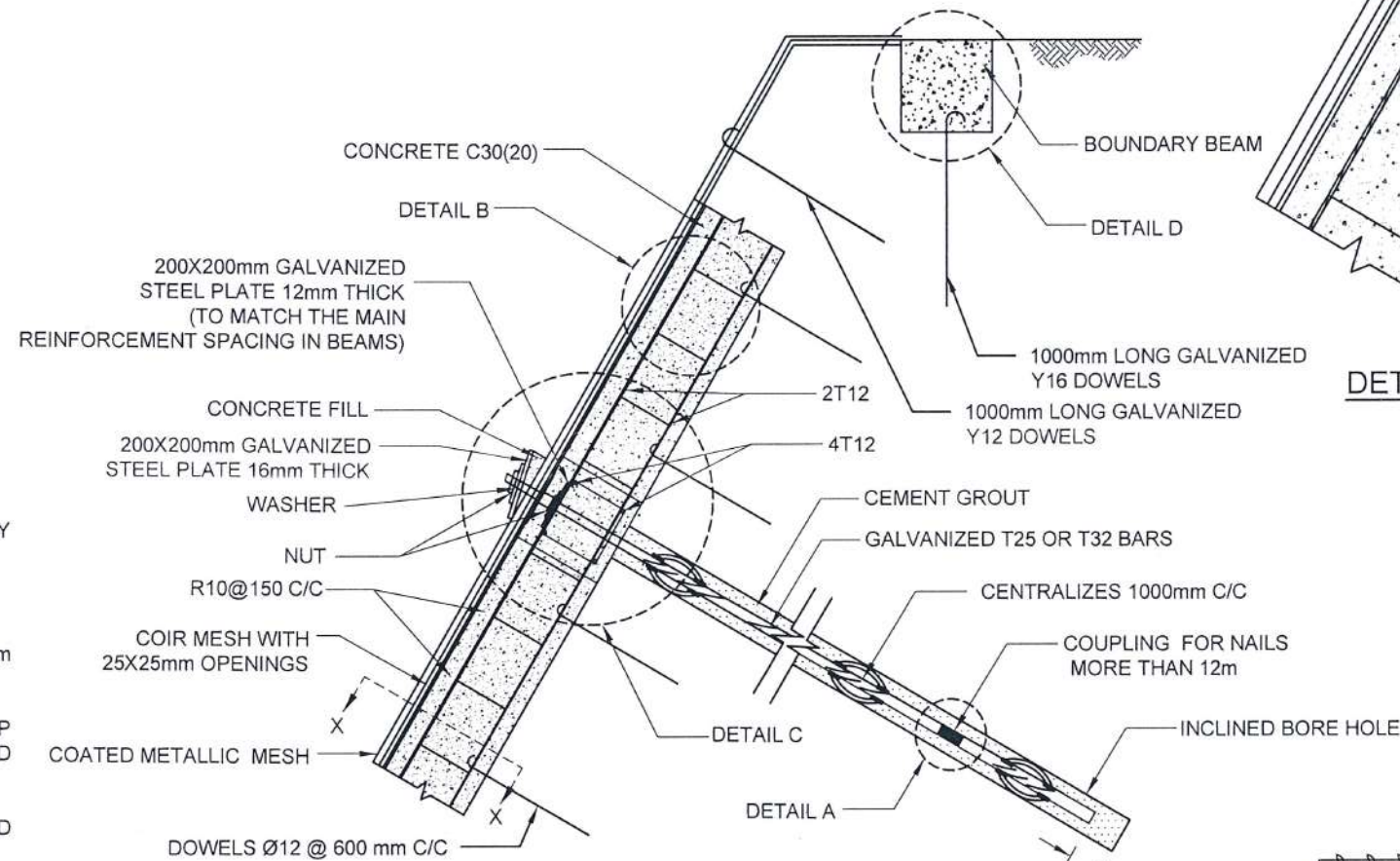
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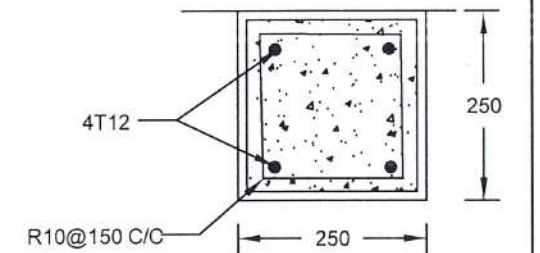
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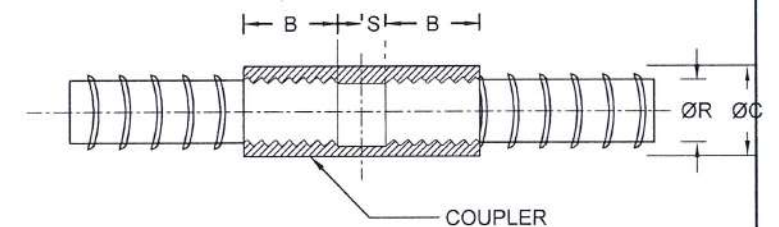
DETAIL C



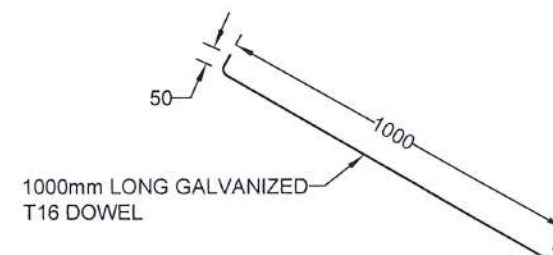
DETAIL OF SOIL NAIL



SECTION X-X



COUPLER DETAILS - A (NAIL LENGTH > 12m)



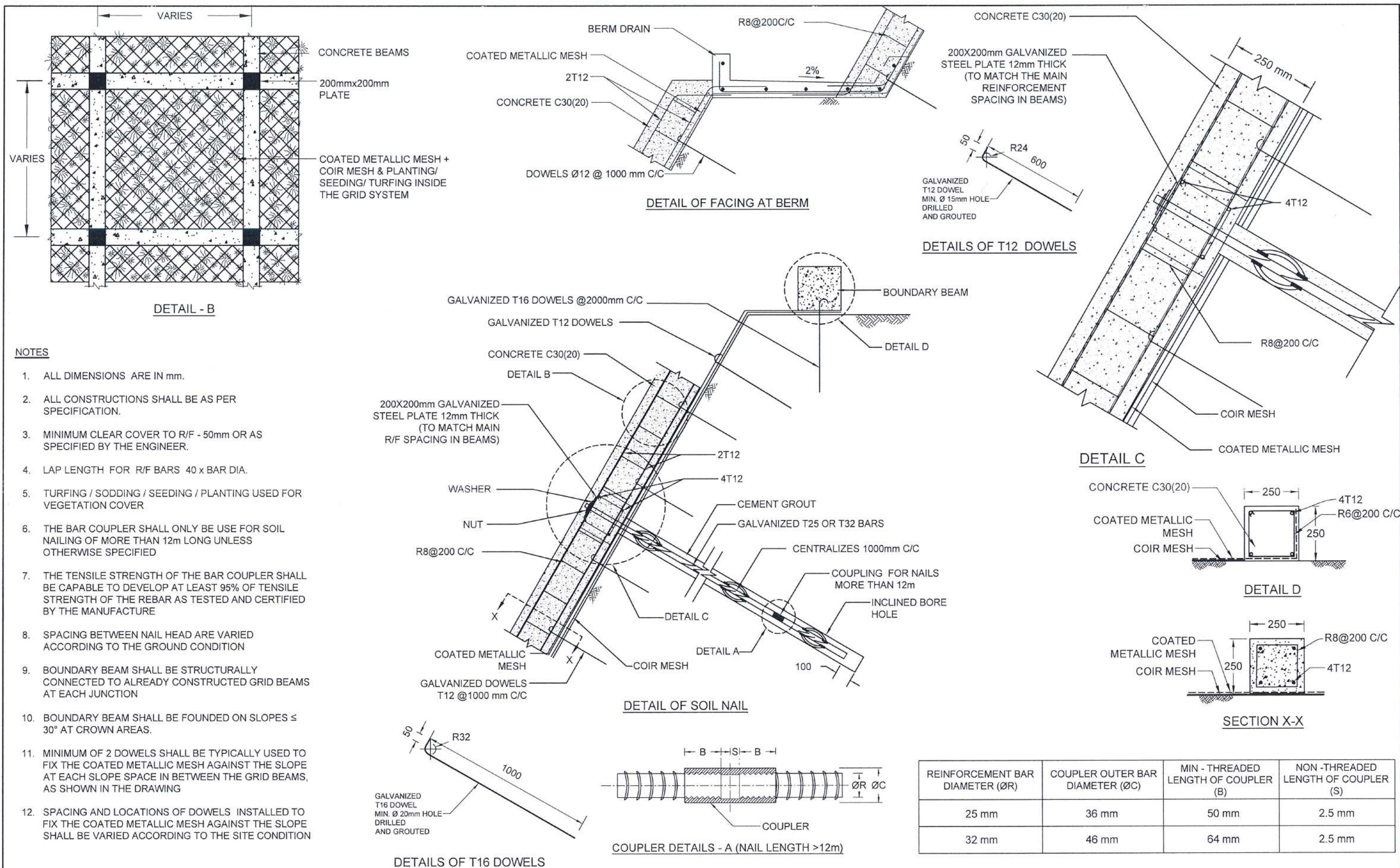
DETAILS OF DOWELS

NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- STRUCTURAL CONC. AS PER SPECIFICATION.
- MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
- STRUCTURAL MEMBERS AS PER SPECIFICATION.
- LAP LENGTH FOR R/F BARS 40 x BAR DIA.
- TWO SETS OF 4T12 BARS PLACED PERPENDICULAR TO EACH OTHERS BY CONNECTING NAIL HEADS VERTICALLY AND HORIZONTALLY ON SLOPE FACE.
- TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER.
- THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG.
- THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE.
- SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION.
- DOWEL SPACING FOR BOUNDARY BEAM SHALL BE 2m.
- BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION.
- MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING.
- SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION.

REINFORCEMENT BAR DIAMETER (ØR)	COUPLER OUTER BAR DIAMETER (ØC)	MIN - THREADED LENGTH OF COUPLER (B)	NON - THREADED LENGTH OF COUPLER (S)
25 mm	36 mm	50 mm	2.5 mm
32 mm	46 mm	64 mm	2.5 mm

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99 /1, JAWATTA ROAD COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY	TITLE DETAILS OF SOIL NAILING WITH EMBEDDED GRID BEAM	DESCRIPTION DRAWN	NAME K.M.D. NISHANTHI	SIGNATURE 	
									DESIGNED	R.J.K.P.N. RANATHUNGA			
									CHECKED	I.A.N.D. IDRIMANNA			
								SCALE N.T.S.	DATE 25.052026	RECOMMENDED	PROF. S.A.S. KULATHILAKA		
								PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/232/D1		REVISION 00	APPROVED	ENG.(DR.) SANCHITHA JAYAKODY	



NOTES

- ALL DIMENSIONS ARE IN mm.
- ALL CONSTRUCTIONS SHALL BE AS PER SPECIFICATION.
- MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
- LAP LENGTH FOR R/F BARS 40 x BAR DIA.
- TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER
- THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG UNLESS OTHERWISE SPECIFIED
- THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE
- SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION
- BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION
- BOUNDARY BEAM SHALL BE FOUNDED ON SLOPES $\leq 30^\circ$ AT CROWN AREAS.
- MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING
- SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION

EMPLOYER

 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

DESIGNER

 DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
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REDUCTION OF LAND SLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT

HILLWOOD COLLEGE
KANDY

TITLE

DETAILS OF SOIL NAILING WITH
NON EMBEDDED GRID BEAM

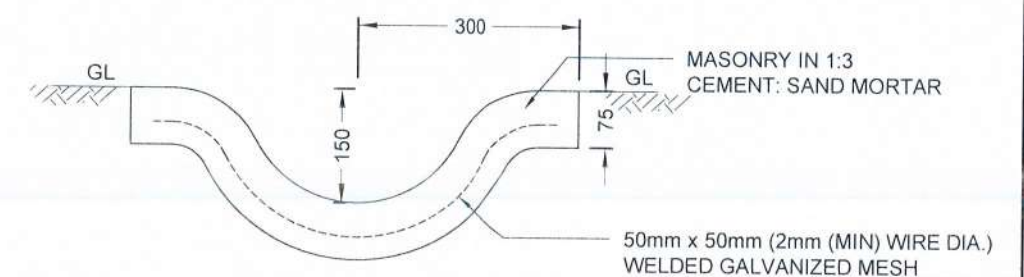
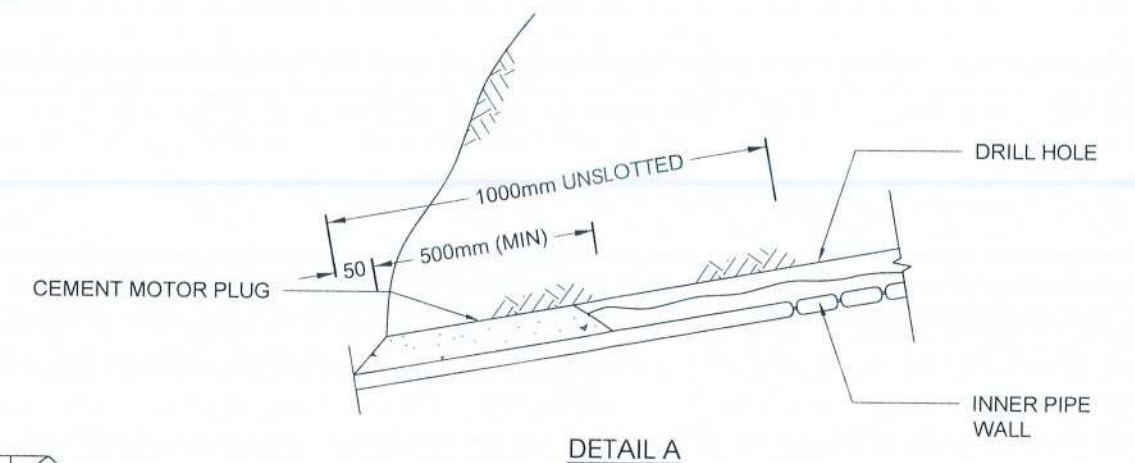
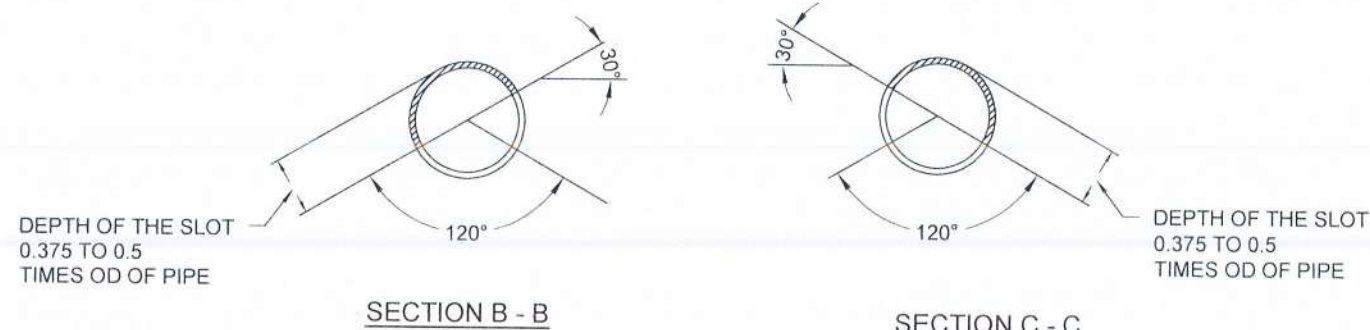
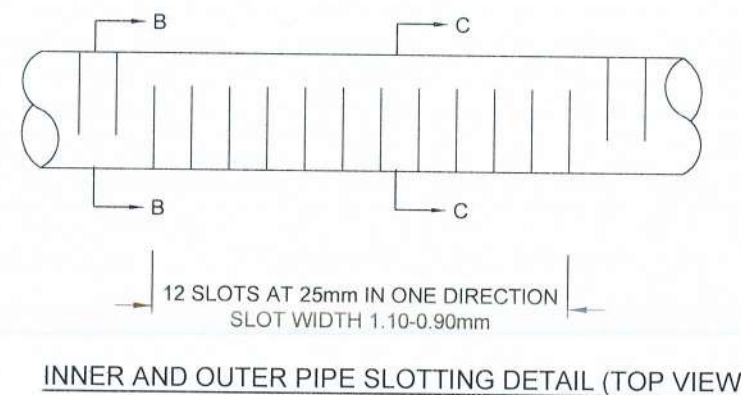
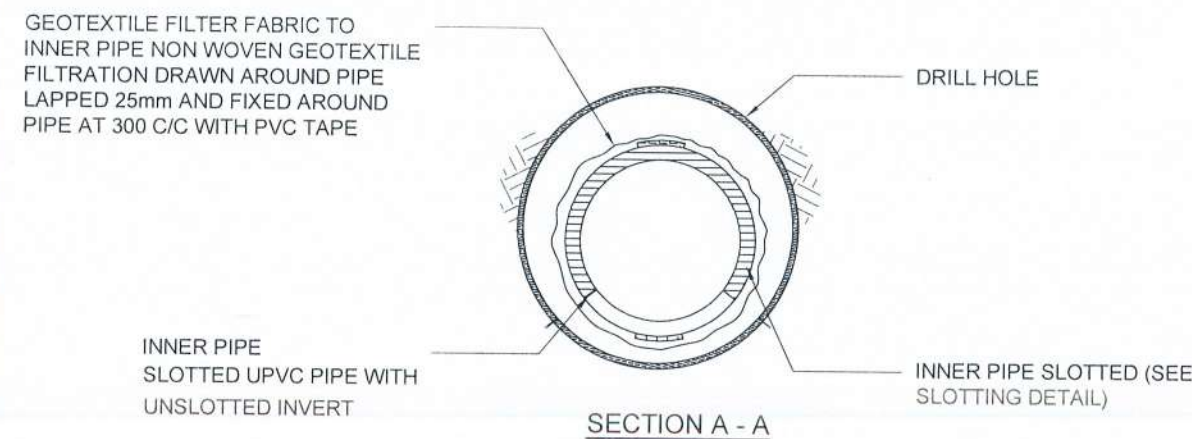
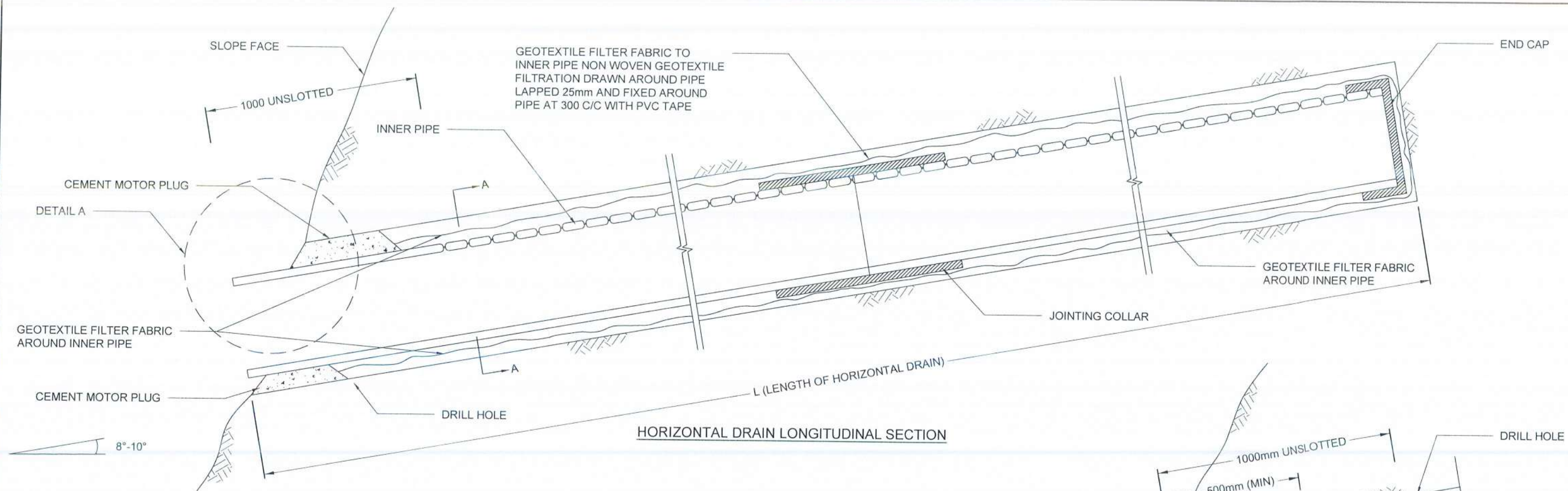
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RLVMMP/WORKS/NCB/PH III/232/D2

REVISION 00

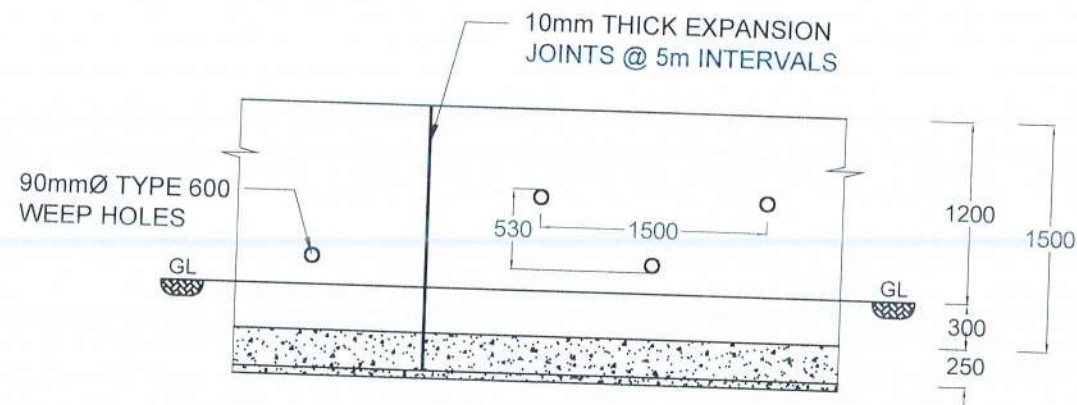
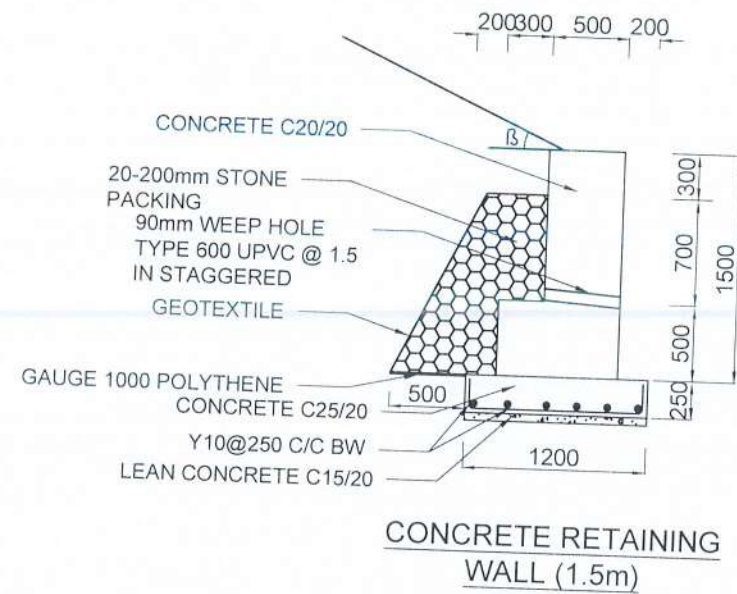
DESCRIPTION	NAME	SIGNATURE
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG.(DR.) SANCHITHA JAYAKODY	



NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. PIPE DIAMETERS, ANGLE & LENGTHS AS SPECIFIED IN DRAWINGS.
3. ALL MATERIALS SHALL CONFORM TO PROJECT SPECIFICATION

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	<table><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	REV	DATE	REVISION DESCRIPTION	APPROVAL																									PROJECT TITLE REDUCTION OF LAND SLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT HILLWOOD COLLEGE KANDY	<table><tr><td colspan="2">TITLE</td><td>DESCRIPTION</td><td>NAME</td><td>SIGNATURE</td></tr><tr><td colspan="2" rowspan="4">DETAILS OF HORIZONTAL DRAIN SECTIONS</td><td>DRAWN</td><td>K.M.D. NISHANTHI</td><td></td></tr><tr><td>DESIGNED</td><td>R.J.K.P.N. RANATHUNGA</td><td></td></tr><tr><td>CHECKED</td><td>I.A.N.D. IDIRIMANNA</td><td></td></tr><tr><td>RECOMMENDED</td><td>PROF. S.A.S. KULATHILAKA</td><td></td></tr><tr><td>SCALE</td><td>N.T.S.</td><td>DATE</td><td>27.04.2026</td><td rowspan="2"></td></tr><tr><td colspan="2">PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/232/E</td><td>REVISION</td><td>00</td></tr><tr><td colspan="2">APPROVED</td><td colspan="2">ENG. (DR.) SANCHITHA JAYAKODY</td><td></td></tr></table>	TITLE		DESCRIPTION	NAME	SIGNATURE	DETAILS OF HORIZONTAL DRAIN SECTIONS		DRAWN	K.M.D. NISHANTHI		DESIGNED	R.J.K.P.N. RANATHUNGA		CHECKED	I.A.N.D. IDIRIMANNA		RECOMMENDED	PROF. S.A.S. KULATHILAKA		SCALE	N.T.S.	DATE	27.04.2026		PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/232/E		REVISION	00	APPROVED		ENG. (DR.) SANCHITHA JAYAKODY		
REV	DATE	REVISION DESCRIPTION	APPROVAL																																																															
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SCALE	N.T.S.	DATE	27.04.2026																																																															
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/232/E		REVISION	00																																																															
APPROVED		ENG. (DR.) SANCHITHA JAYAKODY																																																																



FRONT ELEVATION

NOTES

- 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED @ EVERY 5m INTERVALS.
- DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS
- WHERE THE EARTH CUT HEIGHT IS LESS THAN THAT OF THE APPLICABLE TYPICAL WALL, THE HEIGHT OF THE WALL SHOULD BE REDUCED TO FIT THE CUT HEIGHT, FROM ITS BOTTOM END WHILE MAINTAINING THE GIVEN TOP WIDTH.

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a] SCREED	- GR. 15/20
[b] BASE	- GR. 25/20
[c] WALL	- GR. 20/20

REINFORCEMENT

- ALL BARS MARKED "T" SHALL BE HIGH YIELD DEFORMED BARS OF YIELD STRENGTH NOT LESS THAN 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED WITH LENGTH OF 50Ø, WHERE Ø IS THE DIAMETER AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.
- CLEAR CONCRETE COVER FOR ALL FOUNDATION REINFORCEMENT BELLOW GROUND LEVEL TO BE 50 mm.

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT

HILLWOOD COLLEGE
KANDY

TITLE

DETAILS OF RETAINING WALL

SCALE N.T.S.
PROJECT / DRAWING No.
RLVMP/WORKS/NCB/PH III/232/F

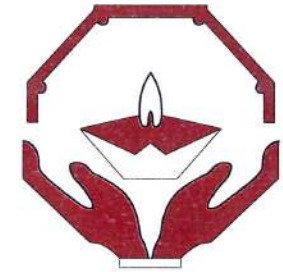
DATE 27.04.2026
REVISION 00

DESCRIPTION	NAME	SIGNATURE
DRAWN	A. K. A. T. NAYOMI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR). SANCHITHA JAYAKODY	

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE



NATIONAL BUILDING RESEARCH INSTITUTE



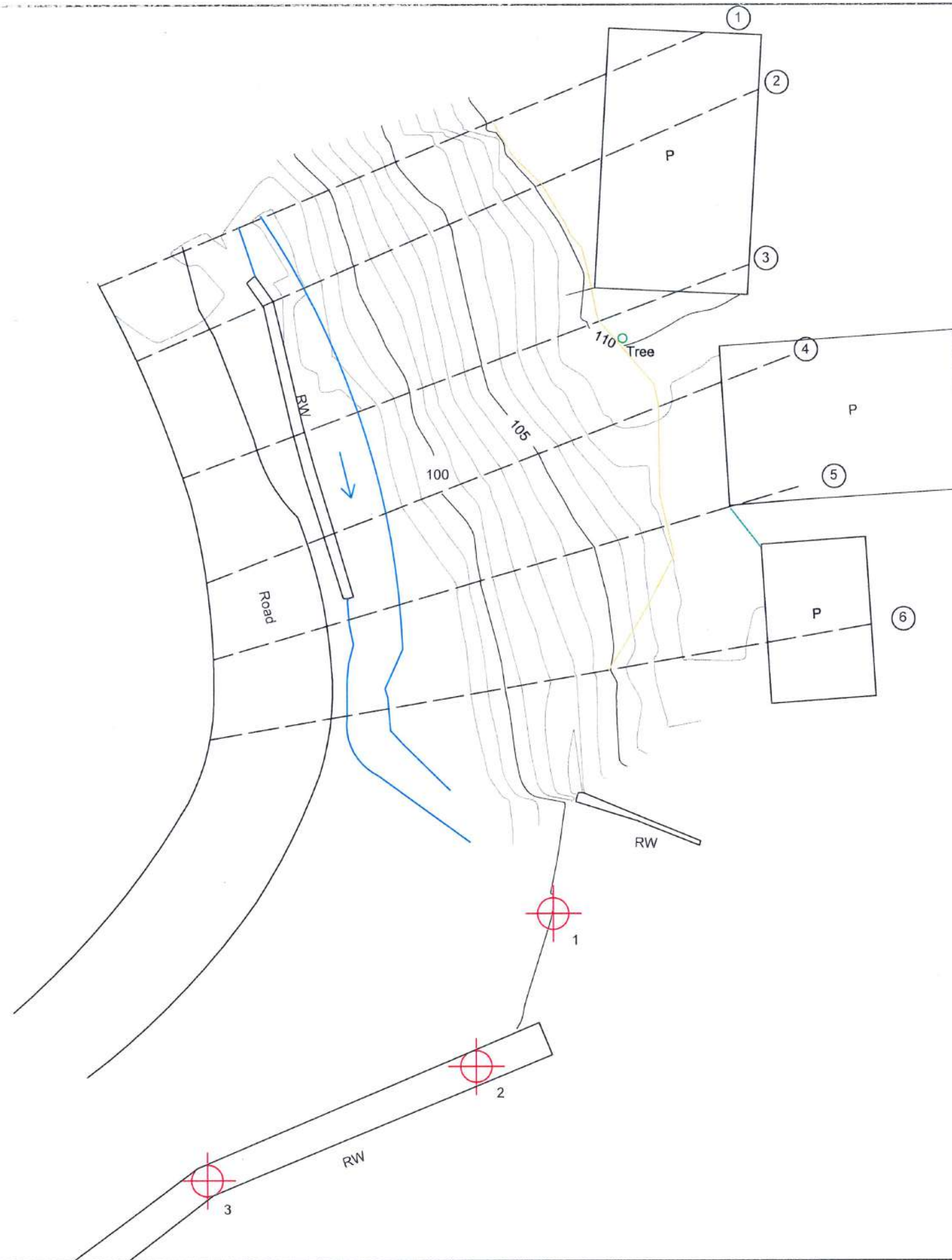
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
KANDY
LOCATION 01, LOCATION 02 & LOCATION 03

PROJECT NO: RLVMP/WORKS/NCB/PHIII/231

DETAILED DESIGN DRAWINGS

APRIL 2026

Site No. 246-Location 1



REFERENCE

■	Net Fence	NF
■	ELA	MDn
■	Permanent Building	P
■	Retaining Wall	RW
■	Electric Post	EP
■	SCAR	
■	Sections	
○	Tree	
⊕	Reference Points	

N	E	Z	PN
987.013	2013.31	100	1
977.918	2008.65	99.105	2
971.126	1992.49	98.186	3

EMPLOYER

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

DESIGNER

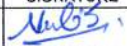
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

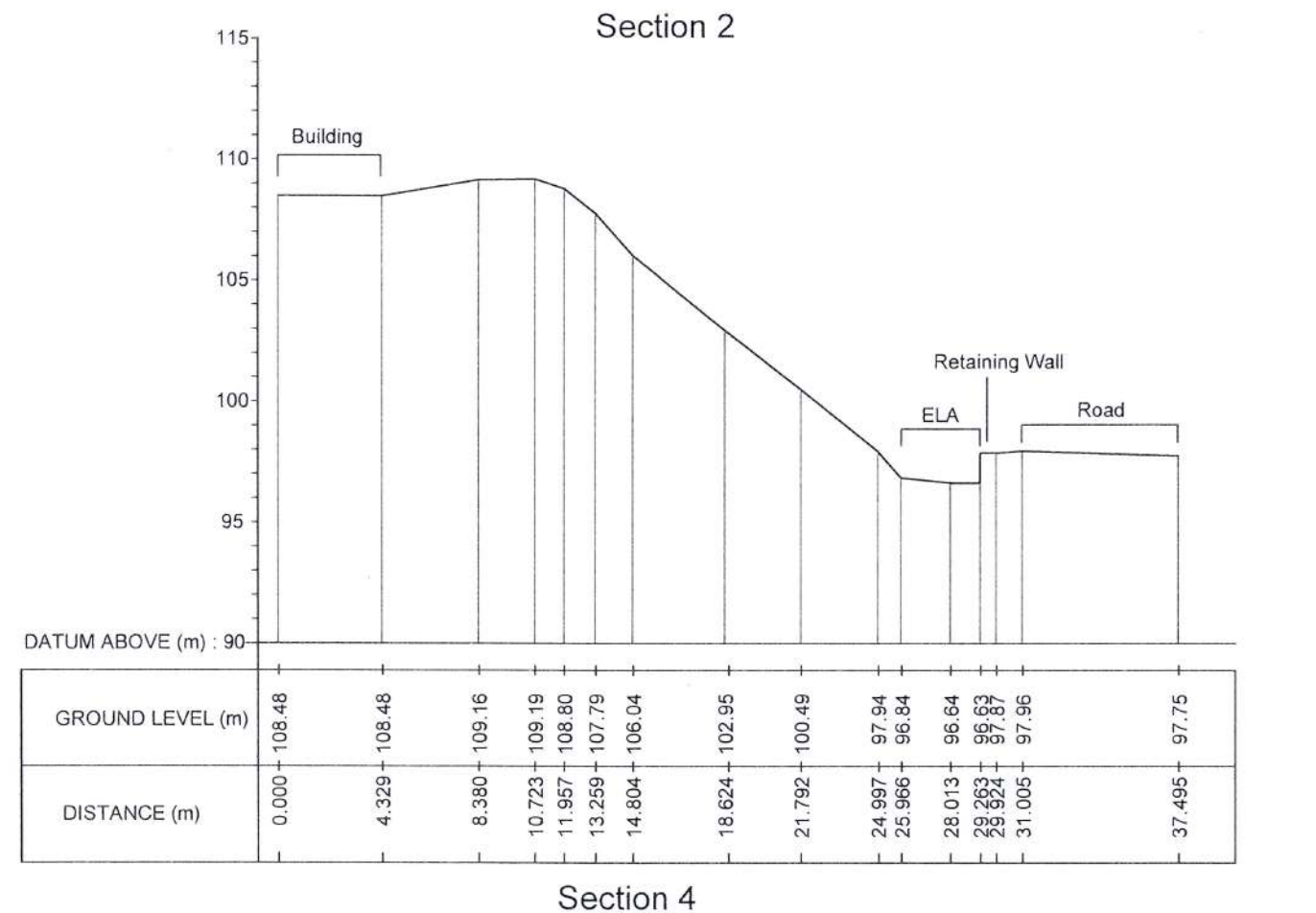
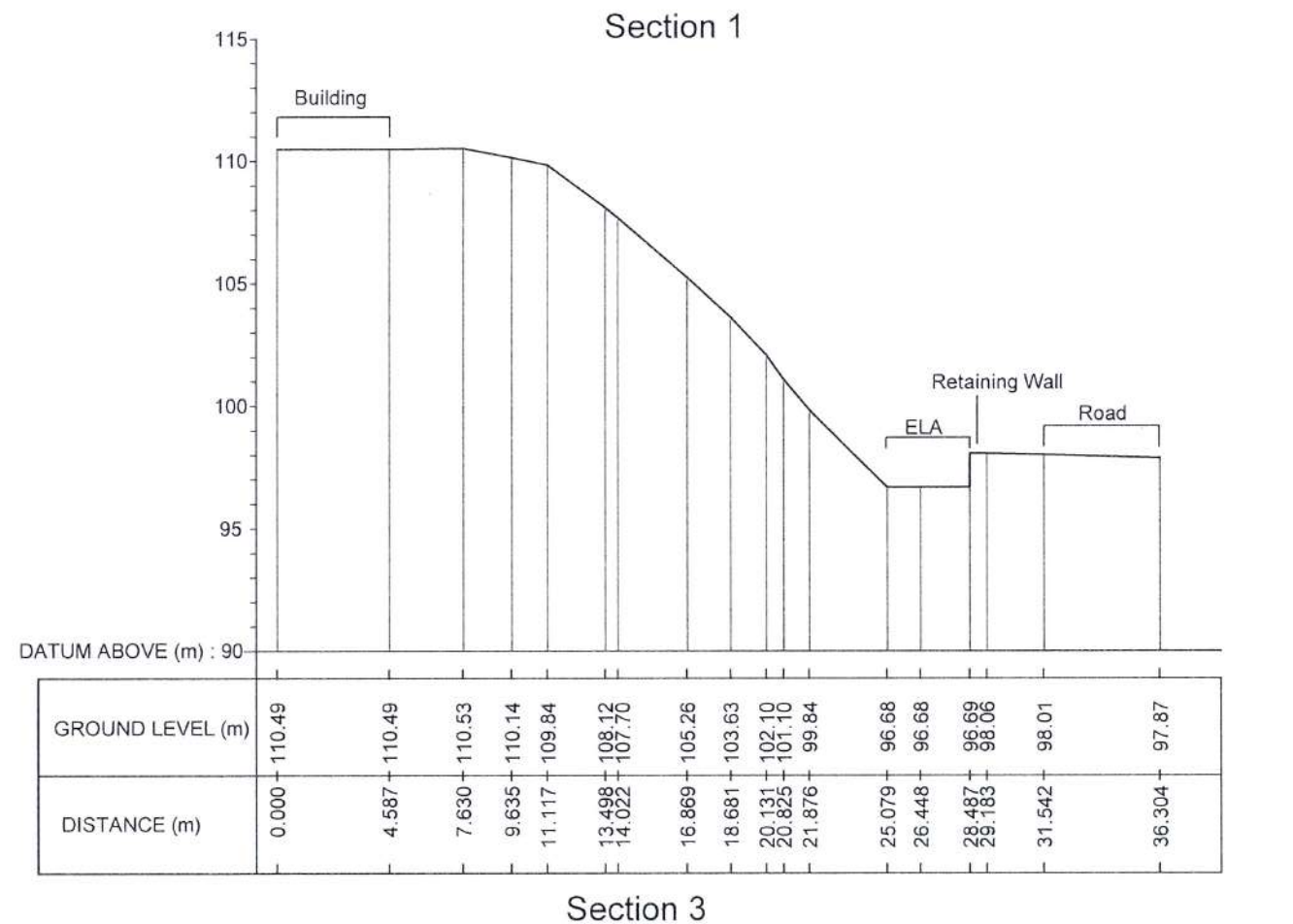
REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
IN FRONT OF THE MAHINDODAYA LABORATORY
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 1

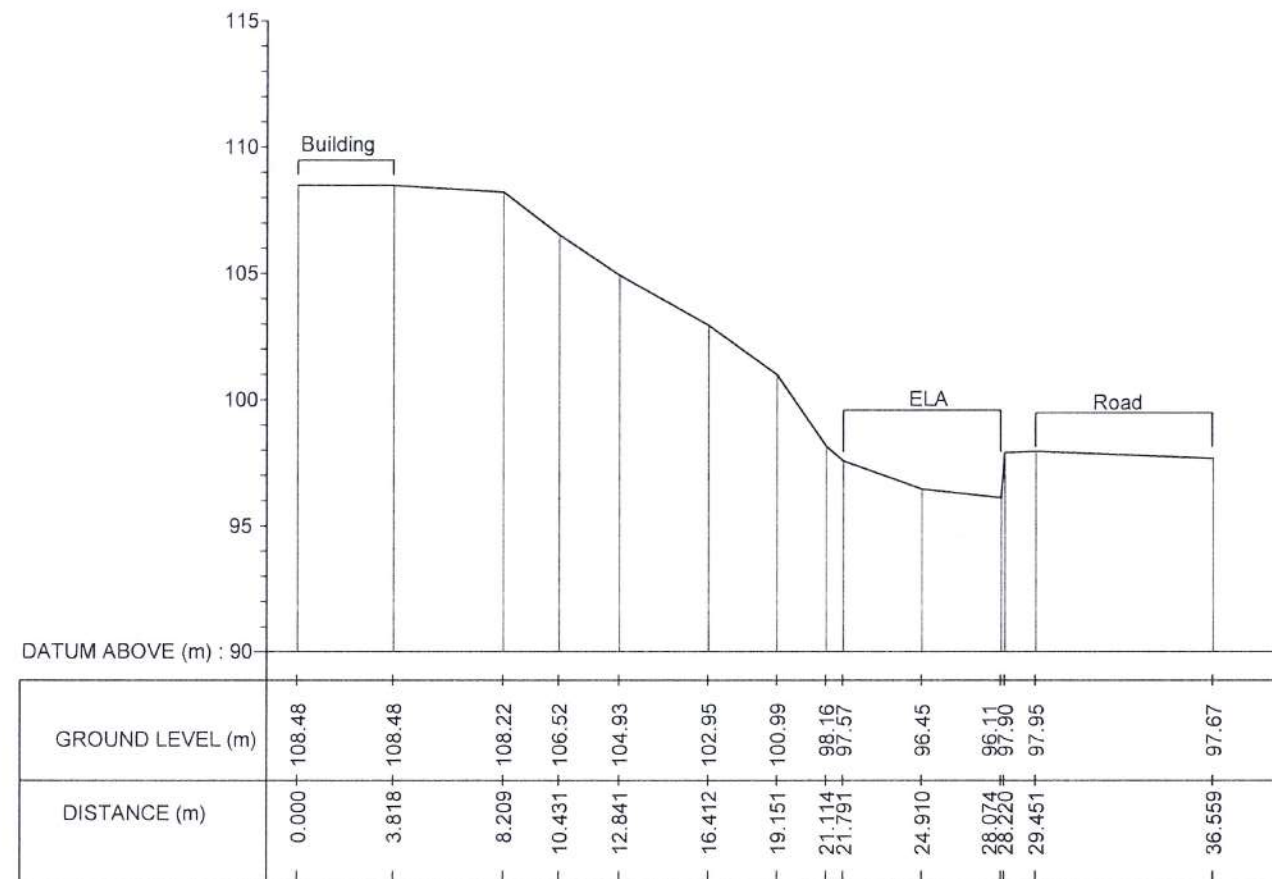
TITLE
SURVEY PLAN

SCALE	1:300	DATE	09.04.2026
PROJECT / DRAWING No.	RLVMMP/WORKS/NCB/PH III/231/L/DR 01	REVISION	00

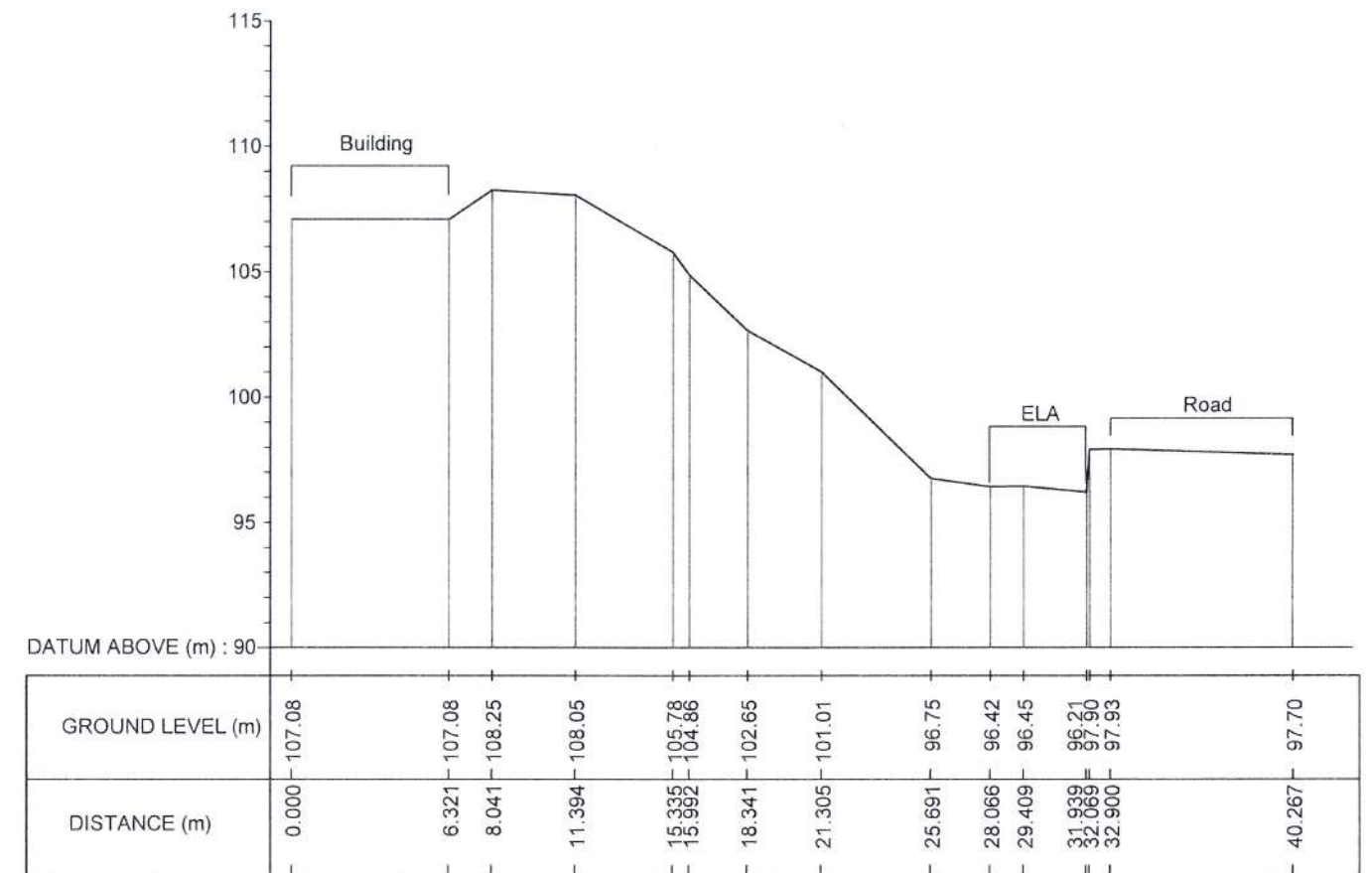
DESCRIPTION	NAME	SIGNATURE
SURVEYED	W. L. P. N. N. WIJESINGHE	
CHECKED	R. J. K. P. N. RANATHUNGA	



EMPLOYER		DESIGNER		REV		DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE
	DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05						REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHINDODAYA LABORATORY SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 1	EXISTING CROSS SECTION	SCALE	1:300	DATE	09.04.2026	

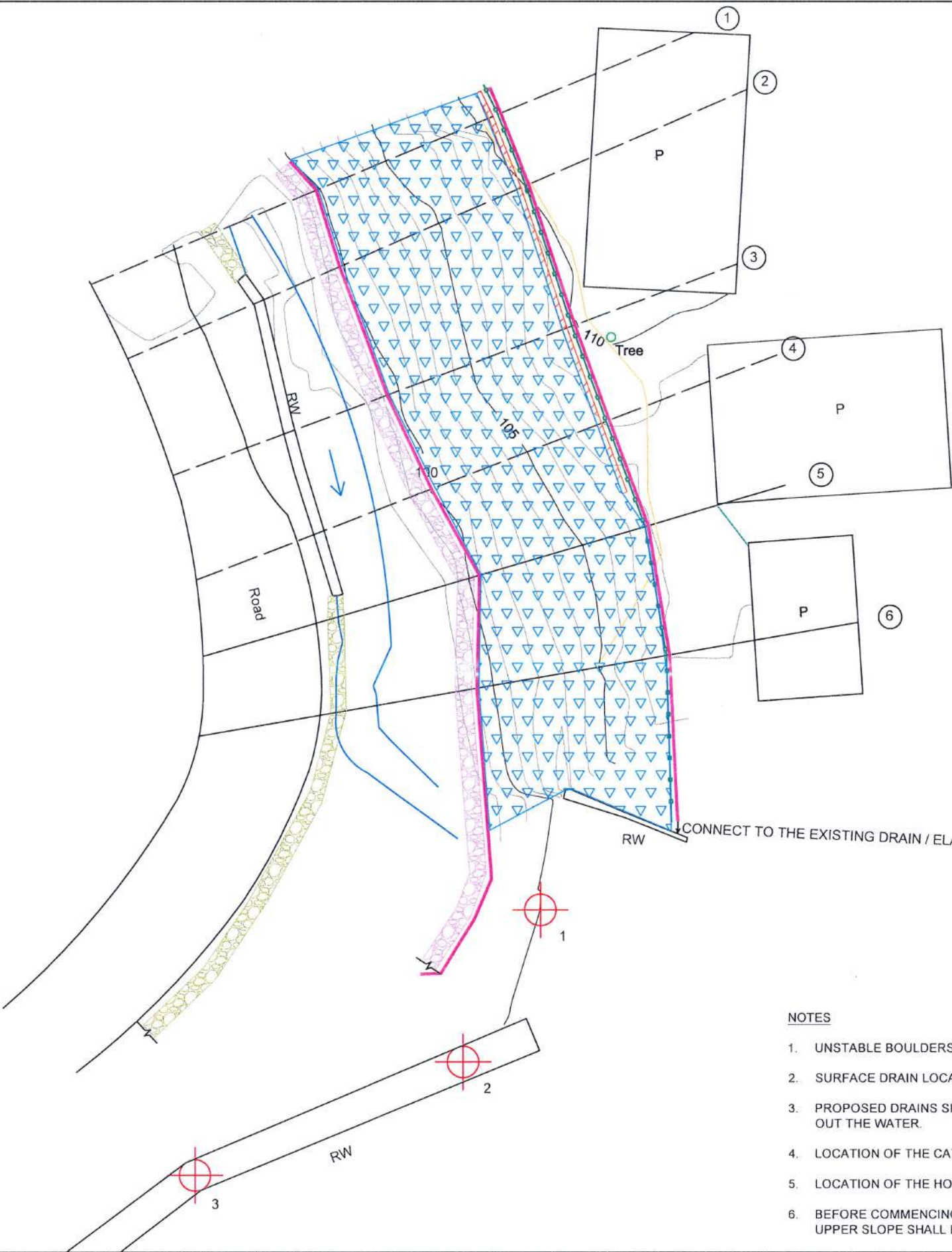


Section 5



Section 6

EMPLOYER		DESIGNER		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05						REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHINDODAYA LABORATORY SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 1	EXISTING CROSS SECTION			SURVEYED	W. L. P. N. N. WIJESINGHE	
									SCALE 1:300			DATE	09.04.2026	
									PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH III/231/L 1/DR 02b			REVISION 00		



REFERENCE

Net Fence	NF
ELA	MDn
Permanent Building	P
Retaining Wall	RW
Electric Post	EP
SCAR	
Sections	
Tree	
Reference Points	

N	E	Z	PN
987.013	2013.31	100	1
977.918	2008.65	99.105	2
971.126	1992.49	98.186	3

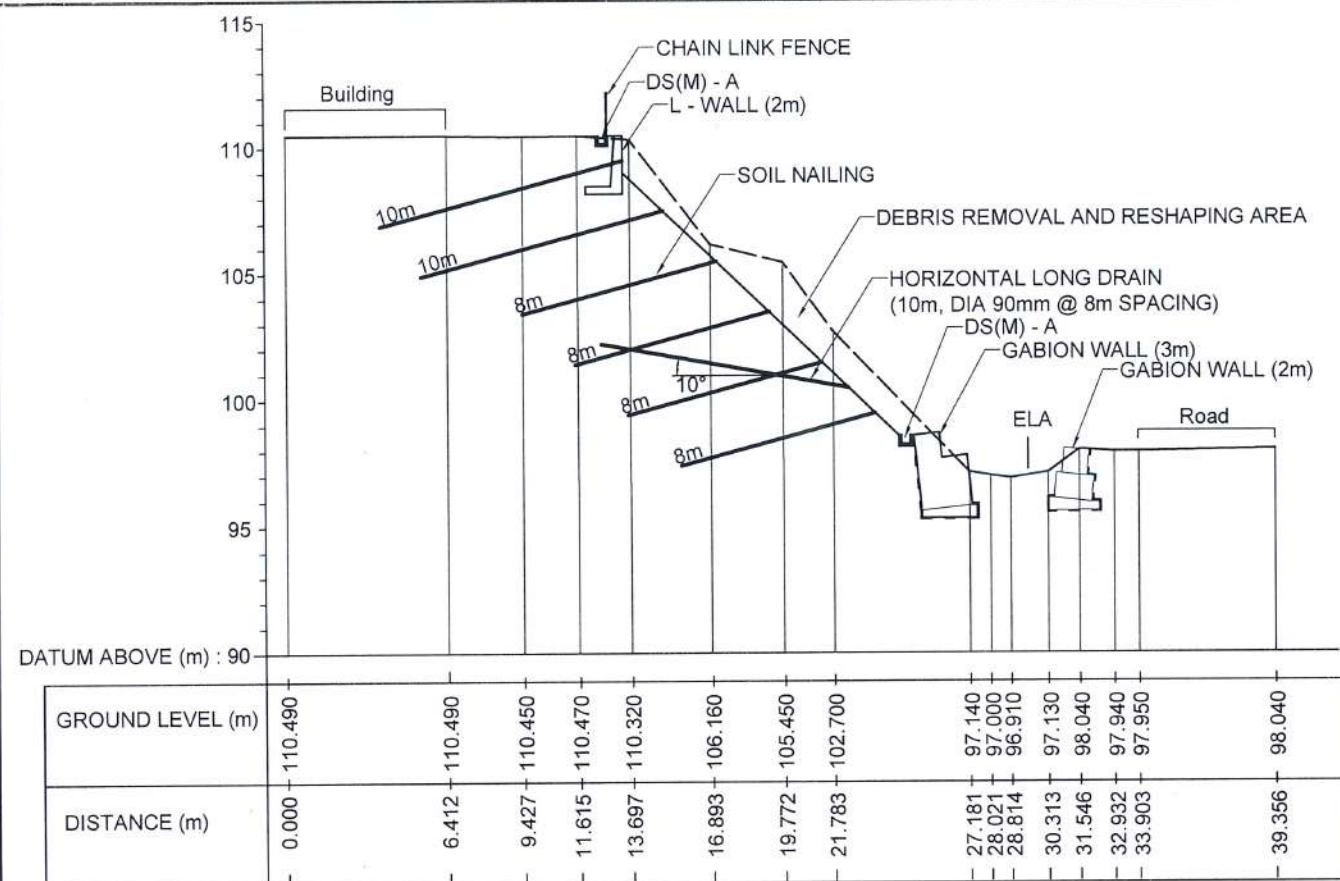
DESIGN NOTATION

DS(M) - A	
GABION WALL (2m)	
GABION WALL (3m)	
L - WALL (2m)	
CHAIN LINK FENCE	
SOIL NAILING	

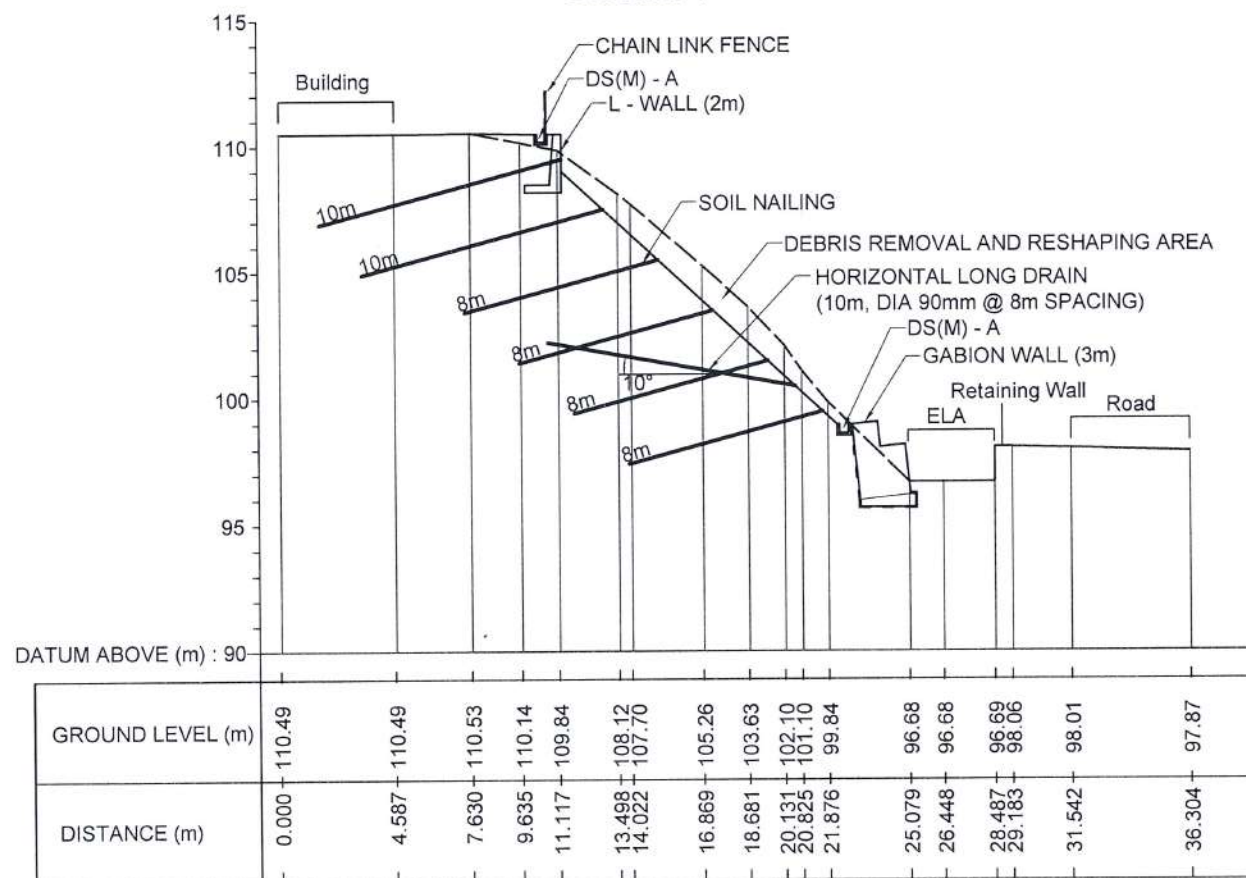
NOTES

- UNSTABLE BOULDERS AND DEBRIS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
- SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
- PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
- LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.
- LOCATION OF THE HORIZONTAL DRAINS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.
- BEFORE COMMENCING EXCAVATION FOR THE CONSTRUCTION OF THE 3m GABION WALL AT THE TOE, THE UPPER SLOPE SHALL BE STABILIZED WITH SOIL NAILING.

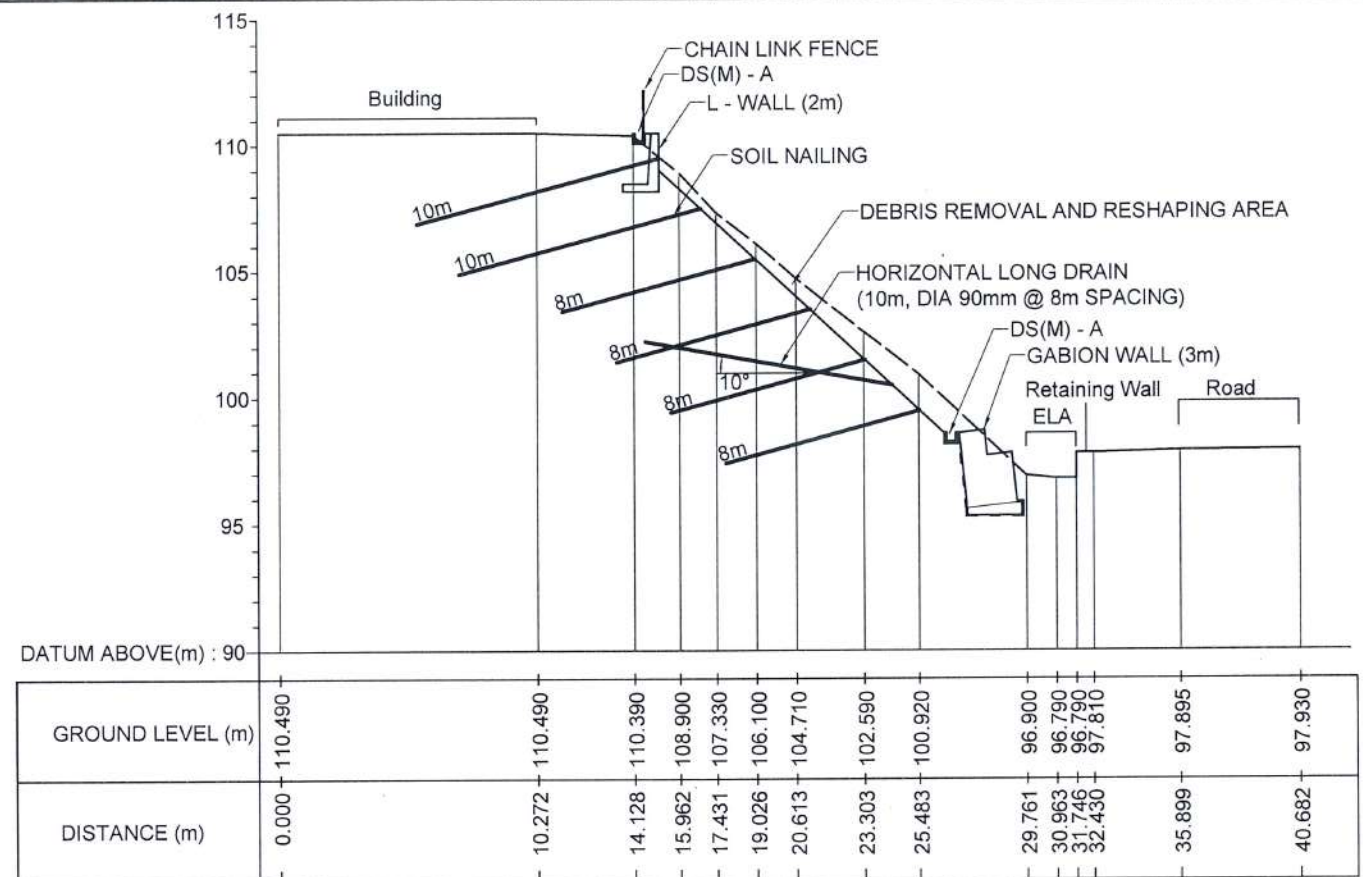
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHINDODAYA LABORATORY SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 1	TITLE PLAN VIEW OF PROPOSED MITIGATION MEASURES			DESCRIPTION	NAME	SIGNATURE
										DRAWN	A.K.A.T. NAYOMI	
										DESIGNED	R.J.K.P.N. RANATHUNGA	
										CHECKED	I.A.N.D. IDIRIMANNA	
							RECOMMENDED	PROF. S.A.S. KULATHILAKA				
		SCALE 1:300			DATE		09.04.2026	REVISION	00	APPROVED	ENG. (DR). SANCHITHA JAYAKODY	
		PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/231/L1/DR 03										



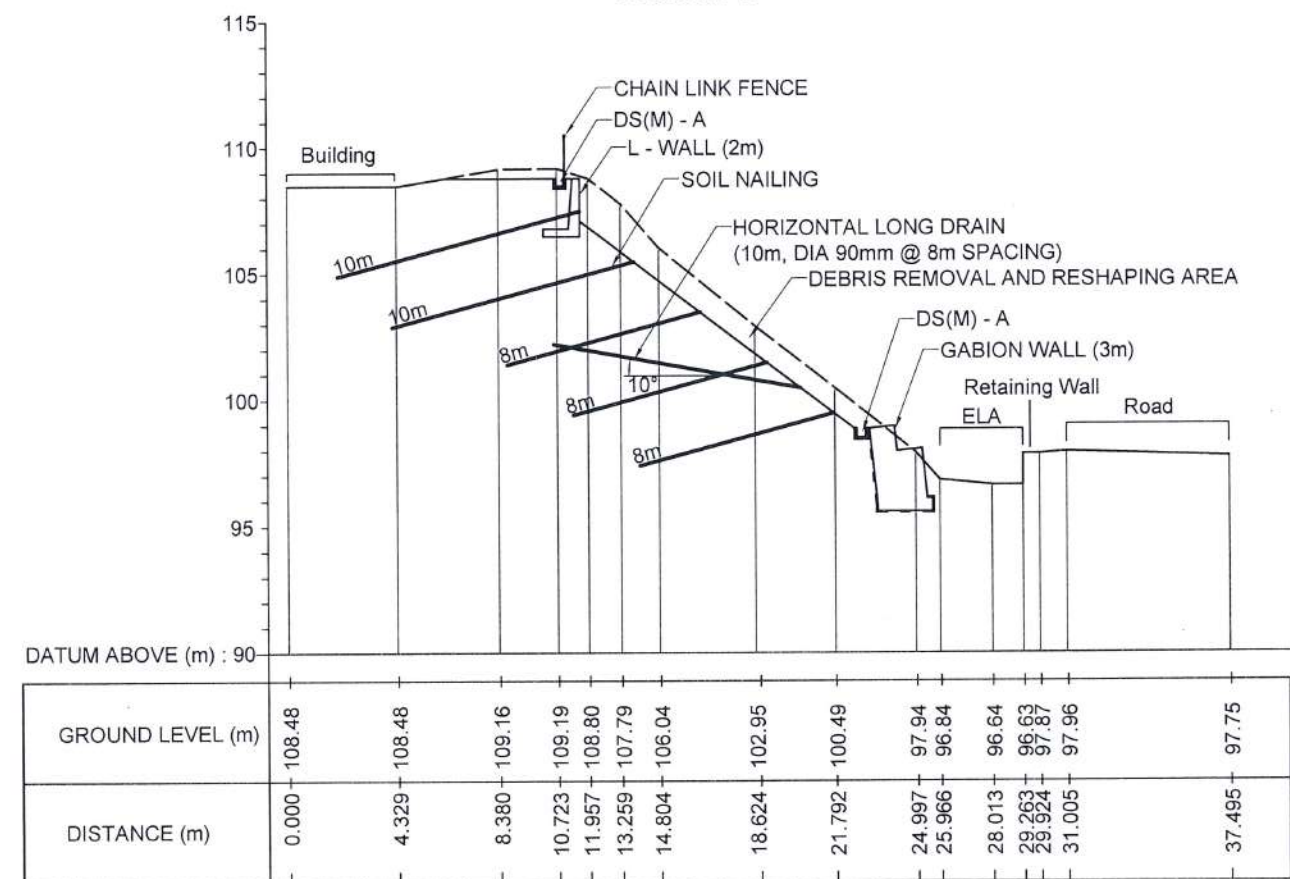
Section 1



Section 3



Section 2



Section 4

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

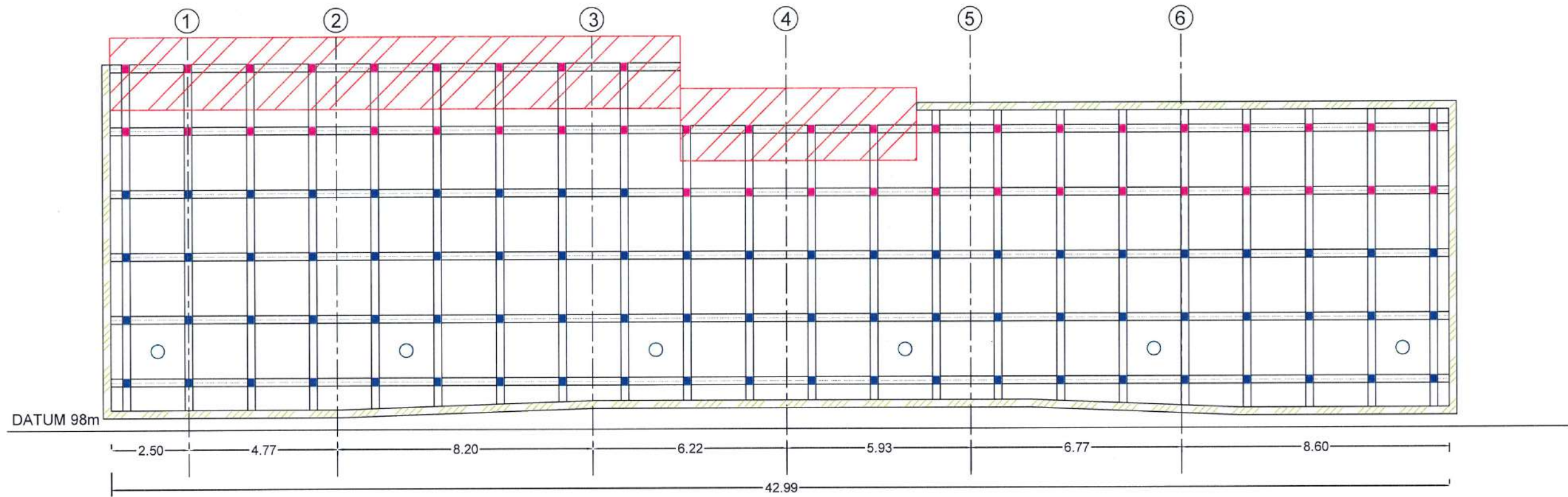
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
IN FRONT OF THE MAHINDODAYA LABORATORY
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 1

TITLE
CROSS SECTIONS OF
PROPOSED MITIGATION MEASURES
SCALE 1:300
DATE 09.04.2026
PROJECT / DRAWING No.
RLVMP/WORKS/NCB/PH III/231/L1/DR 04a
REVISION 00

DESCRIPTION	NAME	SIGNATURE
DRAWN	A.K.A.T. NAYOMI	<i>[Signature]</i>
DESIGNED	R.J.K.P.N. RANATHUNGA	<i>[Signature]</i>
CHECKED	I.A.N.D. IDIRIMANNA	<i>[Signature]</i>
RECOMMENDED	PROF. S.A.S. KULATHILAKA	<i>[Signature]</i>
APPROVED	ENG. (DR). SANCHITHA JAYAKODY	<i>[Signature]</i>



FRONT ELEVATION OF SOIL NAILING AREA

LEGEND

■ SOIL NAILING

- TOTAL SOIL NAIL LENGTH = 8 m
NO OF SOIL NAIL = 78
REINFORCEMENT DIAMETER = 32 mm
DIAMETER OF DRILLED HOLE = 125 mm
NAIL SPACING = 2m (BW)

○ HORIZONTAL LONG DRAIN

- HORIZONTAL LONG DRAIN LENGTH = 10 m
NO'S OF LONG DRAIN = 06
DIAMETER = 90 mm
SPACING = 8 m

■ SOIL NAILING

- TOTAL SOIL NAIL LENGTH = 10 m
NO OF SOIL NAIL = 44
REINFORCEMENT DIAMETER = 32 mm
DIAMETER OF DRILLED HOLE = 125 mm
NAIL SPACING = 2m (BW)

▨ BOUNDARY BEAM

▨ L- WALL

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

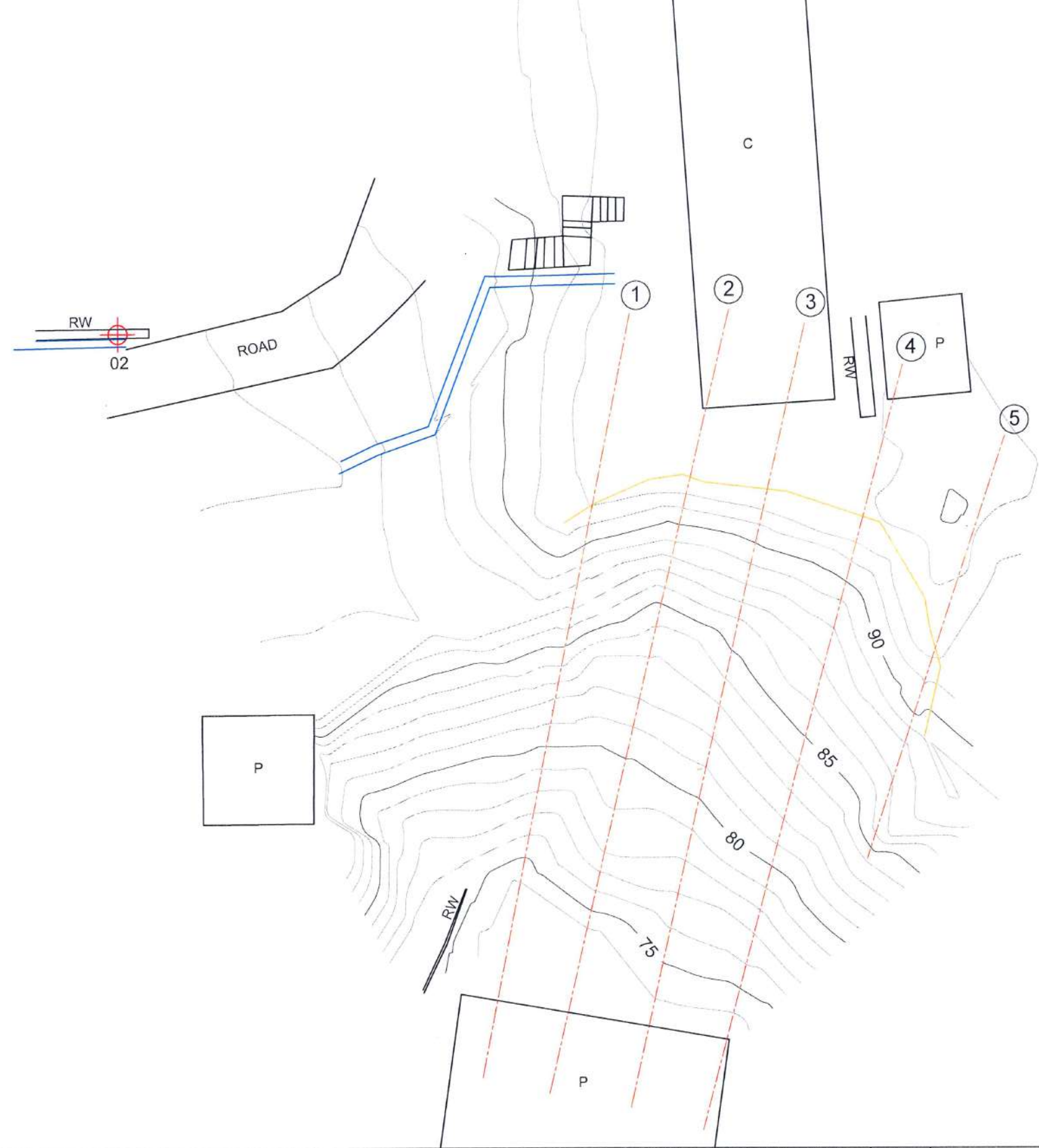
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
IN FRONT OF THE MAHINDODAYA LABORATORY
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 1

TITLE
FRONT ELEVATION OF
PROPOSED MITIGATION MEASURES
SCALE 1:300
DATE 09.04.2026
PROJECT / DRAWING No.
RLVMMP/WORKS/NCB/PH III/231/L1/DR 05
REVISION 00

DESCRIPTION	NAME	SIGNATURE
DRAWN	A.K.A.T. NAYOMI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR). SANCHITHA JAYAKODY	



REFERENCE

■	MASONRY DRAIN	MDn
	MARTIN WICKRAMASINGHE HALL	C
	PERMANENT BUILDING	P
■	SCAR	
■	SECTIONS	

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER



NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 02

TITLE

SURVEY PLAN

SCALE

1:250

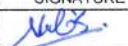
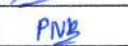
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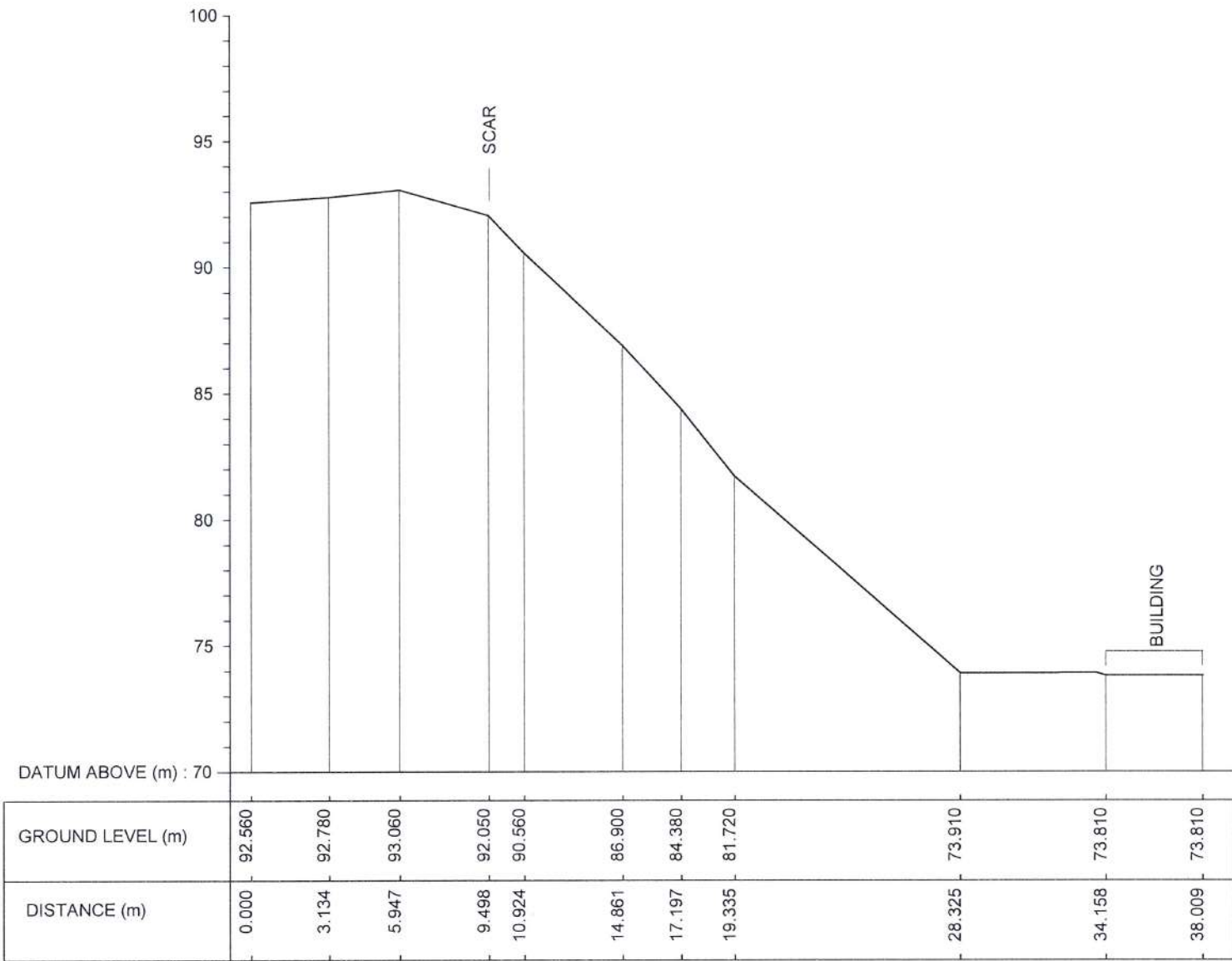
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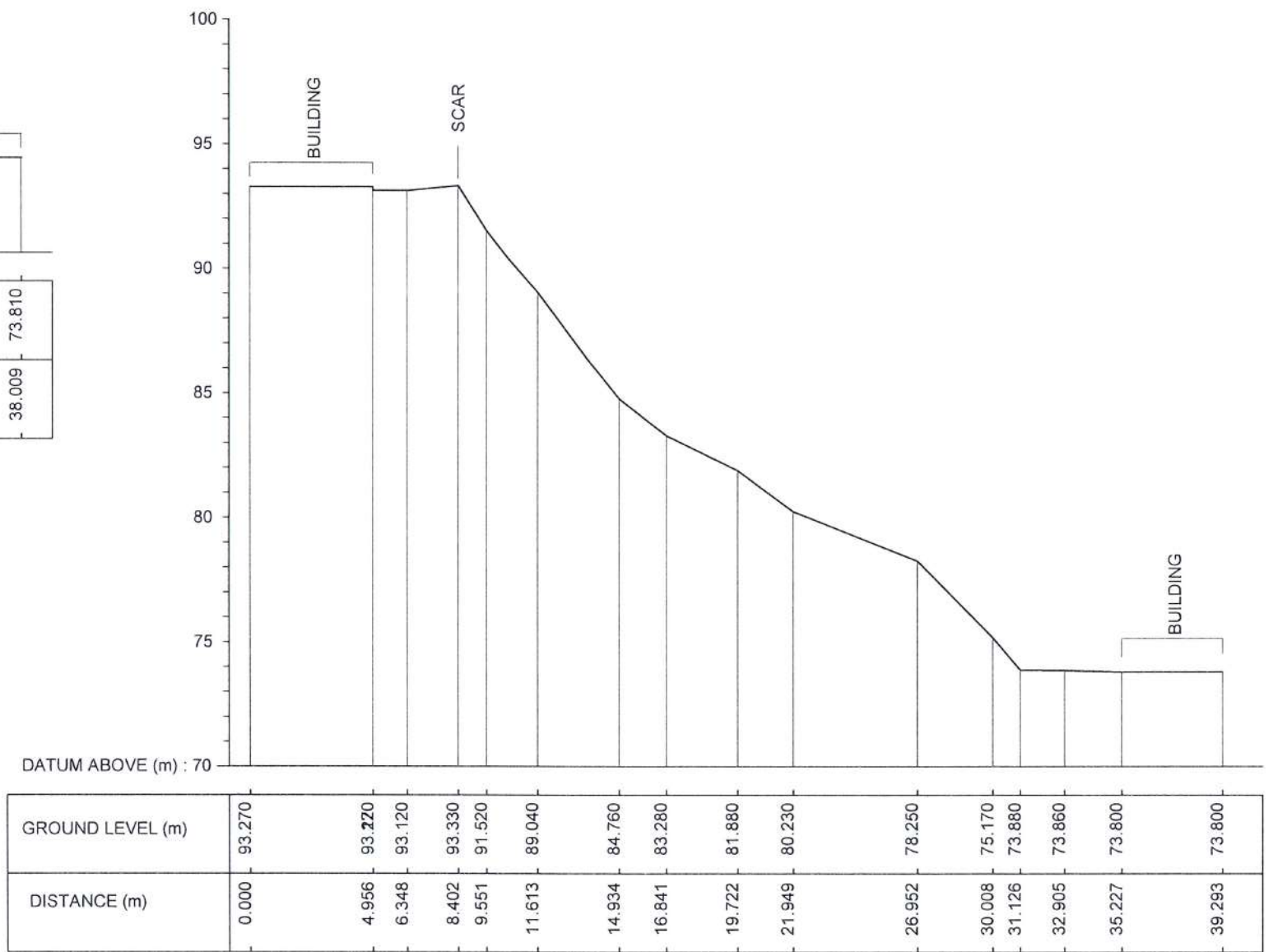
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REVISION

DESCRIPTION	NAME	SIGNATURE
SURVEYED	W.L.P.N.N WIJESINGHE	
CHECKED	R.J.K.P.N. RANATHUNGA	

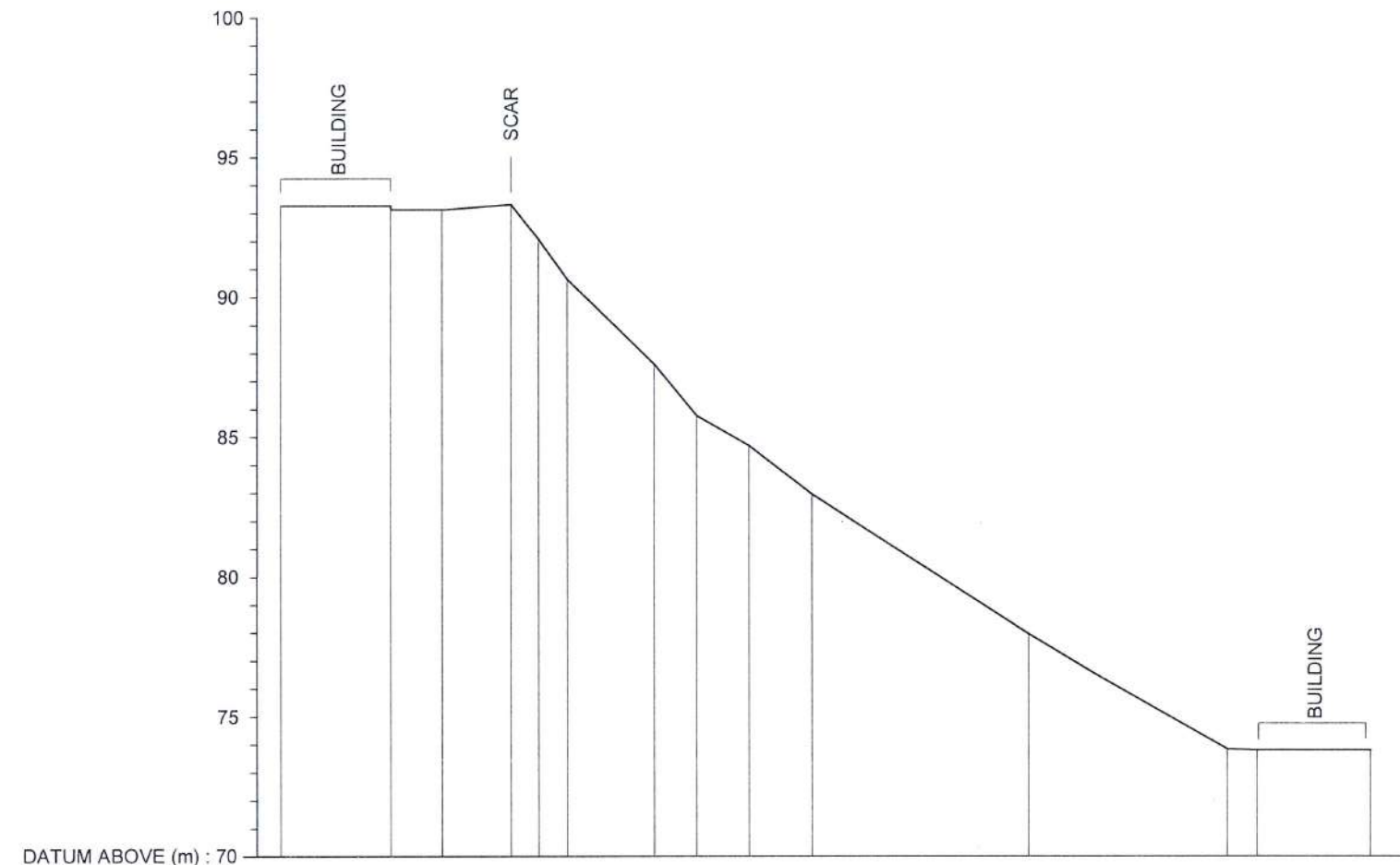


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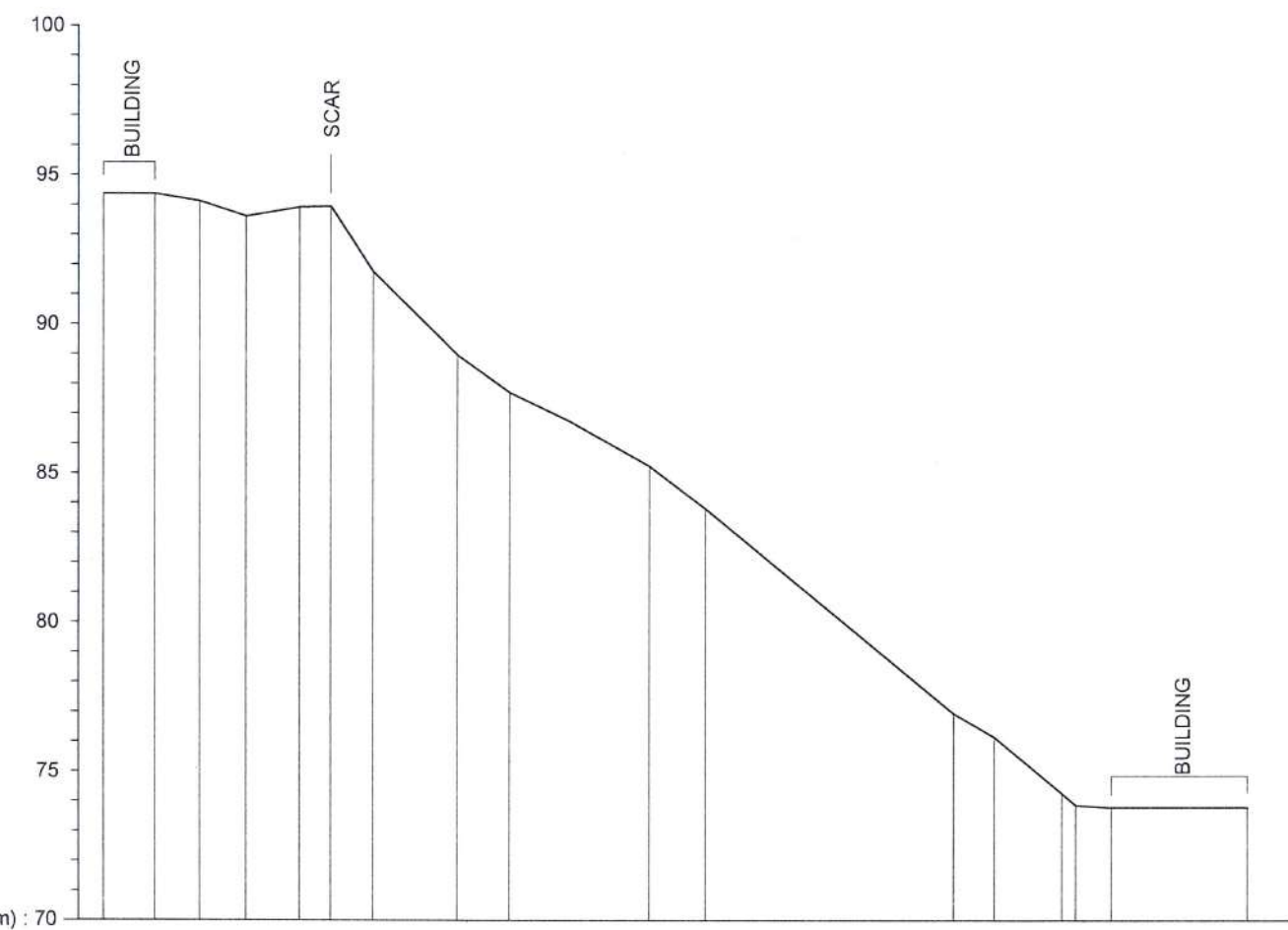
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EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 02	TITLE EXISTING CROSS SECTION SCALE 1:250 DATE 20.04.2026 PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH II/231/L02/DR 02a REVISION	DESCRIPTION	NAME	SIGNATURE
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								CHECKED	R.J.K.P.N. RANATHUNGA	



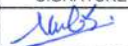
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DISTANCE (m)	0.000	3.986	5.833	8.310	9.297	10.330		13.470	14.995	16.889	19.153		26.935		34.086	35.176		39.241

CS 3



GROUND LEVEL (m)	94.370	94.370	94.120	93.610	93.920	93.950	91.760		88.970	87.710		85.240	83.810		76.950	76.150		74.270	73.880	73.800		73.800
DISTANCE (m)	0.000	1.730	3.233	4.814	6.618	7.660	9.102		11.944	13.715		18.441	20.345		28.721	30.094		32.376	32.847	34.059		38.647

CS 4

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 02	TITLE EXISTING CROSS SECTION	DESCRIPTION	NAME	SIGNATURE	
								SURVEYED	W.L.P.N.N WIJESINGHE		
								CHECKED	R.J.K.P.N. RANATHUNGA		
								SCALE	1:250	DATE	20.04.2026
								PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH II/231/L02/DR 02b	REVISION	

RW
02

ROAD

C

P

P

P

UP TO EXISTING DRAIN

REFERENCE

MASONRY DRAIN	MDn
MARTIN WICKRAMASINGHE HALL	C
PERMANENT BUILDING	P
SCAR	
SECTIONS	

DESIGN NOTATION

- DS (B) - D (TYPE II)
- DS (C) - A
- DS (M) - A
- DS (M) - B (WITH GRATING)
- CHAIN LINK FENCE
- CONCRETE RETAINING WALL (2.0m)
- SOIL NAILLING AREA
- CATCH PIT

NOTES

1. SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
2. UNSTABLE BOULDERS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
3. PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
4. WALLS SHOULD BE PLACED ON A HARD LAYER.
5. HEIGHT OF THE WALL MAY BE VARIED ACCORDING TO THE ACTUAL SITE CONDITIONS AND SHALL BE CONSTRUCTED AS PER THE ENGINEER'S INSTRUCTIONS.
6. LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.

EMPLOYER
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COLOMBO - 05

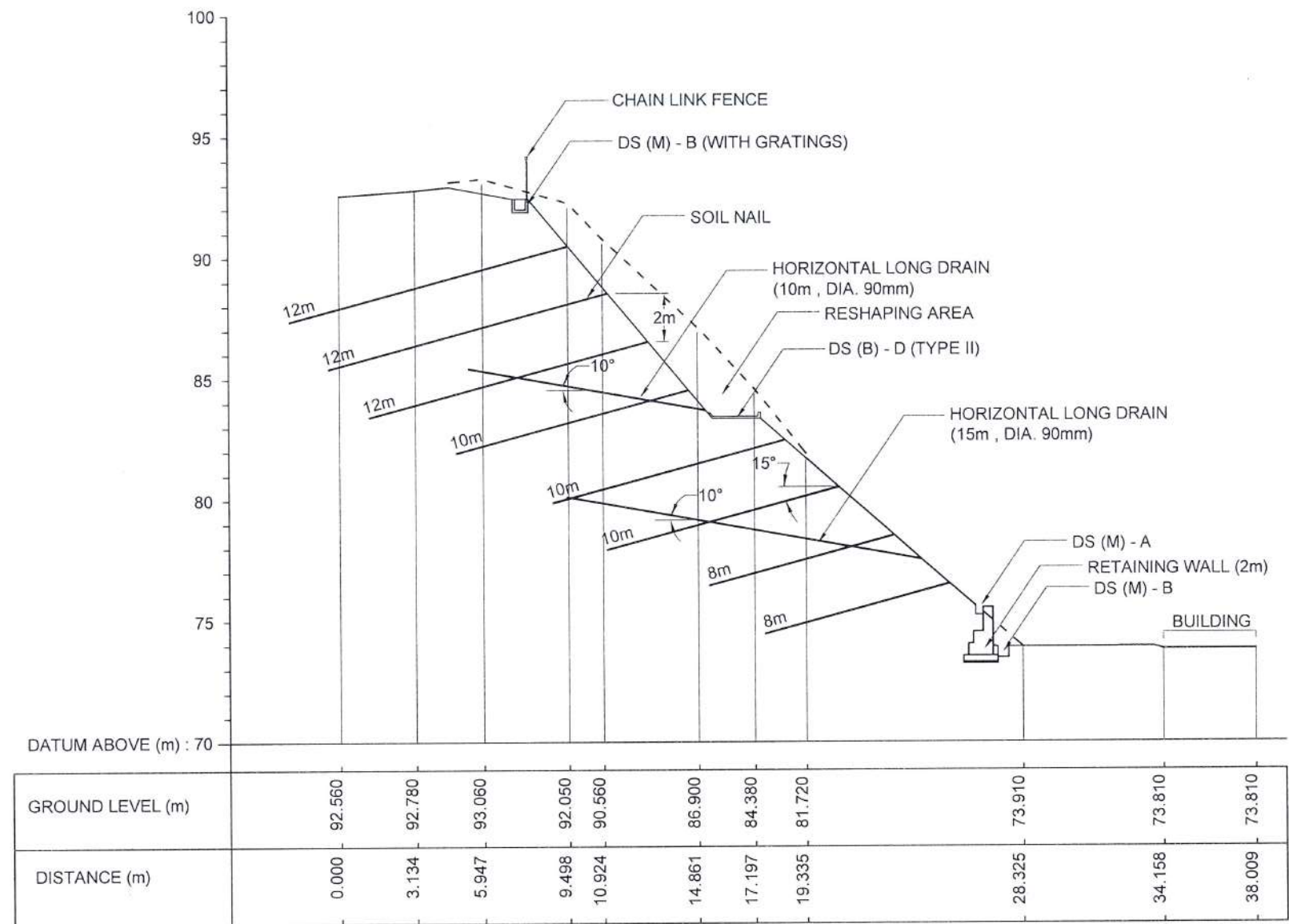
DESIGNER
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 02

TITLE	DESCRIPTION	NAME	SIGNATURE
PLAN VIEW OF PROPOSED MITIGATION MEASURES	DRAWN	K.M.D. NISHANTHI	
	DESIGNED	R.J.K.P.N. RANATHUNGA	
	CHECKED	I.A.N.D. IDIRIMANNA	
	RECOMMENDED	PROF. S.A.S. KULATHILAKA	
	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE	1:250	DATE	20.04.2026
PROJECT / DRAWING No.	RLVMMMP/WORKS/NCB/PH II/231/L02/DR 03	REVISION	



CS 1



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

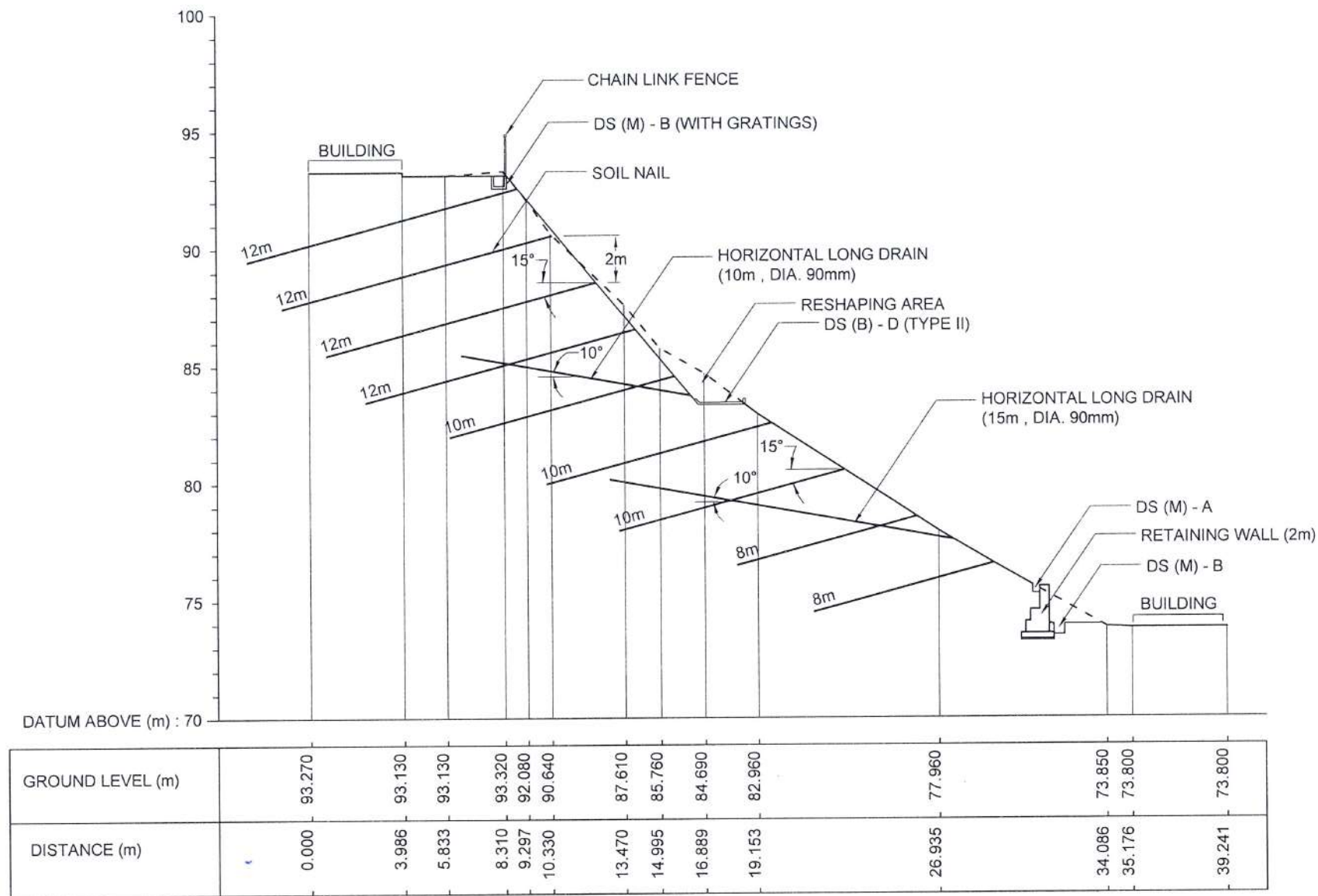
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 02

TITLE

CROSS SECTION OF
PROPOSED MITIGATION MEASURES

SCALE 1:250 DATE 20.04.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/231/L02/DR 04a

DESCRIPTION	NAME	SIGNATURE
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



CS 3

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 02

TITLE

CROSS SECTION OF
PROPOSED MITIGATION MEASURES

SCALE 1:250 DATE 20.04.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/231/L02/DR 04b

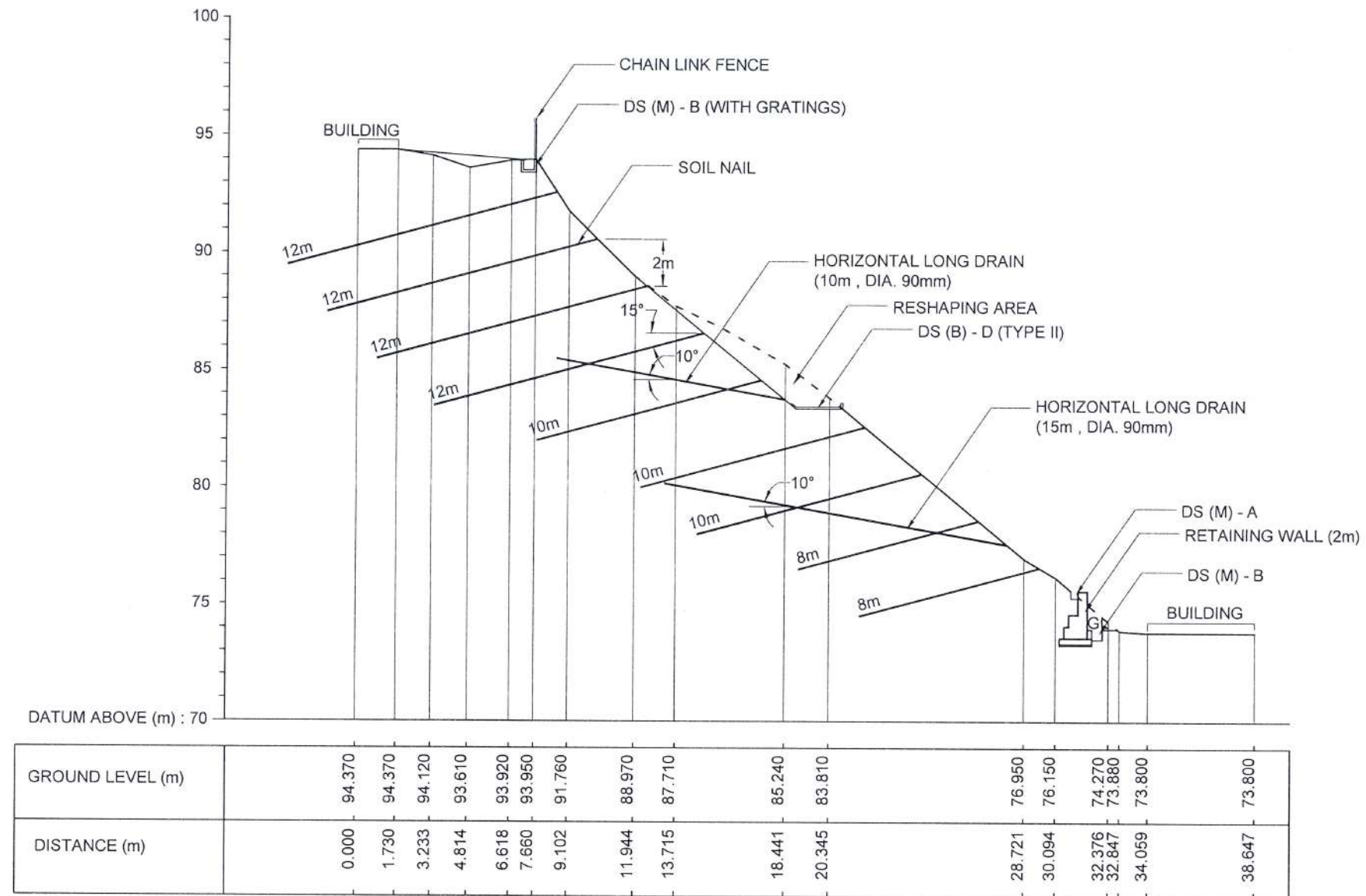
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DRAWN K.M.D. NISHANTHI
DESIGNED R.J.K.P.N. RANATHUNGA
CHECKED I.A.N.D. IDIRIMANNA
RECOMMENDED PROF. S.A.S. KULATHILAKA
APPROVED ENG. (DR.) SANCHITHA JAYAKODY

NAME

SIGNATURE

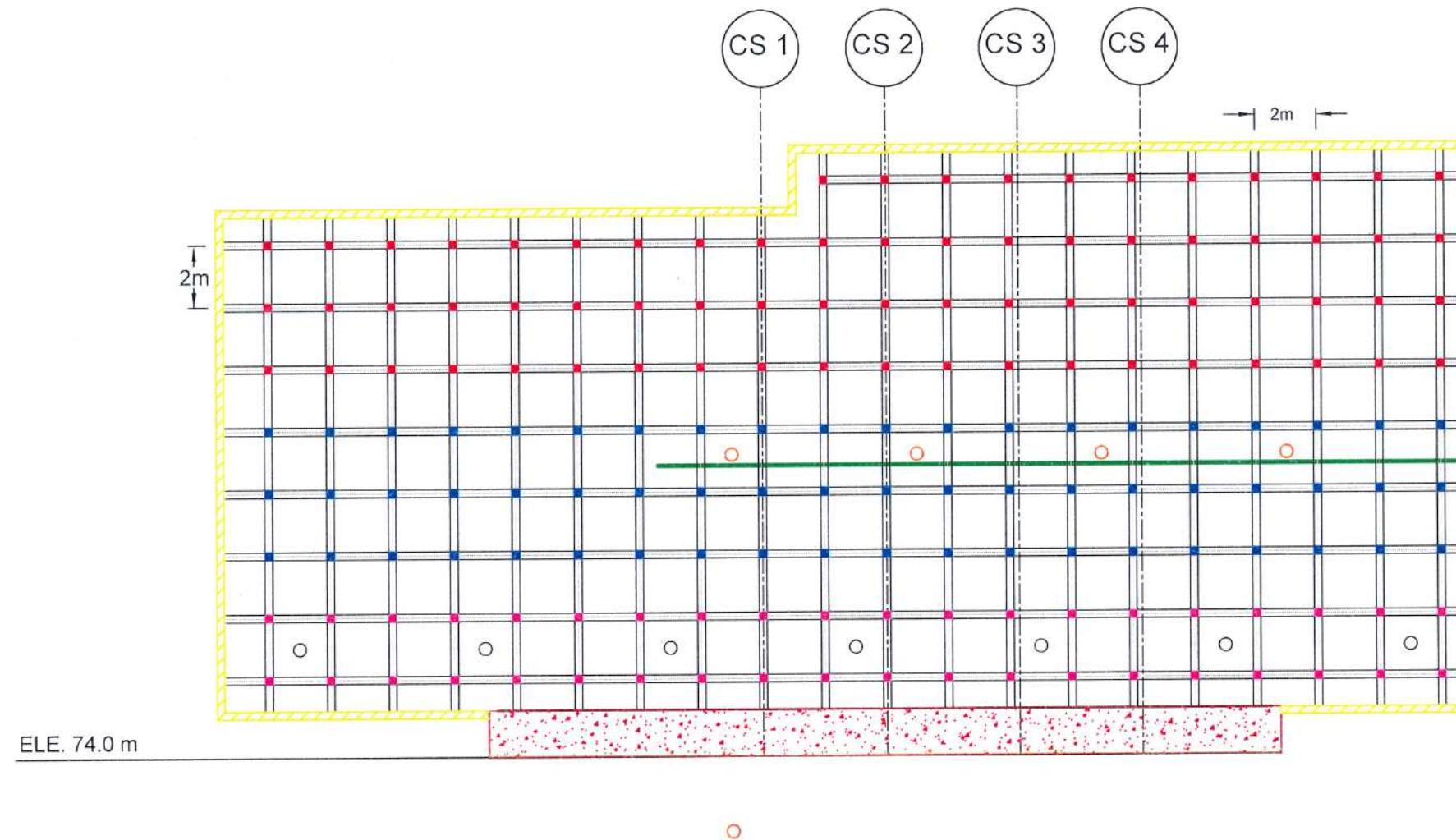
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CS 4

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
								DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE	1:250	DATE	20.04.2026
PROJECT / DRAWING No.		REVISION	
RLVMP/WORKS/NCB/PH II/231/L02/DR 04b			



FRONT ELEVATION OF SOIL NAILING AREA

LEGEND

	SOIL NAILING	-	TOTAL SOIL NAIL LENGTH = 8m NO OF SOIL NAIL = 40 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING = AS SHOWN		HORIZONTAL LONG DRAIN	-	HORIZONTAL LONG DRAIN LENGTH = 15 m NO'S OF LONG DRAIN = 07 DIAMETER = 90 mm SPACING = 06 m
	SOIL NAILING	-	TOTAL SOIL NAIL LENGTH = 10m NO OF SOIL NAIL = 60 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING = AS SHOWN		HORIZONTAL LONG DRAIN	-	HORIZONTAL LONG DRAIN LENGTH = 10 m NO'S OF LONG DRAIN = 04 DIAMETER = 90 mm SPACING = 06 m
	SOIL NAILING	-	TOTAL SOIL NAIL LENGTH = 12m NO OF SOIL NAIL = 71 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING = AS SHOWN		DS (B) - D (TYPE II)		
					BOUNDARY BEAM		

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
LOCATION 02

TITLE

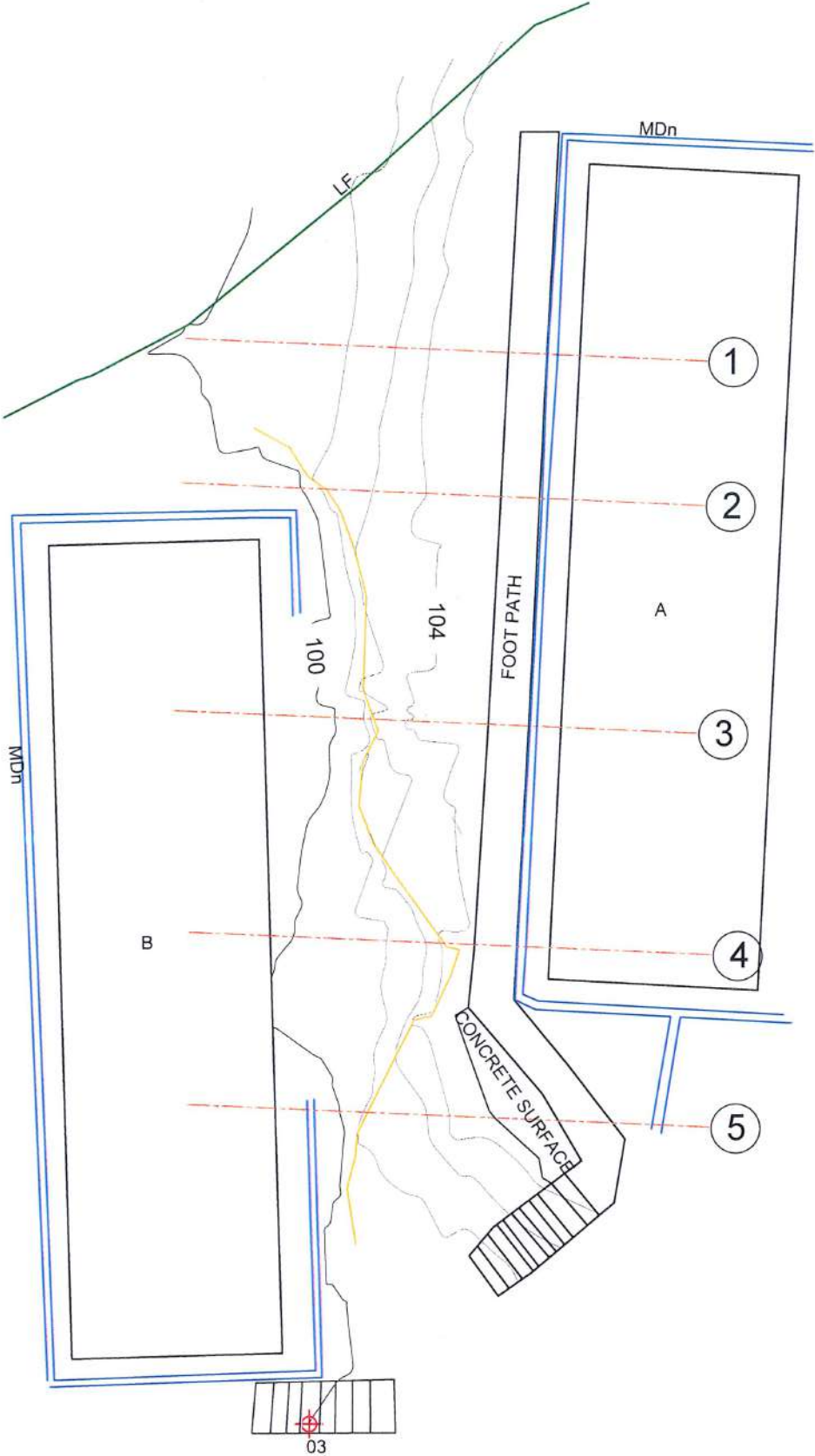
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SCALE 1:200 DATE 20.04.2025
PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH II/231/L02/DR 05

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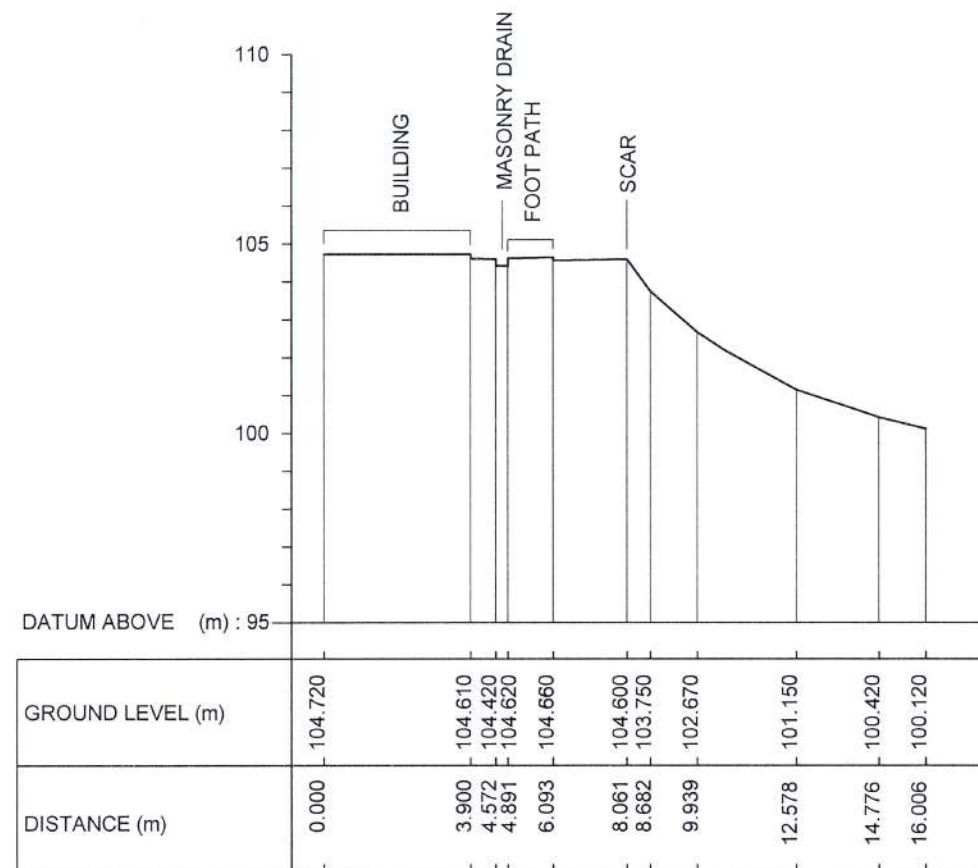
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SIGNATURE

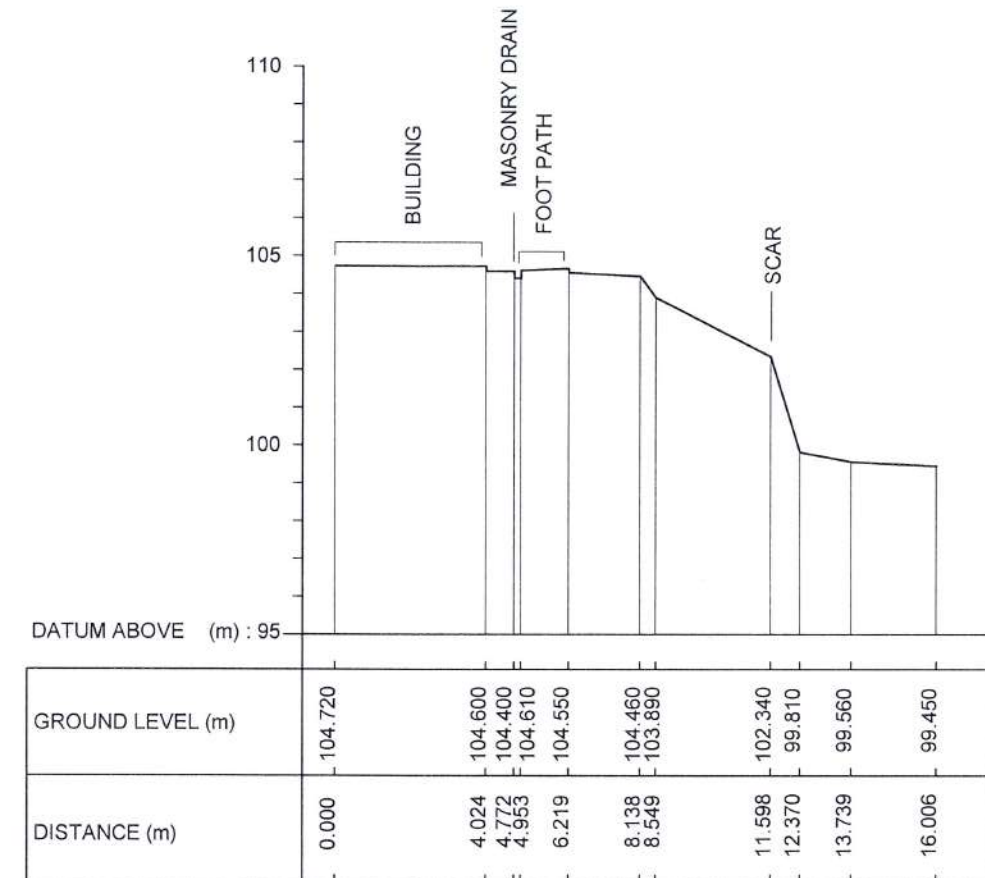


REFERENCE		
■	MASONRY DRAIN	MDn
	MAHAGAMASEKARA HALL	A
	EDIRIWEERA SARATHCHANDRA HALL	B
■	SCAR	
■	SECTIONS	
■	LIVE FENCE	LF
○	TREE	

EMPLOYER		DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE		
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHAGAMASEKARA HALL SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 3	SURVEY PLAN			SURVEYED	W.L.P.N.N. WIJESINGHE			
													CHECKED	R.J.K.P.N. RANATHUNGA	
												SCALE	1:400	DATE	02.04.2026
								PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/231/L3/DR 01			REVISION	00			

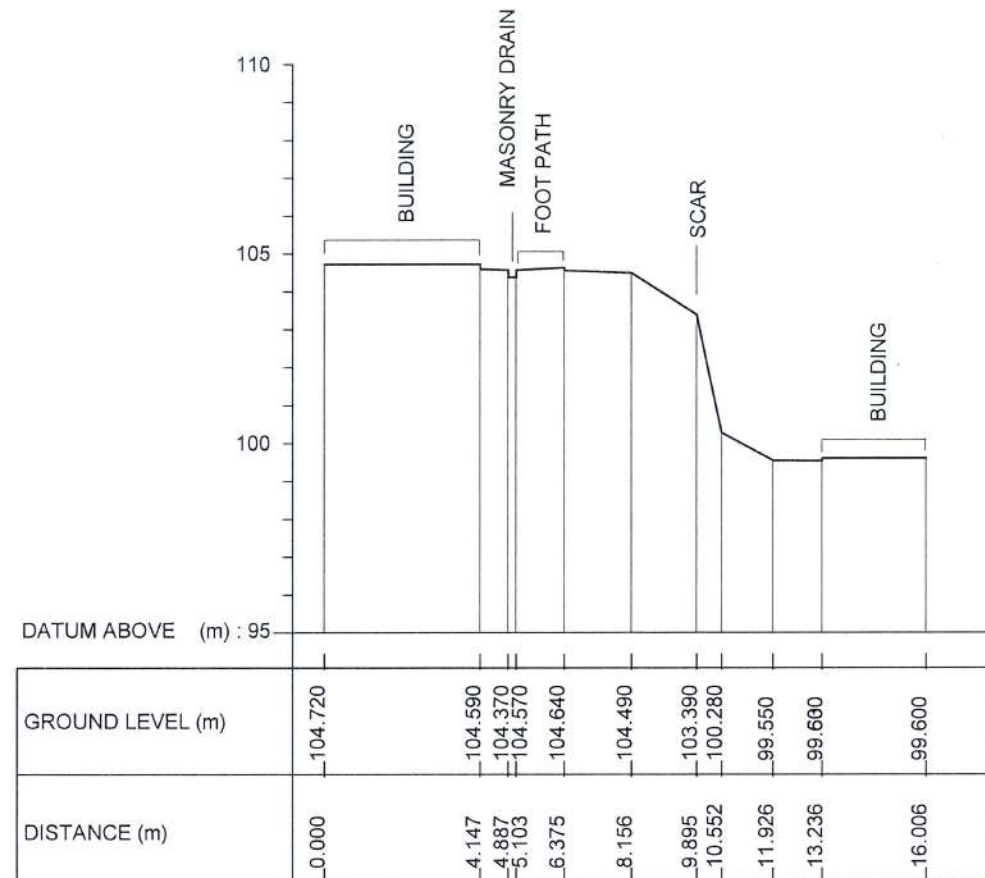


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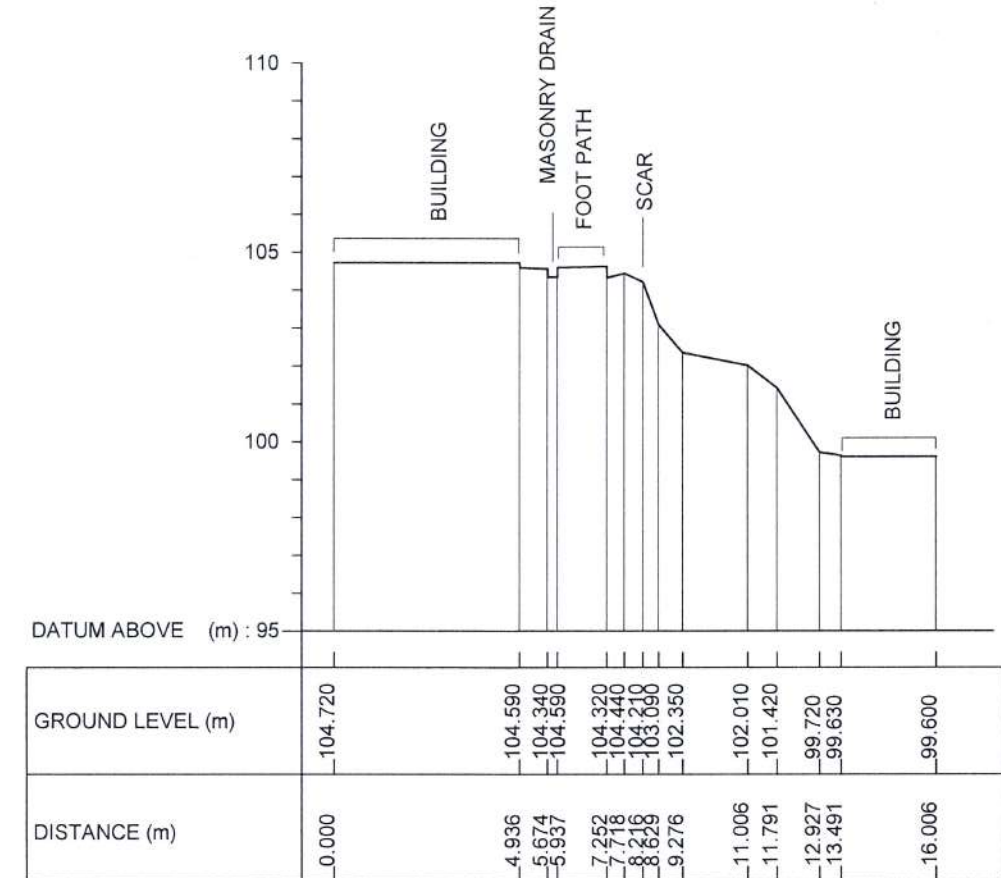


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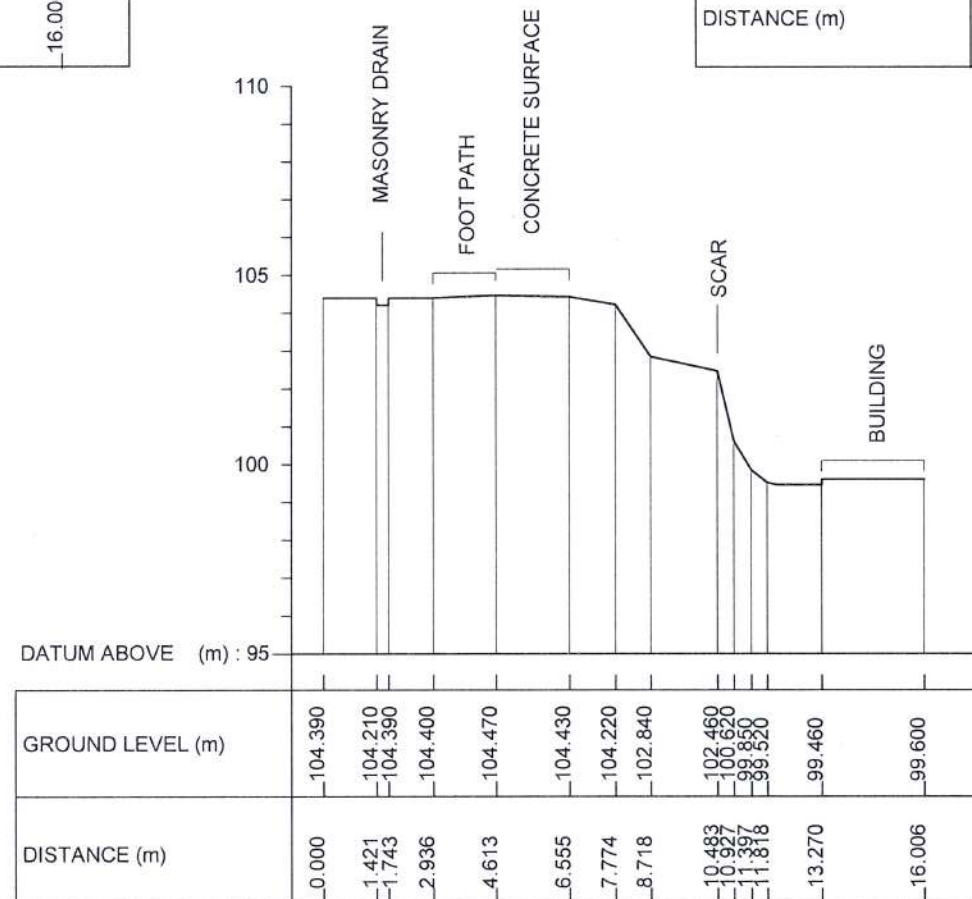
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	<table><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>	REV	DATE	REVISION DESCRIPTION	APPROVAL																													PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHAGAMASEKARA HALL SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 3	<table><tr><td colspan="4"> TITLE EXISTING CROSS SECTION </td><td> DESCRIPTION DRAWN </td><td> NAME W.L.P.N.N. WIJESINGHE </td><td> SIGNATURE  </td></tr><tr><td colspan="4"></td><td> CHECKED </td><td> R.J.K.P.N. RANATHUNGA </td><td>  </td></tr><tr><td colspan="4"></td><td></td><td></td><td></td></tr><tr><td colspan="4"> SCALE 1:200 </td><td> DATE 02.04.2026 </td><td></td><td></td></tr><tr><td colspan="4"> PROJECT / DRAWING No. RLVMMPP/WORKS/NCB/PH III/231/L3/DR 02a </td><td> REVISION 00 </td><td></td><td></td></tr></table>	TITLE EXISTING CROSS SECTION				DESCRIPTION DRAWN	NAME W.L.P.N.N. WIJESINGHE	SIGNATURE 					CHECKED	R.J.K.P.N. RANATHUNGA									SCALE 1:200				DATE 02.04.2026			PROJECT / DRAWING No. RLVMMPP/WORKS/NCB/PH III/231/L3/DR 02a				REVISION 00		
REV	DATE	REVISION DESCRIPTION	APPROVAL																																																																					
TITLE EXISTING CROSS SECTION				DESCRIPTION DRAWN	NAME W.L.P.N.N. WIJESINGHE	SIGNATURE 																																																																		
				CHECKED	R.J.K.P.N. RANATHUNGA																																																																			
SCALE 1:200				DATE 02.04.2026																																																																				
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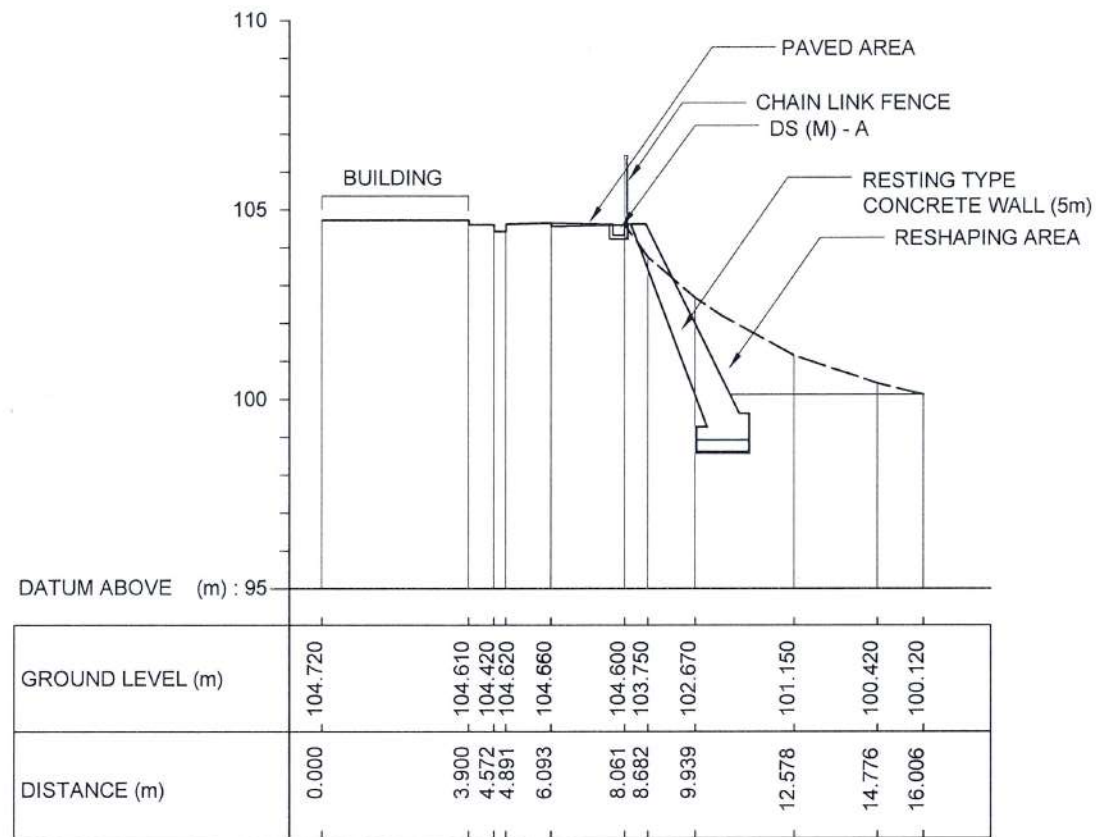


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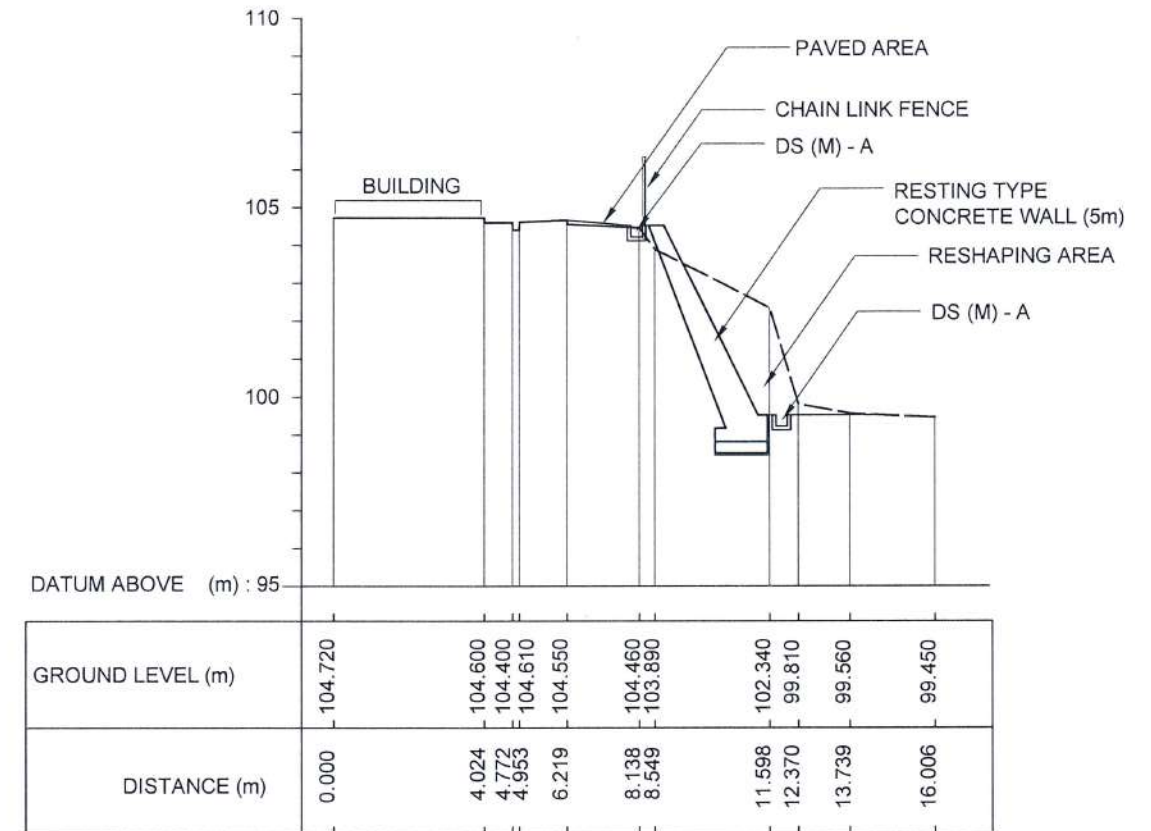


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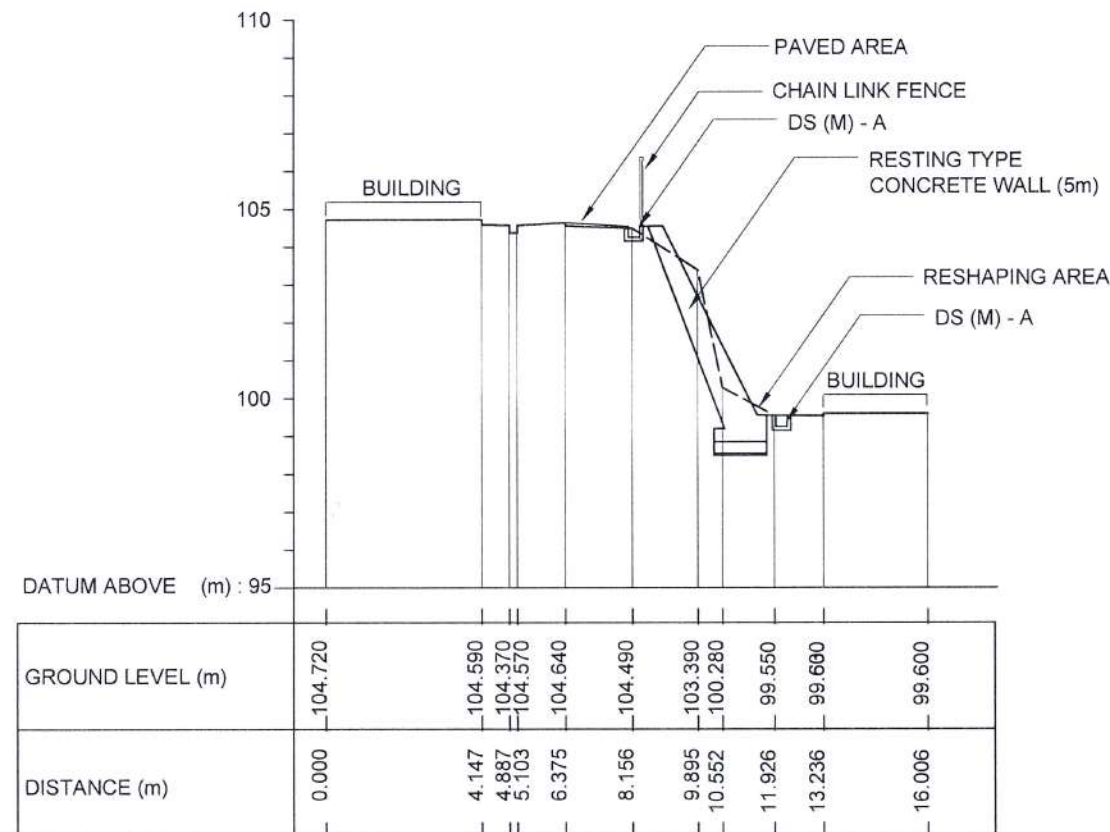
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT IN FRONT OF THE MAHAGAMASEKARA HALL SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA LOCATION 3	TITLE EXISTING CROSS SECTION		DESCRIPTION	NAME	SIGNATURE
									DRAWN	W.L.P.N.N. WIJESINGHE			
									CHECKED	R.J.K.P.N. RANATHUNGA			



CS 1



CS 2

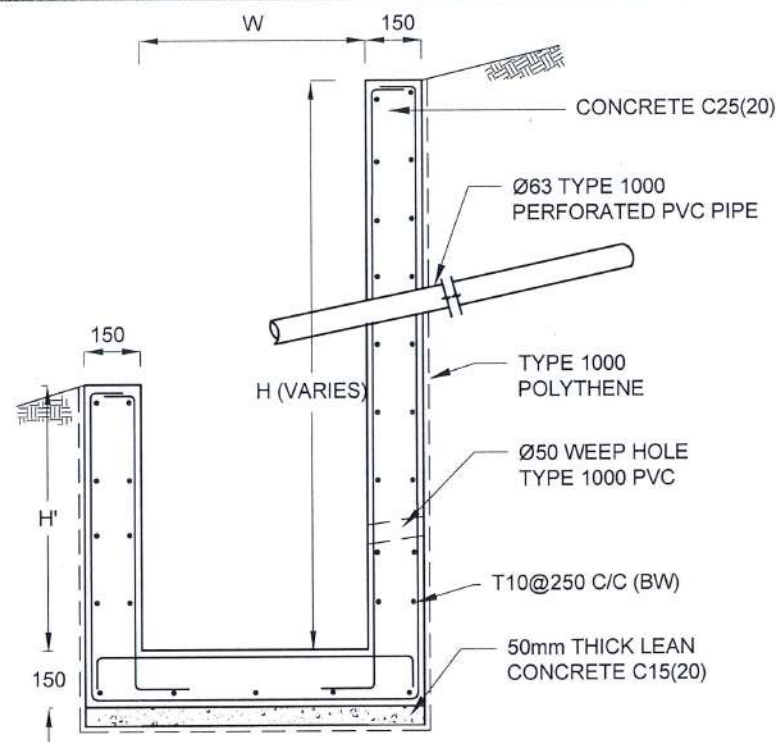


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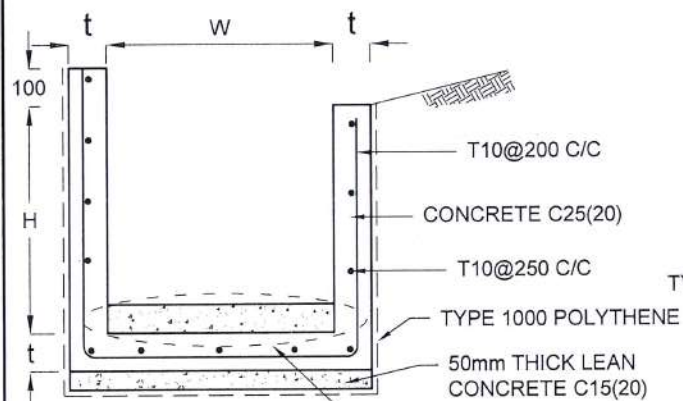
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								SCALE 1:200	DATE 02.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA			
								PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/231/L3/DR 04a		REVISION 00	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY		



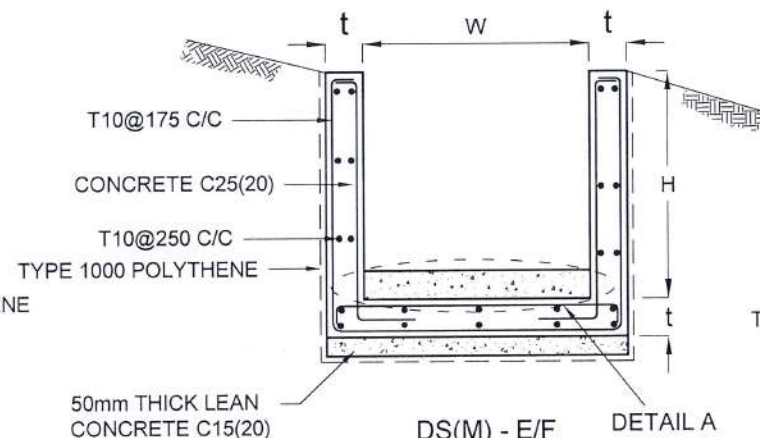
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										DRAWN	K.M.D. NISHANTHI				
										DESIGNED	R.J.K.P.N. RANATHUNGA				
										CHECKED	I.A.N.D. IDIRIMANNA				
									SCALE	1:200	DATE	02.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA	
									PROJECT / DRAWING No.			REVISION 00	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
									RLVMMMP/WORKS/NCB/PH III/231/L3/DR 04b						



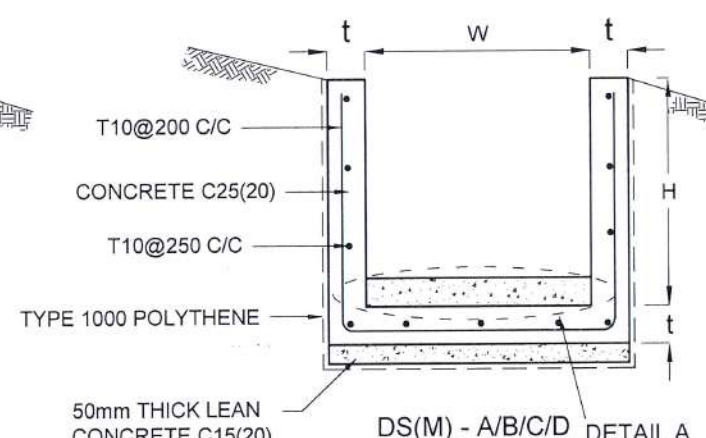
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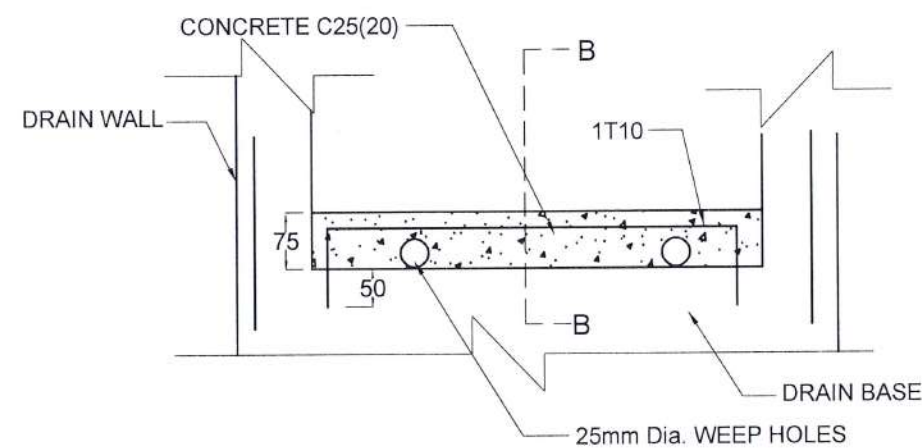
DS(M) - P/R/Q



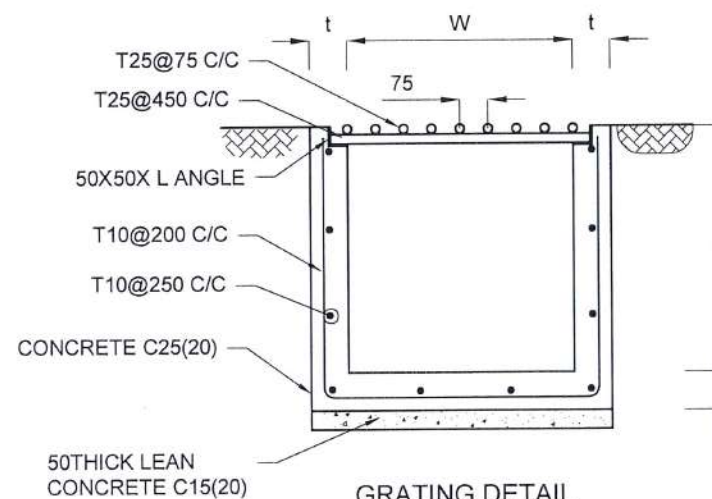
DS(M) - E/F



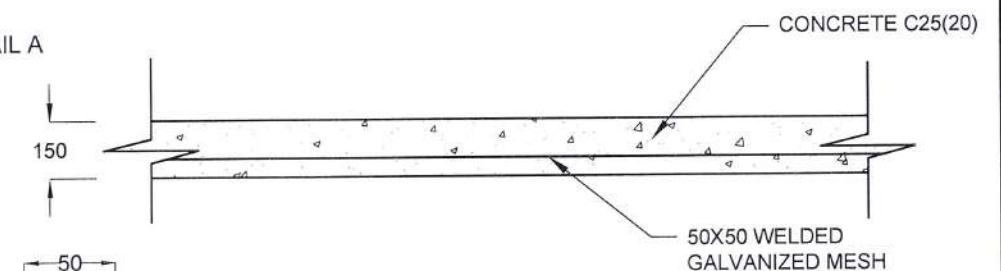
DS(M) - A/B/C/D



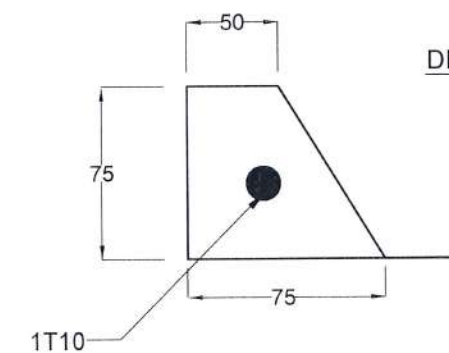
DETAIL A - (ENERGY BREAKER AT 3M)



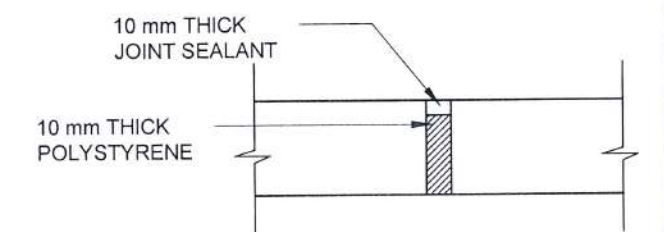
GRATING DETAIL



DETAILS OF BERM SEALING



SECTION B-B



EXPANTION JOINT DETAIL

DS(M) - L	W (mm)	H' (mm)
TYPE I	600	600
TYPE II	800	800

DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (M) - A /P	300	300	100
DS (M) - B/R	450	450	100
DS (M) - C/Q	600	600	100
DS (M) - D	750	750	125
DS (M) - E	900	900	150
DS (M) - F	1000	1000	150

NOTES

- DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
- STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- ENERGY BREAKERS SHALL BE CONSTRUCTED AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
- DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
- 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm

EMPLOYER

 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

DESIGNER

 DESIGN UNIT
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

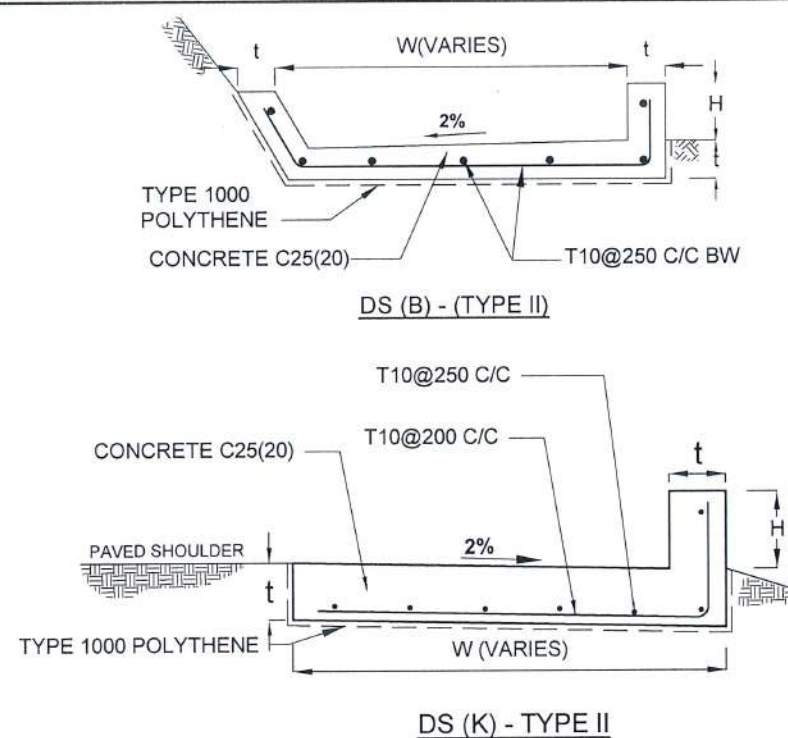
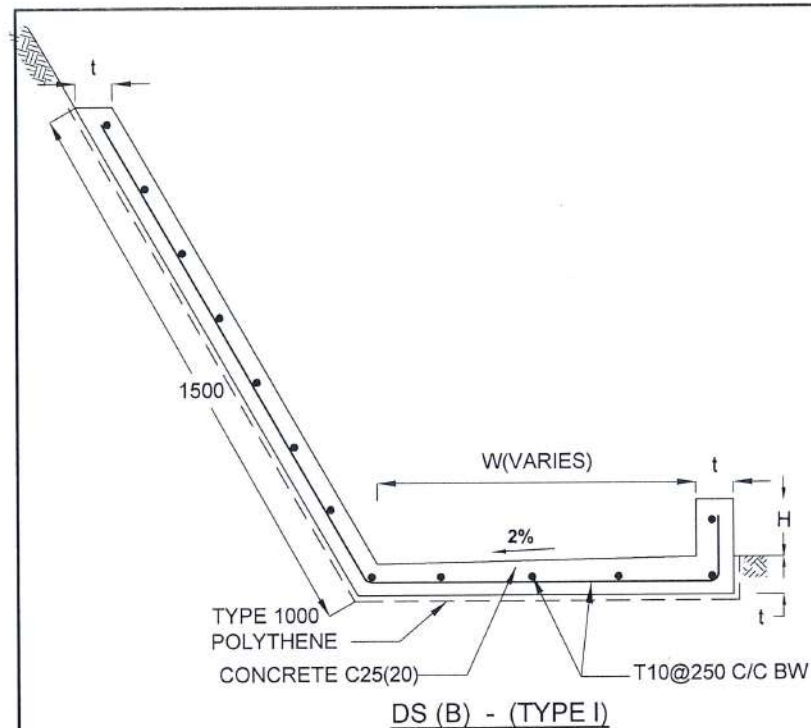
REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
 REDUCTION OF LANDSLIDE VULNERABILITY
 BY MITIGATION MEASURES PROJECT
 SRI SWARNAJOTHI NATIONAL SCHOOL
 KIRIBATHKUMBURA
 KANDY

TITLE
 DETAILS OF DRAINS
 (SURFACE DRAIN -1 OF 2)

SCALE	N.T.S.	DATE	20.04.2026
PROJECT / DRAWING No.	RLVMM/WORKS/NCB/PH III/231/A1	REVISION	00

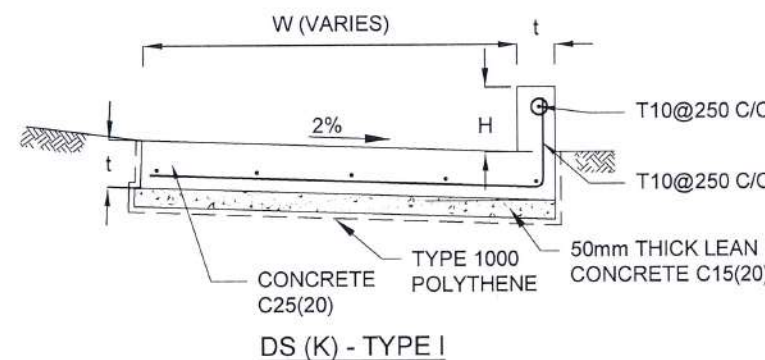
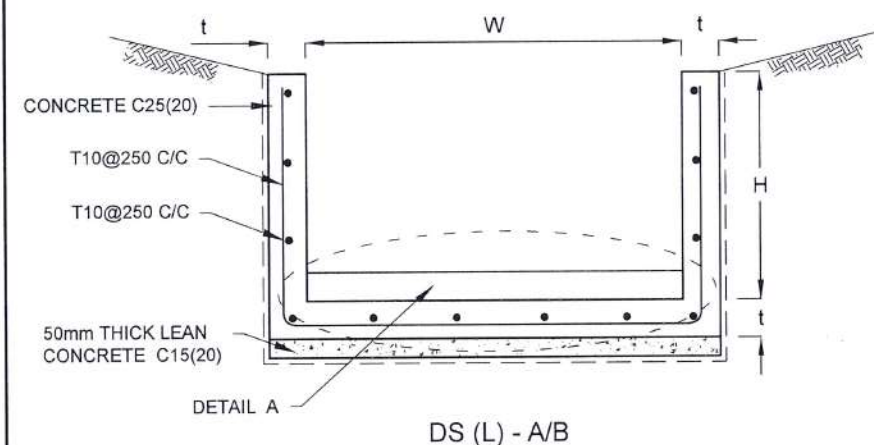
DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



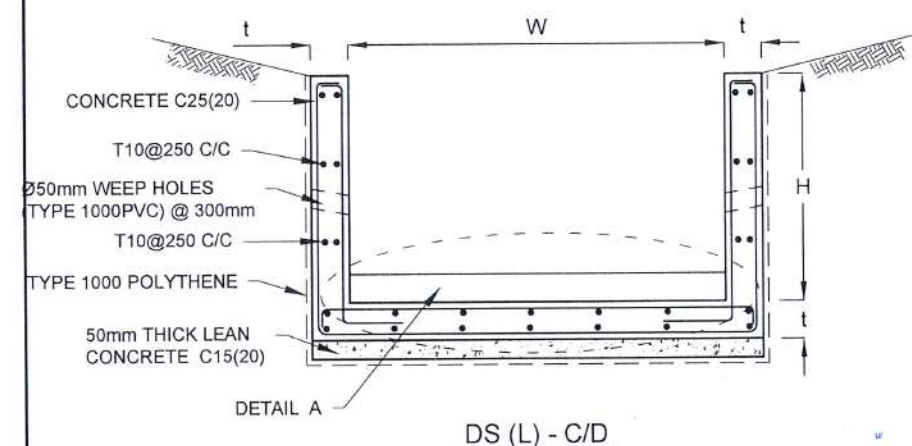
DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (B) - A	500	150	100
DS (B) - B	1000	150	100
DS (B) - C	1500	150	100
DS (B) - D	2000	150	100

NOTES

- DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
- STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- ENERGY BREAKERS SHALL BE CONSTRUCTED IN STAGGERED PATTERN AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
- DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLABS NEED TO BE PROVIDED ONLY FOR THE REGIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLAB WIDTH (W_c) SHOULD BE TAKEN AS THE SUM OF DRAIN WIDTH AND $2x$ DRAIN WALL THICKNESS. [$W_c = W + 2xt$]
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
- 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.



DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (K) - A	1000	200	100
DS (K) - B	1000	300	100
DS (K) - C	1150	200	200



DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (L) - A	1000	600	100
DS (L) - B	1000	800	125
DS (L) - C	1000	1000	125
DS (L) - D	2000	2000	150

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm

EMPLOYER

 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

DESIGNER

 DESIGN UNIT
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

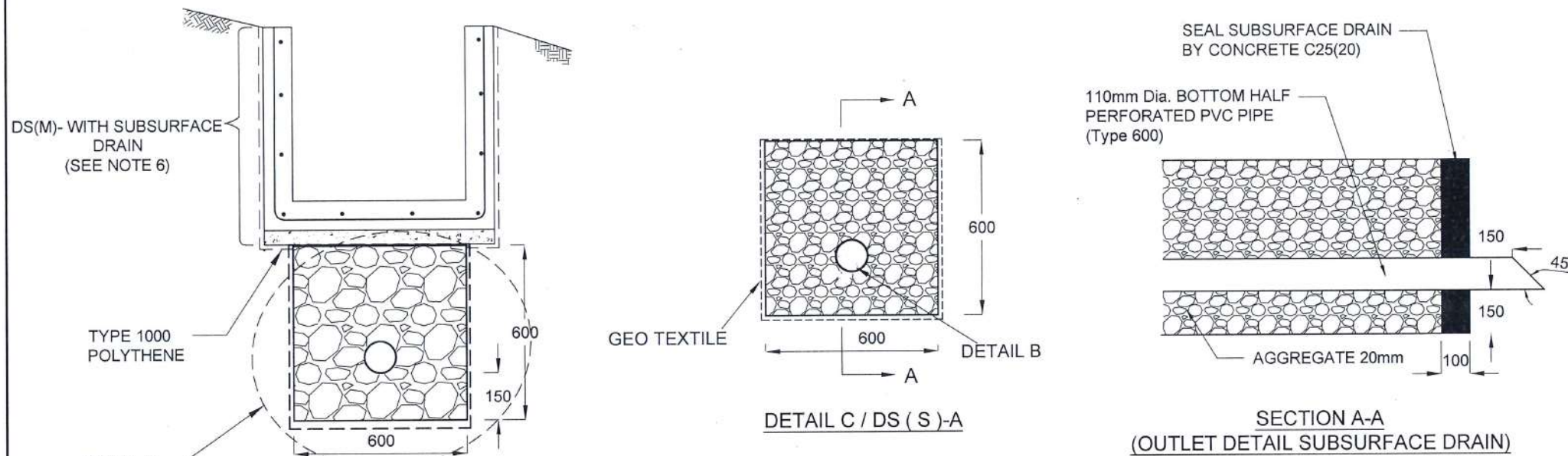
REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
 REDUCTION OF LANDSLIDE VULNERABILITY
 BY MITIGATION MEASURES PROJECT
 SRI SWARNAJOTHI NATIONAL SCHOOL
 KIRIBATHKUMBURA
 KANDY

TITLE
 DETAILS OF DRAINS
 (SURFACE DRAIN - 2 OF 2)

SCALE N.T.S. DATE 20.04.2026
 PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/231/A2 REVISION 00

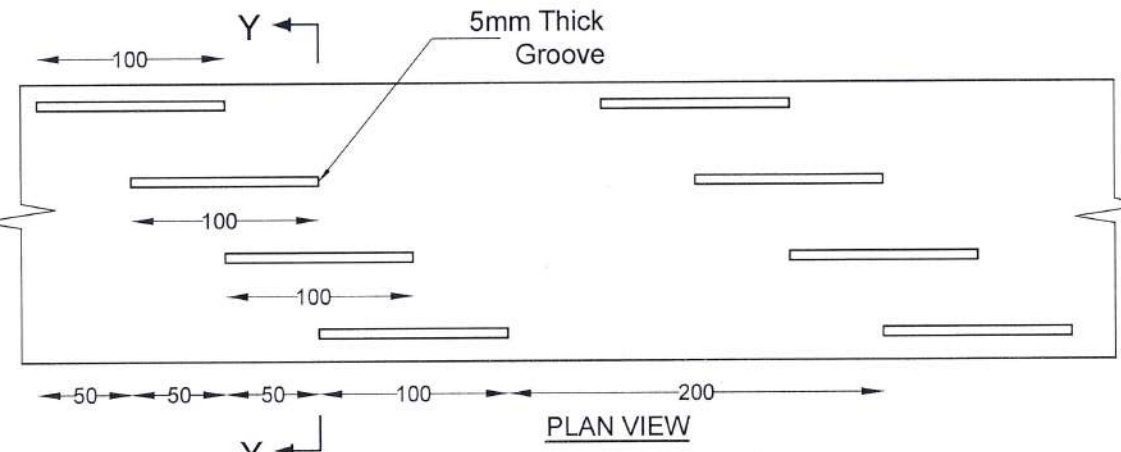
DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



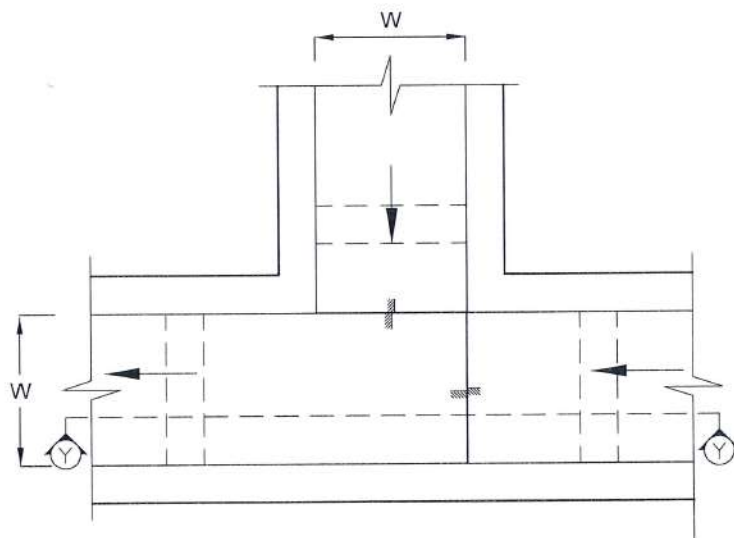
**SUBSURFACE DRAIN
[DS (S) -A]**

100mm x 5mm
Groove

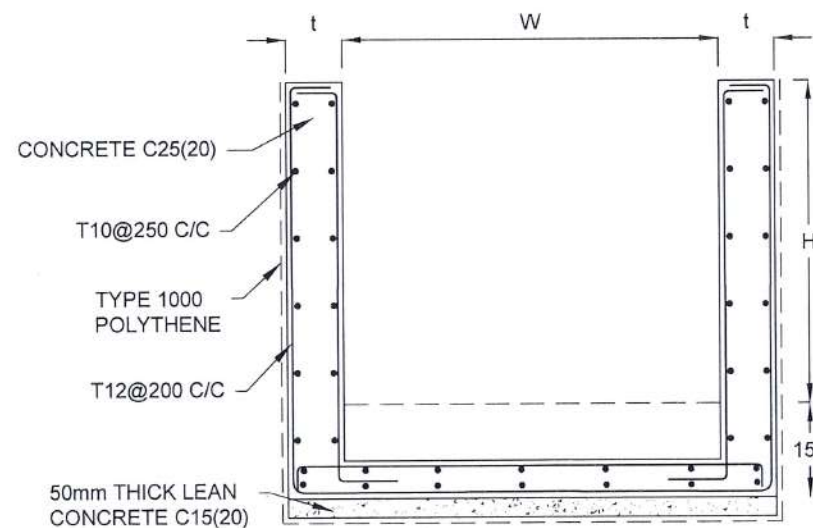
SECTION Y - Y



DETAIL - B (PERFORATED PIPE FOR SUB-SURFACE DRAINS)



PLAN VIEW OF CATCH PIT (CP)



SECTION Y-Y (CP- R)

NOTES

1. W,H,t ; SHALL BE THE SAME AS RESPECTIVE DRAIN SECTION.
2. CP - R SHALL BE USED WHERE $H \geq 900\text{mm}$
3. DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.
6. DETAILS OF SURFACE DRAIN PORTION OF THE SUBSURFACE DRAINS SHALL BE AS PER DS(M), DS(B), DS(K) OR DS(C) SECTIONS ACCORDINGLY.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

CONCRETE

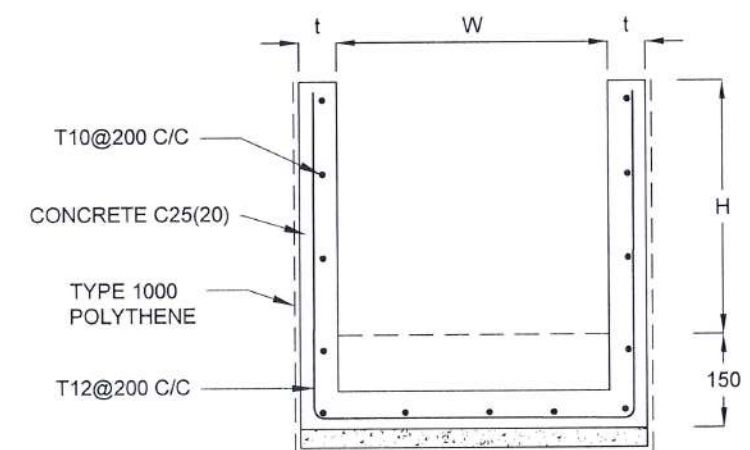
8. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

9. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm^2 .
10. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF $40 \times \text{BAR DIA.}$ AND LAPPING SHOULD BE STAGGERED.
11. ANCHORAGE LENGTH SHOULD BE $40 \times \text{BAR DIA.}$
12. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
13. COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm



SECTION Y - Y

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

DESIGNER



DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

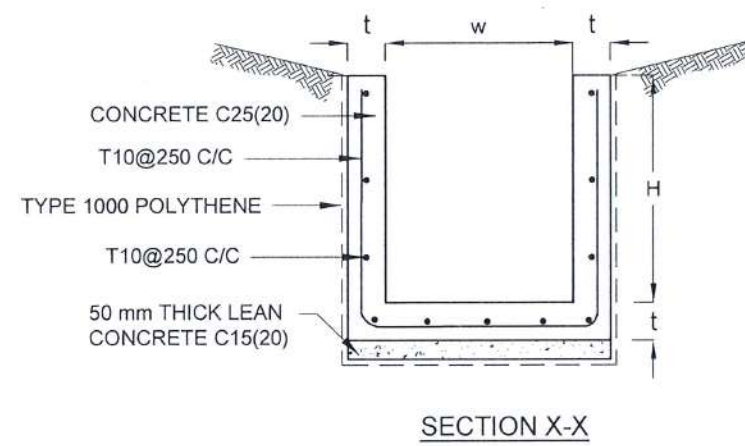
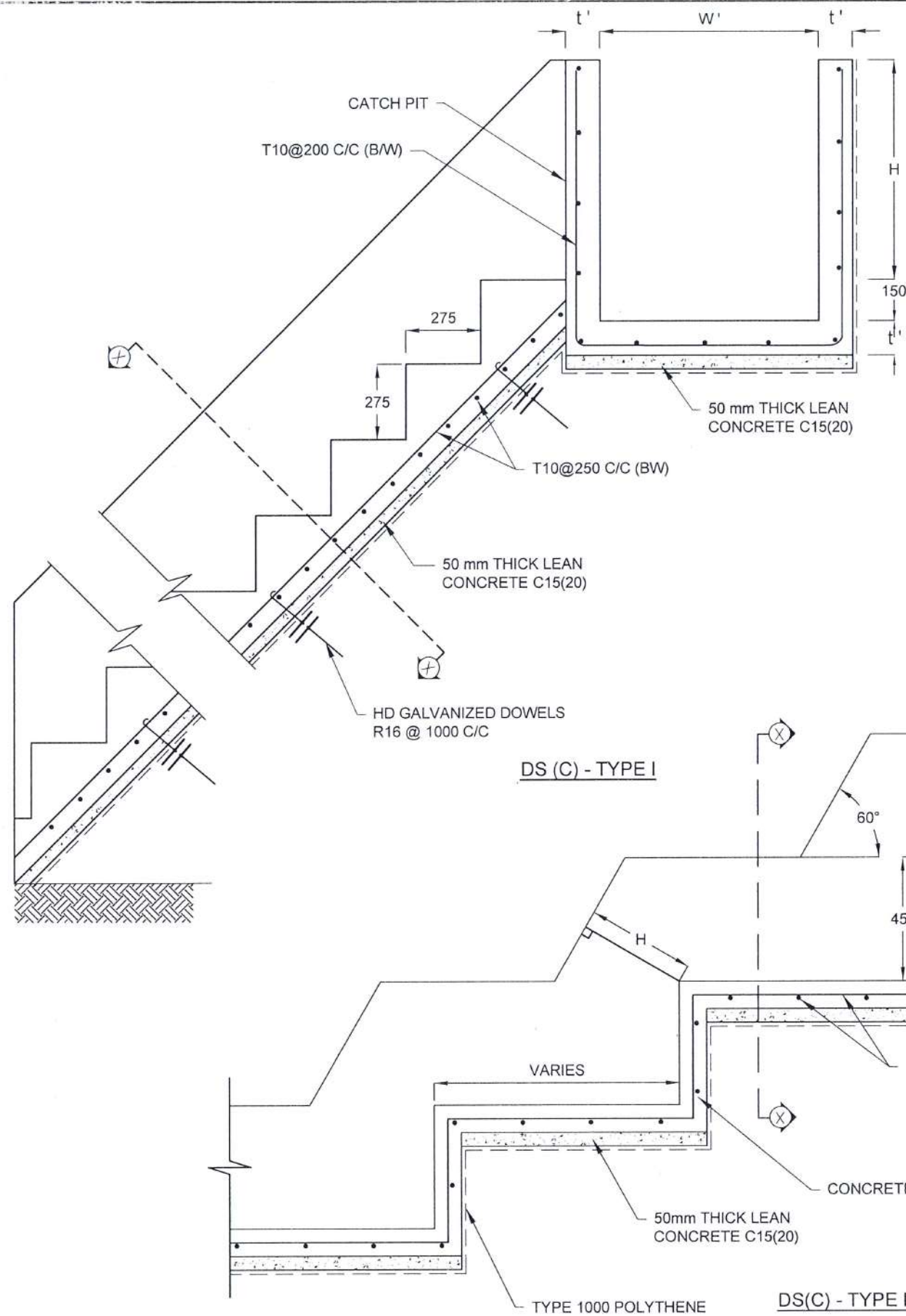
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
KANDY

TITLE

DETAILS OF DRAINS
(SUBSURFACE DRAIN AND CATCHPIT)

SCALE	N.T.S.	DATE	20.04.2026
PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH III/231/A3	REVISION	00

DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



NOTES

- USE EITHER TYPE I OR TYPE II CASCADE DRAIN ACCORDING TO THE ACTUAL GROUND CONDITION AS INSTRUCTED BY THE ENGINEER.
- LENGTH OF THE STEPS OF CASCADE WILL BE VARIED ACCORDING TO THE SITE CONDITIONS.
- DEPTH OF EXCAVATION SHALL BE VARIED ACCORDING TO SITE CONDITIONS.
- DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

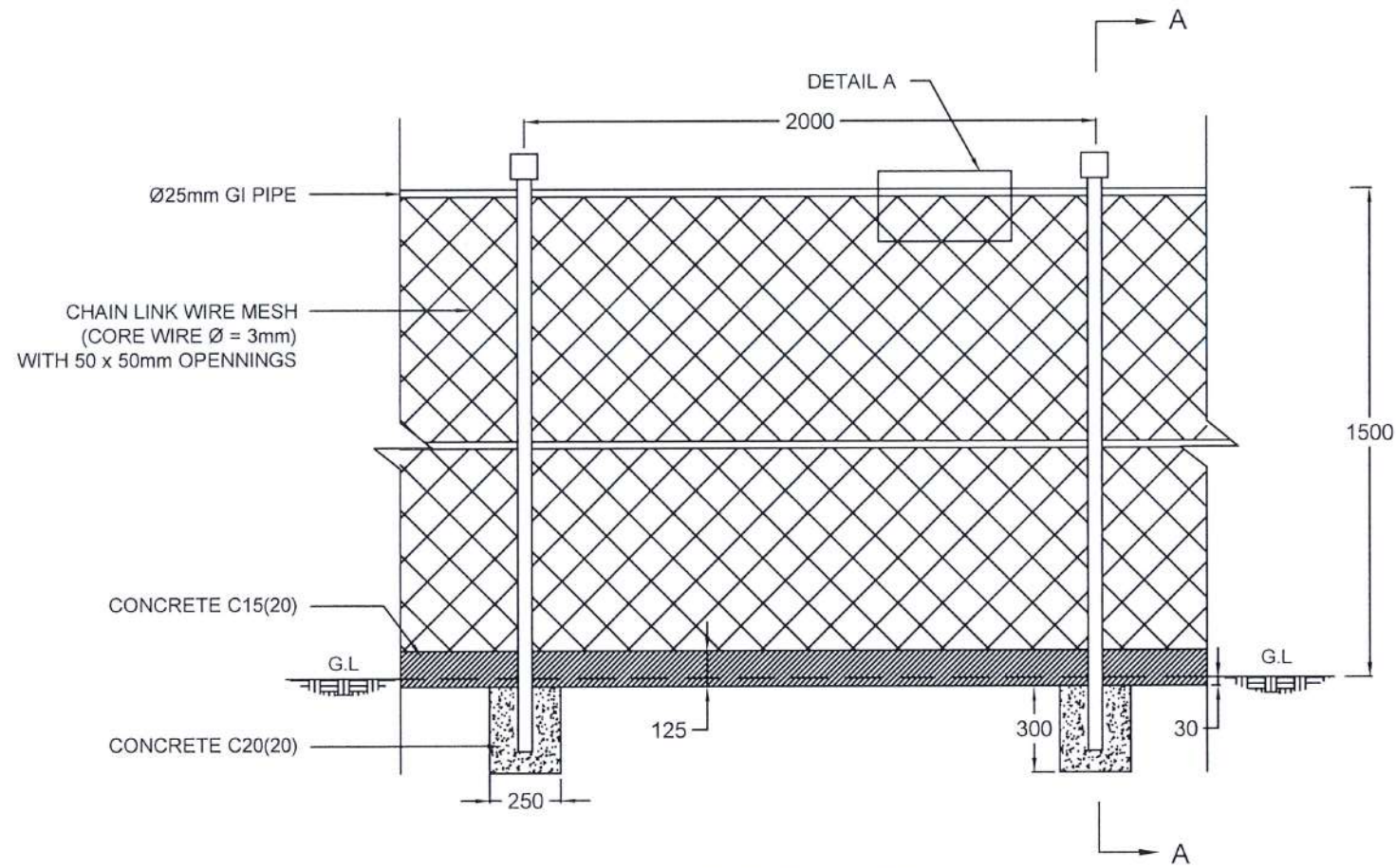
REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- COVER TO REINFORCEMENT

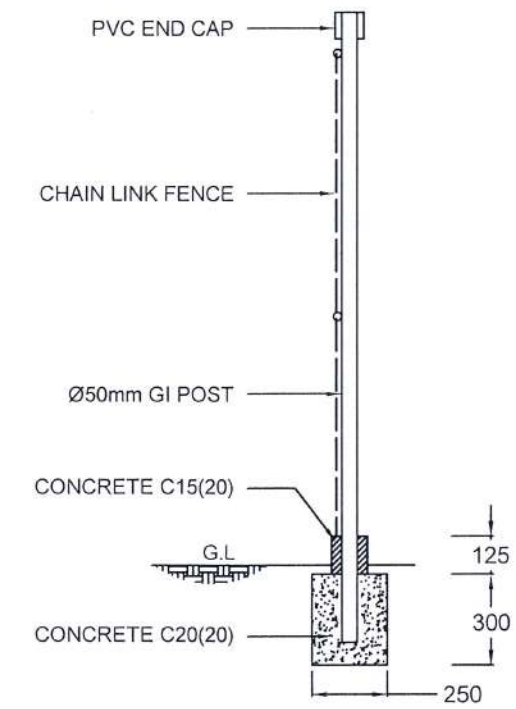
[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm

DRAIN TYPE	W (mm)	H (mm)	t (mm)	W' (mm)	t' (mm)
DS (C) - A	450	450	100	600	100
DS (C) - B	450	600	100	750	100
DS (C) - C	600	600	100	800	100
DS (C) - D	750	750	100	800	100
DS (C) - E	800	800	125	1000	125
DS (C) - F	1000	750	125	1200	125

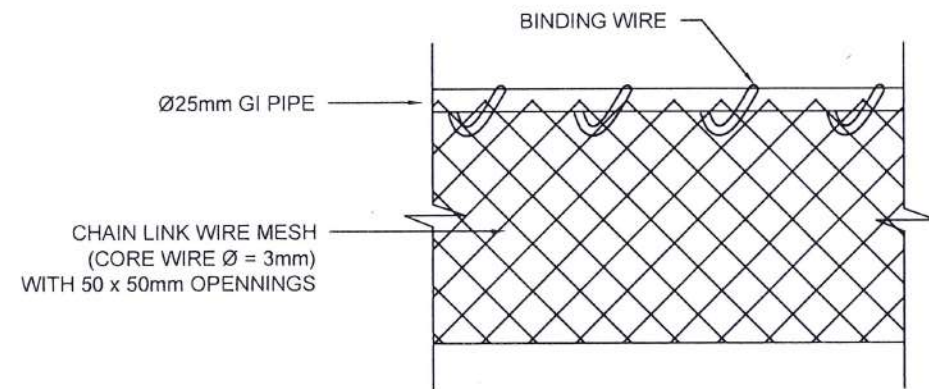
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	TITLE DETAILS OF DRAINS (CASCADE DRAIN)				DESCRIPTION	NAME	SIGNATURE				
											DRAWN	K. M. D. NISHANTHI					
											DESIGNED	R. J. K. P. N. RANATHUNGA					
											CHECKED	I. A. N. D. IDIRIMANNA					
										SCALE	N.T.S.	DATE	20.04.2026	RECOMMENDED	PROF. S. A. S. KULATHILAKA		
										PROJECT / DRAWING No. RL VMMP/WORKS/NCB/PH III/231/A4				REVISION 00	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



FRONT ELEVATION



SECTION A - A

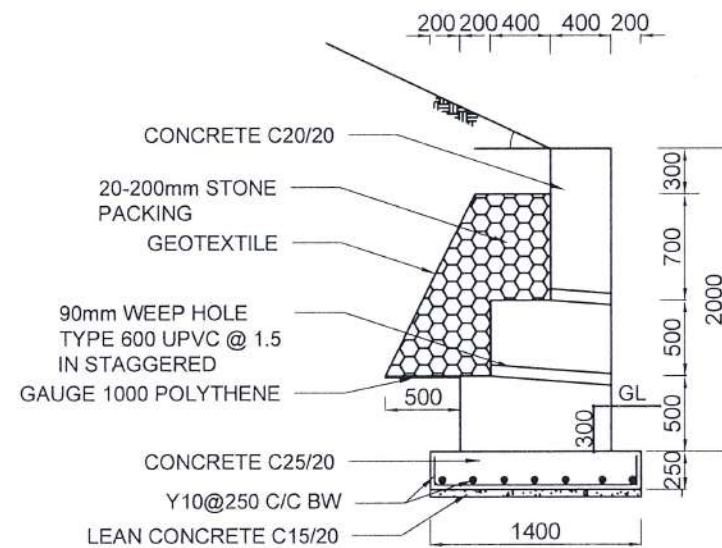


DETAIL A

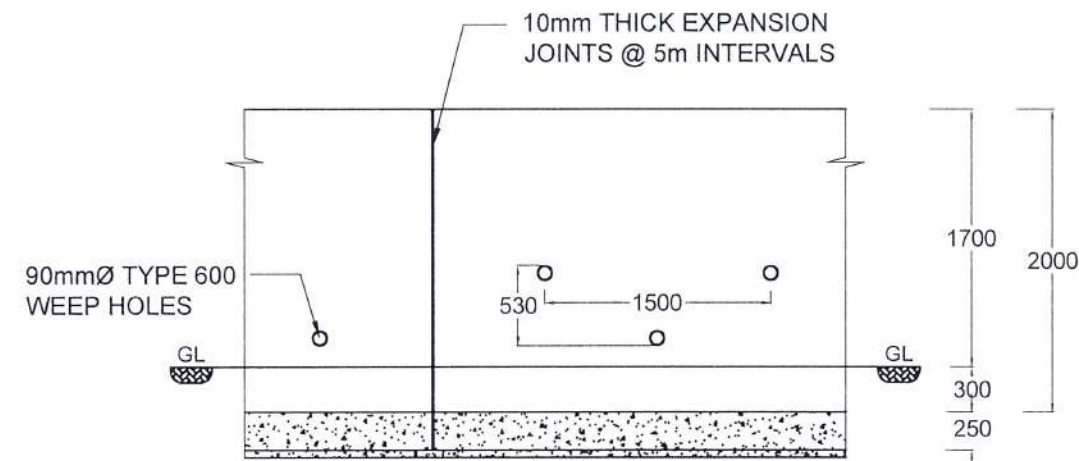
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. GI POST SHOULD BE COVERED WITH GREEN COLOUR ANTI-CORROSIVE PAINT.
3. PRIOR APPROVAL IS REQUIRED FOR CHAIN LINK WIRE MESH, GI POST AND PVC CAP.

EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	DETAILS OF CHAIN LINK FENCE	DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
							SCALE N.T.S. DATE 20.04.2026 PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/231/B REVISION 00			



CONCRETE RETAINING
WALL (2m)



FRONT ELEVATION

NOTES

- 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED @ EVERY 5m INTERVALS.
- DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS
- WHERE THE EARTH CUT HEIGHT IS LESS THAN THAT OF THE APPLICABLE TYPICAL WALL, THE HEIGHT OF THE WALL SHOULD BE REDUCED TO FIT THE CUT HEIGHT, FROM ITS BOTTOM END WHILE MAINTAINING THE GIVEN TOP WIDTH.

CONCRETE

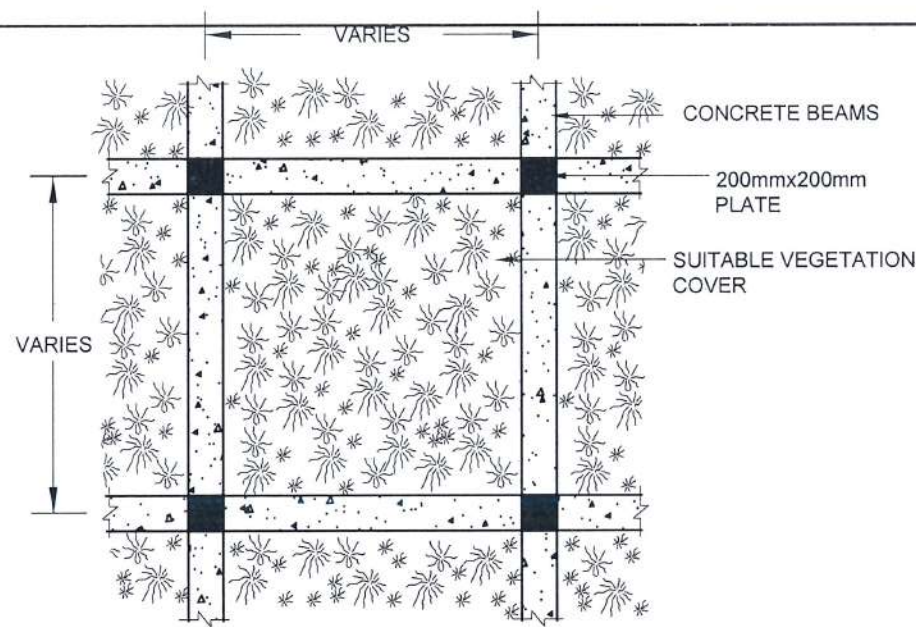
- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a] SCREED	- GR. 15/20
[b] BASE	- GR. 25/20
[c] WALL	- GR. 20/20

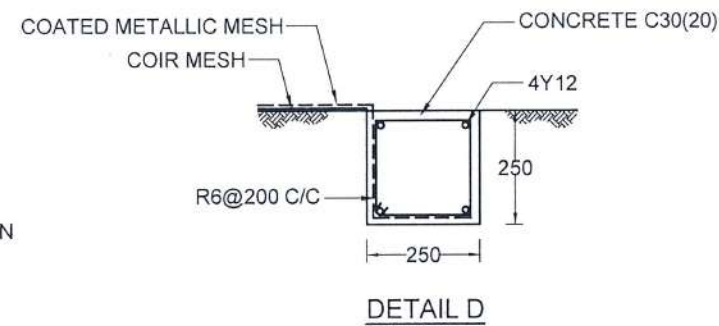
REINFORCEMENT

- ALL BARS MARKED "T" SHALL BE HIGH YIELD DEFORMED BARS OF YIELD STRENGTH NOT LESS THAN 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED WITH LENGTH OF 50Ø, WHERE Ø IS THE DIAMETER AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.
- CLEAR CONCRETE COVER FOR ALL FOUNDATION REINFORCEMENT BELLOW GROUND LEVEL TO BE 50 mm.

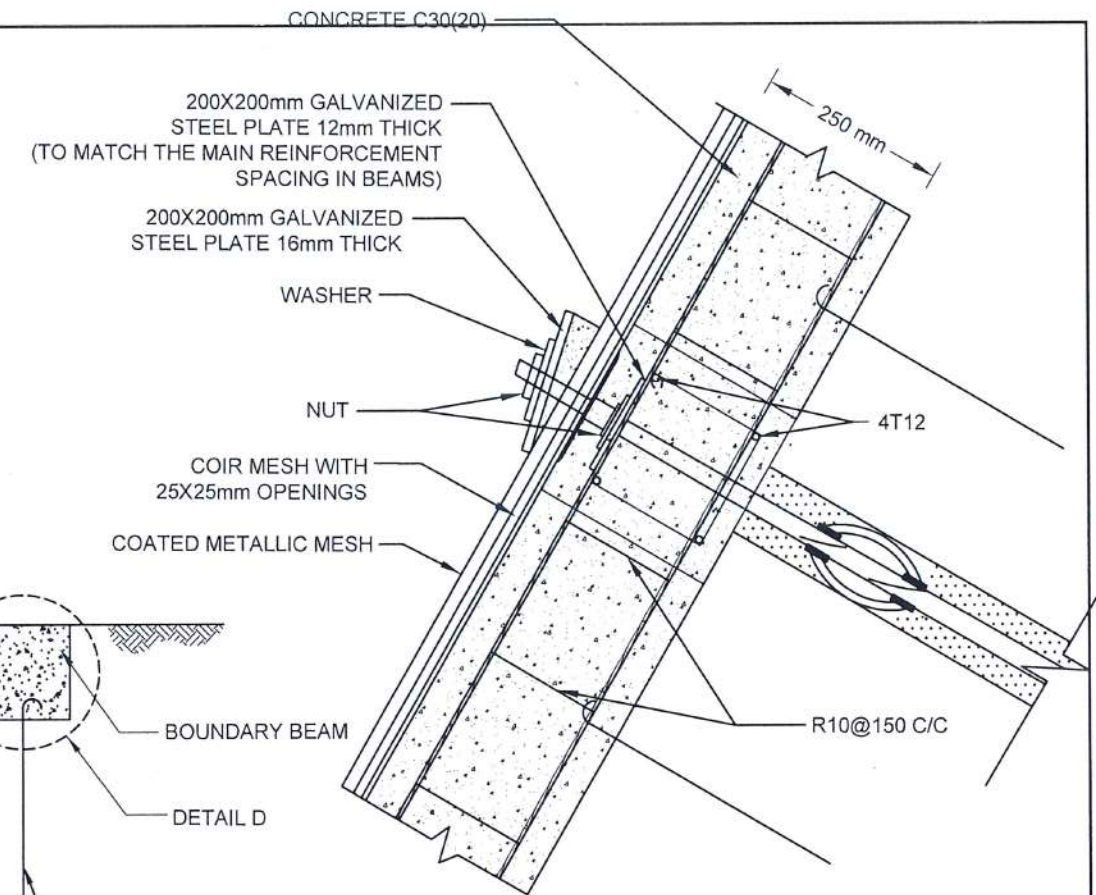
EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	DETAILS OF RETAINING WALL	DRAWN	K. M. D. NISHANTHI	
								DESIGNED	R. J. K. P. N. RANATHUNGA	
								CHECKED	I. A. N. D. IDIRIMANNA	
								RECOMMENDED	PROF. S. A. S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
							SCALE: N.T.S.	DATE: 20.04.2026		
							PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/231/C	REVISION 00		



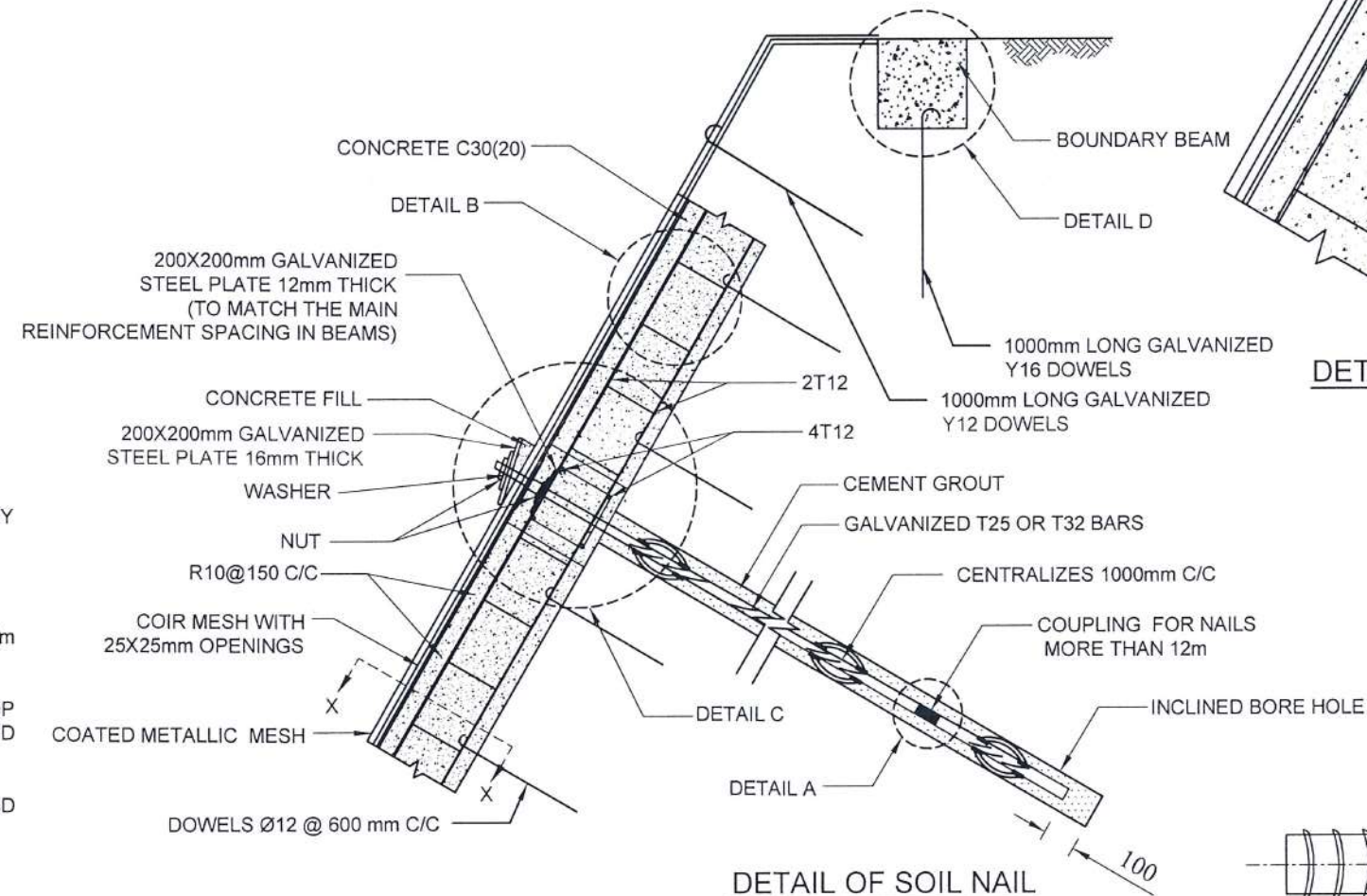
DETAIL - B



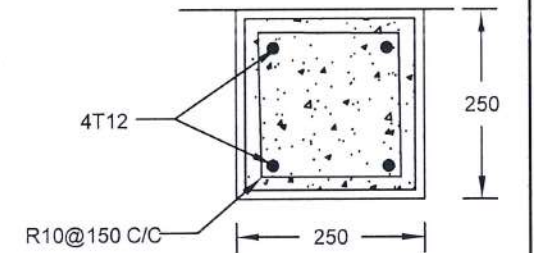
DETAIL D



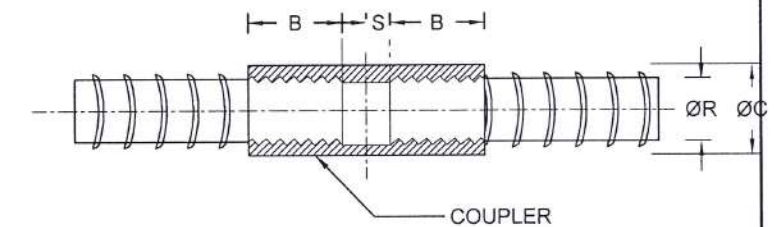
DETAIL C



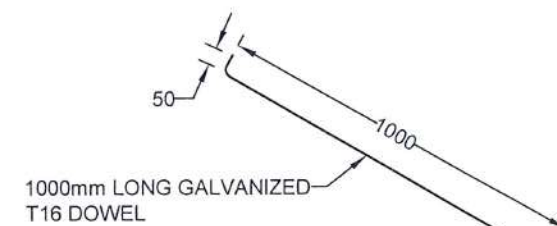
DETAIL OF SOIL NAIL



SECTION X-X



COUPLER DETAILS - A (NAIL LENGTH >12m)



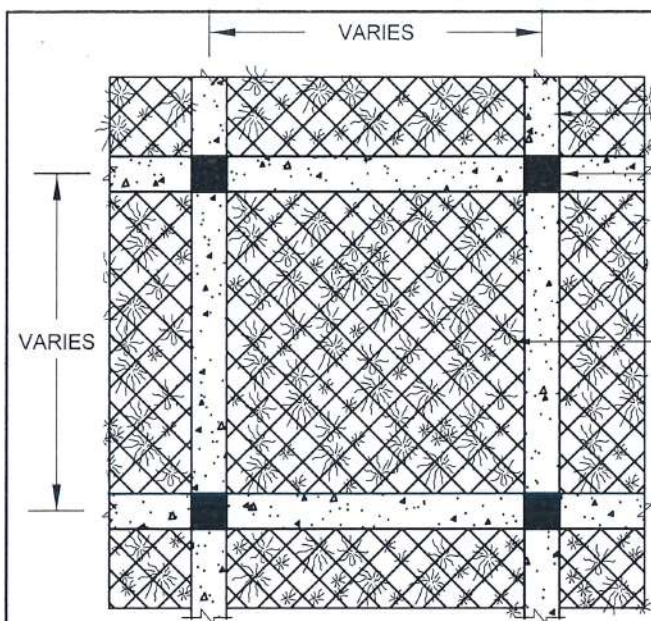
DETAILS OF DOWELS

NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- STRUCTURAL CONC. AS PER SPECIFICATION.
- MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
- STRUCTURAL MEMBERS AS PER SPECIFICATION.
- LAP LENGTH FOR R/F BARS 40 x BAR DIA.
- TWO SETS OF 4T12 BARS PLACED PERPENDICULAR TO EACH OTHERS BY CONNECTING NAIL HEADS VERTICALLY AND HORIZONTALLY ON SLOPE FACE.
- TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER.
- THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG.
- THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE.
- SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION.
- DOWEL SPACING FOR BOUNDARY BEAM SHALL BE 2m.
- BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION.
- MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING.
- SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION.

REINFORCEMENT BAR DIAMETER (ØR)	COUPLER OUTER BAR DIAMETER (ØC)	MIN - THREADED LENGTH OF COUPLER (B)	NON - THREADED LENGTH OF COUPLER (S)
25 mm	36 mm	50 mm	2.5 mm
32 mm	46 mm	64 mm	2.5 mm

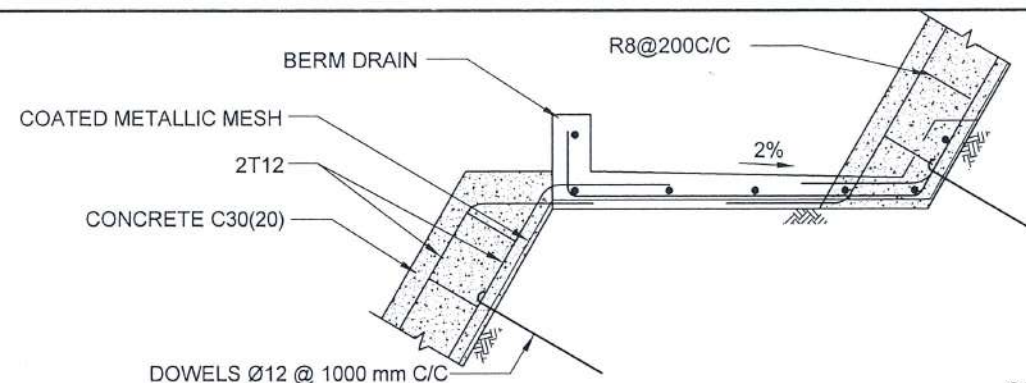
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE NO. 99/1, JAWATTA ROAD COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	TITLE DETAILS OF SOIL NAILING WITH EMBEDDED GRID BEAM			DESCRIPTION	NAME	SIGNATURE
		DRAWN	K.M.D. NISHANTHI									
		DESIGNED	R.J.K.P.N. RANATHUNGA									
		CHECKED	I.A.N.D. IDIRIMANNA									
		SCALE			N.T.S.		DATE	20.04.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA		
		PROJECT / DRAWING No.						REVISION	APPROVED	ENG.(DR.) SANCHITHA JAYAKODY		
		RLVMMP/WORKS/NCB/PH III/231/D1						00				



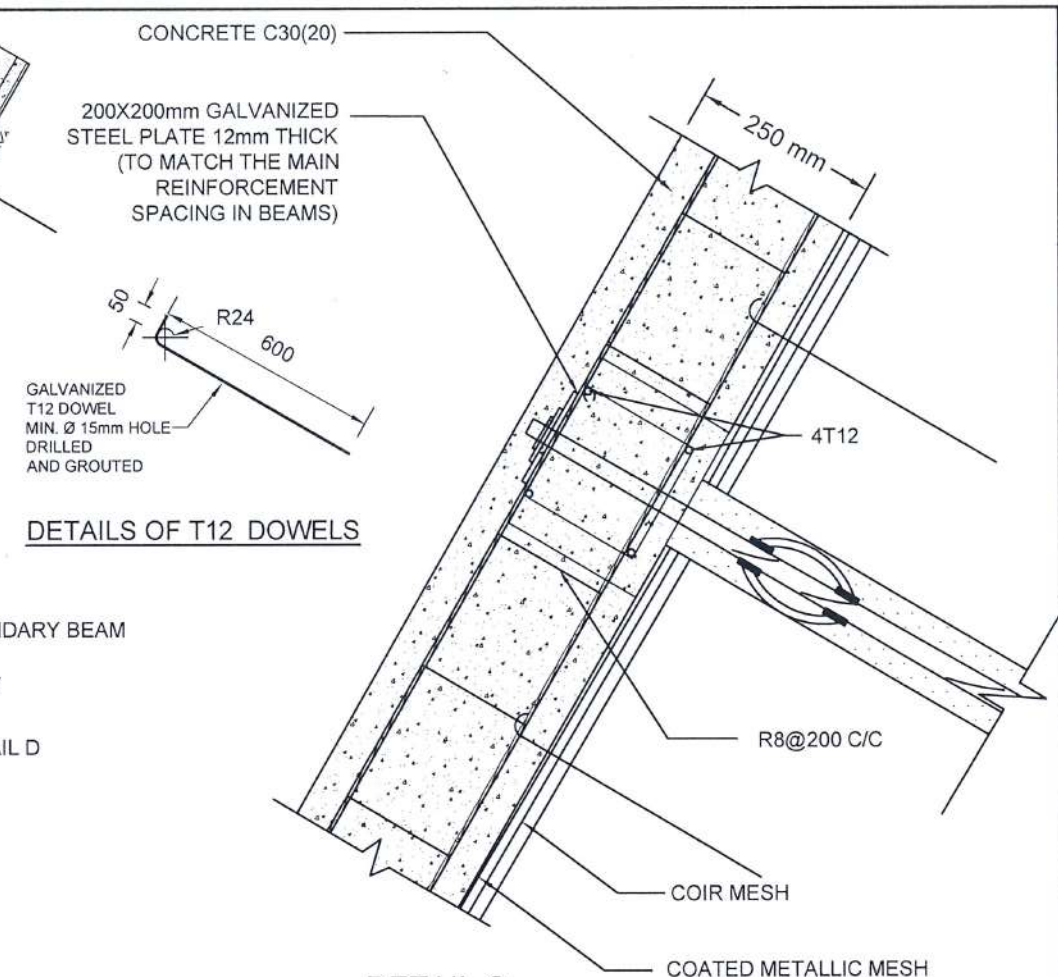
DETAIL - B

NOTES

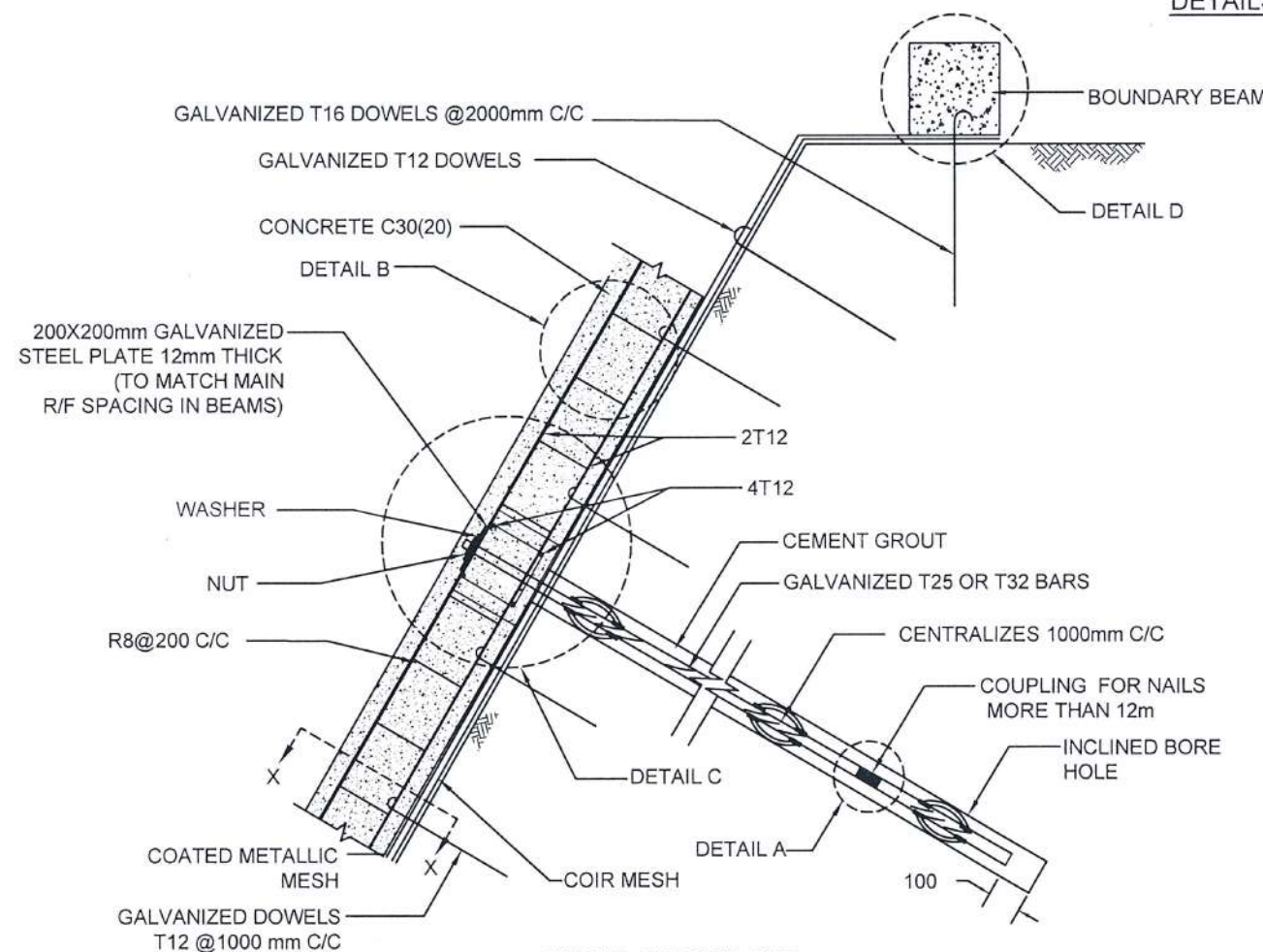
1. ALL DIMENSIONS ARE IN mm.
2. ALL CONSTRUCTIONS SHALL BE AS PER SPECIFICATION.
3. MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
4. LAP LENGTH FOR R/F BARS 40 x BAR DIA.
5. TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER
6. THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG UNLESS OTHERWISE SPECIFIED
7. THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE
8. SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION
9. BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION
10. BOUNDARY BEAM SHALL BE FOUNDED ON SLOPES $\leq 30^\circ$ AT CROWN AREAS.
11. MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING
12. SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION



DETAIL OF FACING AT BERM

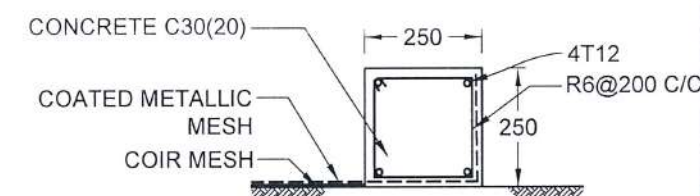


DETAILS OF T12 DOWELS

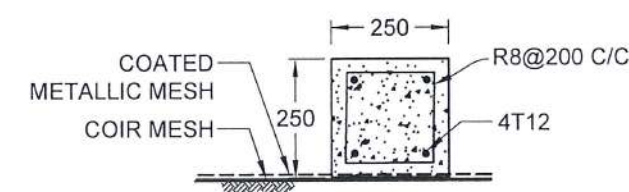


DETAIL OF SOIL NAIL

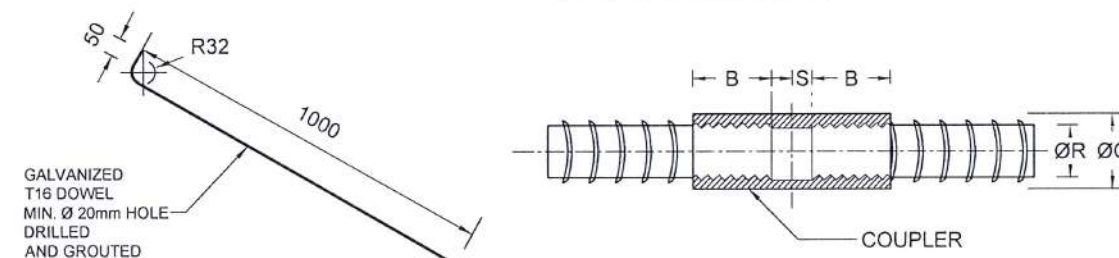
DETAIL C



DETAIL D



SECTION X-X

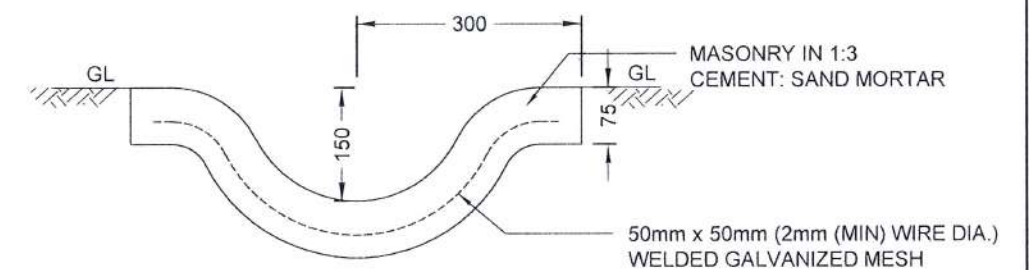
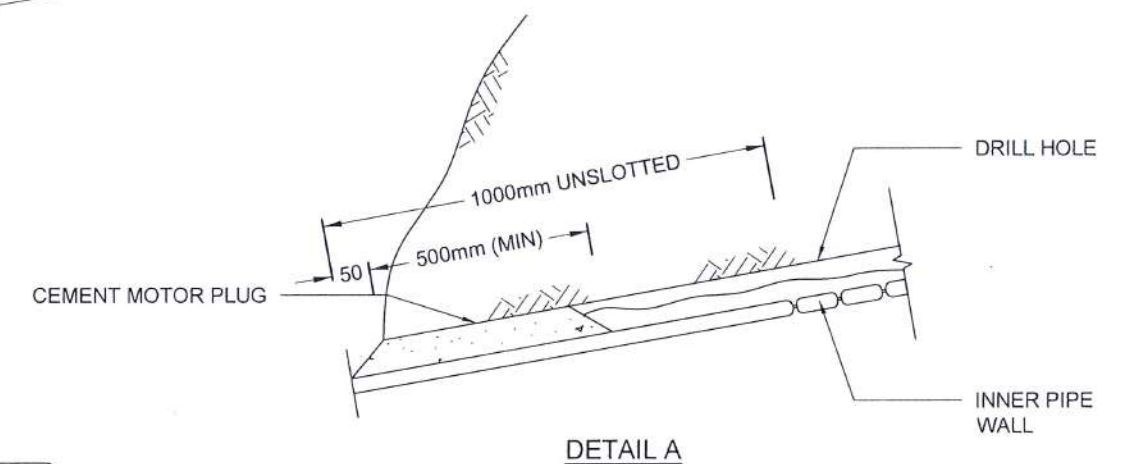
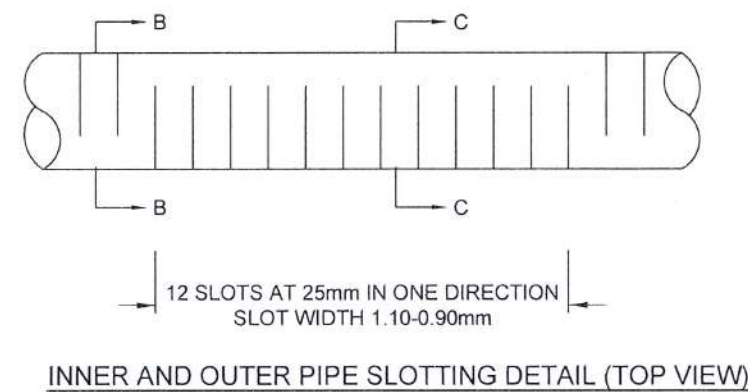
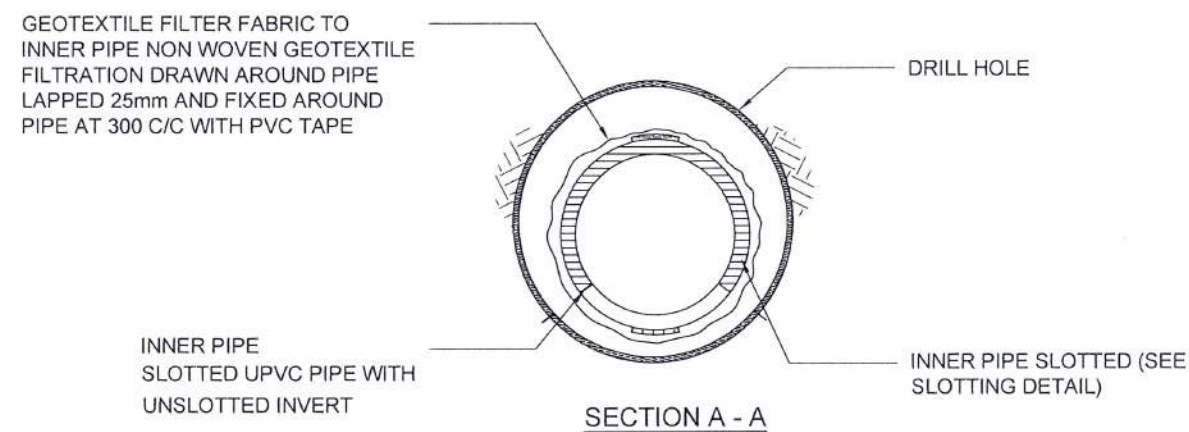
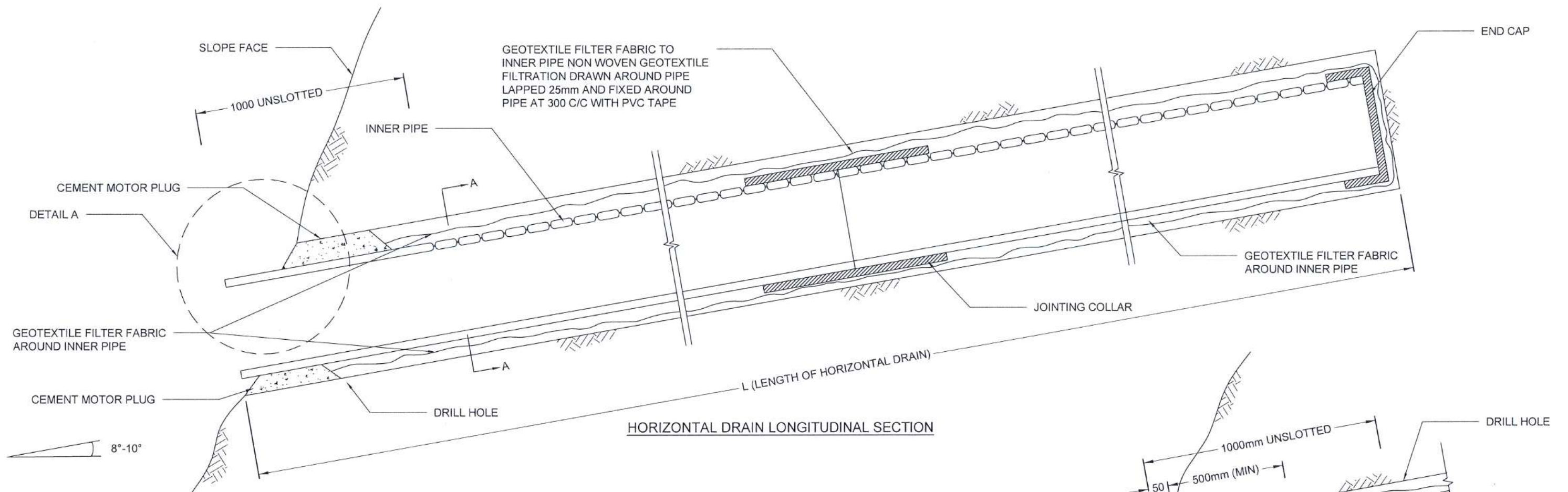


COUPLER DETAILS - A (NAIL LENGTH >12m)

DETAILS OF T16 DOWELS

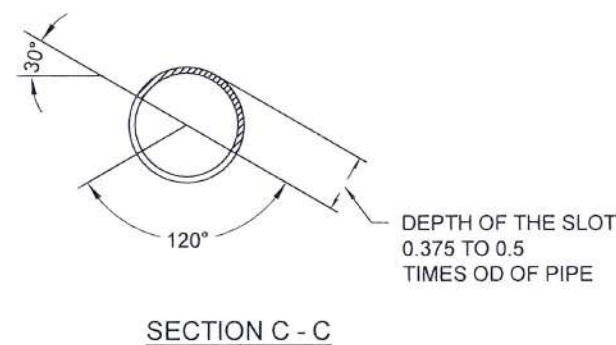
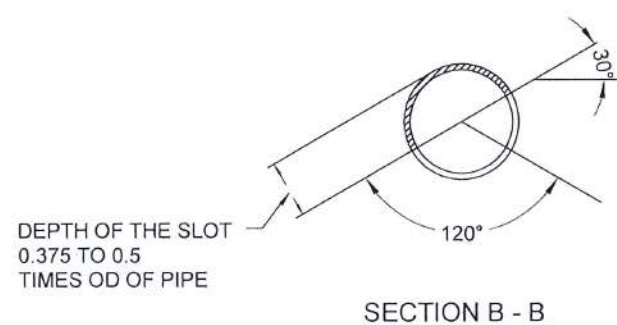
REINFORCEMENT BAR DIAMETER (ØR)	COUPLER OUTER BAR DIAMETER (ØC)	MIN - THREADED LENGTH OF COUPLER (B)	NON - THREADED LENGTH OF COUPLER (S)
25 mm	36 mm	50 mm	2.5 mm
32 mm	46 mm	64 mm	2.5 mm

EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE		DESCRIPTION		NAME		SIGNATURE	
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LAND SLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY		DETAILS OF SOIL NAILING WITH NON EMBEDDED GRID BEAM		DRAWN		K.M.D. NISHANTHI			
																DESIGNED		R.J.K.P.N. RANATHUNGA			
																CHECKED		I.A.N.D. IDIRIMANNA			
														SCALE N.T.S.		DATE		20.04.2026		RECOMMENDED	
														PROJECT / DRAWING No.		REVISION		00		APPROVED	
														RLVMP/WORKS/NCB/PH III/231/D2						ENG.(DR.) SANCHITHA JAYAKODY	
																					

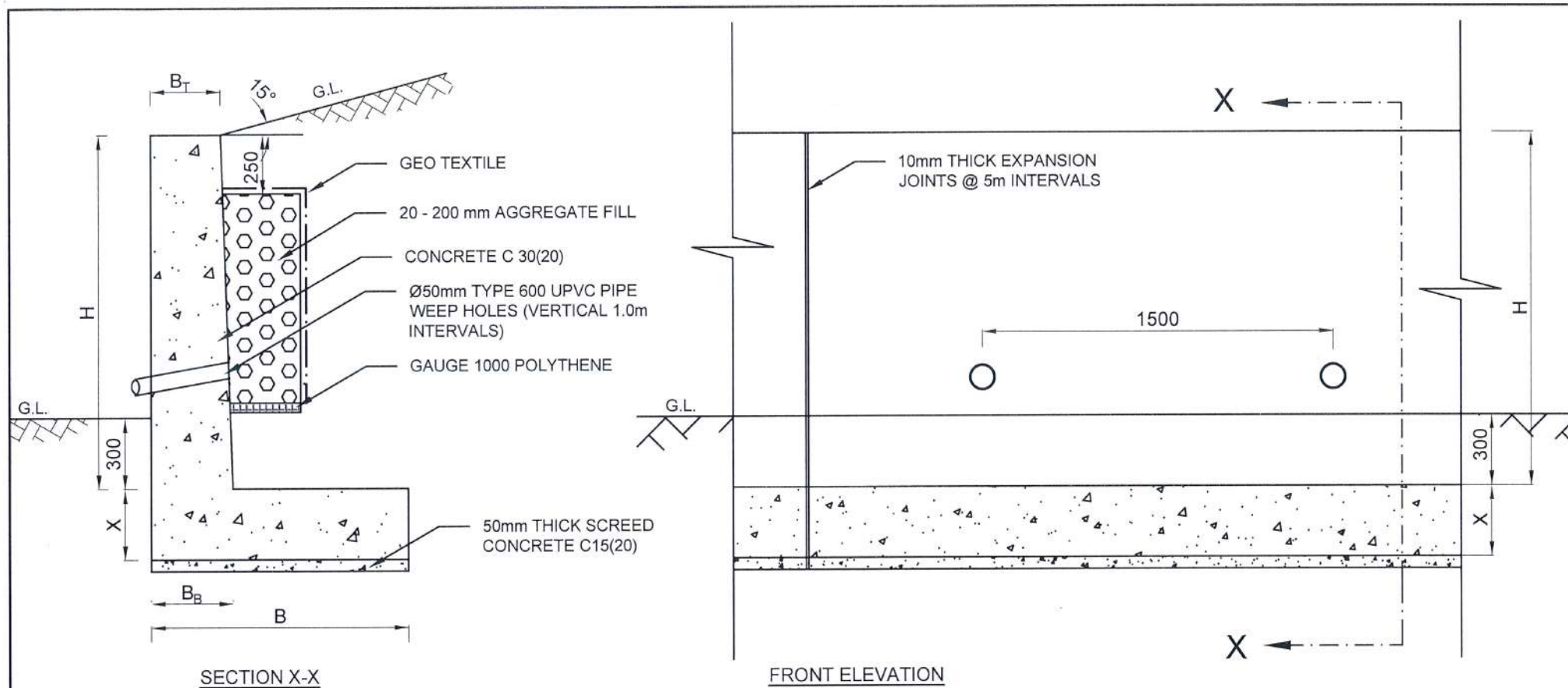


NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. PIPE DIAMETERS, ANGLE & LENGTHS AS SPECIFIED IN DRAWINGS.
3. ALL MATERIALS SHALL CONFORM TO PROJECT SPECIFICATION



EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LAND SLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	DETAILS OF HORIZONTAL DRAIN SECTIONS	DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
							SCALE	N.T.S.	DATE	20.04.2026
							PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH III/231/E	REVISION	00



NOTES

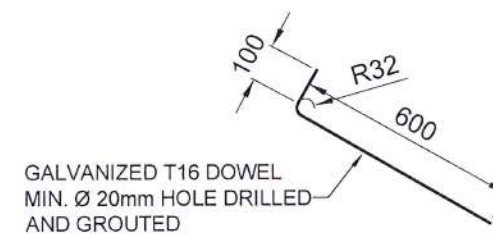
1. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. AGGREGATE BACKFILL AND GEO-TEXTILE SHOULD BE CONFORMED TO THE SPECIFICATIONS PROVIDED.
3. HEIGHT OF THE WALL SHALL BE SELECTED CONFORMING TO THE CUT HEIGHT OF THE LOCATION AS PER THE INSTRUCTIONS GIVEN BY ENGINEER.
4. TEMPORARY SHORING WILL BE NEEDED DURING THE EXCAVATION FOR THE RETAINING WALLS.
5. WALL HEIGHTS SHOULD BE SELECTED TO BE SUITED TO THE CUT HEIGHT AT THE SITE BASED ON THE ACTUAL SITE CONDITION AS PER THE ENGINEERS INSTRUCTIONS.
6. DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
7. ALLOWABLE BEARING CAPACITY SHALL BE 150 kN/m².
8. THE SOIL PROVIDING PASSIVE RESISTANCE AT THE TOE SHALL BE MAINTAINED AT ALL TIMES. ANY ACCIDENTAL EXCAVATION OR REMOVAL OF THIS SOIL WILL ADVERSELY AFFECT WALL STABILITY AND SHALL NOT BE PERMITTED.
9. THE FOUNDATION LEVEL SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO PLACING CONCRETE.
10. DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS.
11. 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED AT EVERY 5m INTERVALS WITH APPROVED MATERIAL.
12. 50mm DIAMETER WEEP HOLES SHOULD BE PROVIDED AS GIVEN IN THE DRAWING AND SHOULD BE STAGGERED TO A MINIMUM SLOPE OF 1: 20.

CONCRETE

13. THE FOLLOWING CONCRETE GRADES SHOULD BE USED FOR STRUCTURES
 - (a) SCREED CONCRETE - C. 15(20)
 - (b) BASE/WALL - C. 30(20)

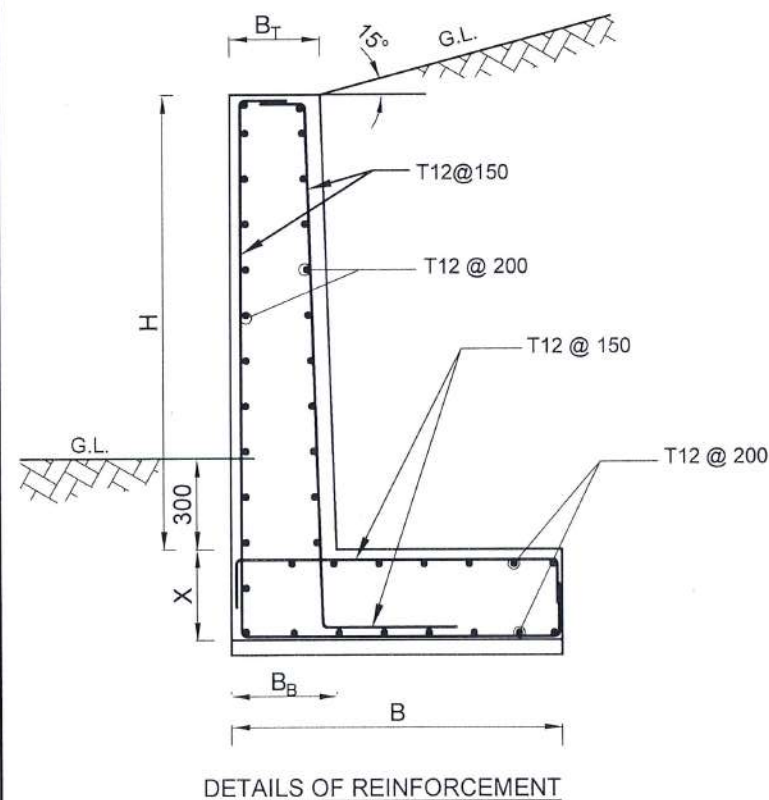
REINFORCEMENT

14. HIGH YIELD REINFORCEMENT BARS DENOTED BY 'T' SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
15. MINIMUM COVER FOR THE REINFORCEMENT SHOULD BE 50mm.
16. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
17. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
18. ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.

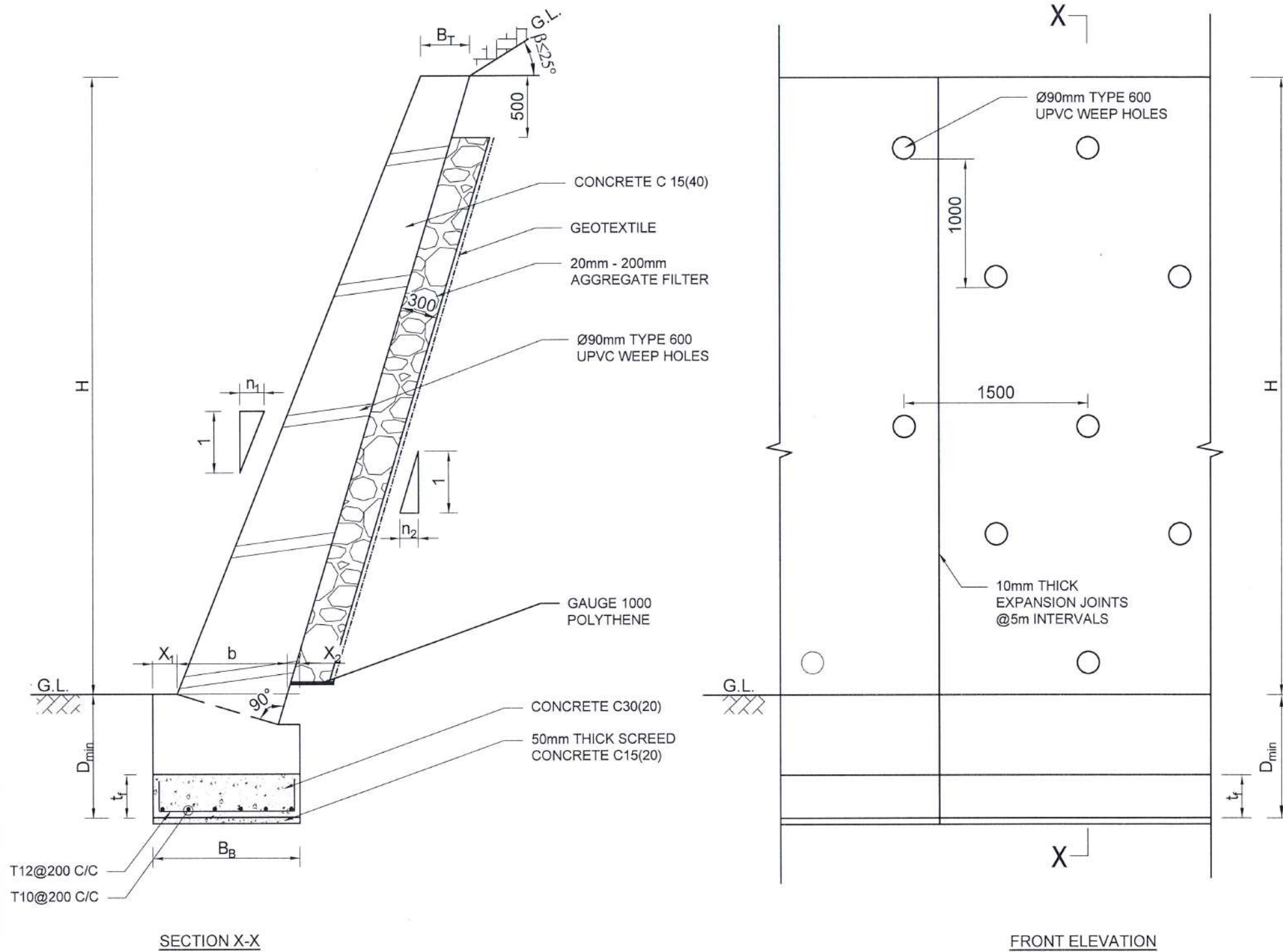


DETAILS OF T12 DOWELS

DIM.	B _T (mm)	B _B (mm)	B (mm)	H (mm)	X (mm)
HEIGHT					
1.5 m	300	350	1100	1500	300
2.0 m	300	450	1450	2000	300
2.5 m	350	500	2200	2500	300



EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE				DESCRIPTION		NAME		SIGNATURE	
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY		DETAILS OF CANTILEVER L WALL				DRAWN		A.K.A.T. NAYOMI			
																		DESIGNED		R.J.K.P.N. RANATHUNGA			
																		CHECKED		I.A.N.D. IDIRIMANNA			
																		RECOMMENDED		PROF. S.A.S. KULATHILAKA			
														SCALE NTS				DATE		20.04.2026			
														PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/231/F				REVISION		00		APPROVED	
																				ENG. (DR). SANCHITHA JAYAKODY			



DETAILS OF TYPICAL RESTING TYPE RETAINING WALL SECTIONS

Dim: Height	B _T (mm)	B _B (mm)	X ₁ (mm)	X ₂ (mm)	t _f (mm)	D _{min} (mm)	n ₁	n ₂
2m	300	800	200	100	200	600	0.30	0.20
3m	300	900	200	100	200	600	0.30	0.20
4m	400	1100	200	100	250	800	0.30	0.20
5m	400	1400	250	150	250	1000	0.50	0.38
6m	500	1700	250	150	300	1200	0.40	0.27
7m	500	2000	300	200	300	1400	0.40	0.27

NOTES:

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
- RETAINING WALL TYPE SHALL BE DECIDED ACCORDING TO THE ACTUAL SITE CONDITION.
- SLOPE SHALL BE ABLE TO STAND ON ITS OWN UNTIL THE WALL IS MADE. NOT SUITABLE FOR COLLAPSING SOILS.
- WHERE THE EARTH CUT HEIGHT IS LESS THAN THAT OF THE APPLICABLE TYPICAL WALL, THE HEIGHT OF THE WALL SHOULD BE REDUCED TO FIT THE CUT HEIGHT, FROM ITS BOTTOM END WHILE MAINTAINING THE GIVEN TOP WIDTH.
- BACK SLOPE ANGLE, LEVEL AND FROM MAY VARY AS PER THE DESIGN AT EACH SITE.
- ALLOWABLE BEARING CAPACITY SHALL BE 150kN/m² FOR 2-4m HIGH WALLS AND 200kN/m² FOR 5-7m HIGH WALL.
- DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS.
- 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED AT EVERY 5m INTERVALS WITH APPROVED MATERIAL.
- WEEP HOLES TO BE PROVIDED AT 1.5m C/C (HORIZONTALLY) STAGGERED USING 90mm DIA UPVC PIPES (TYPE 600) WITH A MINIMUM SLOPE OF 1: 20 TO ALLOW PROPER DRAINAGE.

CONCRETE

- THE FOLLOWING CONCRETE GRADES SHOULD BE USED FOR STRUCTURES

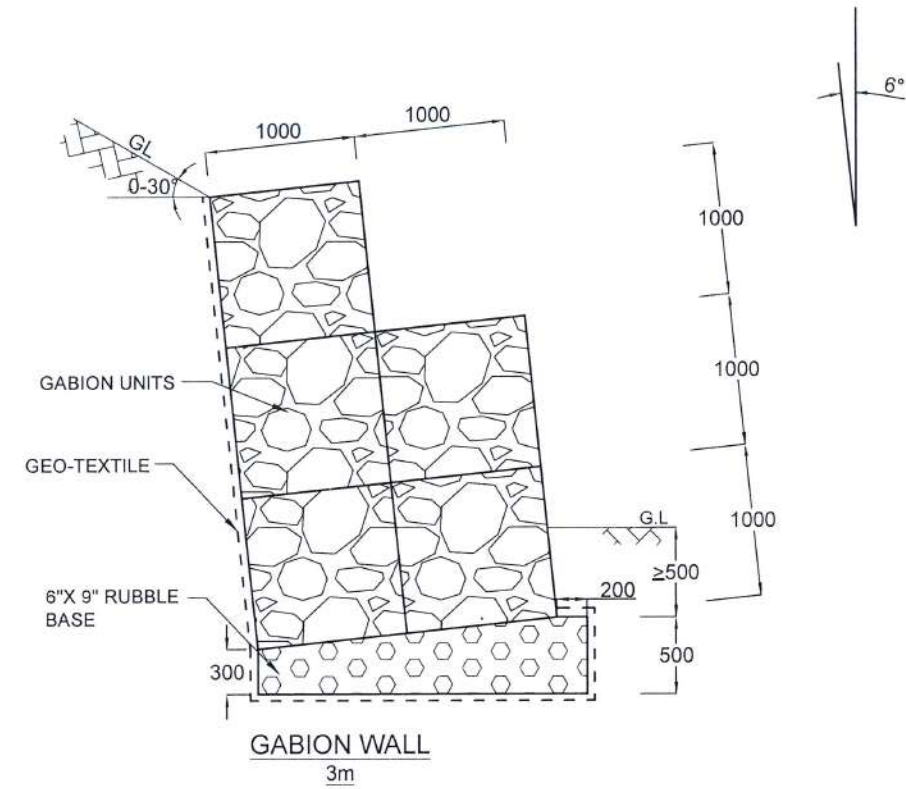
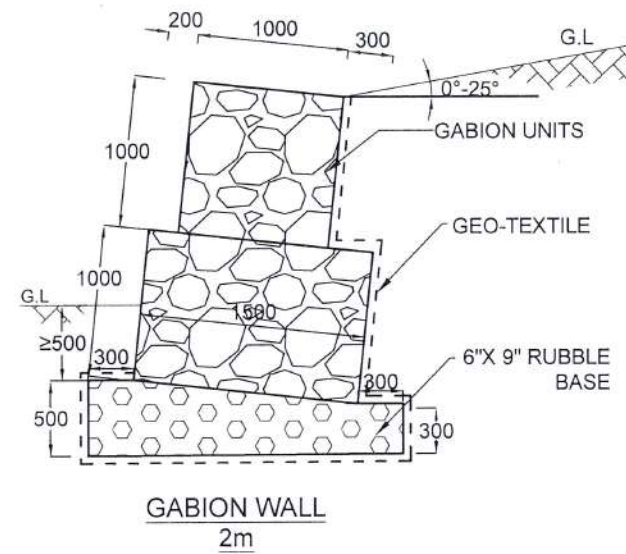
- (a) SCREED CONCRETE - C. 15(20)
- (b) WALL - C. 15(40)
- (c) BASE - C. 30(20)

REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm²
- CLEAR CONCRETE COVER FOR ALL REINFORCEMENT TO BE 50 mm.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.

EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SRI SWARNAJOTHI NATIONAL SCHOOL KIRIBATHKUMBURA KANDY	TITLE DETAILS OF CONCRETE RESTING TYPE RETAINING WALLS	DESCRIPTION	NAME	SIGNATURE
								DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

SCALE: N.T.S. DATE: 20.04.2026
PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH III/231/H REVISION 00



NOTES

1. ALL DIMENSION ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. BACKSLOPE ANGLE, LEVEL AND FORM MAY VARY AS PER THE DESIGN AT EACH SITE.

EMPLOYER



DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05



DESIGNER

DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE

REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SRI SWARNAJOTHI NATIONAL SCHOOL
KIRIBATHKUMBURA
KANDY

TITLE

DETAILS OF GABION WALL

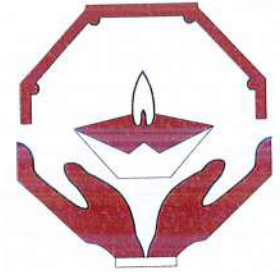
SCALE	N.T.S.	DATE	20.04.2026
PROJECT / DRAWING No.	RLVMM/WORKS/NCB/PH III/231/G	REVISION	00

DESCRIPTION	NAME	SIGNATURE
DRAWN	A.K.A.T. NAYOMI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR). SANCHITHA JAYAKODY	

DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE



NATIONAL BUILDING RESEARCH INSTITUTE



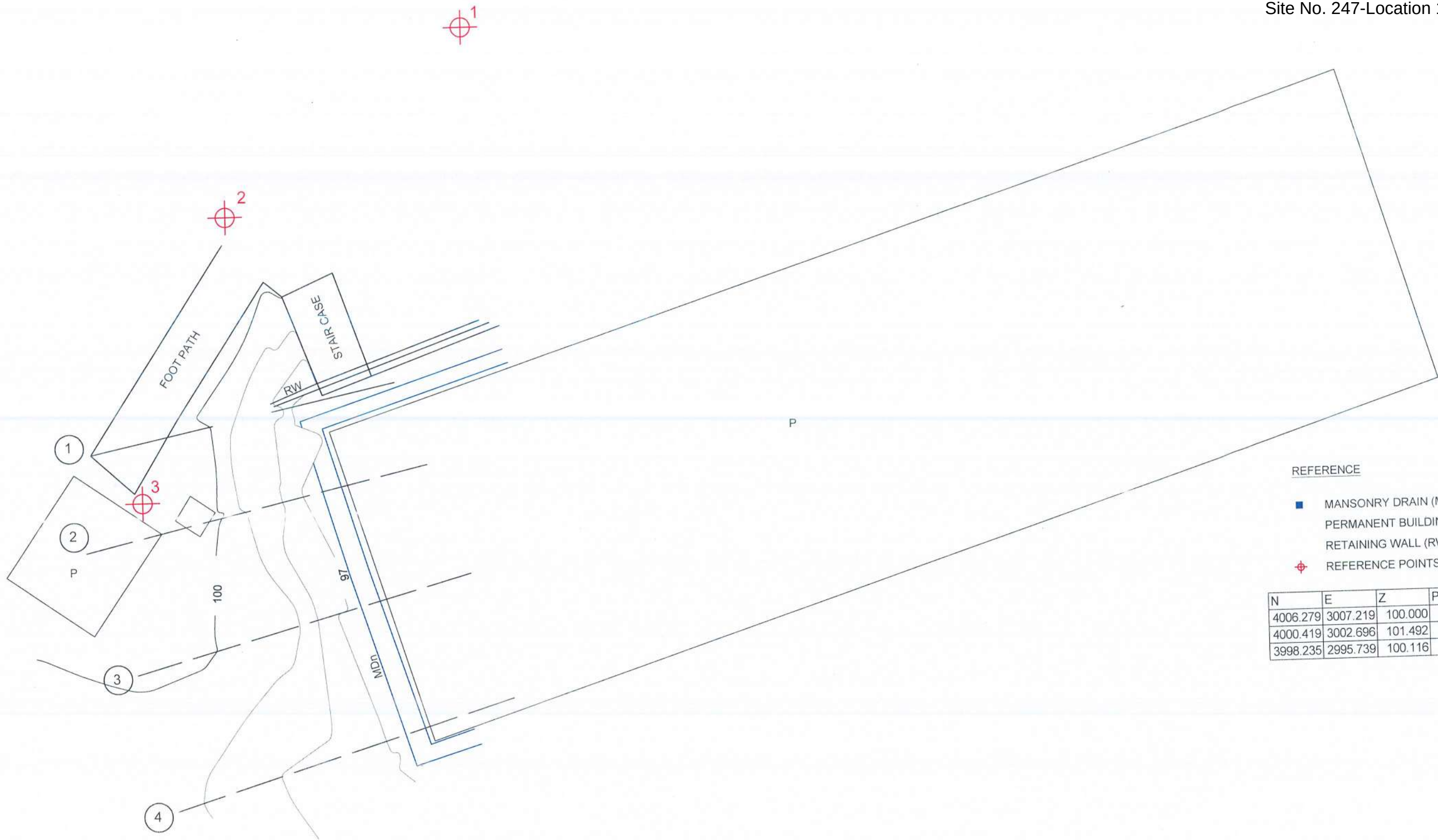
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SUMANGALA COLLEGE
KANDY

LOCATION 01, LOCATION 02 & LOCATION 03

PROJECT NO: RLVMMMP/WORKS/NCB/PHIII/233

DETAILED DESIGN DRAWINGS

MAY 2026



REFERENCE

- MANSONRY DRAIN (MDn)
- PERMANENT BUILDING (P)
- RETAINING WALL (RW)
- REFERENCE POINTS

N	E	Z	PN
4006.279	3007.219	100.000	1
4000.419	3002.696	101.492	2
3998.235	2995.739	100.116	3

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

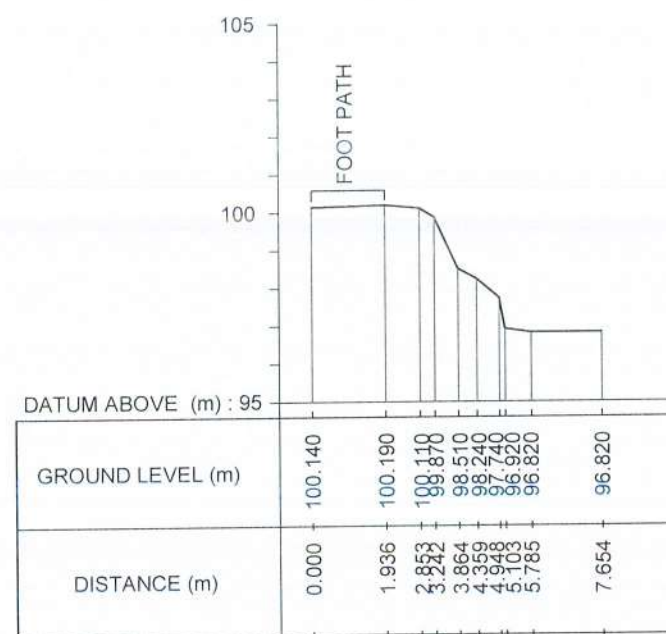
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

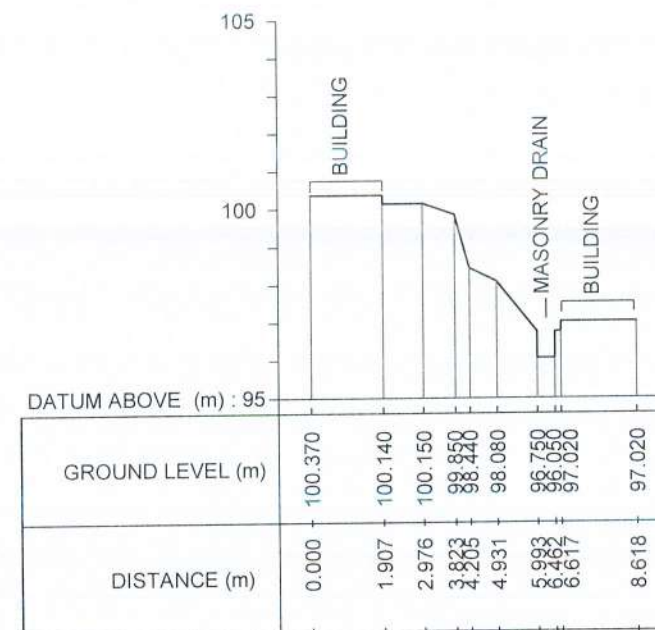
PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
BEHIND THE GRADE 9 CLASS ROOMS
SUMANGALA COLLEGE - KANDY
LOCATION - 1

TITLE	
SURVEY PLAN	
SCALE 1:100	DATE 07.05.2026
PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/233/L1/DR 01	REVISION 00

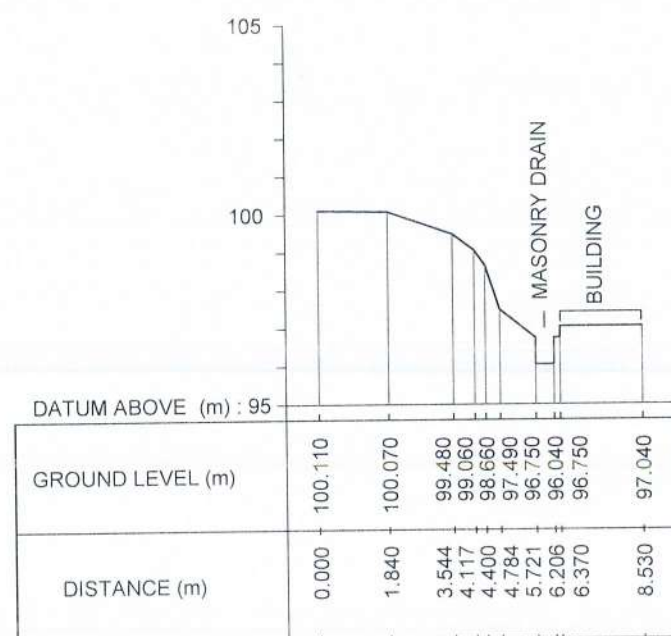
DESCRIPTION	NAME	SIGNATURE
SURVEYED	W. L. P. N. N. WIJESINGHE	<i>W. L. P. N. N. WIJESINGHE</i>
CHECKED	R. J. K. P. N. RANATHUNGA	<i>R. J. K. P. N. RANATHUNGA</i>



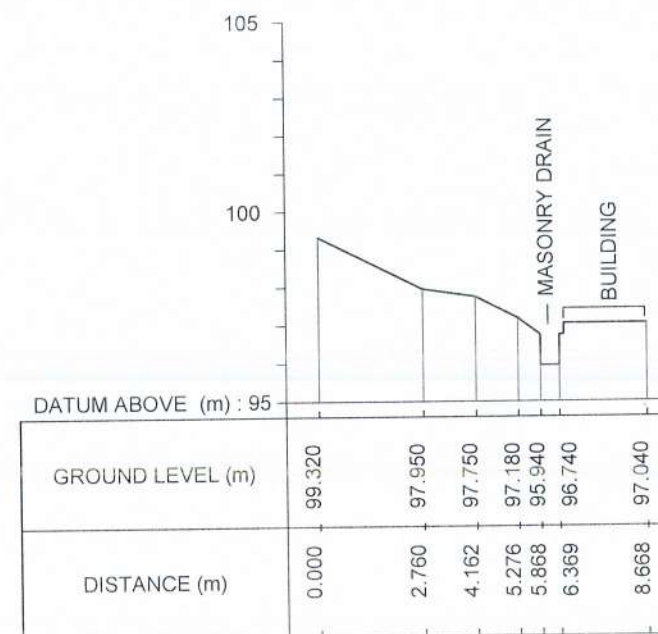
SECTION 1



SECTION 2

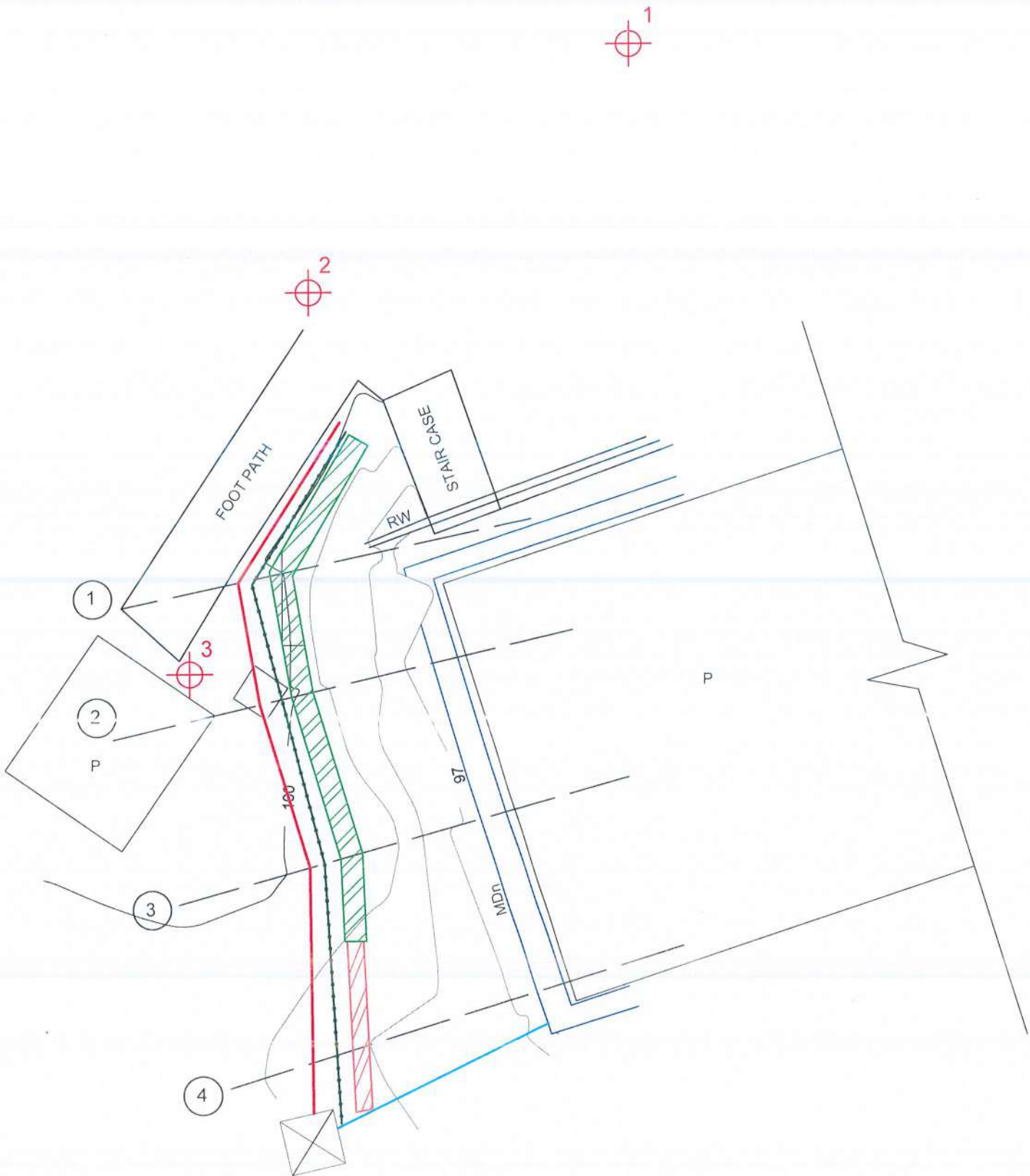


SECTION 3



SECTION 4

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT BEHIND THE GRADE 9 CLASS ROOMS SUMANGALA COLLEGE - KANDY LOCATION - 1	TITLE EXISTING CROSS SECTIONS	DESCRIPTION	NAME	SIGNATURE
								SURVEYED	W. L. P. N. N. WIJESINGHE	
								CHECKED	R. J. K. P. N. RANATHUNGA	
						SCALE	1:200	DATE	07.05.2026	
						PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH III/233/L1/DR 02	REVISION	00	



REFERENCE

- MANSONRY DRAIN (MDn)
- PERMANENT BUILDING (P)
- RETAINING WALL (RW)
- REFERENCE POINTS

N	E	Z	PN
4006.279	3007.219	100.000	1
4000.419	3002.696	101.492	2
3998.235	2995.739	100.116	3

DESIGN NOTATION

- DS(K) -A TYPE I
- DS(C) -A
- RESTING TYPE CONCRETE WALL (3.5m)
- RESTING TYPE CONCRETE WALL (2.5m)
- CATCH PIT (CP)
- CHAIN LINK FENCE

NOTES

- SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION.
- PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
- LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
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COLOMBO - 05

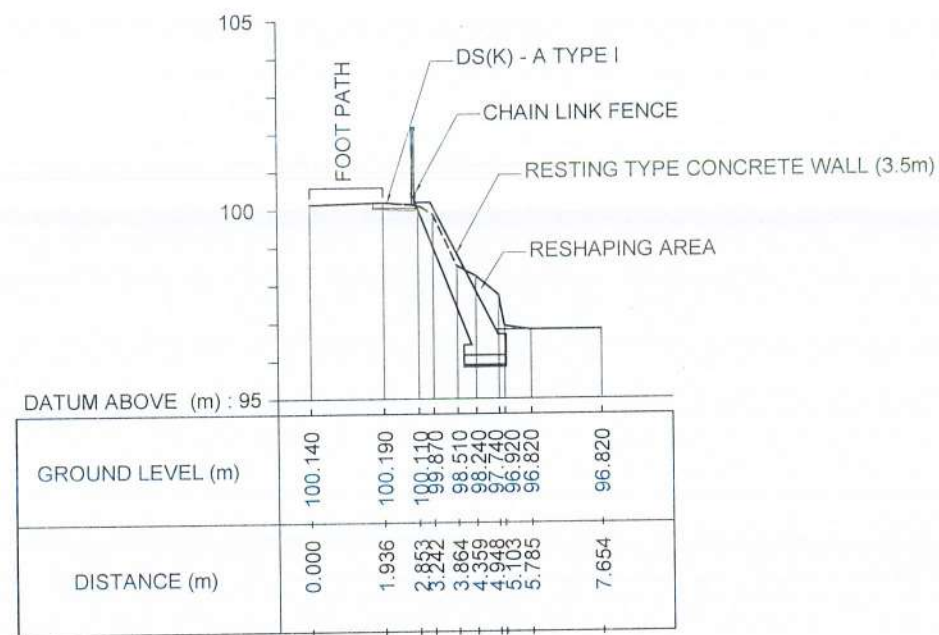
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

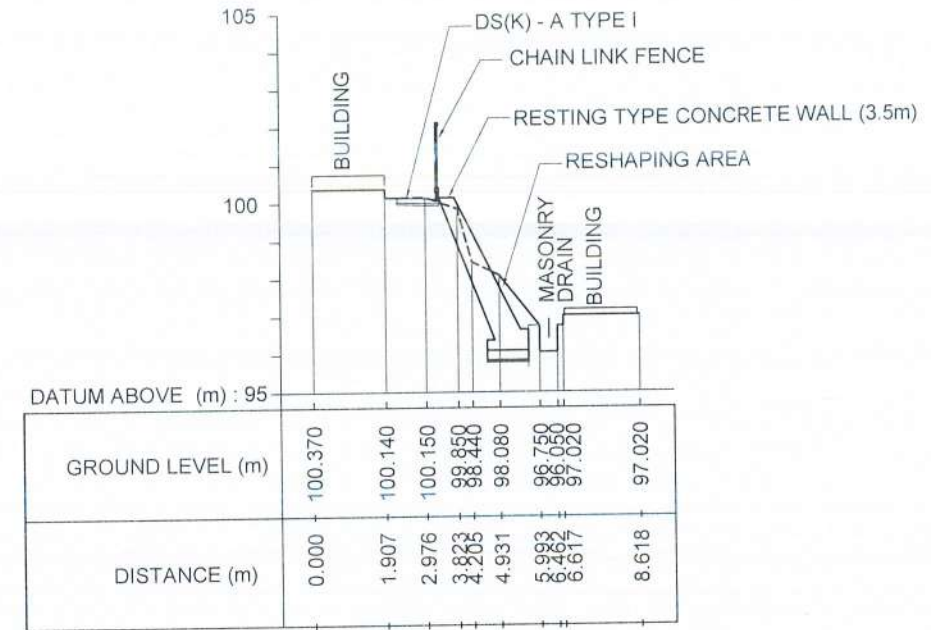
PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
BEHIND THE GRADE 9 CLASS ROOMS
SUMANGALA COLLEGE - KANDY
LOCATION - 1

TITLE
PLAN VIEW OF
PROPOSED MITIGATION MEASURES
SCALE 1:100
DATE 07.05.2026
PROJECT / DRAWING No.
RLVMM/WORKS/NCB/PH III/233/L1/DR 03
REVISION 00

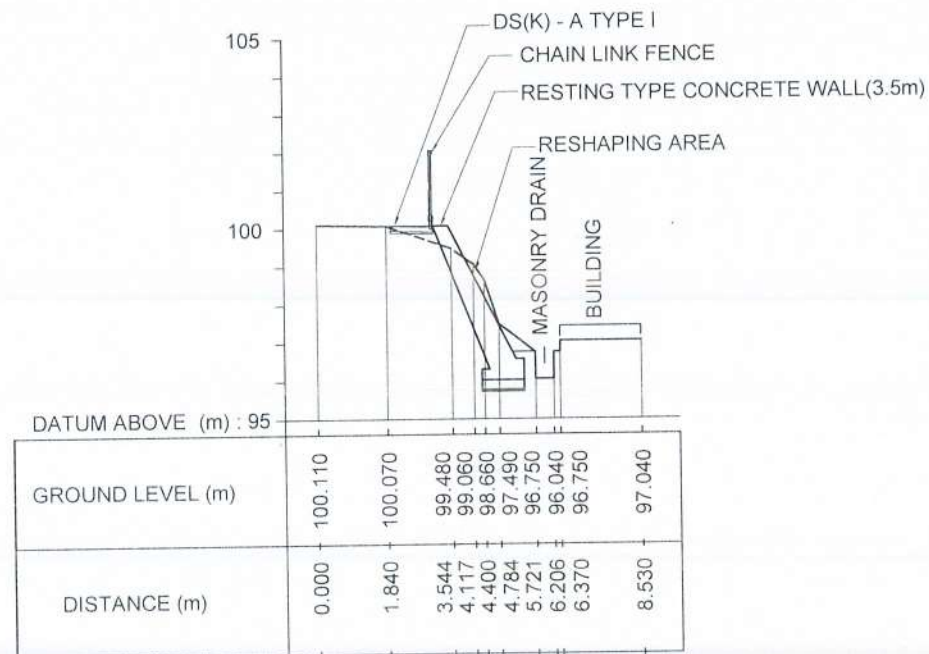
DESCRIPTION	NAME	SIGNATURE
DRAWN	A. K. A. T. NAYOMI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR). SANCHITHA JAYAKODY	



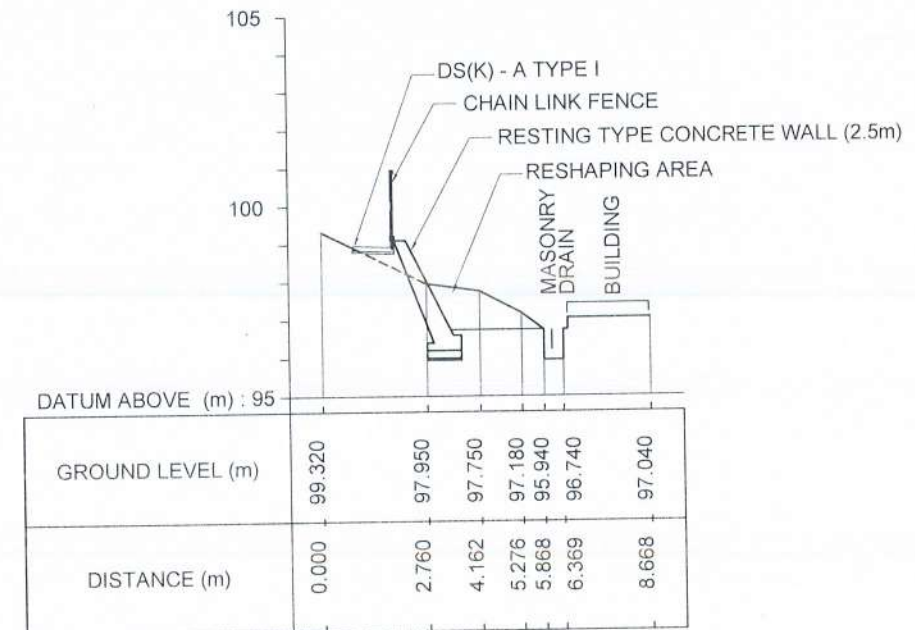
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SECTION 2

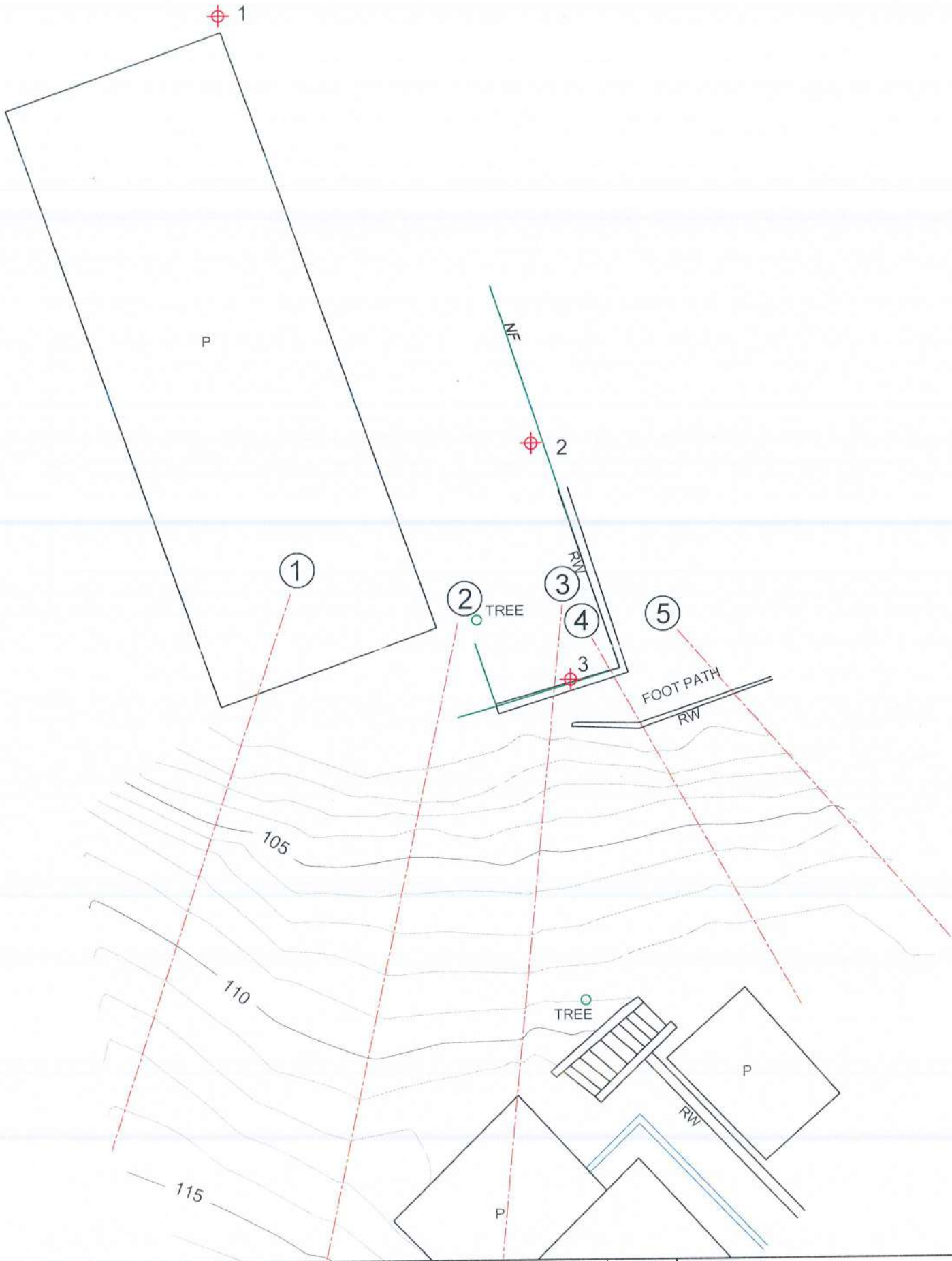


SECTION 3



SECTION 4

EMPLOYER		DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE			DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT BEHIND THE GRADE 9 CLASS ROOMS SUMANGALA COLLEGE - KANDY LOCATION - 1	CROSS SECTIONS OF PROPOSED MITIGATION MEASURES		DRAWN	A. K. A. T. NAYOMI		
										DESIGNED	R. J. K. P. N. RANATHUNGA		
										CHECKED	I. A. N. D. IDIRIMANNA		
										RECOMMENDED	PROF. S. A. S. KULATHILAKA		
										APPROVED	ENG. (DR). SANCHITHA JAYAKODY		
								SCALE	1:200	DATE	07.05.2026		
								PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/233/L1/DR 04		REVISION	00		



REFERENCE

- NET FENCE NF
- MASONRY DRAIN MDn
- RETAINING WALL RW
- SECTIONS
- REFERENCE POINT

N	E	Z	PN
1988.492	1018.71	100	1
2000.515	1002.009	100.088	2
2001.982	992.849	100.229	3

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

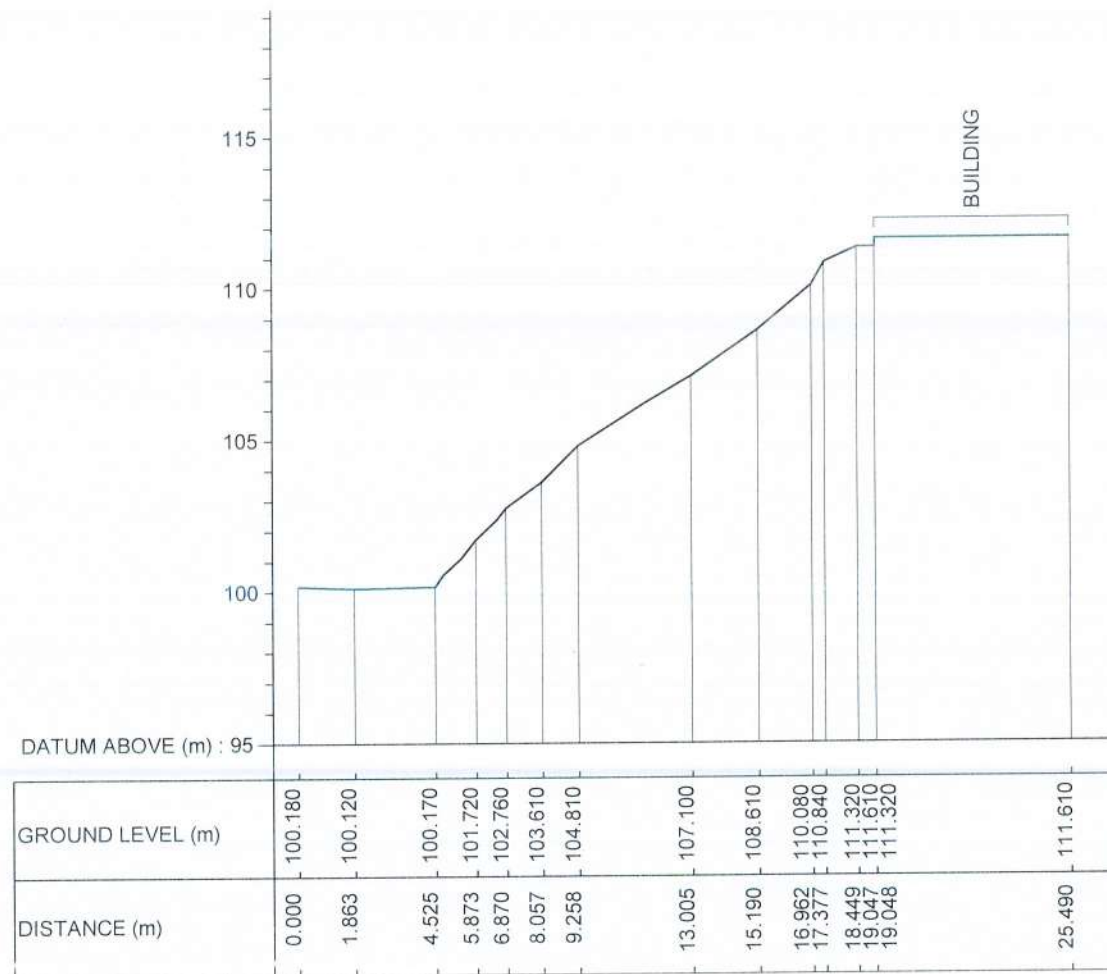
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

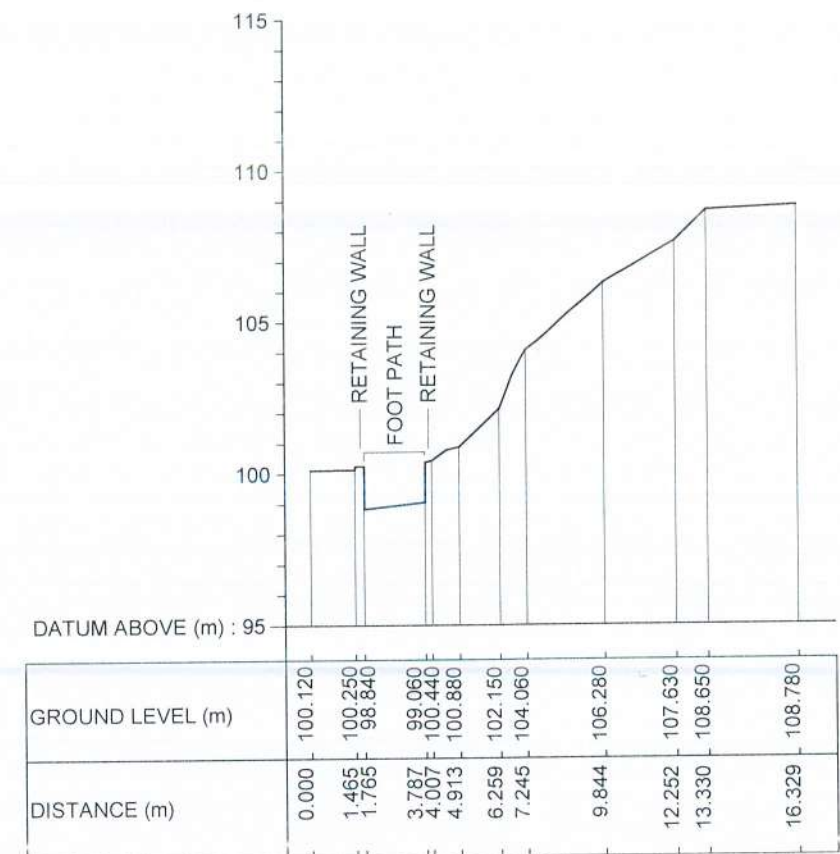
PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SUMANGALA COLLEGE
KANDY
LOCATION 2

TITLE			
SURVEY PLAN			
SCALE	1:200	DATE	08.05.2025
PROJECT / DRAWING No		REVISION	
RLVMMP/WORKS/NCB/PH III/233/L2/DR 01		00	

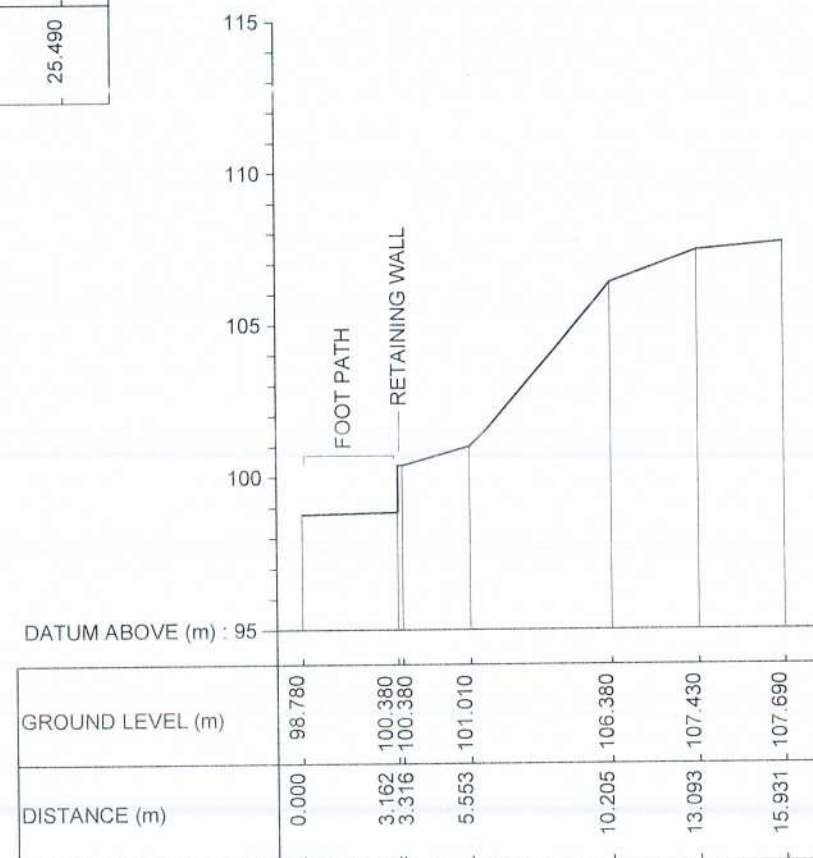
DESCRIPTION	NAME	SIGNATURE
SURVEYED	W.L.P.N.N. WIJESINGHE	
CHECKED	R.J.K.P.N. RANATHUNGA	



CS 3



CS 4



CS 5

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV DATE REVISION DESCRIPTION APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY LOCATION 2	TITLE EXISTING CROSS SECTIONS	DESCRIPTION SURVEYED W.L.P.N.N. WIJESINGHE CHECKED R.J.K.P.N. RANATHUNGA	NAME W.L.P.N.N. WIJESINGHE R.J.K.P.N. RANATHUNGA	SIGNATURE  
		SCALE 1:250 PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH II/233/L2/DR 02b	DATE 08.05.2026 REVISION 00				

REFERENCE

NET FENCE	NF
MASONRY DRAIN	MDn
RETAINING WALL	RW
SECTIONS	
REFERENCE POINT	

N	E	Z	PN
1988.492	1018.71	100	1
2000.515	1002.009	100.088	2
2001.982	992.849	100.229	3

DESIGN NOTATION

—	- DS (B) - C
—	- DS (C) - A
—	- DS (M) - A
—	- DS (M) - B
—	- CHAIN LINK FENCE
▽▽▽▽	- SOIL NAILING AREA
▨	- CONCRETE RETAINING WALL (2m)
□	- CATCH PIT

NOTES

- SURFACE DRAIN LOCATIONS (PATH) & LENGTHS MIGHT BE VARIED ACCORDING TO ACTUAL SITE CONDITION
- UNSTABLE BOULDERS SHALL BE REMOVED AS PER THE INSTRUCTION OF THE ENGINEER.
- PROPOSED DRAINS SHALL BE CONNECTED TO THE EXISTING DRAINS / LEADER WAYS TO PROPERLY DRAIN OUT THE WATER.
- WALLS SHOULD BE PLACED ON A HARD LAYER.
- HEIGHT OF THE WALL MAY BE VARIED ACCORDING TO THE ACTUAL SITE CONDITIONS AND SHALL BE CONSTRUCTED AS PER THE ENGINEER'S INSTRUCTIONS.
- LOCATION OF THE CATCH PITS MIGHT BE VARIED ACCORDING TO THE ACTUAL SITE CONDITION.
- BEFORE COMMENCING EXCAVATION FOR THE CONSTRUCTION OF THE 2m CONCRETE RETAINING WALL AT THE TOE, THE UPPER SLOPE SHALL BE STABILIZED WITH SOIL NAILING.

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

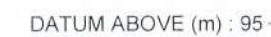
DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

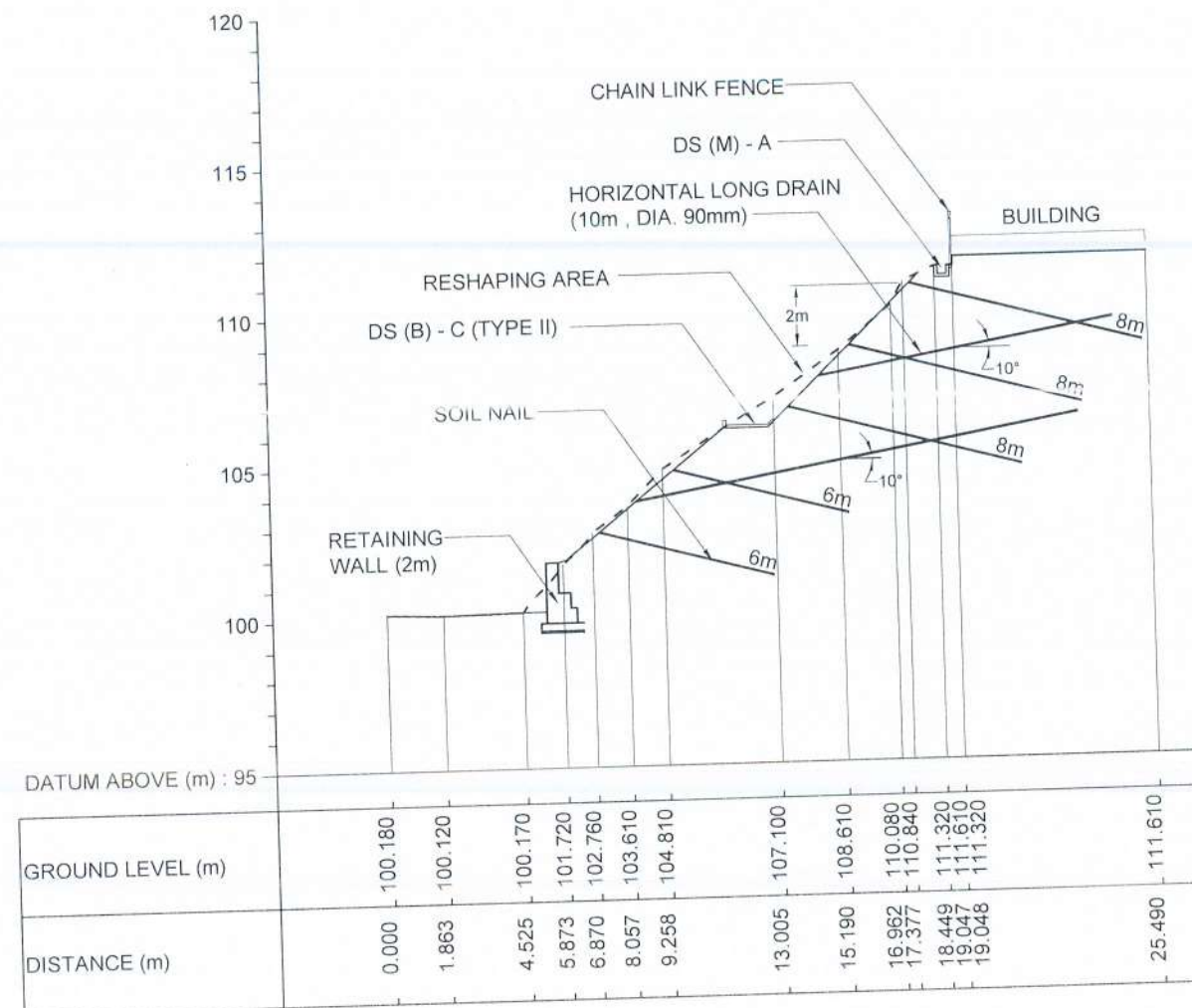
REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SUMANGALA COLLEGE
KANDY
LOCATION 2

TITLE
PLAN VIEW OF
PROPOSED MITIGATION MEASURES
SCALE 1:200
PROJECT / DRAWING No.
RLVMM/WORKS/NCB/PH II/233/L2/DR 03

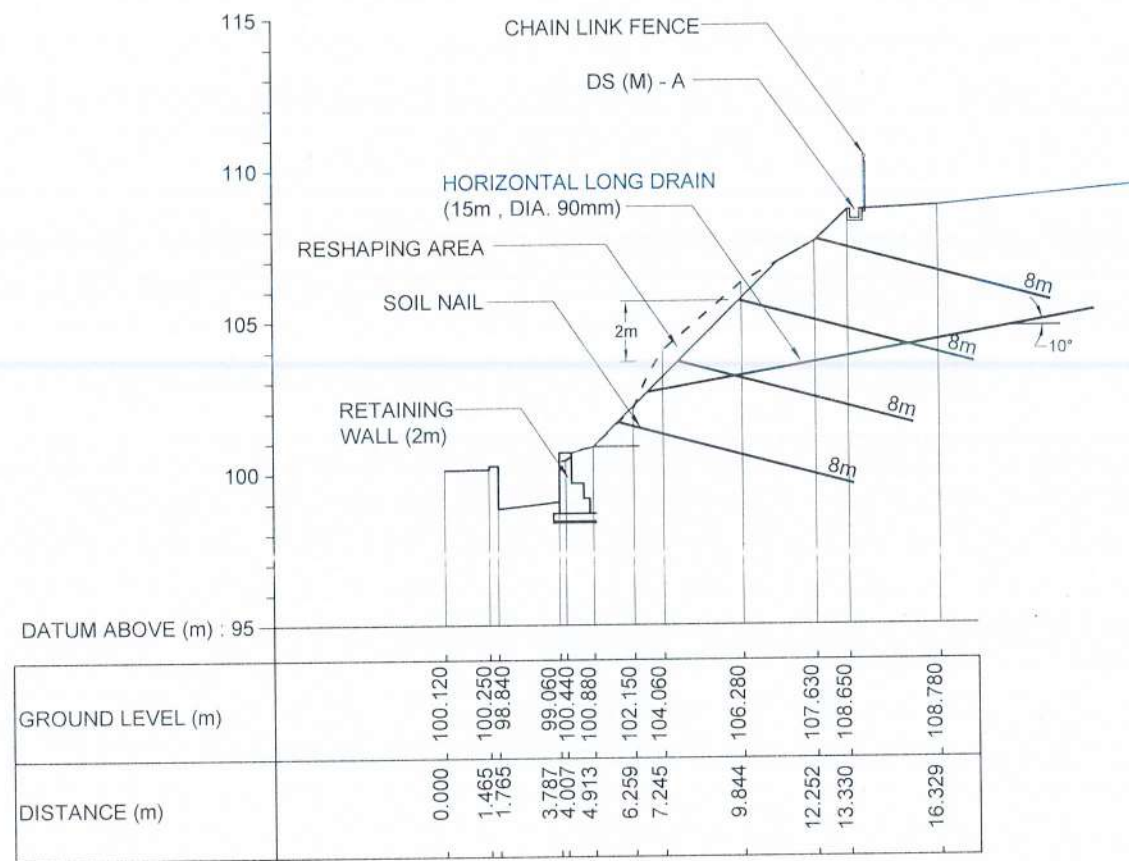
DESCRIPTION	NAME	SIGNATURE
DRAWN	K.M.D. NISHANTHI	
DESIGNED	R.J.K.P.N. RANATHUNGA	
CHECKED	I.A.N.D. IDIRIMANNA	
RECOMMENDED	PROF. S.A.S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

CS 1CS 2

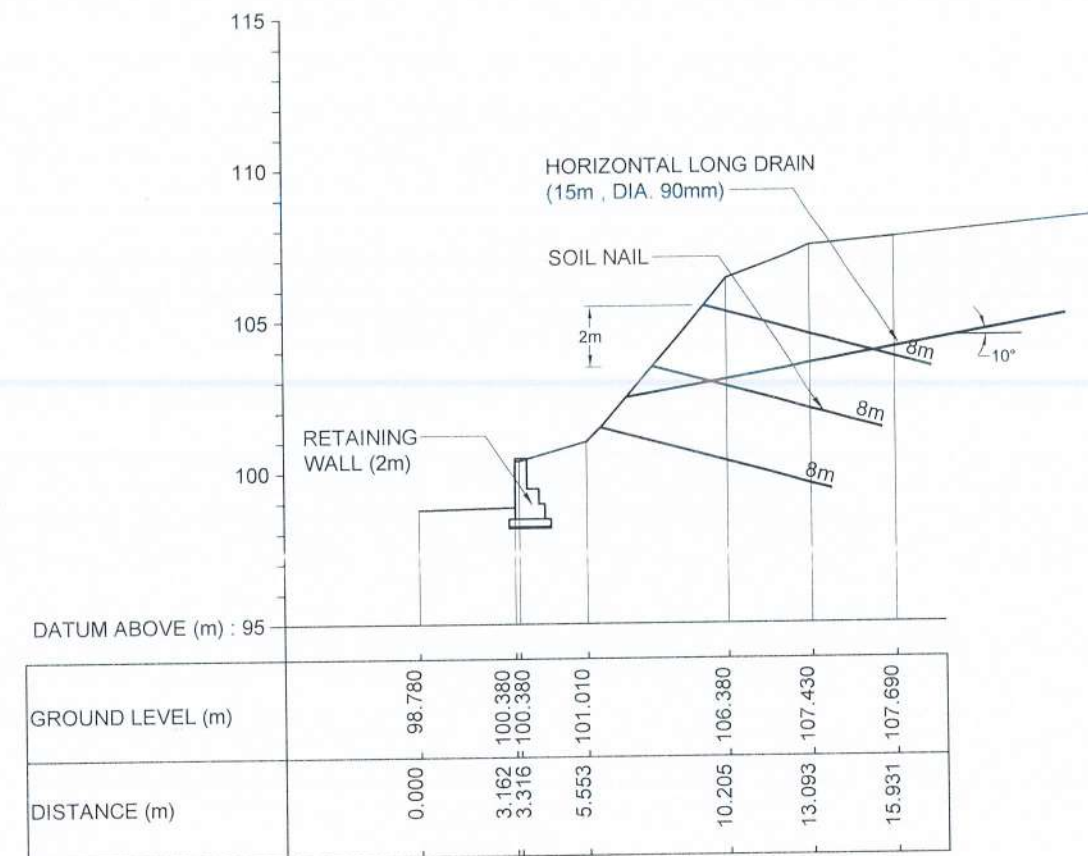


CS 3

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV 1 2 3 4 5 6 7 8 9 10	DATE 1 2 3 4 5 6 7 8 9 10	REVISION DESCRIPTION 1 2 3 4 5 6 7 8 9 10	APPROVAL 1 2 3 4 5 6 7 8 9 10	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY LOCATION 2	TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES	DESCRIPTION DRAWN DESIGNED CHECKED RECOMMENDED APPROVED	NAME K.M.D. NISHANTHI R.J.K.P.N. RANATHUNGA I.A.N.D. IDIRIMANNA PROF. S.A.S. KULATHILAKA ENG. (DR.) SANCHITHA JAYAKODY	SIGNATURE     
		SCALE 1:250 PROJECT / DRAWING No. RLVMM/WORKS/NCB/PH II/233/L2/DR 04b		DATE 08.05.2026 REVISION 00						

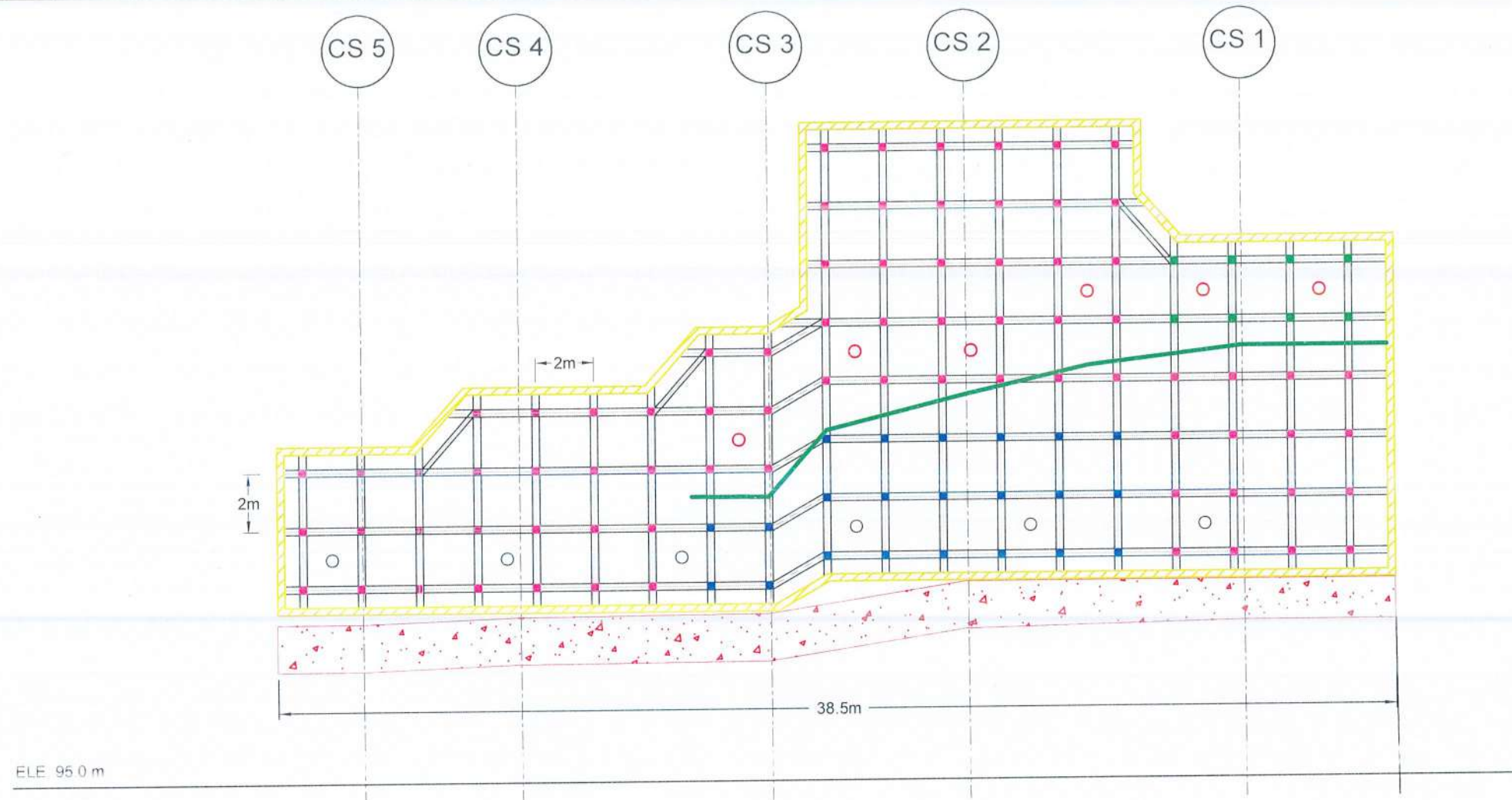


CS 4



CS 5

EMPLOYER		DESIGNER		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE		TITLE		DESCRIPTION	NAME	SIGNATURE
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05						REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY LOCATION 2		CROSS SECTIONS OF PROPOSED MITIGATION MEASURES		DRAWN	K.M.D. NISHANTHI	
												DESIGNED	R.J.K.P.N. RANATHUNGA	
												CHECKED	I.A.N.D. IDIRIMANNA	
												RECOMMENDED	PROF. S.A.S. KULATHILAKA	
												APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
										SCALE	1:250	DATE	08.05.2026	
										PROJECT / DRAWING No.		REVISION		
										RLVMMPP/WORKS/NCB/PH II/233/L2/DR 04c		00		

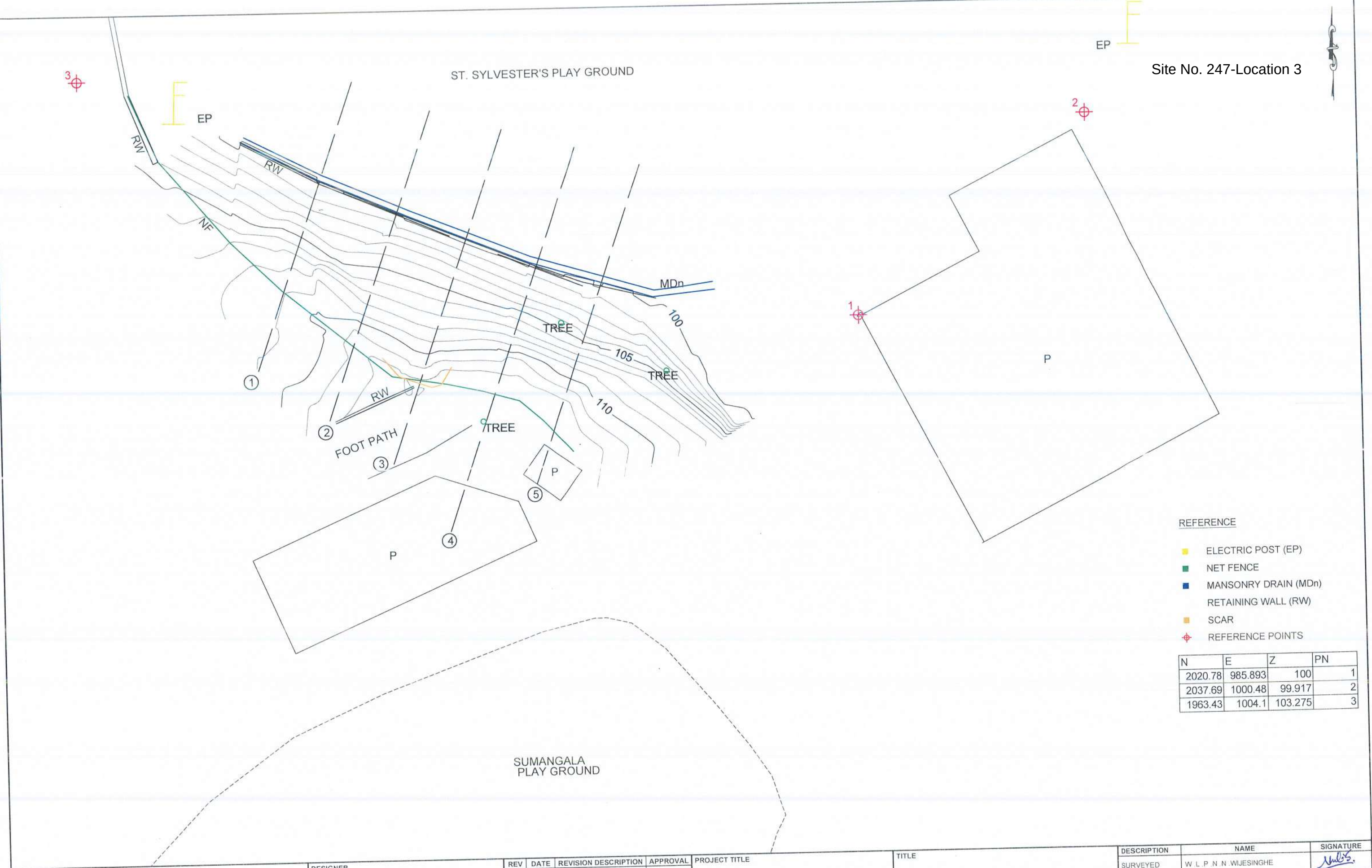


FRONT ELEVATION OF SOIL NAILING AREA

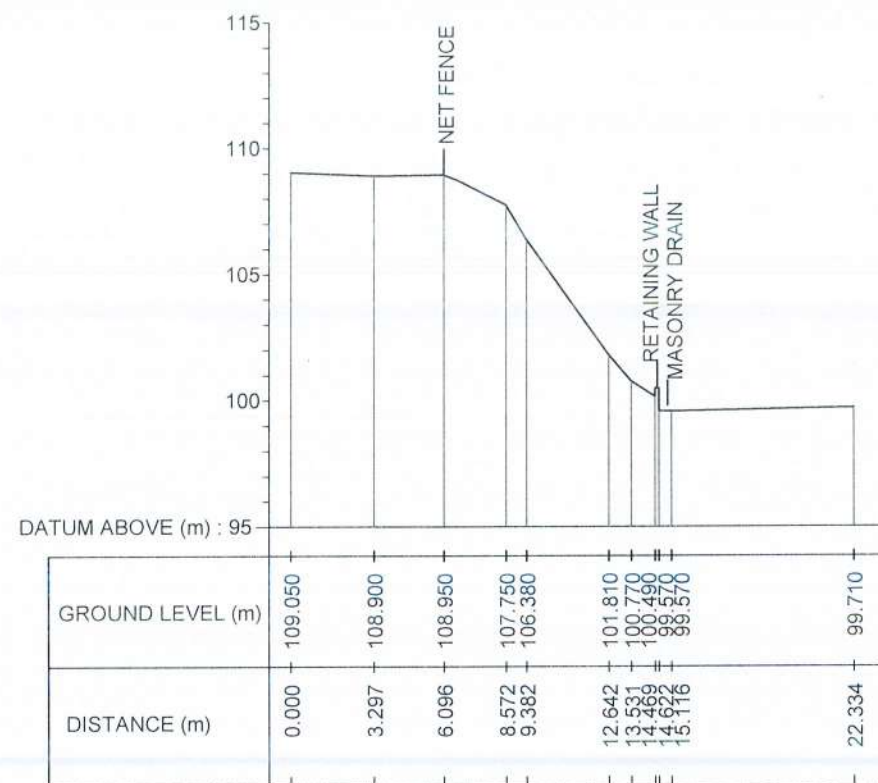
LEGEND

	SOIL NAILING	-	SOIL NAIL LENGTH = 10m NO OF SOIL NAIL = 08 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - 2m		SOIL NAILING	-	SOIL NAIL LENGTH = 6m NO OF SOIL NAIL = 22 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - 2m
	SOIL NAILING	-	SOIL NAIL LENGTH = 8m NO OF SOIL NAIL = 77 REINFORCEMENT DIAMETER = 32 mm DIAMETER OF DRILLED HOLE = 125mm NAIL SPACING - 2m		HORIZONTAL LONG DRAIN	-	HORIZONTAL LONG DRAIN LENGTH = 15 m NO'S OF LONG DRAIN = 06 DIAMETER = 90 mm SPACING = 06 m
	DS (B) - C				HORIZONTAL LONG DRAIN	-	HORIZONTAL LONG DRAIN LENGTH = 10 m NO'S OF LONG DRAIN = 06 DIAMETER = 90 mm SPACING = 04m
	BOUNDARY BEAM						
	RETAINING WALL						

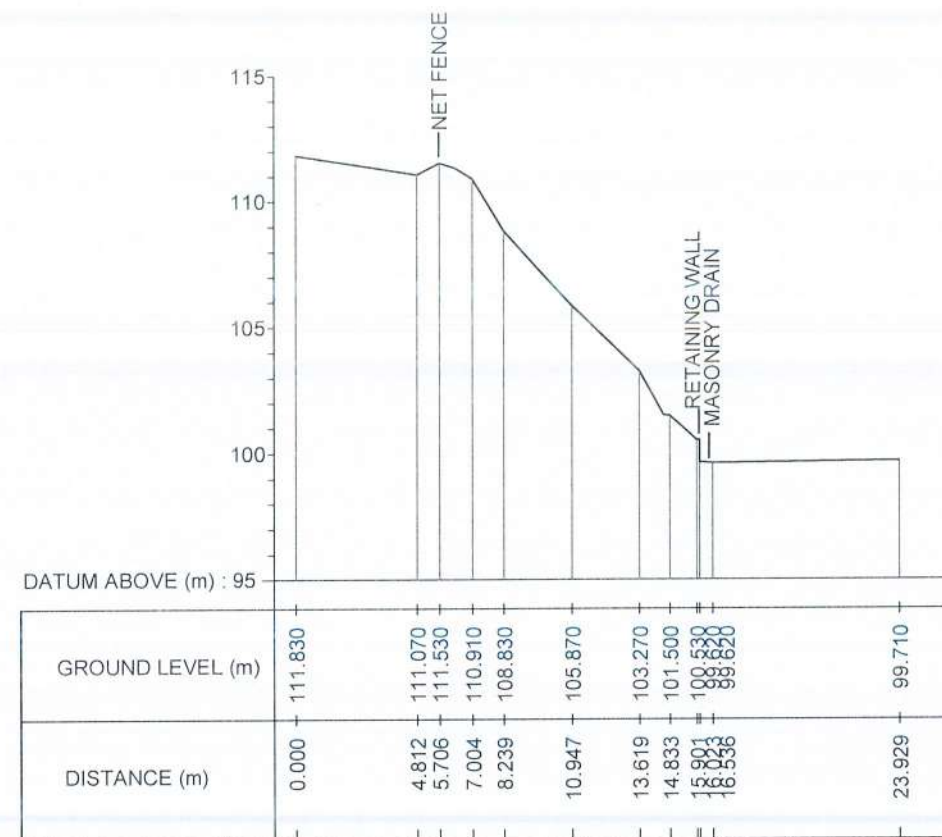
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY LOCATION 2	TITLE FRONT ELEVATION OF PROPOSED MITIGATION MEASURES				DESCRIPTION	NAME	SIGNATURE	
											DRAWN	K.M.D. NISHANTHI		
											DESIGNED	R.J.K.P.N. RANATHUNGA		
											CHECKED	I.A.N.D. IDIRIMANNA		
									SCALE 1:200	DATE 08.05.2026	RECOMMENDED	PROF. S.A.S. KULATHILAKA		
									PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH II/233/L2/DR 05		REVISION 00	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



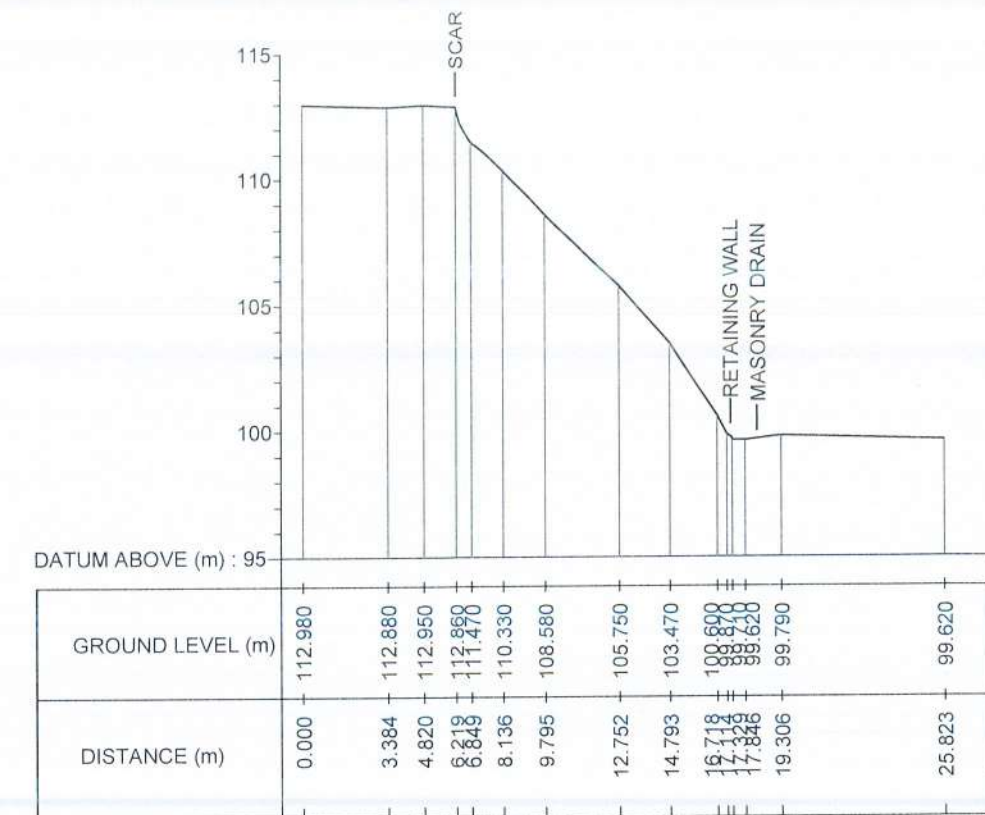
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT NEAR THE BOUNDARY BETWEEN SUMANGALA PLAYGROUND AND ST. SYLVESTER'S PLAY GROUND SUMANGALA COLLEGE - KANDY LOCATION -3	TITLE SURVEY PLAN	DESCRIPTION	NAME	SIGNATURE
								SURVEYED	W. L. P. N. N. WIJESINGHE	<i>[Signature]</i>
								CHECKED	R. J. K. P. N. RANATHUNGA	<i>[Signature]</i>
							SCALE 1:250	DATE 07.05.2026		
							PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/233/L3/DR 01	REVISION 00		



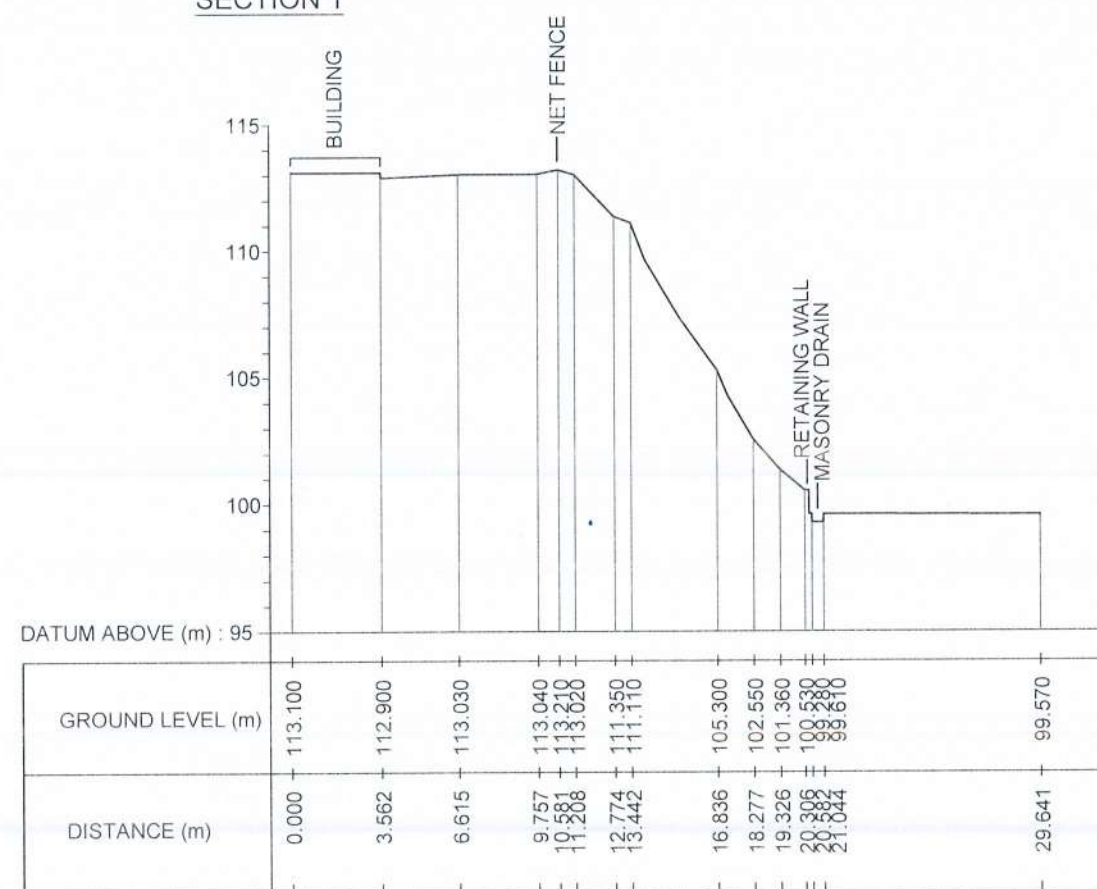
SECTION 1



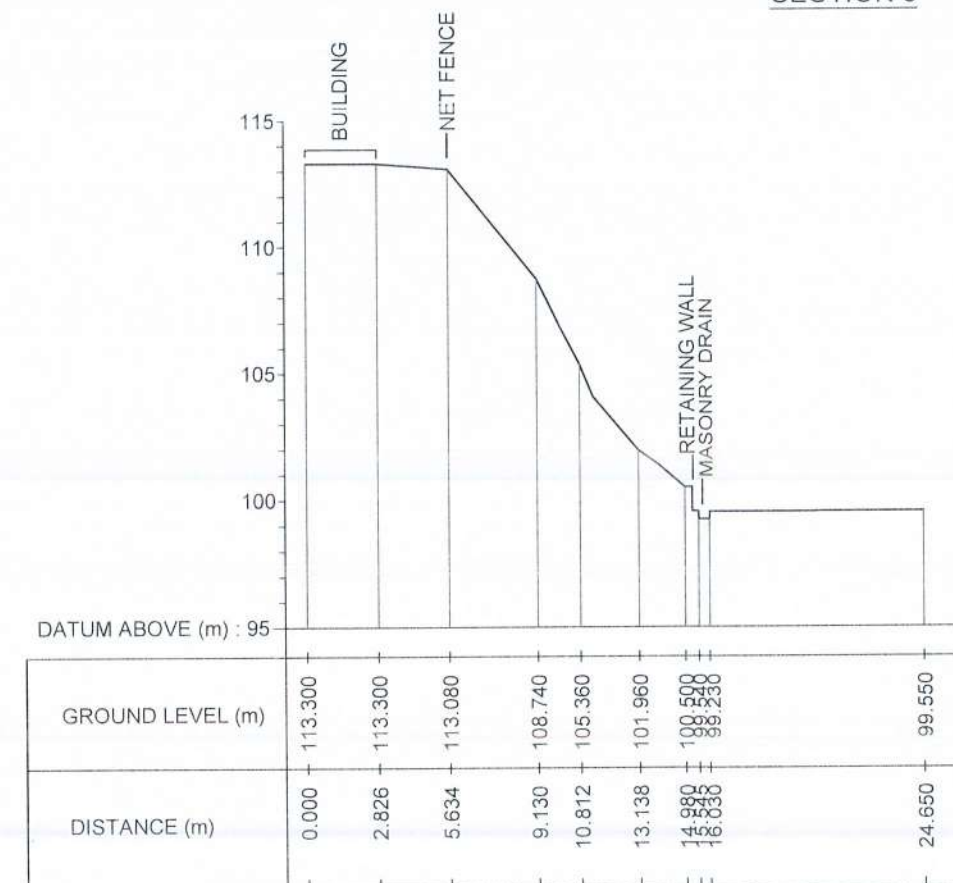
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SECTION 3

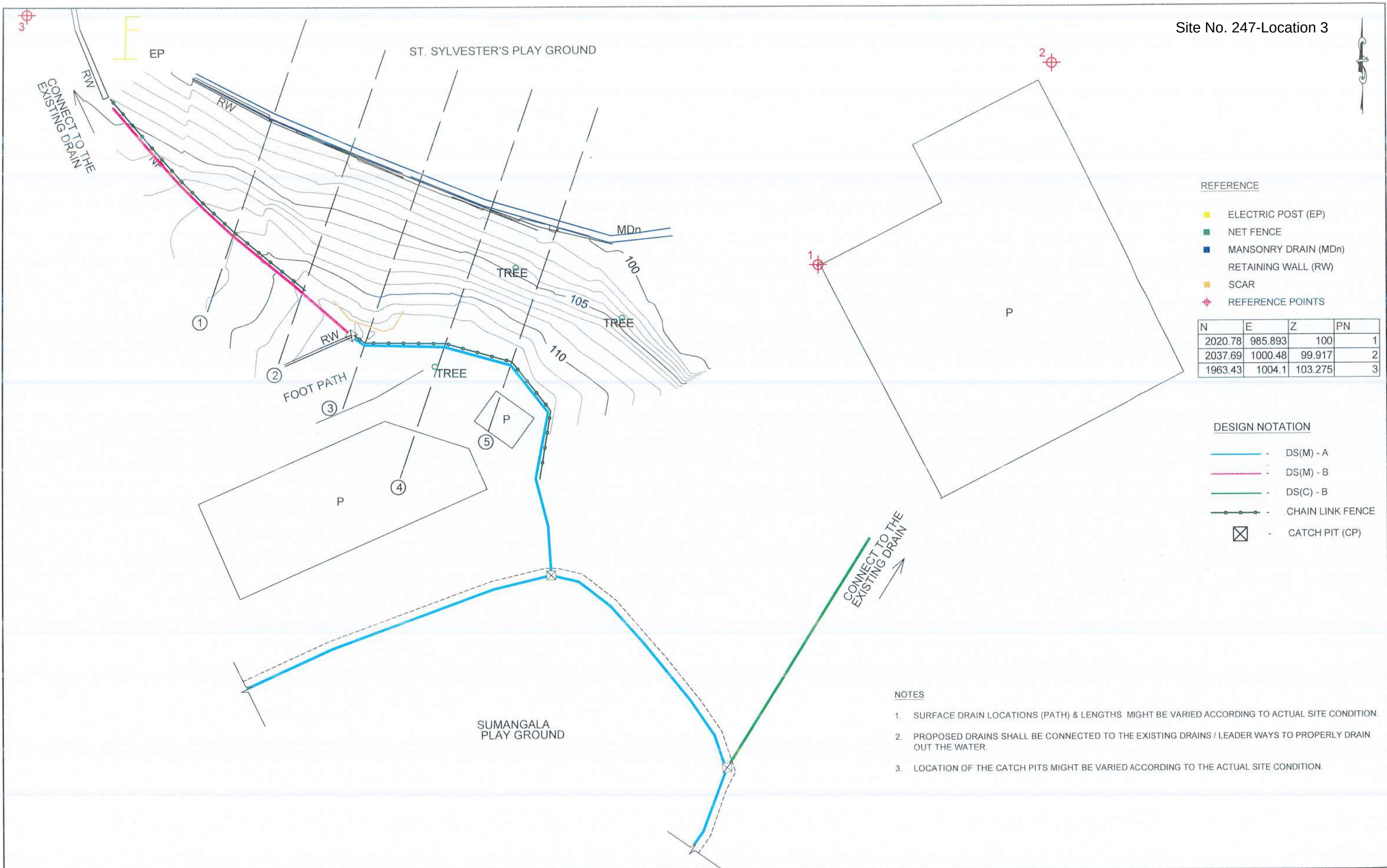


SECTION 4

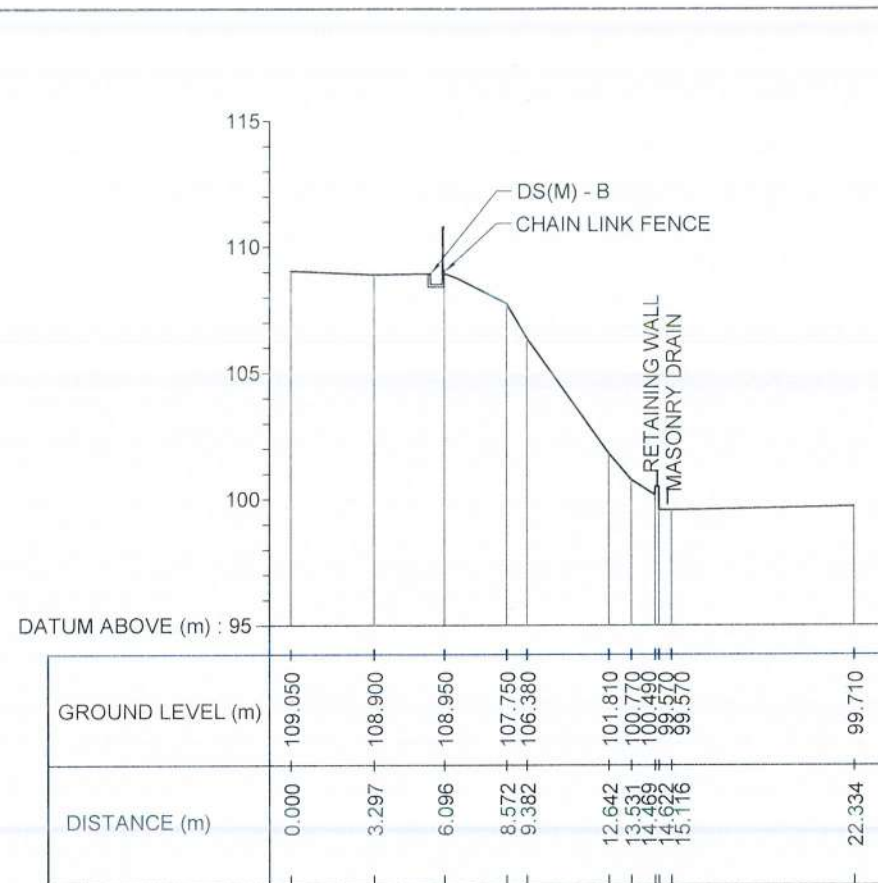


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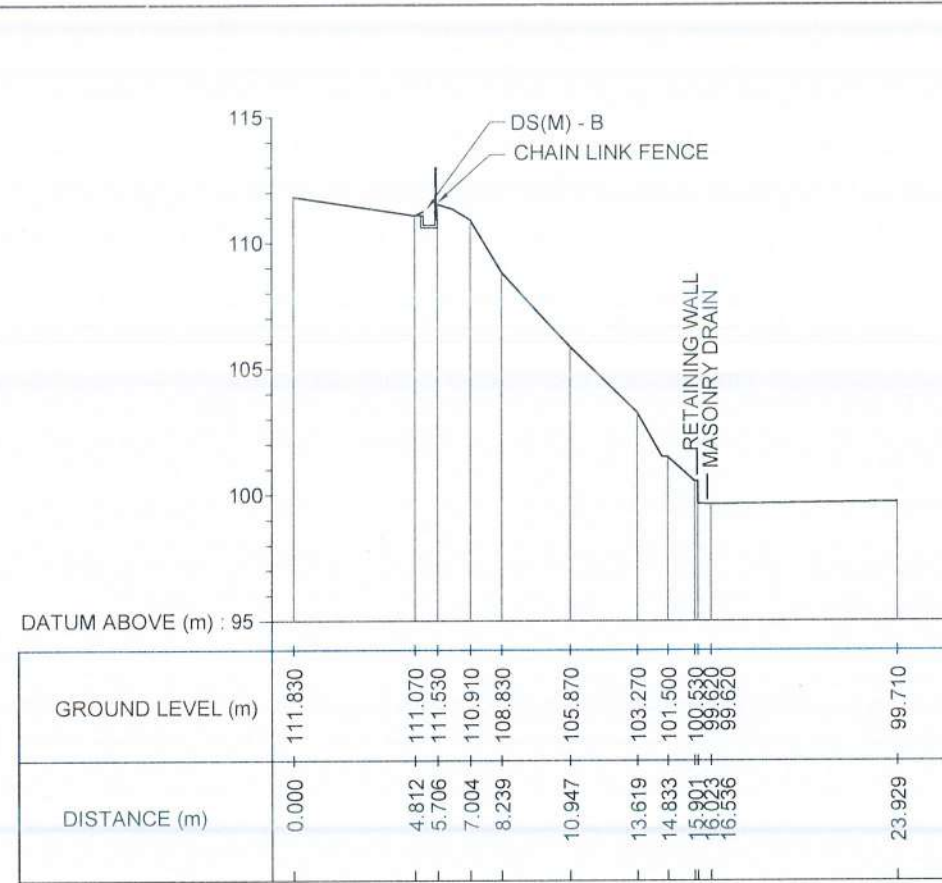
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV 1 2 3 4 5 6 7 8 9 10	DATE 1 2 3 4 5 6 7 8 9 10	REVISION DESCRIPTION 1 2 3 4 5 6 7 8 9 10	APPROVAL 1 2 3 4 5 6 7 8 9 10	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT NEAR THE BOUNDARY BETWEEN SUMANGALA PLAYGROUND AND ST. SYLVESTER'S PLAY GROUND SUMANGALA COLLEGE - KANDY LOCATION - 3	TITLE EXISTING CROSS SECTIONS	DESCRIPTION SURVEYED CHECKED	NAME W. L. P. N. N. WIJESINGHE R. J. K. P. N. RANATHUNGA	SIGNATURE
		SCALE 1:300 PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/233/L3/DR 02 DATE 07.05.2026 REVISION 00								



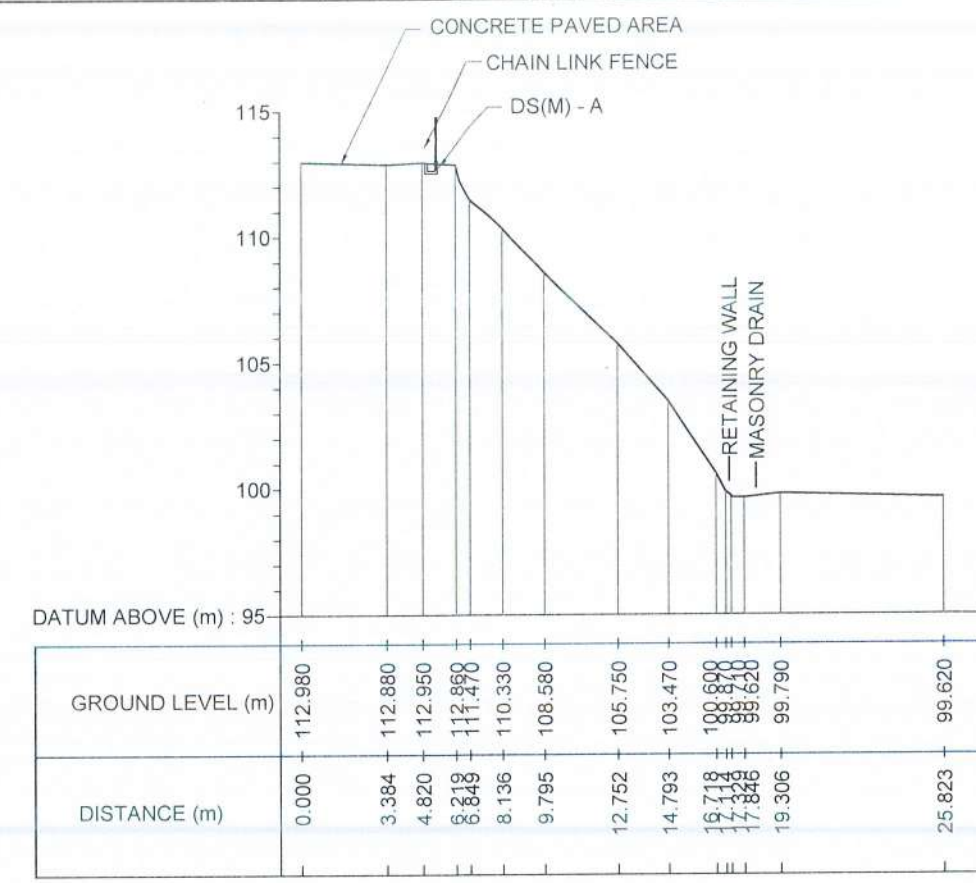
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 	DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT NEAR THE BOUNDARY BETWEEN SUMANGALA PLAYGROUND AND ST. SYLVESTER'S PLAY GROUND SUMANGALA COLLEGE - KANDY LOCATION - 3	TITLE PLAN VIEW OF PROPOSED MITIGATION MEASURES			DESCRIPTION	NAME	SIGNATURE
										DRAWN	A K A T NAYOMI	
										DESIGNED	R J K P N RANATHUNGA	
										CHECKED	I A N D IDIRIMANNA	
							RECOMMENDED	PROF. S A S KULATHILAKA				
									SCALE 1:250	DATE 07.05.2026	REVISION 00	APPROVED



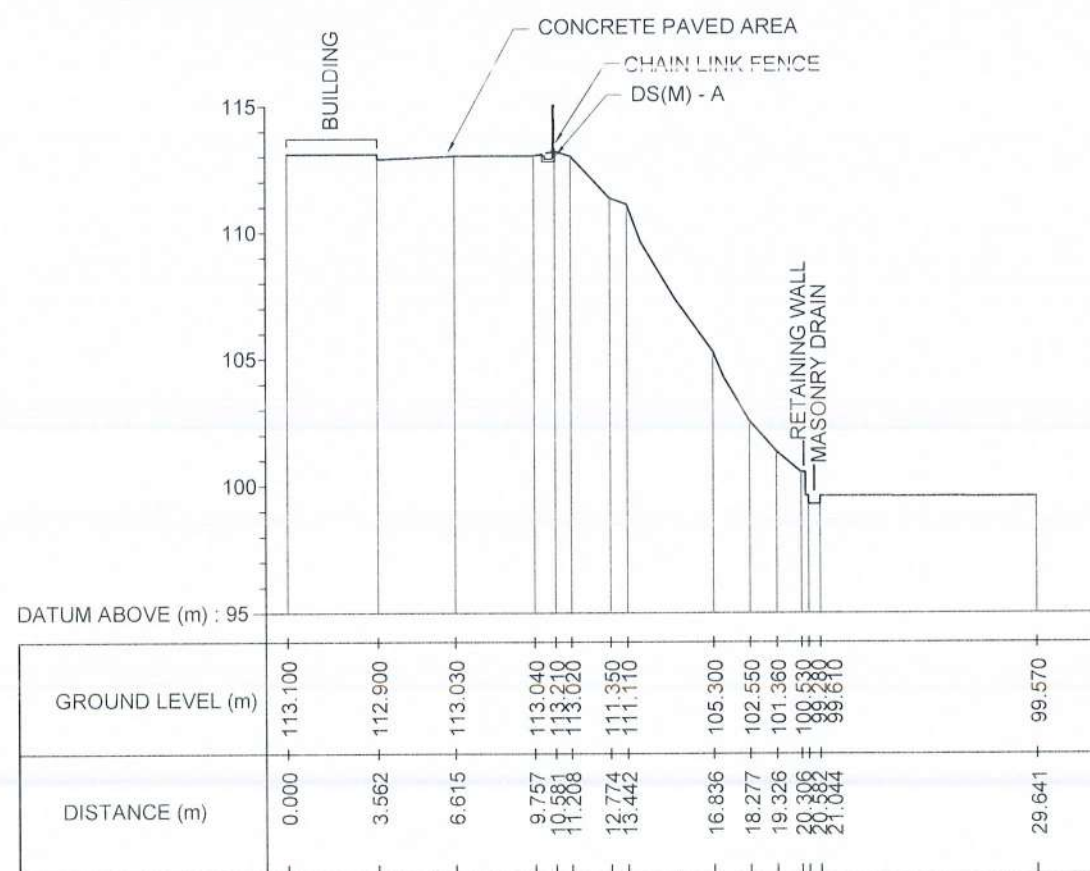
SECTION 1



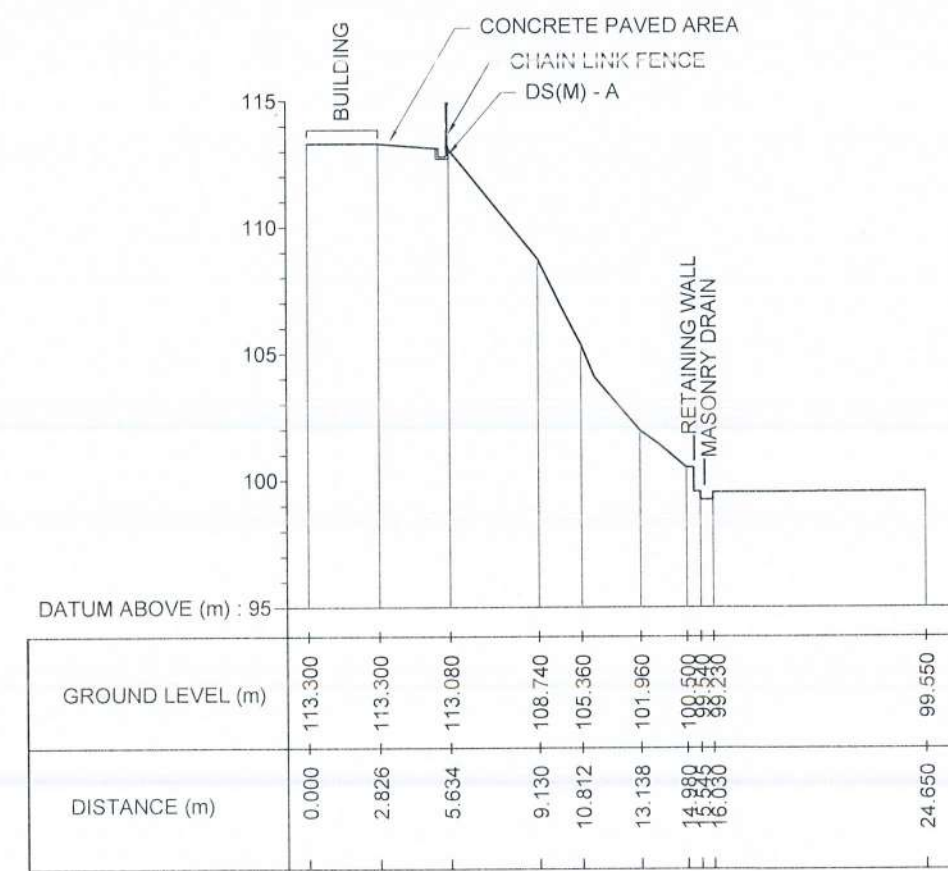
SECTION 2



SECTION 3

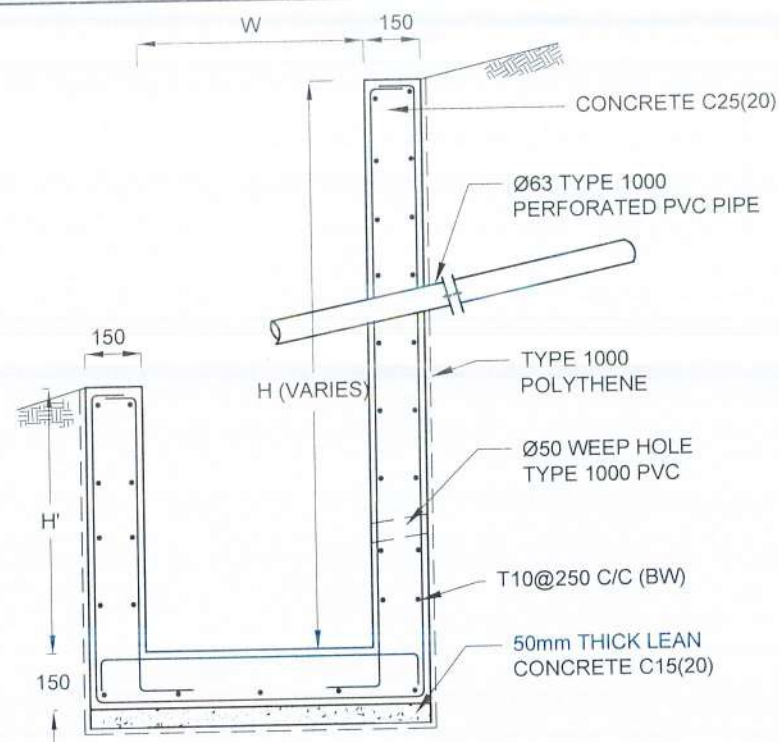


SECTION 4



SECTION 5

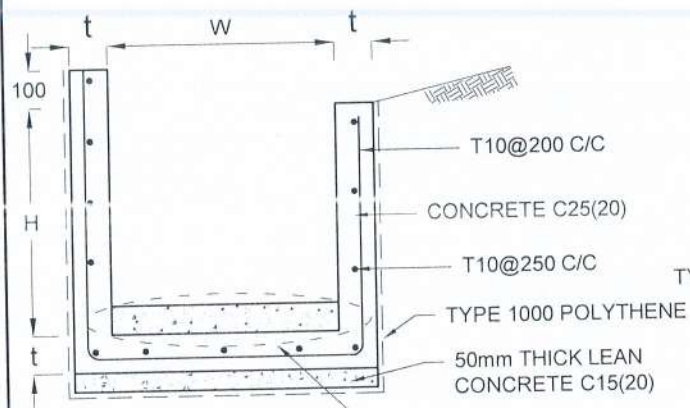
EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT NEAR THE BOUNDARY BETWEEN SUMANGALA PLAYGROUND AND ST. SYLVESTER'S PLAY GROUND SUMANGALA COLLEGE - KANDY LOCATION -3	TITLE CROSS SECTIONS OF PROPOSED MITIGATION MEASURES	DESCRIPTION	NAME	SIGNATURE
								DRAWN	A. K. A. T. NAYOMI	
								DESIGNED	R. J. K. P. N. RANATHUNGA	
								CHECKED	I. A. N. D. IDIRIMANNA	
								RECOMMENDED	PROF. S. A. S. KULATHILAKA	
								APPROVED	ENG. (DR). SANCHITHA JAYAKODY	



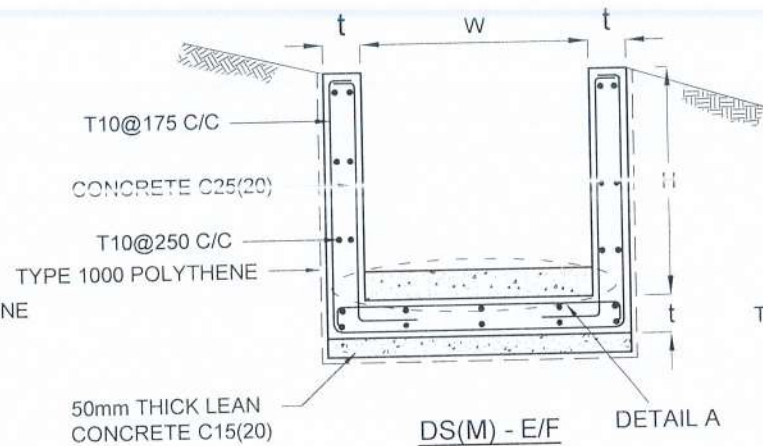
DS (M) - L

DS(M) - L	W (mm)	H' (mm)
TYPE I	600	600
TYPE II	800	800

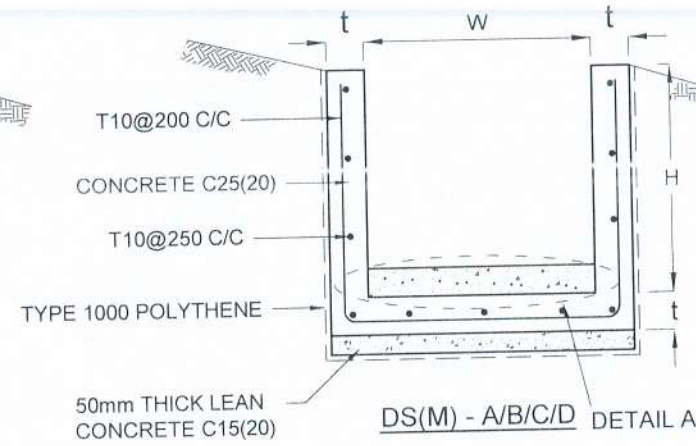
DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (M) - A /P	300	300	100
DS (M) - B/R	450	450	100
DS (M) - C/Q	600	600	100
DS (M) - D	750	750	125
DS (M) - E	900	900	150
DS (M) - F	1000	1000	150



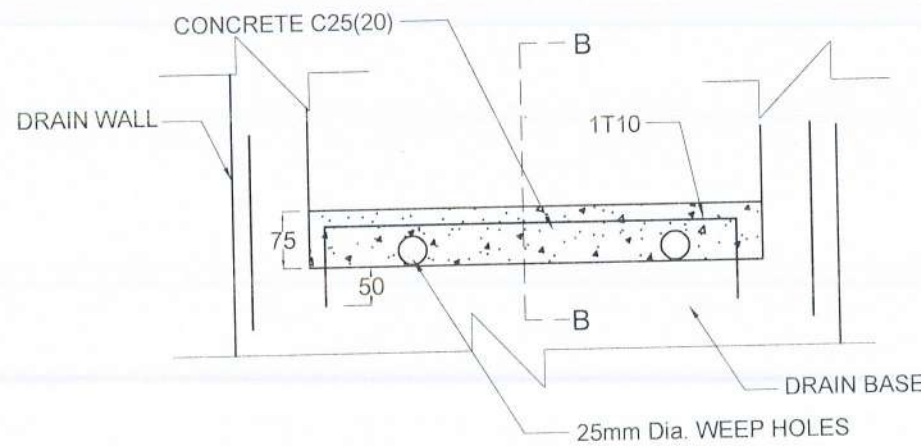
DS(M) - P/R/Q



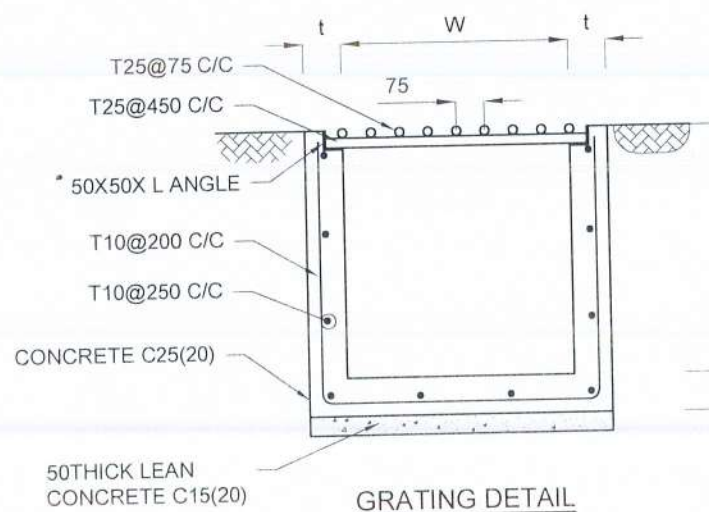
DS(M) - E/F



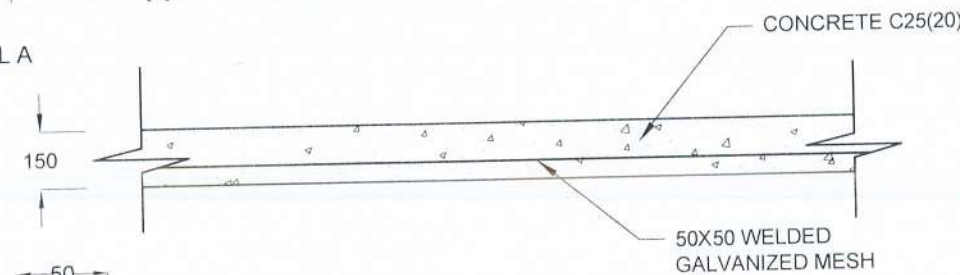
DS(M) - A/B/C/D



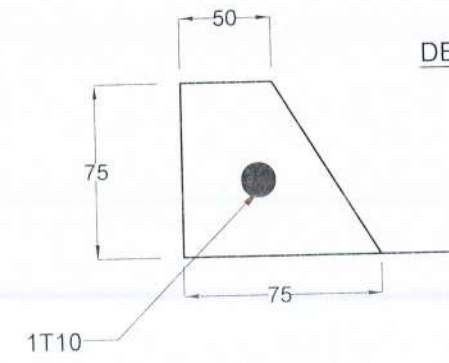
DETAIL A - (ENERGY BREAKER AT 3M)



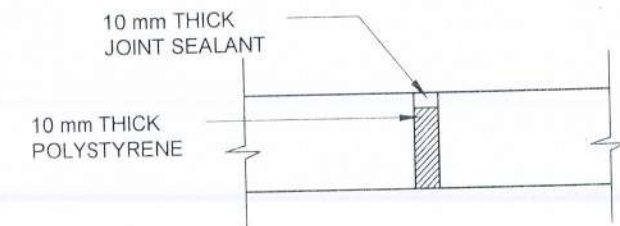
GRATING DETAIL



DETAILS OF BERM SEALING



SECTION B-B



EXPANTION JOINT DETAIL

NOTES

1. DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
2. STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
3. ENERGY BREAKERS SHALL BE CONSTRUCTED AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
6. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.

CONCRETE

7. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE
 - [a] SCREED - C15(20)
 - [b] WALLS / BASE / ENERGY BREAKERS - C25(20)

REINFORCEMENT

8. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
9. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
10. ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
11. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
12. COVER TO REINFORCEMENT
 - [a] BURIED FACES AND DRAIN INVERTS - 40 mm
 - [b] ALL OTHER FACES - 25 mm

EMPLOYER
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
MINISTRY OF DEFENCE
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

DESIGNER
DESIGN UNIT
NATIONAL BUILDING RESEARCH INSTITUTE
No. 99/1, JAWATTA ROAD,
COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

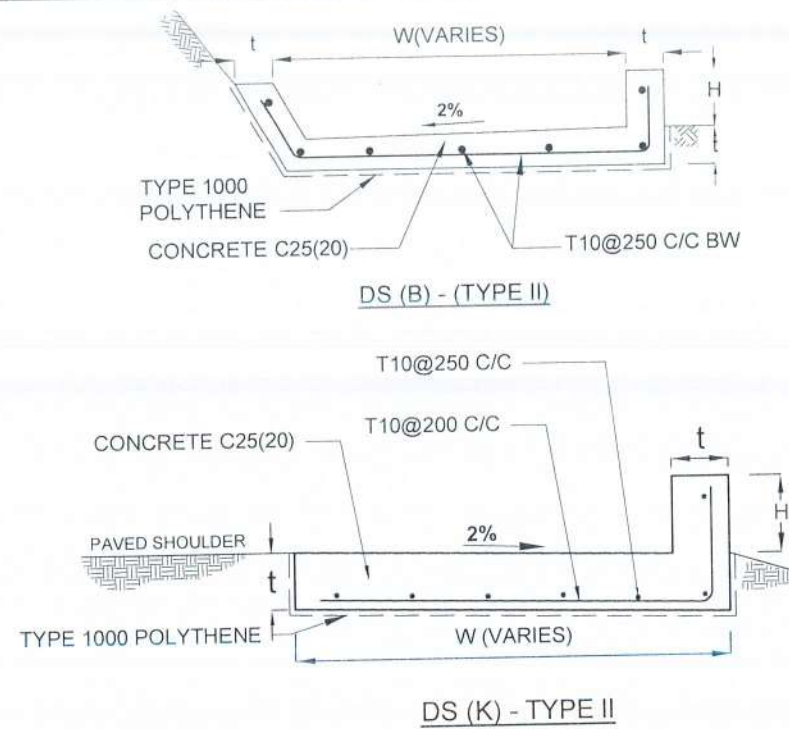
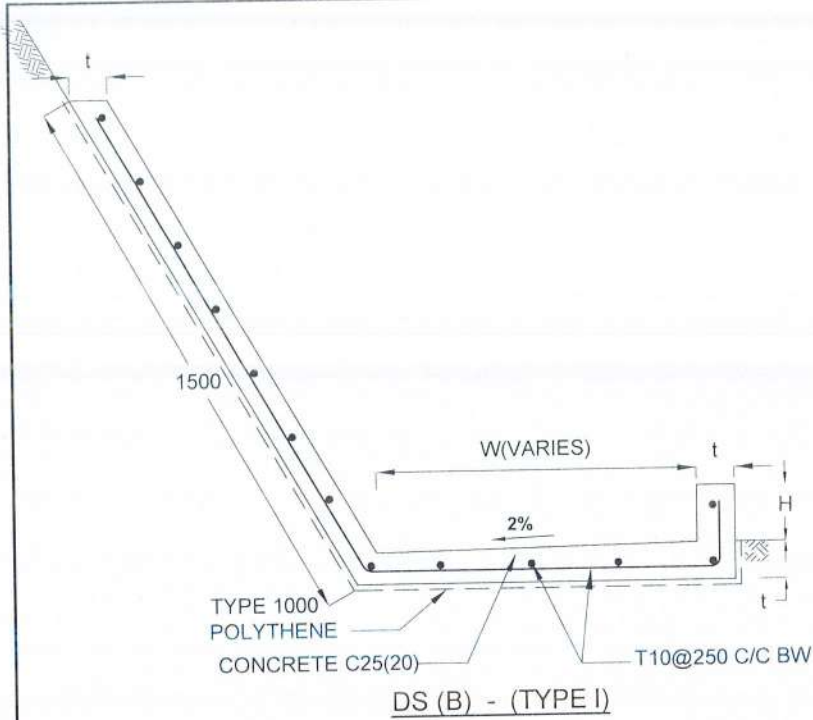
PROJECT TITLE
REDUCTION OF LANDSLIDE VULNERABILITY
BY MITIGATION MEASURES PROJECT
SUMANGALA COLLEGE
KANDY

TITLE
DETAILS OF DRAINS
(SURFACE DRAIN -1 OF 2)

SCALE N.T.S.
PROJECT / DRAWING No.
RLVMP/WORKS/NCB/PH III/233/A1

DATE 08.05.2026
REVISION 00

DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	



DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (B) - A	500	150	100
DS (B) - B	1000	150	100
DS (B) - C	1500	150	100
DS (B) - D	2000	150	100

NOTES

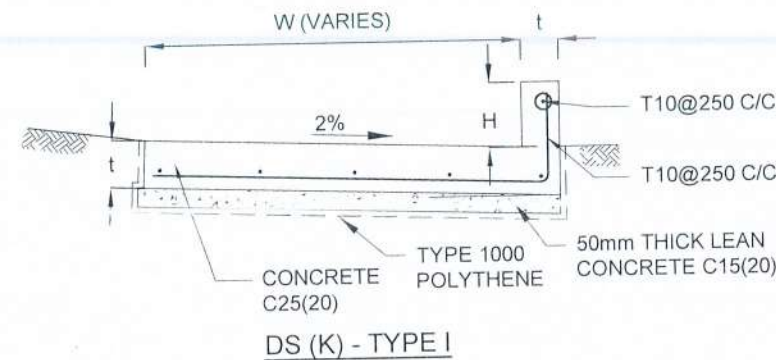
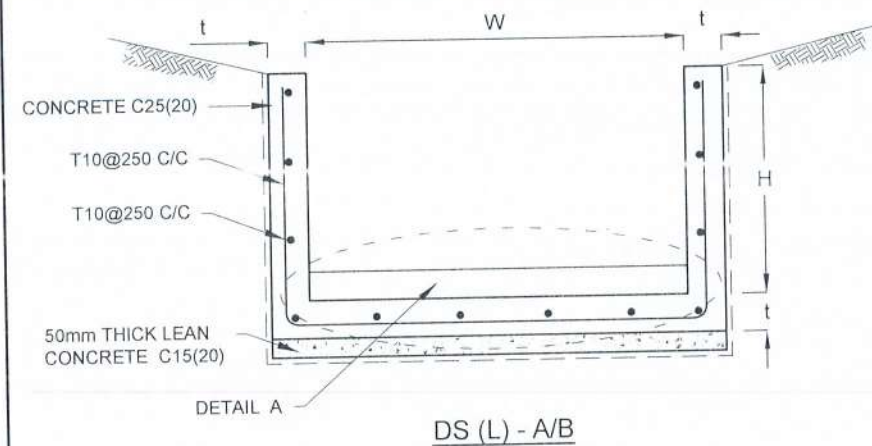
- DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
- STEPS SHALL BE CONSTRUCTED AT SURFACE DRAIN ON SLOPING GROUND ACCORDING TO THE SITE CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- ENERGY BREAKERS SHALL BE CONSTRUCTED IN STAGGERED PATTERN AT THE STEEP DRAIN SEGMENTS AS PER THE INSTRUCTIONS OF THE ENGINEER.
- DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLABS NEED TO BE PROVIDED ONLY FOR THE REGIONS AS INSTRUCTED BY THE ENGINEER.
- COVER SLAB WIDTH (W_c) SHOULD BE TAKEN AS THE SUM OF DRAIN WIDTH AND $2x$ DRAIN WALL THICKNESS. [$W_c = W + 2xt$]
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
- 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.

CONCRETE

- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE
 - SCREED - C15(20)
 - WALLS / BASE / ENERGY BREAKERS - C25(20)

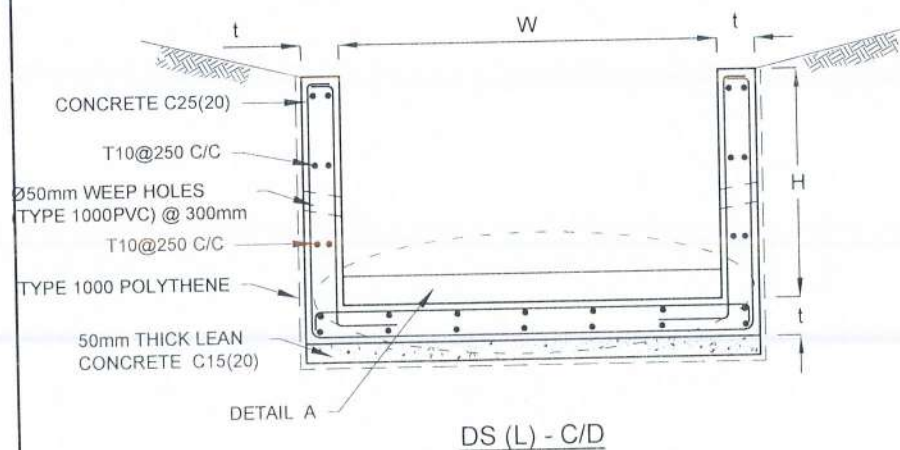
REINFORCEMENT

- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
- REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
- COVER TO REINFORCEMENT
 - BURIED FACES AND DRAIN INVERTS - 40 mm
 - ALL OTHER FACES - 25 mm



DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (K) - A	1000	200	100
DS (K) - B	1000	300	100
DS (K) - C	1150	200	200

DRAIN TYPE	W (mm)	H (mm)	t (mm)
DS (L) - A	1000	600	100
DS (L) - B	1000	800	125
DS (L) - C	1000	1000	125
DS (L) - D	2000	2000	150



EMPLOYER
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

DESIGNER
 DESIGN UNIT
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

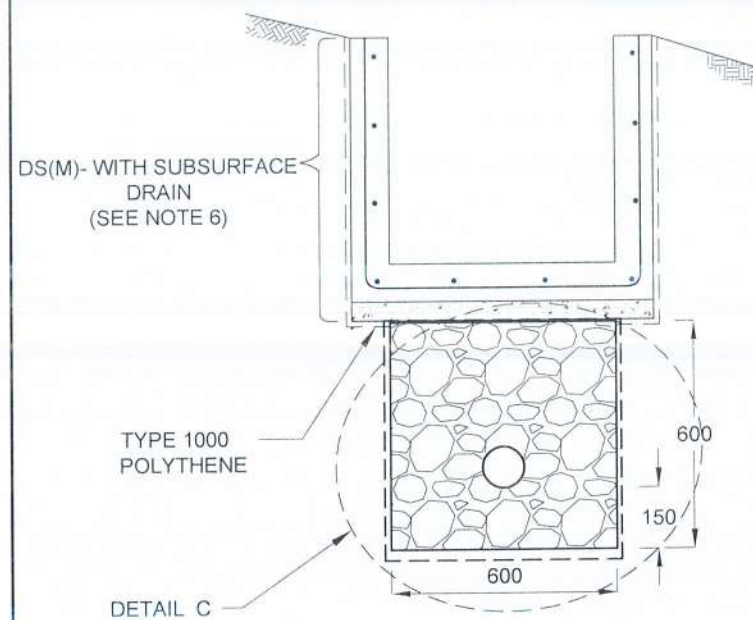
PROJECT TITLE
 REDUCTION OF LANDSLIDE VULNERABILITY
 BY MITIGATION MEASURES PROJECT
 SUMANGALA COLLEGE
 KANDY

TITLE
 DETAILS OF DRAINS
 (SURFACE DRAIN - 2 OF 2)

SCALE: N.T.S.
 PROJECT / DRAWING No.
 RLVMP/WORKS/NCB/PH III/233/A2

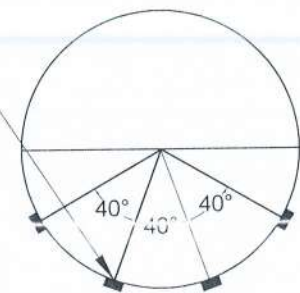
DATE: 08.05.2025
 REVISION: 00

DESCRIPTION	NAME	SIGNATURE
DRAWN	K. M. D. NISHANTHI	
DESIGNED	R. J. K. P. N. RANATHUNGA	
CHECKED	I. A. N. D. IDIRIMANNA	
RECOMMENDED	PROF. S. A. S. KULATHILAKA	
APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	

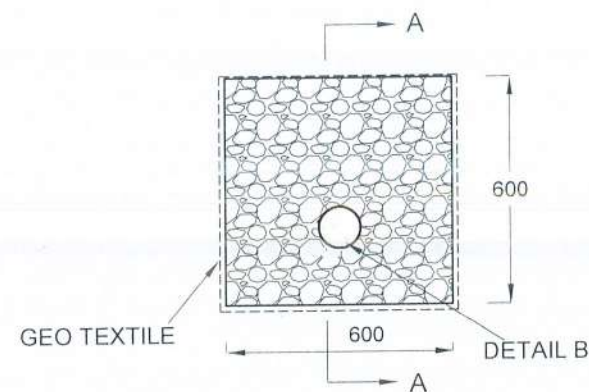


SUBSURFACE DRAIN
[DS (S) -A]

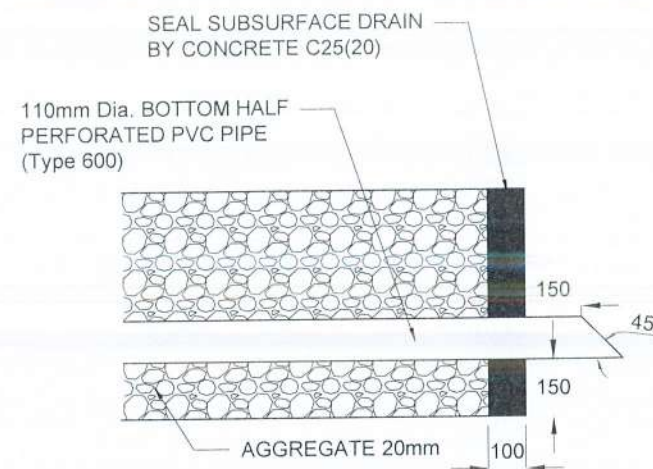
100mm x 5mm
Groove



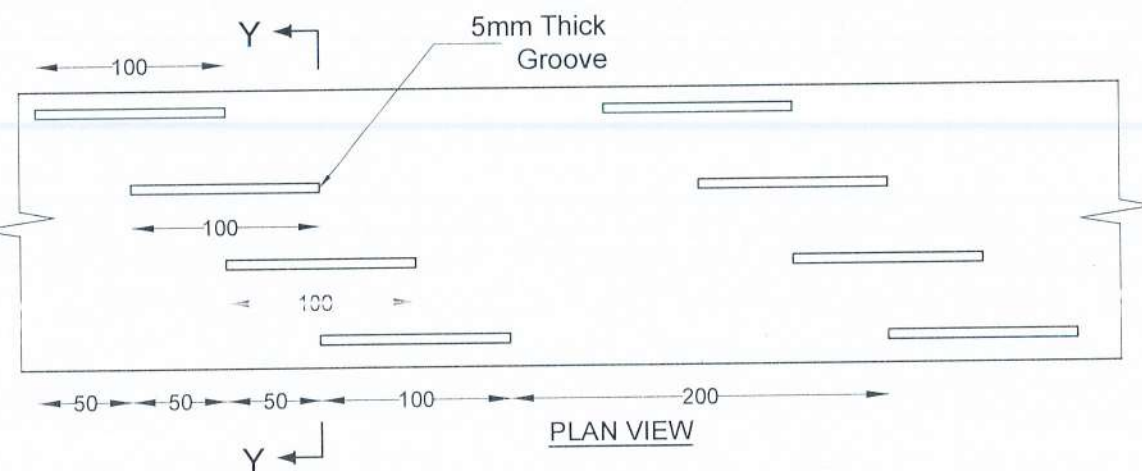
SECTION Y - Y



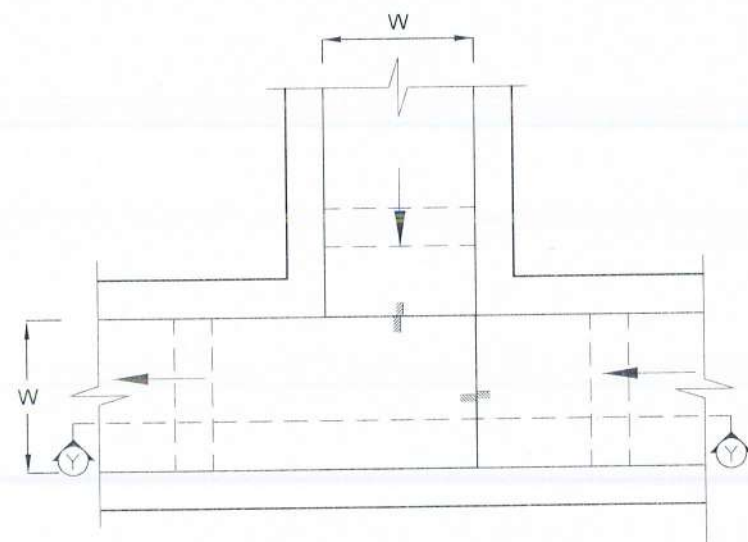
DETAIL C / DS (S) -A



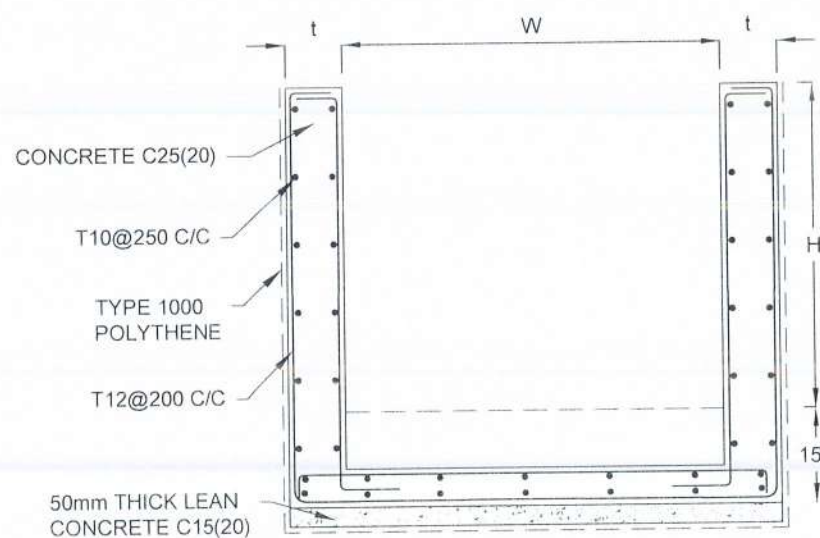
SECTION A-A
(OUTLET DETAIL SUBSURFACE DRAIN)



DETAIL - B (PERFORATED PIPE FOR SUB-SURFACE DRAINS)



PLAN VIEW OF CATCH PIT (CP)



SECTION Y-Y (CP- R)

NOTES

1. W,H,t; SHALL BE THE SAME AS RESPECTIVE DRAIN SECTION.
2. CP - R SHALL BE USED WHERE $H \geq 900\text{mm}$
3. DEPTH OF EXCAVATION MAY VARY ACCORDING TO SITE CONDITIONS.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.
6. DETAILS OF SURFACE DRAIN PORTION OF THE SUBSURFACE DRAINS SHALL BE AS PER DS(M), DS(B), DS(K) OR DS(C) SECTIONS ACCORDINGLY.
7. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

CONCRETE

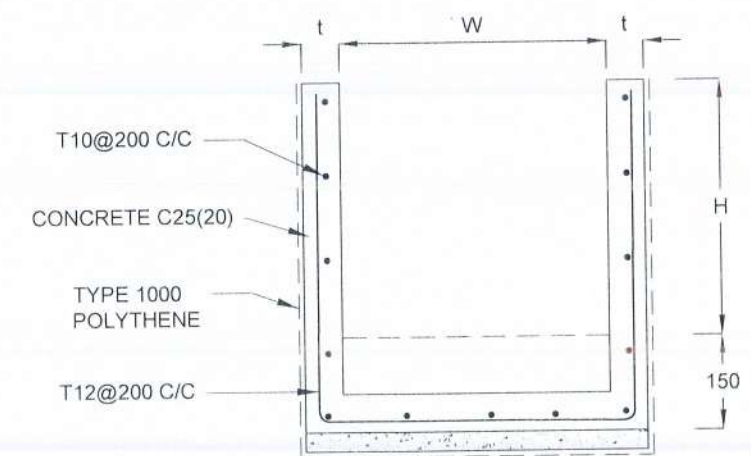
8. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

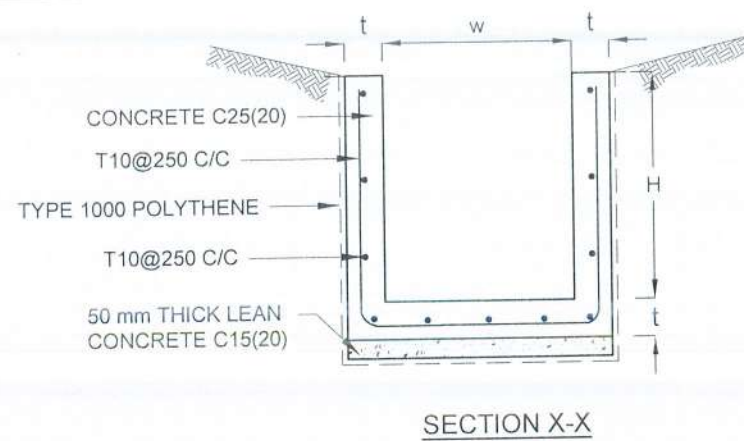
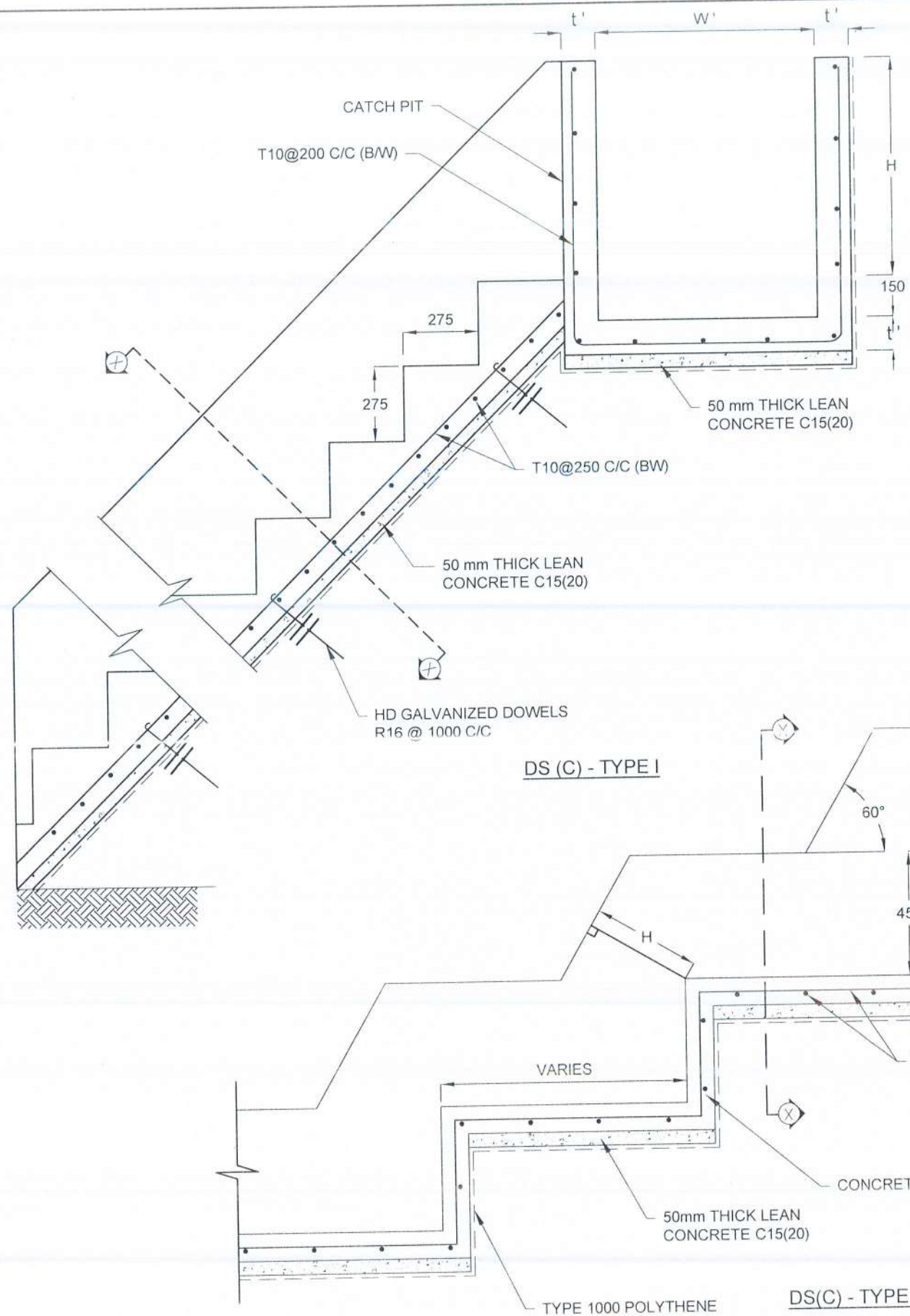
9. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm^2 .
10. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF $40 \times \text{BAR DIA.}$ AND LAPPING SHOULD BE STAGGERED.
11. ANCHORAGE LENGTH SHOULD BE $40 \times \text{BAR DIA.}$
12. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
13. COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm



SECTION Y - Y

EMPLOYER		DESIGNER		REV		DATE		REVISION DESCRIPTION		APPROVAL		PROJECT TITLE		TITLE		DESCRIPTION	NAME	SIGNATURE
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05										REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY		DETAILS OF DRAINS (SUBSURFACE DRAIN AND CATCHPIT)		DRAWN	K. M. D. NISHANTHI	
																DESIGNED	R. J. K. P. N. RANATHUNGA	
																CHECKED	I. A. N. D. IDIRIMANNA	
																RECOMMENDED	PROF. S. A. S. KULATHILAKA	
																APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
SCALE		N.T.S.		DATE		08.05.2026		REVISION		00		PROJECT / DRAWING No.		RLVMM/WORKS/NCB/PH III/233/A3				



NOTES

1. USE EITHER TYPE I OR TYPE II CASCADE DRAIN ACCORDING TO THE ACTUAL GROUND CONDITION AS INSTRUCTED BY THE ENGINEER.
2. LENGTH OF THE STEPS OF CASCADE WILL BE VARIED ACCORDING TO THE SITE CONDITIONS.
3. DEPTH OF EXCAVATION SHALL BE VARIED ACCORDING TO SITE CONDITIONS.
4. DOWELS SHALL BE INSTALLED ACCORDING TO THE GROUND CONDITIONS AS INSTRUCTED BY THE ENGINEER.
5. 10 mm THICK EXPANSION JOINT SHALL BE INTRODUCED IN EVERY 5m INTERVAL.
6. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE STATED.

CONCRETE

7. USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a]	SCREED	- C15(20)
[b]	WALLS / BASE / ENERGY BREAKERS	- C25(20)

REINFORCEMENT

8. HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm².
9. BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40 x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
10. ANCHORAGE LENGTH SHOULD BE 40X BAR DIA.
11. REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
12. COVER TO REINFORCEMENT

[a]	BURIED FACES AND DRAIN INVERTS	- 40 mm
[b]	ALL OTHER FACES	- 25 mm

DRAIN TYPE	W (mm)	H (mm)	t (mm)	W' (mm)	t' (mm)
DS (C) - A	450	450	100	600	100
DS (C) - B	450	600	100	750	100
DS (C) - C	600	600	100	800	100
DS (C) - D	750	750	100	800	100
DS (C) - E	800	800	125	1000	125
DS (C) - F	1000	750	125	1200	125

EMPLOYER

 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA
 MINISTRY OF DEFENCE
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 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

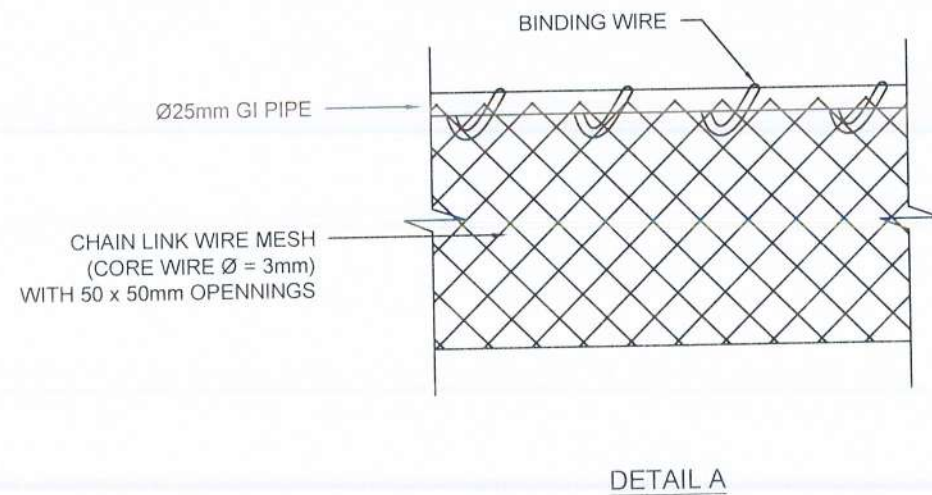
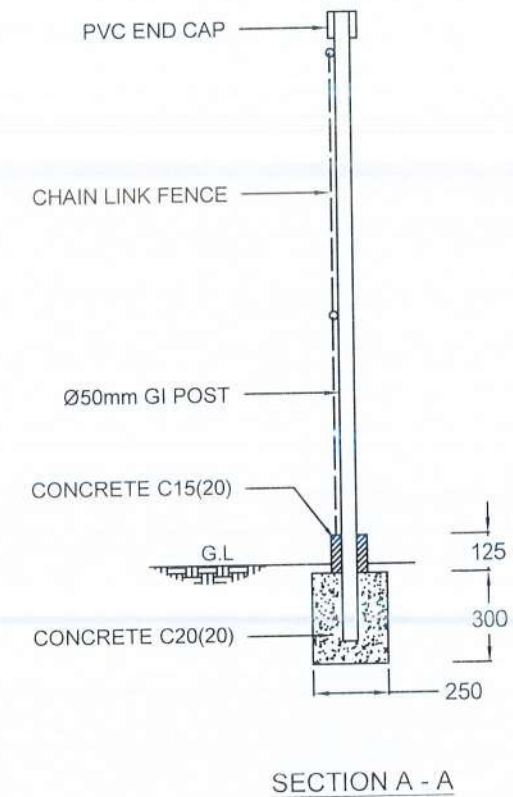
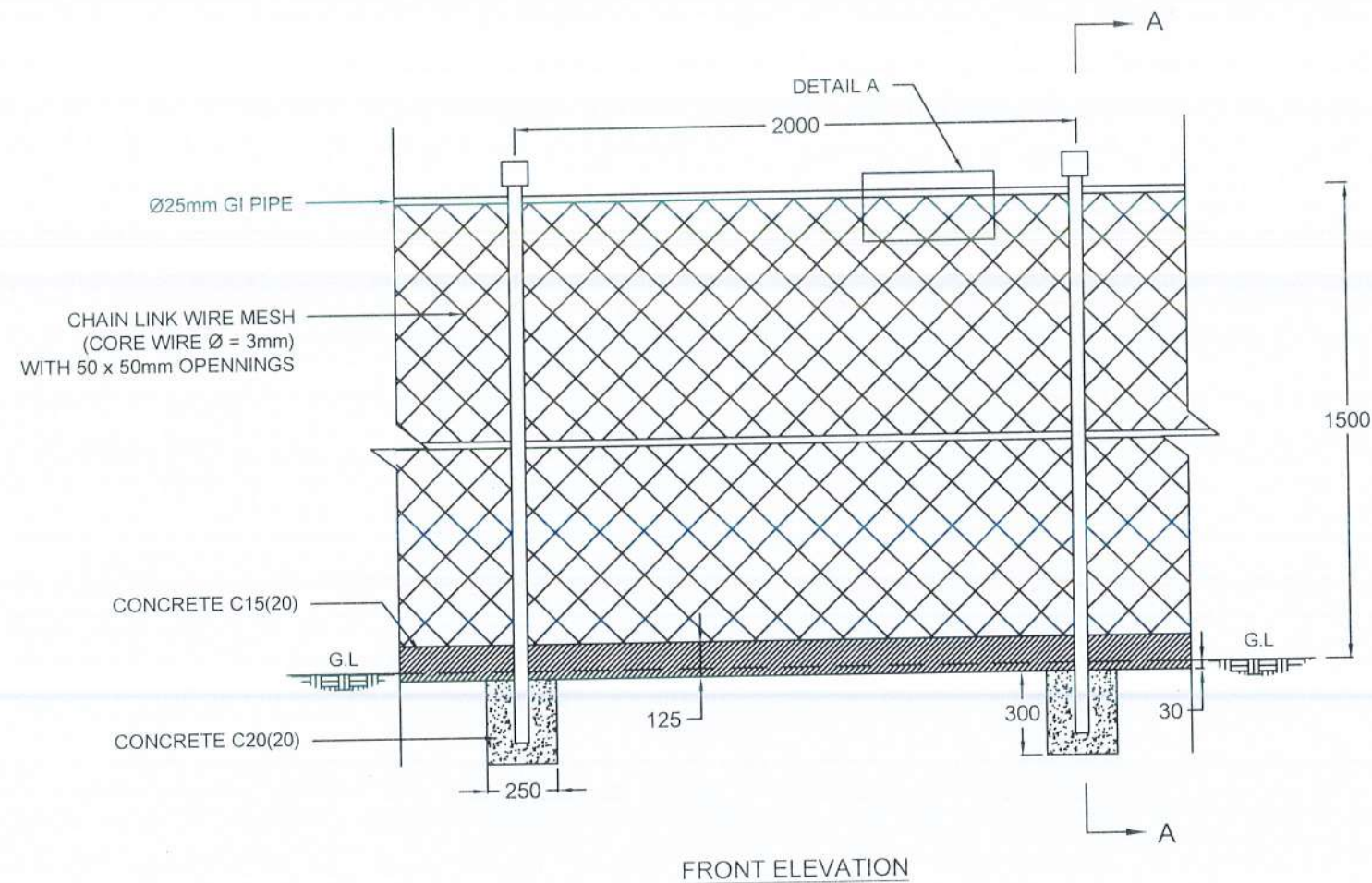
DESIGNER

 DESIGN UNIT
 NATIONAL BUILDING RESEARCH INSTITUTE
 No. 99/1, JAWATTA ROAD,
 COLOMBO - 05

REV	DATE	REVISION DESCRIPTION	APPROVAL

PROJECT TITLE
 REDUCTION OF LANDSLIDE VULNERABILITY
 BY MITIGATION MEASURES PROJECT
 SUMANGALA COLLEGE
 KANDY

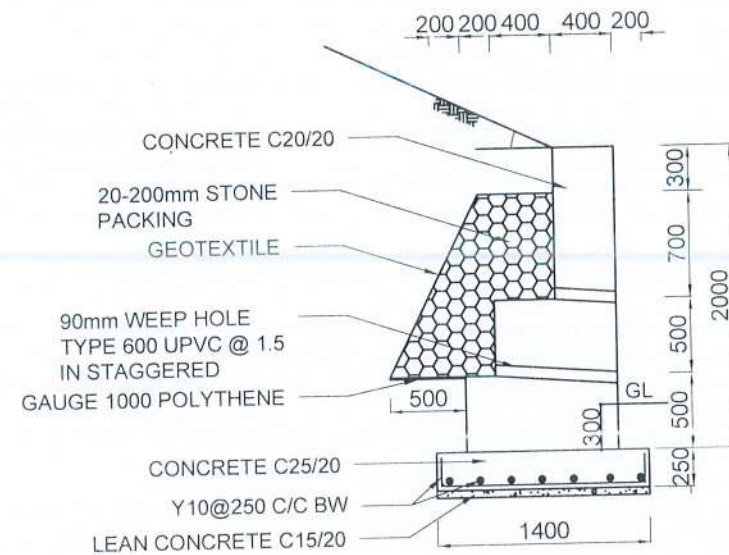
TITLE	DESCRIPTION	NAME	SIGNATURE
DETAILS OF DRAINS (CASCADE DRAIN)	DRAWN	K. M. D. NISHANTHI	
	DESIGNED	R. J. K. P. N. RANATHUNGA	
	CHECKED	I. A. N. D. IDIRIMANNA	
	RECOMMENDED	PROF. S. A. S. KULATHILAKA	
	APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
SCALE	N.T.S.	DATE	08.05.2026
PROJECT / DRAWING No.	RLVMP/WORKS/NCB/PH III/233/A/4	REVISION	00



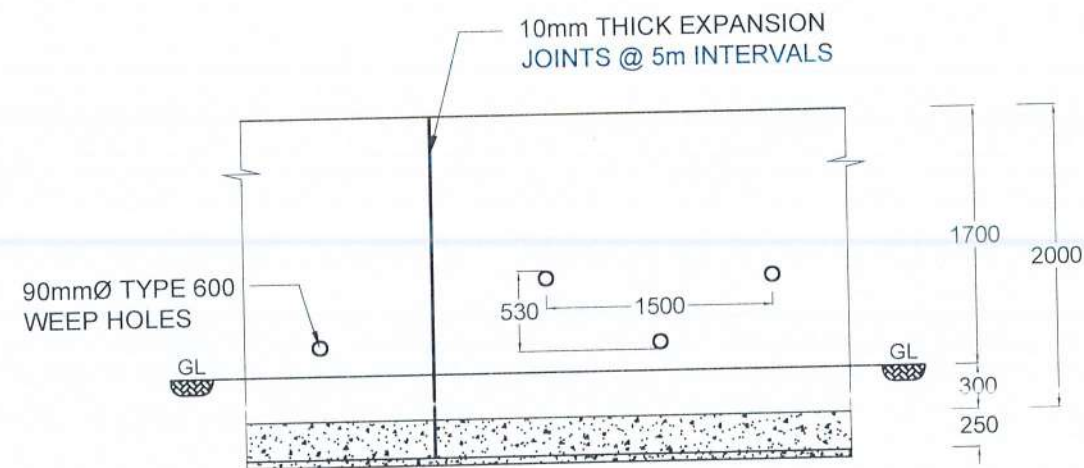
NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. GI POST SHOULD BE COVERED WITH GREEN COLOUR ANTI-CORROSIVE PAINT.
3. PRIOR APPROVAL IS REQUIRED FOR CHAIN LINK WIRE MESH, GI POST AND PVC CAP.

EMPLOYER		DESIGNER		REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05						REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY	DETAILS OF CHAIN LINK FENCE	DRAWN	K.M.D. NISHANTHI	
										DESIGNED	R.J.K.P.N. RANATHUNGA	
										CHECKED	I.A.N.D. IDIRIMANNA	
										RECOMMENDED	PROF. S.A.S. KULATHILAKA	
										APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
								SCALE	N.T.S.	DATE	08.05.2026	
								PROJECT / DRAWING No.		REVISION		
								RLVMMP/WORKS/NCB/PH III/233/B		00		



CONCRETE RETAINING
WALL (2m)



FRONT ELEVATION

NOTES

- 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED @ EVERY 5m INTERVALS.
- DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS
- WHERE THE EARTH CUT HEIGHT IS LESS THAN THAT OF THE APPLICABLE TYPICAL WALL, THE HEIGHT OF THE WALL SHOULD BE REDUCED TO FIT THE CUT HEIGHT, FROM ITS BOTTOM END WHILE MAINTAINING THE GIVEN TOP WIDTH.

CONCRETE

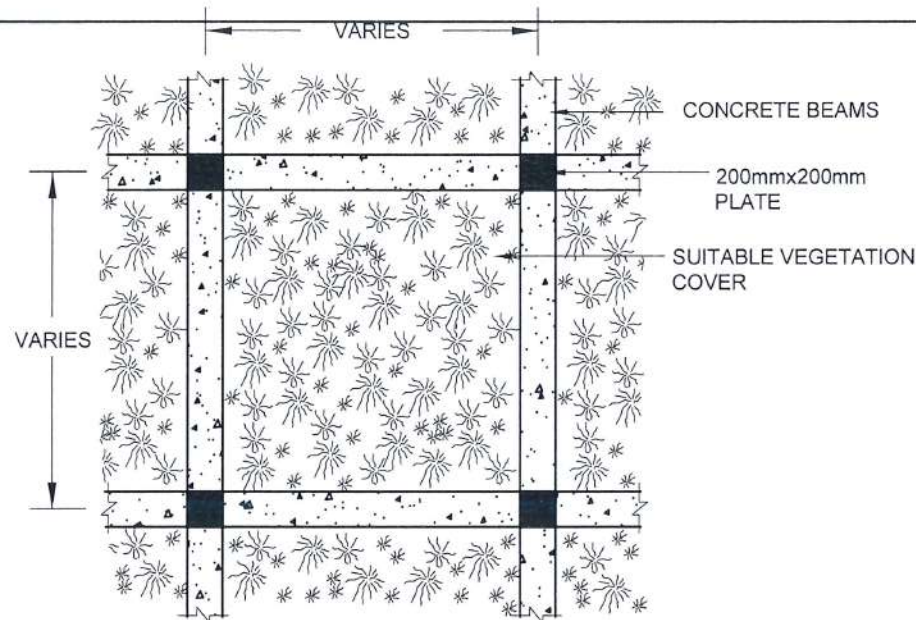
- USE FOLLOWING CONCRETE GRADES FOR STRUCTURE

[a] SCREED	- GR. 15/20
[b] BASE	- GR. 25/20
[c] WALL	- GR. 20/20

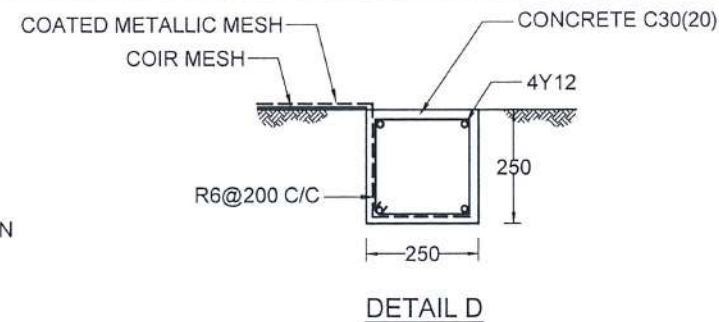
REINFORCEMENT

- ALL BARS MARKED "T" SHALL BE HIGH YIELD DEFORMED BARS OF YIELD STRENGTH NOT LESS THAN 460N/mm².
- BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED WITH LENGTH OF 50Ø, WHERE Ø IS THE DIAMETER AND LAPPING SHOULD BE STAGGERED.
- ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.
- CLEAR CONCRETE COVER FOR ALL FOUNDATION REINFORCEMENT BELOW GROUND LEVEL TO BE 50 mm.

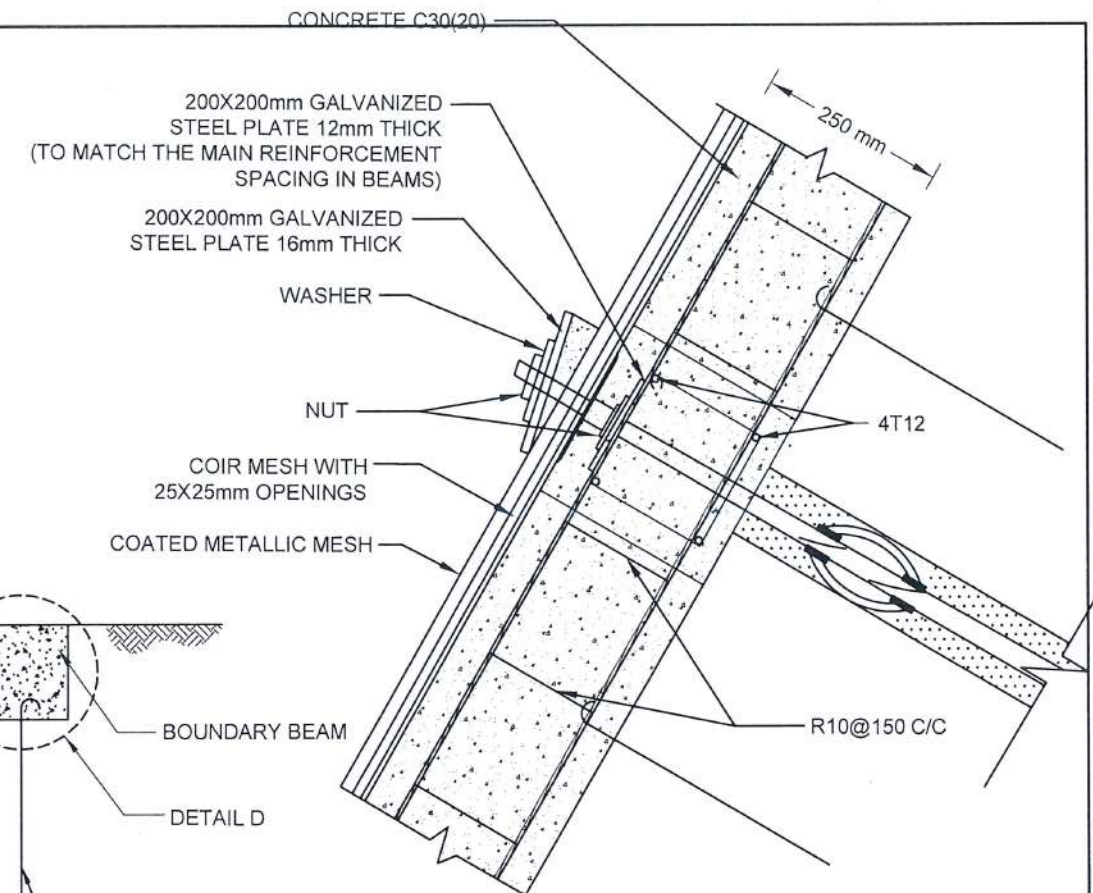
EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY	DETAILS OF RETAINING WALL	DRAWN	K. M. D. NISHANTHI	
								DESIGNED	R. J. K. P. N. RANATHUNGA	
								CHECKED	I. A. N. D. IDIRIMANNA	
								RECOMMENDED	PROF. S. A. S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
							SCALE N.T.S.	DATE	08.05.2026	
							PROJECT / DRAWING No.	REVISION	00	
							RLVMM/WORKS/NCB/PH III/233/C			



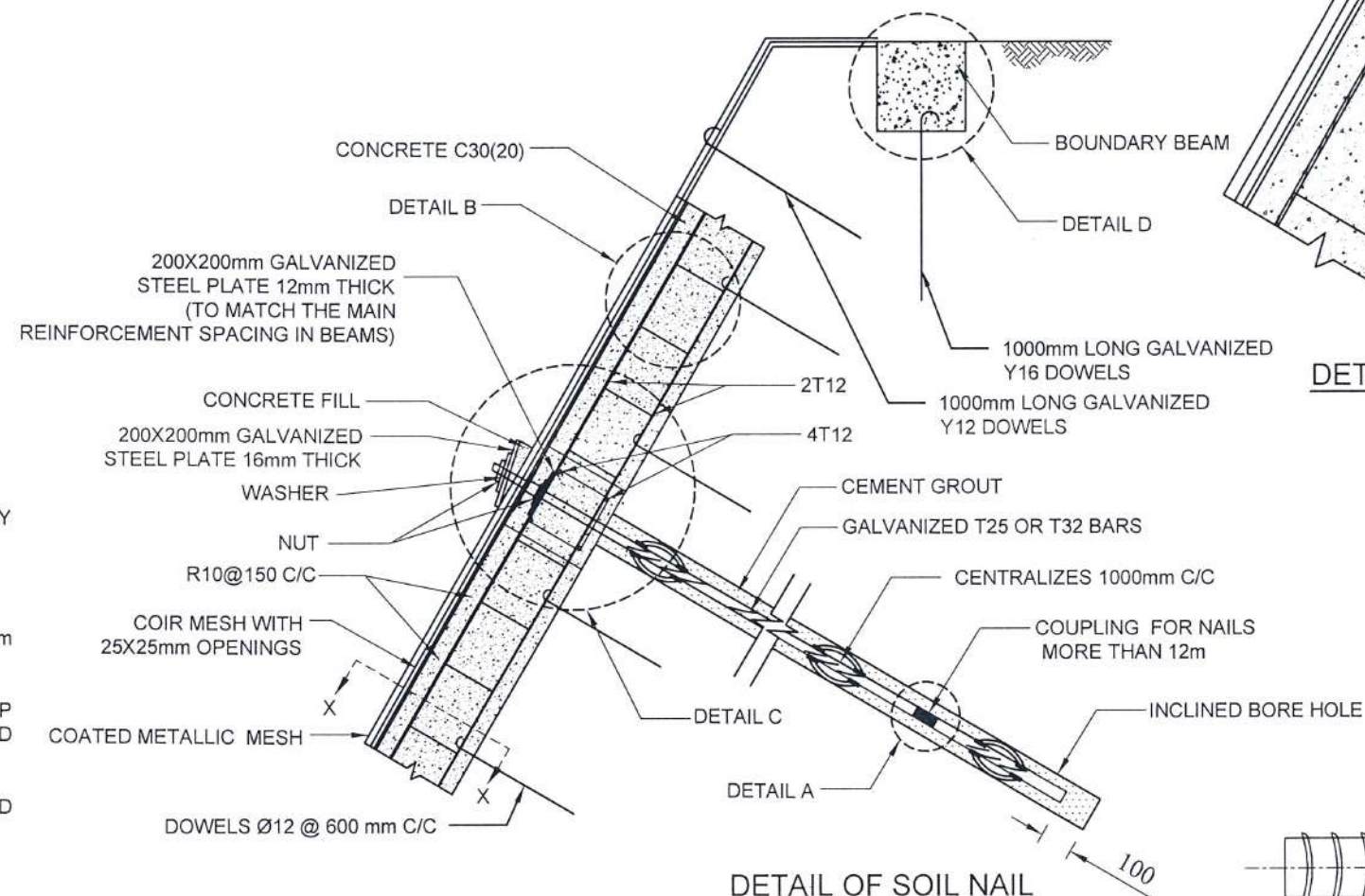
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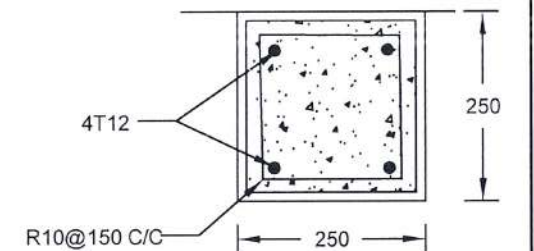
DETAIL D



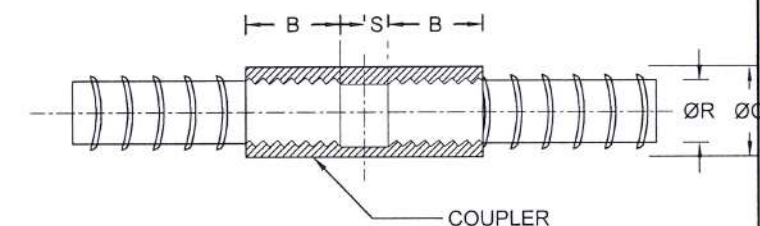
DETAIL C



DETAIL OF SOIL NAIL

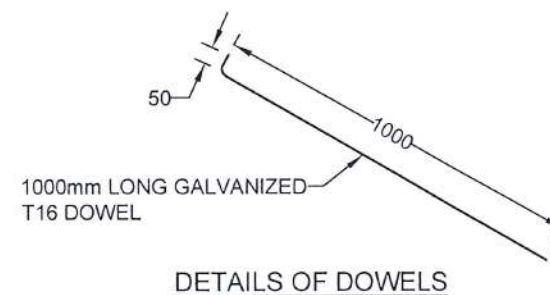


SECTION X-X



COUPLER DETAILS - A (NAIL LENGTH > 12m)

REINFORCEMENT BAR DIAMETER (ØR)	COUPLER OUTER BAR DIAMETER (ØC)	MIN - THREADED LENGTH OF COUPLER (B)	NON - THREADED LENGTH OF COUPLER (S)
25 mm	36 mm	50 mm	2.5 mm
32 mm	46 mm	64 mm	2.5 mm

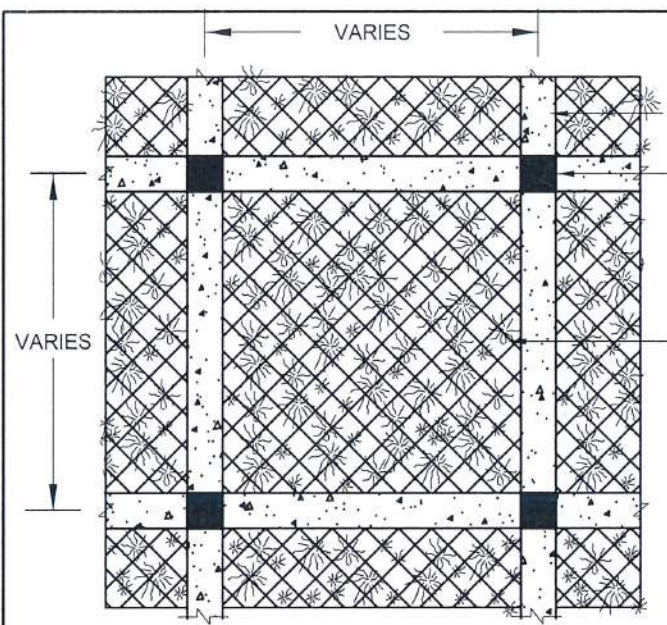


DETAILS OF DOWELS

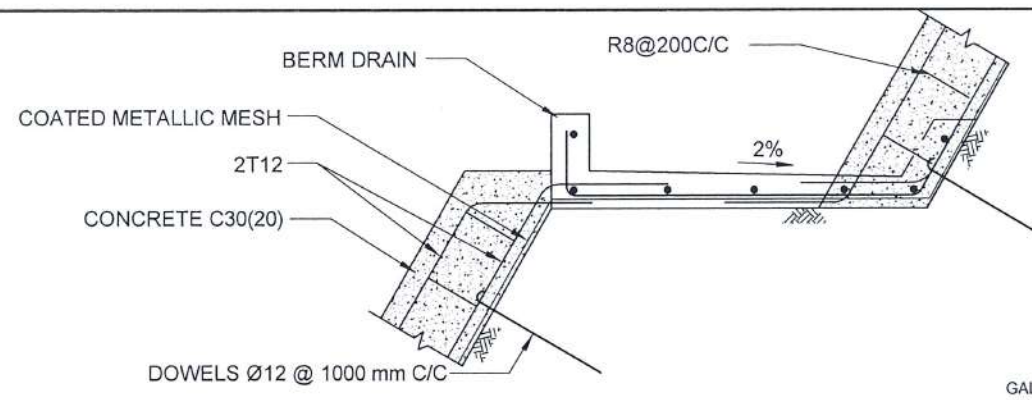
NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS.
- STRUCTURAL CONC. AS PER SPECIFICATION.
- MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
- STRUCTURAL MEMBERS AS PER SPECIFICATION.
- LAP LENGTH FOR R/F BARS 40 x BAR DIA.
- TWO SETS OF 4T12 BARS PLACED PERPENDICULAR TO EACH OTHERS BY CONNECTING NAIL HEADS VERTICALLY AND HORIZONTALLY ON SLOPE FACE.
- TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER.
- THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG.
- THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE.
- SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION.
- DOWEL SPACING FOR BOUNDARY BEAM SHALL BE 2m.
- BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION.
- MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING.
- SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE HIGH TENSILE WIRE MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION.

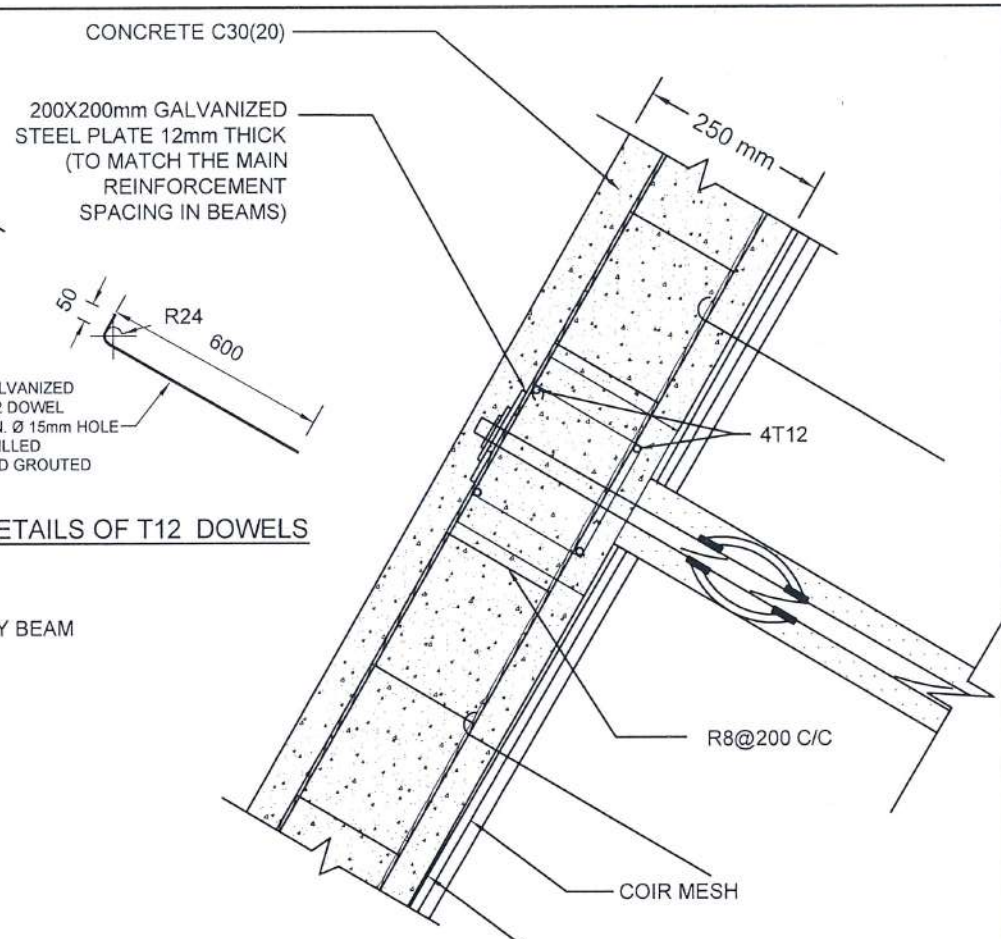
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99 /1, JAWATTA ROAD COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		<table><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>		REV	DATE	REVISION DESCRIPTION	APPROVAL																													PROJECT TITLE REDUCTION OF LANDSLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY		TITLE DETAILS OF SOIL NAILING WITH EMBEDDED GRID BEAM <table><tr><td>SCALE</td><td>N.T.S.</td><td>DATE</td><td>08.05.2026</td></tr><tr><td colspan="3">PROJECT / DRAWING No. PI VMMP/WORKS/INCR/PH III/233/D1</td><td>REVISION 00</td></tr></table>				SCALE	N.T.S.	DATE	08.05.2026	PROJECT / DRAWING No. PI VMMP/WORKS/INCR/PH III/233/D1			REVISION 00	<table><tr><th>DESCRIPTION</th><th>NAME</th><th>SIGNATURE</th></tr><tr><td>DRAWN</td><td>K.M.D. NISHANTHI</td><td></td></tr><tr><td>DESIGNED</td><td>R.J.K.P.N. RANATHUNGA</td><td></td></tr><tr><td>CHECKED</td><td>I.A.N.D. IDIRIMANNA</td><td></td></tr><tr><td>RECOMMENDED</td><td>PROF. S.A.S. KULATHILAKA</td><td></td></tr><tr><td>APPROVED</td><td>ENG.(DR.) SANCHITHA JAYAKODY</td><td></td></tr></table>			DESCRIPTION	NAME	SIGNATURE	DRAWN	K.M.D. NISHANTHI		DESIGNED	R.J.K.P.N. RANATHUNGA		CHECKED	I.A.N.D. IDIRIMANNA		RECOMMENDED	PROF. S.A.S. KULATHILAKA		APPROVED	ENG.(DR.) SANCHITHA JAYAKODY	
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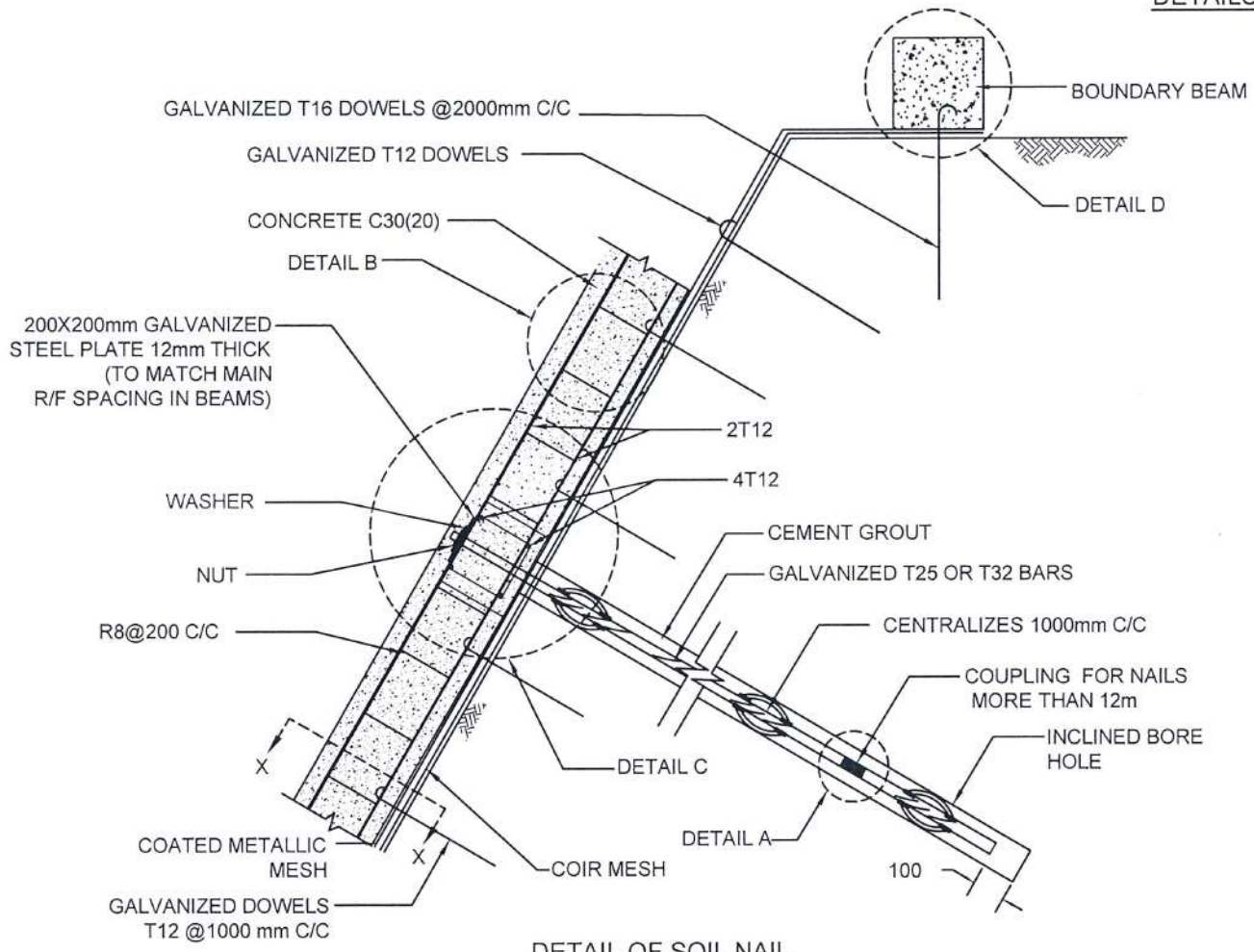
DETAIL - B



DETAIL OF FACING AT BERM

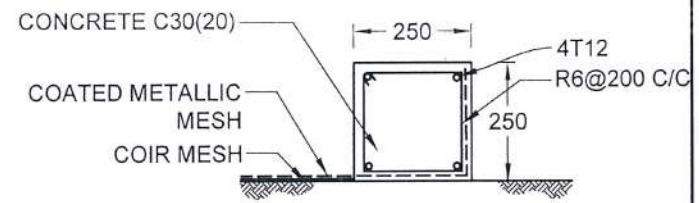


DETAILS OF T12 DOWELS

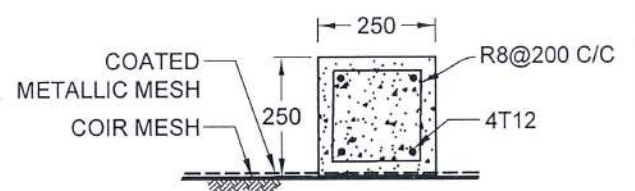


DETAIL OF SOIL NAIL

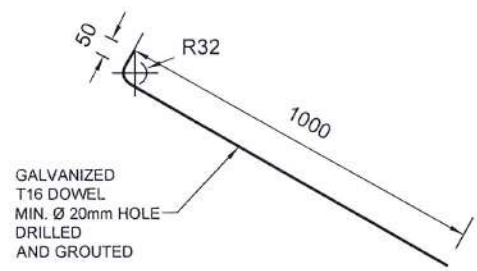
DETAIL C



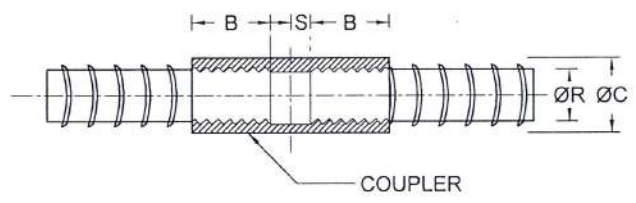
DETAIL D



SECTION X-X



DETAILS OF T16 DOWELS



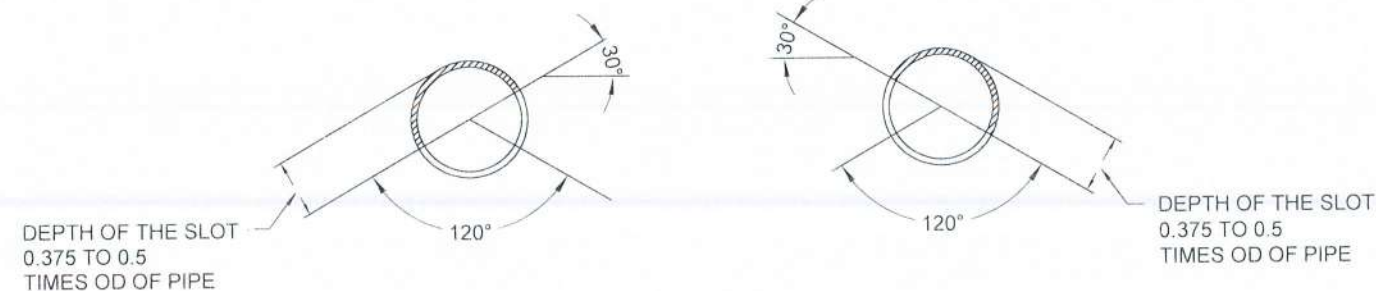
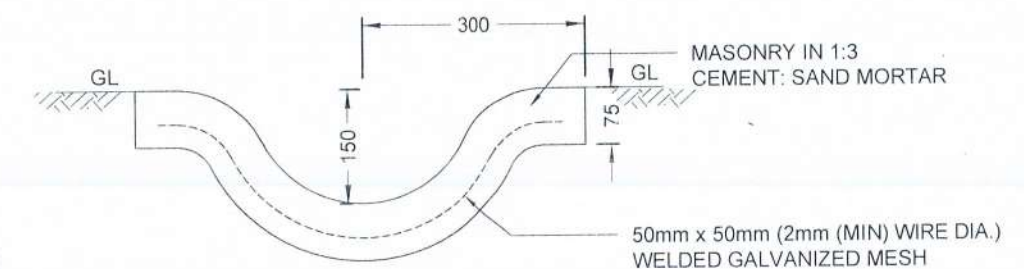
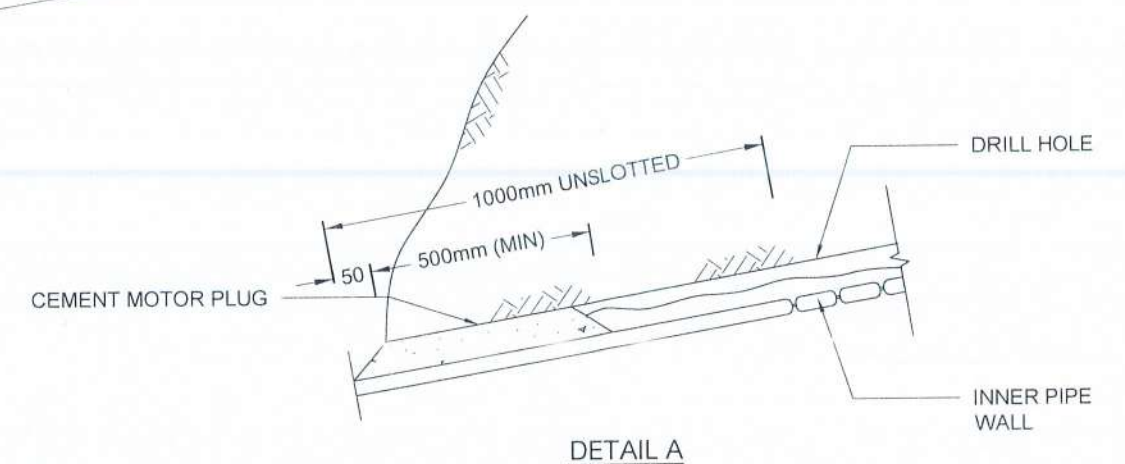
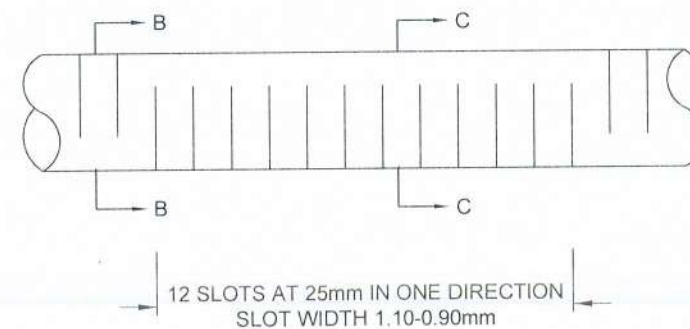
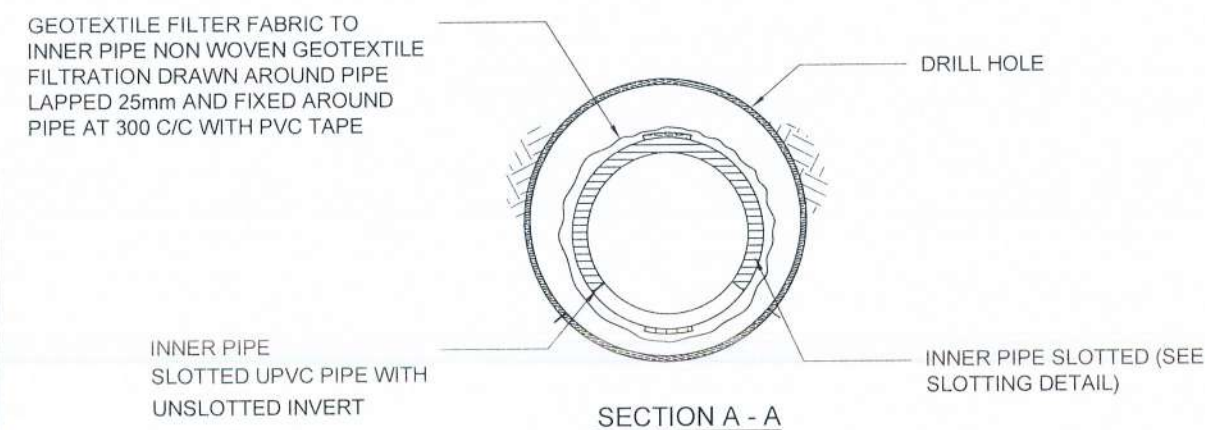
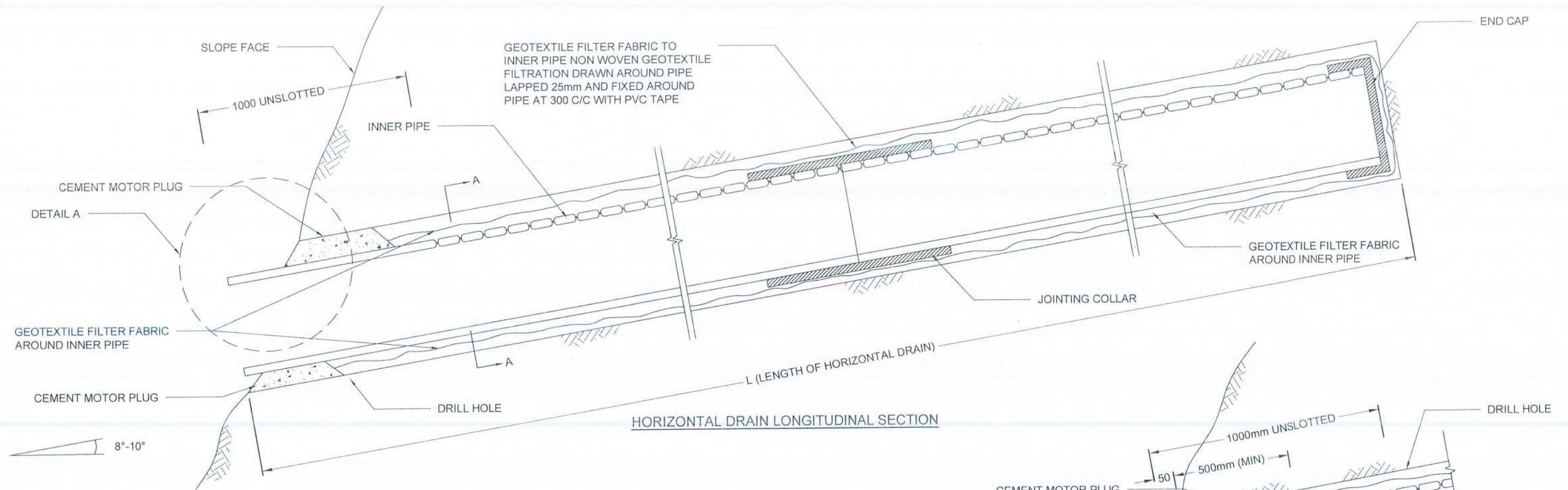
COUPLER DETAILS - A (NAIL LENGTH > 12m)

REINFORCEMENT BAR DIAMETER (ØR)	COUPLER OUTER BAR DIAMETER (ØC)	MIN - THREADED LENGTH OF COUPLER (B)	NON - THREADED LENGTH OF COUPLER (S)
25 mm	36 mm	50 mm	2.5 mm
32 mm	46 mm	64 mm	2.5 mm

NOTES

- ALL DIMENSIONS ARE IN mm.
- ALL CONSTRUCTIONS SHALL BE AS PER SPECIFICATION.
- MINIMUM CLEAR COVER TO R/F - 50mm OR AS SPECIFIED BY THE ENGINEER.
- LAP LENGTH FOR R/F BARS 40 x BAR DIA.
- TURFING / SODDING / SEEDING / PLANTING USED FOR VEGETATION COVER
- THE BAR COUPLER SHALL ONLY BE USE FOR SOIL NAILING OF MORE THAN 12m LONG UNLESS OTHERWISE SPECIFIED
- THE TENSILE STRENGTH OF THE BAR COUPLER SHALL BE CAPABLE TO DEVELOP AT LEAST 95% OF TENSILE STRENGTH OF THE REBAR AS TESTED AND CERTIFIED BY THE MANUFACTURE
- SPACING BETWEEN NAIL HEAD ARE VARIED ACCORDING TO THE GROUND CONDITION
- BOUNDARY BEAM SHALL BE STRUCTURALLY CONNECTED TO ALREADY CONSTRUCTED GRID BEAMS AT EACH JUNCTION
- BOUNDARY BEAM SHALL BE FOUNDED ON SLOPES ≤ 30° AT CROWN AREAS.
- MINIMUM OF 2 DOWELS SHALL BE TYPICALLY USED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE AT EACH SLOPE SPACE IN BETWEEN THE GRID BEAMS, AS SHOWN IN THE DRAWING
- SPACING AND LOCATIONS OF DOWELS INSTALLED TO FIX THE COATED METALLIC MESH AGAINST THE SLOPE SHALL BE VARIED ACCORDING TO THE SITE CONDITION

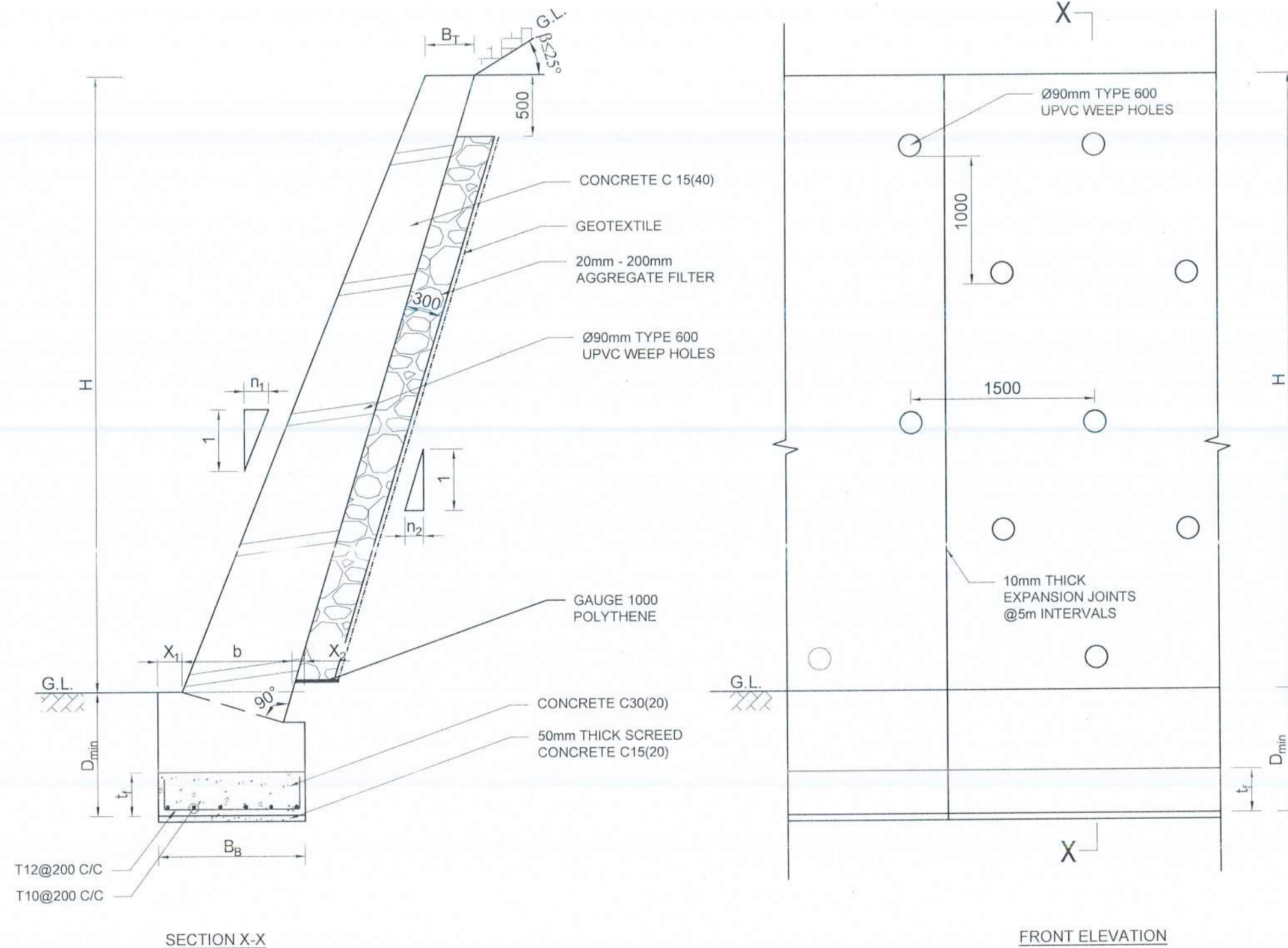
EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05 		DESIGNER  DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05		<table><tr><th>REV</th><th>DATE</th><th>REVISION DESCRIPTION</th><th>APPROVAL</th></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></table>		REV	DATE	REVISION DESCRIPTION	APPROVAL																									PROJECT TITLE REDUCTION OF LAND SLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY		TITLE DETAILS OF SOIL NAILING WITH NON EMBEDDED GRID BEAM <table><tr><td>SCALE</td><td>N.T.S.</td><td>DATE</td><td>08.05.2026</td></tr><tr><td colspan="3">PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/233/D2</td><td>REVISION 00</td></tr></table>				SCALE	N.T.S.	DATE	08.05.2026	PROJECT / DRAWING No. RLVMMP/WORKS/NCB/PH III/233/D2			REVISION 00	<table><tr><th>DESCRIPTION</th><th>NAME</th><th>SIGNATURE</th></tr><tr><td>DRAWN</td><td>K.M.D. NISHANTHI</td><td></td></tr><tr><td>DESIGNED</td><td>R.J.K.P.N. RANATHUNGA</td><td></td></tr><tr><td>CHECKED</td><td>I.A.N.D. IDRIMANNA</td><td></td></tr><tr><td>RECOMMENDED</td><td>PROF. S.A.S. KULATHILAKA</td><td></td></tr><tr><td>APPROVED</td><td>ENG.(DR.) SANCHITHA JAYAKODY</td><td></td></tr></table>		DESCRIPTION	NAME	SIGNATURE	DRAWN	K.M.D. NISHANTHI		DESIGNED	R.J.K.P.N. RANATHUNGA		CHECKED	I.A.N.D. IDRIMANNA		RECOMMENDED	PROF. S.A.S. KULATHILAKA		APPROVED	ENG.(DR.) SANCHITHA JAYAKODY	
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NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. PIPE DIAMETERS, ANGLE & LENGTHS AS SPECIFIED IN DRAWINGS.
3. ALL MATERIALS SHALL CONFORM TO PROJECT SPECIFICATION

EMPLOYER	DESIGNER	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE	TITLE	DESCRIPTION	NAME	SIGNATURE
 DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF DEFENCE NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	 DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05					REDUCTION OF LAND SLIDE VULNERABILITY BY MITIGATION MEASURES PROJECT SUMANGALA COLLEGE KANDY	DETAILS OF HORIZONTAL DRAIN SECTIONS	DRAWN	K.M.D. NISHANTHI	
								DESIGNED	R.J.K.P.N. RANATHUNGA	
								CHECKED	I.A.N.D. IDIRIMANNA	
								RECOMMENDED	PROF. S.A.S. KULATHILAKA	
								APPROVED	ENG. (DR.) SANCHITHA JAYAKODY	
							SCALE: N.T.S. PROJECT / DRAWING No. RLVMP/WORKS/NCB/PH III/233/E	DATE: 08.05.2026 REVISION: 00		



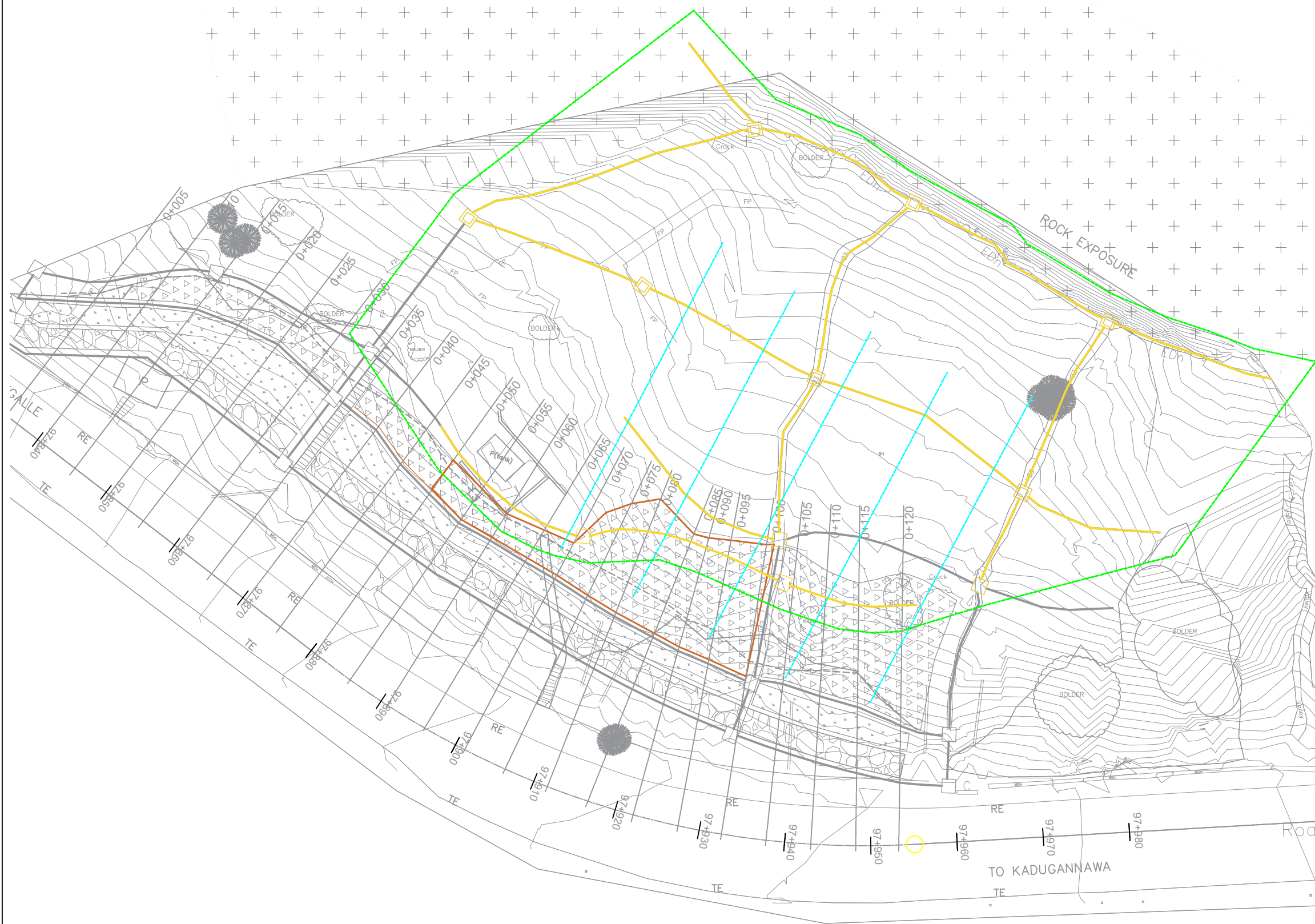
DETAILS OF TYPICAL RESTING TYPE RETAINING WALL SECTIONS									
Dim:	B _T (mm)	B _B (mm)	X ₁ (mm)	X ₂ (mm)	t _f (mm)	D _{min} (mm)	n ₁	n ₂	
Height									
2.5m	300	900	200	100	200	600	0.50	0.40	
3.5m	400	1100	200	100	250	800	0.50	0.40	

- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 - RETAINING WALL TYPE SHALL BE DECIDED ACCORDING TO THE ACTUAL SITE CONDITION.
 - SLOPE SHALL BE ABLE TO STAND ON ITS OWN UNTIL THE WALL IS MADE. NOT SUITABLE FOR COLLAPSING SOILS.
 - WHERE THE EARTH CUT HEIGHT IS LESS THAN THAT OF THE APPLICABLE TYPICAL WALL, THE HEIGHT OF THE WALL SHOULD BE REDUCED TO FIT THE CUT HEIGHT, FROM ITS BOTTOM END WHILE MAINTAINING THE GIVEN TOP WIDTH.
 - BACK SLOPE ANGLE, LEVEL AND FROM MAY VARY AS PER THE DESIGN AT EACH SITE.
 - ALLOWABLE BEARING CAPACITY SHALL BE 150kN/m² FOR 2-4m HIGH WALLS AND 200kN/m² FOR 5-7m HIGH WALL.
 - DOWELS SHALL BE INSTALLED IF HARD ROCK IS ENCOUNTERED AS PER THE ENGINEERS INSTRUCTIONS.
 - 10mm THICK EXPANSION JOINTS SHOULD BE PROVIDED AT EVERY 5m INTERVALS WITH APPROVED MATERIAL.
 - WEEP HOLES TO BE PROVIDED AT 1.5m C/C (HORIZONTALLY) STAGGERED USING 90mm DIA UPVC PIPES (TYPE 600) WITH A MINIMUM SLOPE OF 1: 20 TO ALLOW PROPER DRAINAGE.

- CONCRETE**
- THE FOLLOWING CONCRETE GRADES SHOULD BE USED FOR STRUCTURES
 - (a) SCREED CONCRETE - C. 15(20)
 - (b) WALL - C. 15(40)
 - (c) BASE - C. 30(20)

- REINFORCEMENT**
- HIGH YIELD REINFORCEMENT BARS DENOTED BY "T" SHALL CONFORM TO THE REQUIREMENTS OF TYPE 2 OF BS 4449 AND HAVE A CHARACTERISTIC TENSILE STRENGTH OF 460N/mm²
 - CLEAR CONCRETE COVER FOR ALL REINFORCEMENT TO BE 50 mm.
 - REINFORCEMENT BARS SHALL BE BENT IN ACCORDANCE WITH STANDARD SPECIFICATIONS.
 - BARS OF CUT LENGTH LARGER THAN THE SUPPLIED LENGTH TO BE LAPPED FOR A LENGTH OF 40x BAR DIA. AND LAPPING SHOULD BE STAGGERED.
 - ANCHORAGE LENGTH SHOULD BE 40 x BAR DIA.

EMPLOYER DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA MINISTRY OF TRANSPORT, HIGHWAYS AND URBAN DEVELOPMENT ROAD DEVELOPMENT AUTHORITY "MAGANEGUMA MAHAMEDURA" NO. 216, DENZIL KOBBEKADUWA MAWATHA, KOSWATTA, BATTARAMULLA	DESIGNER DESIGN UNIT NATIONAL BUILDING RESEARCH INSTITUTE No. 99/1, JAWATTA ROAD, COLOMBO - 05	<table border="1"> <thead> <tr> <th>REV</th> <th>DATE</th> <th>REVISION DESCRIPTION</th> <th>APPROVAL</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REV	DATE	REVISION DESCRIPTION	APPROVAL																													PROJECT TITLE MITIGATION OF FAILURES ALONG RDA ROADS DUE TO CYCLONE DITWAH SUMANGALA COLLEGE KANDY	TITLE DETAILS OF CONCRETE RESTING TYPE WALLS	<table border="1"> <thead> <tr> <th>DESCRIPTION</th> <th>NAME</th> <th>SIGNATURE</th> </tr> </thead> <tbody> <tr> <td>DRAWN</td> <td>A. K. A. T. NAYOMI</td> <td><i>[Signature]</i></td> </tr> <tr> <td>DESIGNED</td> <td>R. J. K. P. N. RANATHUNGA</td> <td><i>[Signature]</i></td> </tr> <tr> <td>CHECKED</td> <td>I. A. N. D. IDIRIMANNA</td> <td><i>[Signature]</i></td> </tr> <tr> <td>RECOMMENDED</td> <td>PROF. S. A. S. KULATHILAKA</td> <td><i>[Signature]</i></td> </tr> <tr> <td>APPROVED</td> <td>ENG. (DR). SANCHITHA JAYAKODY</td> <td><i>[Signature]</i></td> </tr> </tbody> </table>	DESCRIPTION	NAME	SIGNATURE	DRAWN	A. K. A. T. NAYOMI	<i>[Signature]</i>	DESIGNED	R. J. K. P. N. RANATHUNGA	<i>[Signature]</i>	CHECKED	I. A. N. D. IDIRIMANNA	<i>[Signature]</i>	RECOMMENDED	PROF. S. A. S. KULATHILAKA	<i>[Signature]</i>	APPROVED	ENG. (DR). SANCHITHA JAYAKODY	<i>[Signature]</i>
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REFERENCE

- | | |
|------------|---|
| C | - CULVERT |
| EDN | - EARTH DRAIN |
| FP | - FOOT PATH |
| MDN | - MASONRY DRAIN |
| P | - PERMANENT BUILDING |
| RE | - ROAD EDGE (EDGE MARKING OF THE
CARRIAGE WAY) |
| ROAD (RDA) | - ROAD (ROAD DEVELOPMENT AUTHORITY) |
| SB | - SLOPE BOUNDARY |
| TE | - TAR EDGE |
| ⊗ | - BORE-HOLE LOCATION |

- Drain Cleaning
- - - Grass Clearing Area
- Cavity filling boundary
- - - Horizontal long drains (63mm dia.,40m)

EMPLOYER  DEMOCRATIC SOCIALIST REPUBLIC OF SRI LANKA ROAD DEVELOPMENT AUTHORITY	 DESIGN UNIT NATIONAL BUILDING RESEARCH ORGANIZATION No. 99/1, JAWATTA ROAD, COLOMBO - 05	REV	DATE	REVISION DESCRIPTION	APPROVAL	PROJECT TITLE MITIGATION OF THE LANDSLIDE BETWEEN CUL. 98/4 AND 99/1 (AT KADUGANNAWA) ON COLOMBO - KANDY HIGHWAY (A1) (PHASE II)	TITLE PLAN VIEW OF PROPOSED MITIGATION MEASURES				DESCRIPTION	NAME	SIGNATURE				
											DRAWN						
											DESIGNED	P.A.D.T.THILAKARATHNA					
											CHECKED						
										SCALE	1:500 (A3)	DATE	24.02.2026	RECOMMENDED			
										PROJECT / DRAWING No. NBRO/GED/2021/30/27386 A/DR-03				REVISION 03	APPROVED		