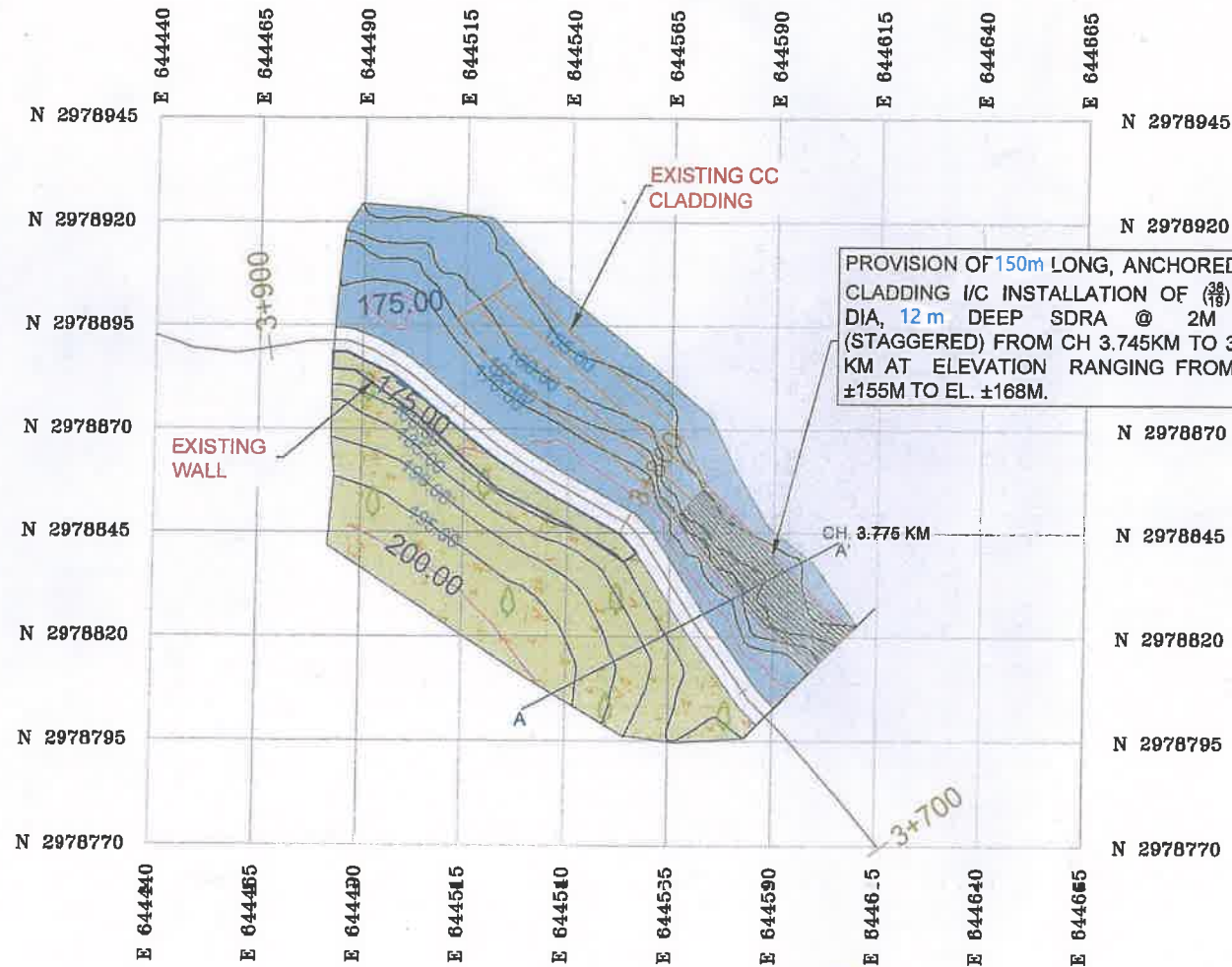




LEGENDS		
1.	CONTOUR	
2.	OVERBURDEN / DEBRIS	
3.	SAND STONE	
4.	ROAD	
5.	VEGETATION	
6.	EXISTING CC CLADDING	
7.	EXISTING CC WALL	
8.	PROPOSED CC CLADDING	



NOTES:-

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

SCALE:

FOR TENDER PURPOSE ONLY



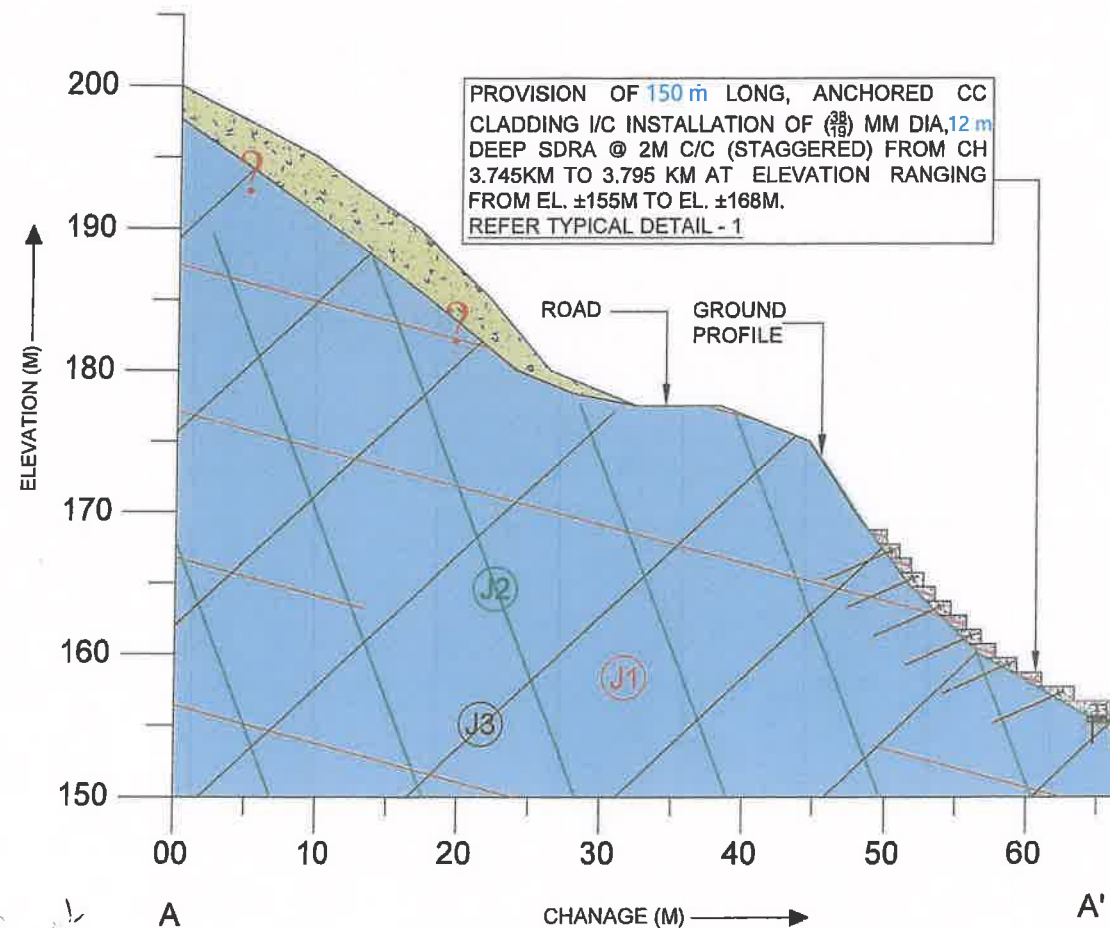
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Ministry of Road Transport and Highways

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE
FROM SEVOKE - RANGPOO ROAD NH10

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 3.750 KM TO CH. 3.900 KM ON SEVOKE -
RANGPOO ROAD, NH-10

SHEET 1 OF 3





SECTION A-A' (CH.- 3.775 KM)

LEGENDS

1.	OVERBURDEN / DEBRIS	
2.	SAND STONE	
3.	ROAD	
4.	TRACES OF JOINTS	
5.	PROPOSED CC CLADDING	

NOTES:-

1. ALL DIMENSIONS ARE IN M UNLESS OTHERWISE SPECIFIED.

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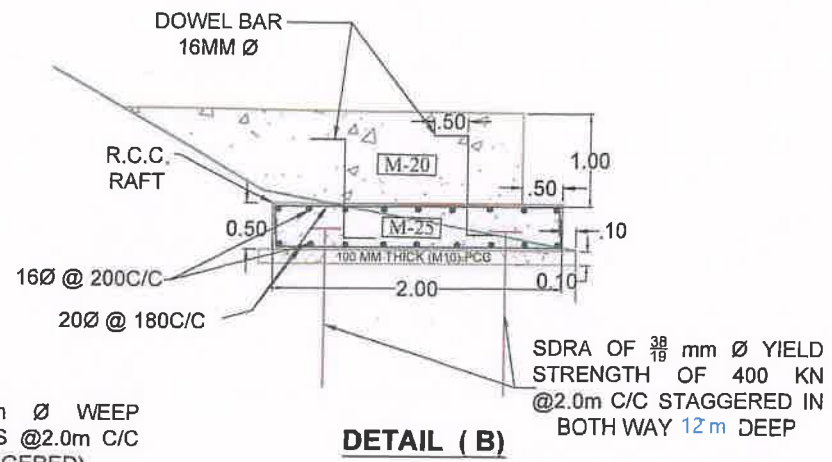
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10

(X-SECTION A-A')
STABILITY MEASURES

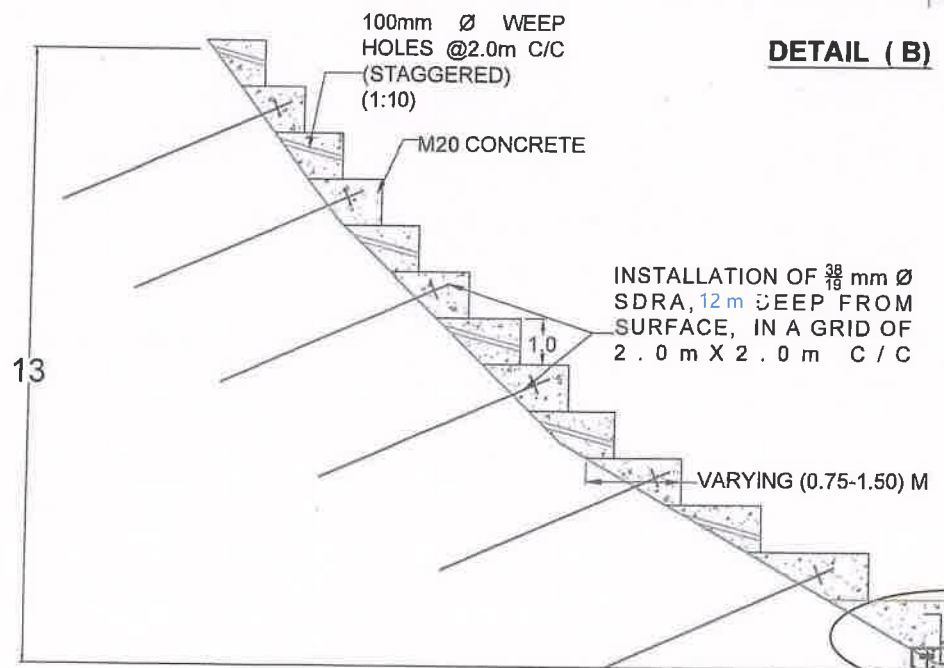
FOR LOCATION BETWEEN CH. 3.750 km TO CH. 3.900 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 3





DETAIL (B)



DETAIL (A)

Detail at (B)

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING.
3. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
4. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PR CUM AND 0.45 RESPECTIVELY.
5. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
RAFT - M25
CC CLADDING - M20.
LEVELING COURSE - M10.
6. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
7. THE GROUTING SHALL BE DONE AT A PRESSURE RANGING FROM 1 TO 3 KG/SQCM.
8. ANY DEVIATION SHALL BE CHECKED AND ADEQUATE MEASURES MUST BE TAKEN BY ENGINEER-IN-CHARGE.
9. FOUNDATION SURFACE UPON WHICH CC CLADDING IS TO BE PLACED SHALL BE APPROVED BY GEOLOGIST/ ENGINEER-IN - CHARGE PRIOR TO START OF WORK.

**TYPICAL DETAILS OF CC CLADDING
REINFORCED WITH SDRA**



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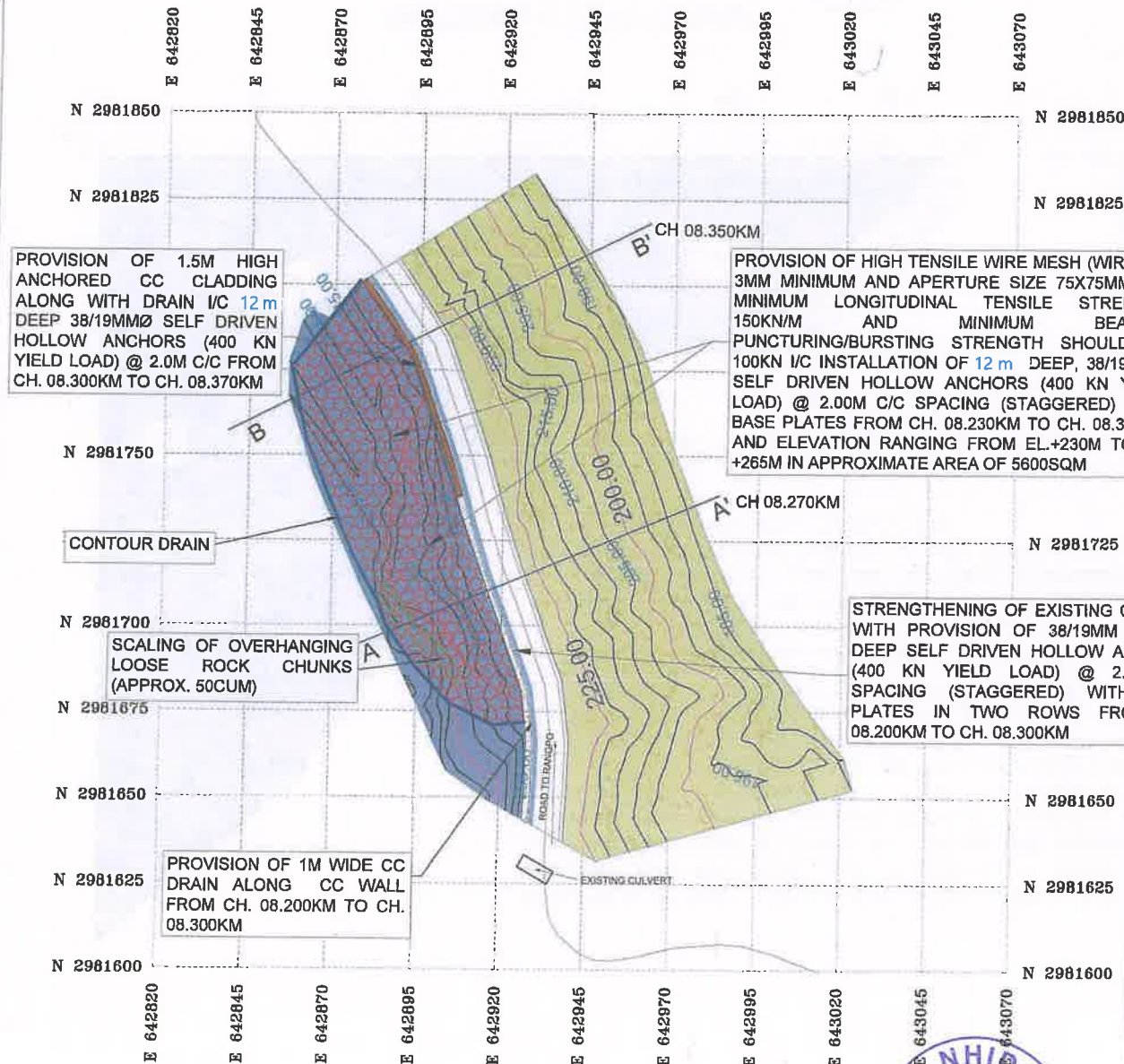
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**PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10**

(TYPICAL DETAIL -1)
STABILITY MEASURES

FOR LOCATION BETWEEN CH.3:750 km TO CH.3:900 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 3 OF 3



LEGENDS

1.	CONTOUR	
2.	OVERBURDEN / DEBRIS	
3.	QUARTZITIC PHYLLITE	
4.	ROAD	
5.	VEGETATION	
6.	SLIDE LINE	
7.	HIGH TENSILE WIRE MESH	
8.	SCALING	
9.	CC WALL	
10.	CC CLADDING	

NOTE:

- ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
- THE REFERENCE OF MEASURES SHALL BE APPLIED IN ACCORDANCE WITH THE GEOGRAPHIC CO-ORDINATES.

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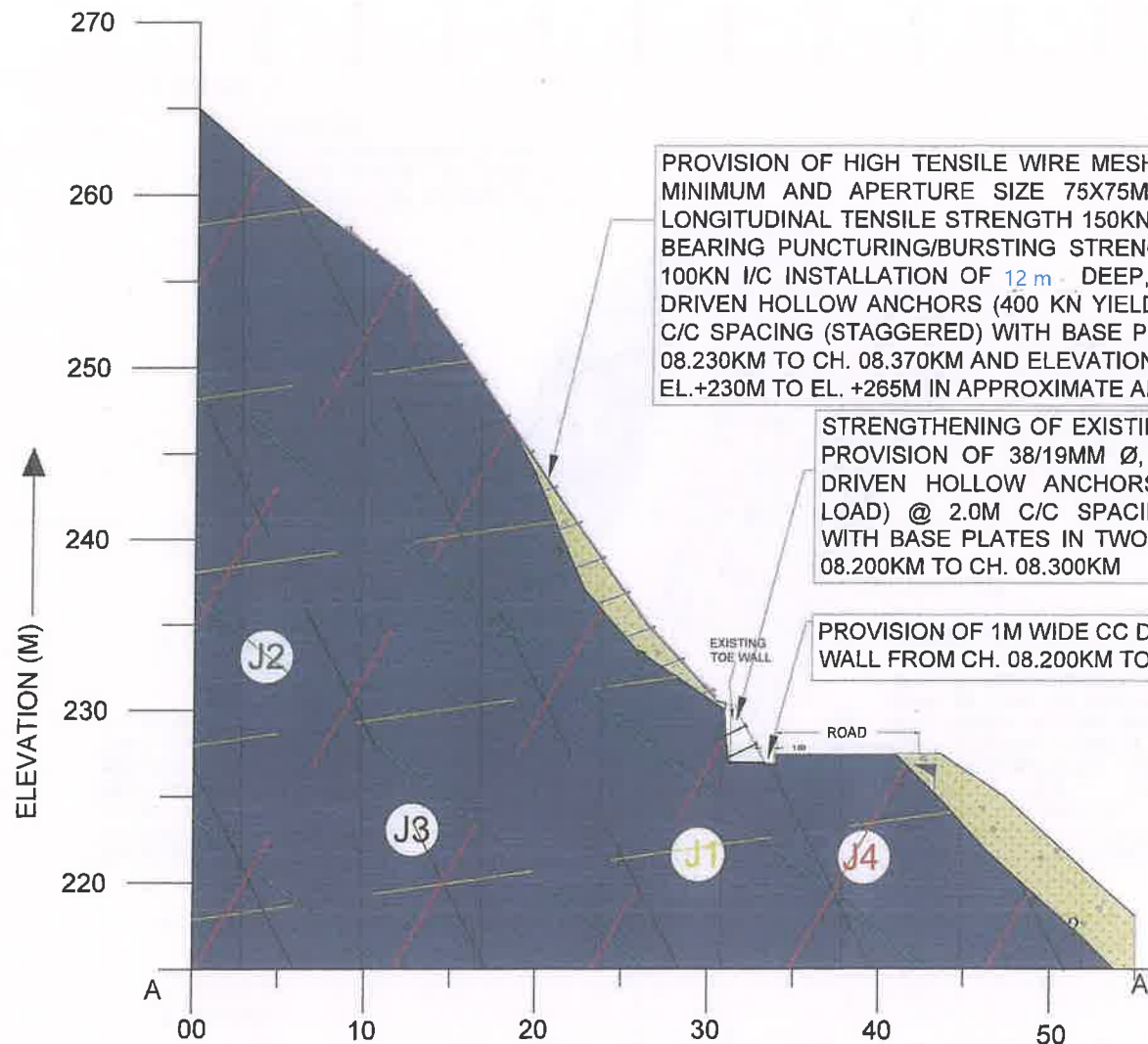
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Ministry of Road Transport and Highways

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH58

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH 8.200KM TO CH. 8.370KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 1 OF 3





PROVISION OF HIGH TENSILE WIRE MESH (WIRE DIA 3MM MINIMUM AND APERTURE SIZE 75X75MM) OF MINIMUM LONGITUDINAL TENSILE STRENGTH 150KN/M AND MINIMUM BEARING PUNCTURING/BURSTING STRENGTH SHOULD BE 100KN I/C INSTALLATION OF 12 m DEEP, 38/19MMØ SELF DRIVEN HOLLOW ANCHORS (400 KN YIELD LOAD) @ 2.00M C/C SPACING (STAGGERED) WITH BASE PLATES FROM CH. 08.230KM TO CH. 08.370KM AND ELEVATION RANGING FROM EL.+230M TO EL. +265M IN APPROXIMATE AREA OF 5600SQM

STRENGTHENING OF EXISTING CC WALL WITH PROVISION OF 38/19MM Ø, 12 m DEEP SELF DRIVEN HOLLOW ANCHORS (400 KN YIELD LOAD) @ 2.0M C/C SPACING (STAGGERED) WITH BASE PLATES IN TWO ROWS FROM CH. 08.200KM TO CH. 08.300KM

PROVISION OF 1M WIDE CC DRAIN ALONG CC WALL FROM CH. 08.200KM TO CH. 08.300KM

LEGENDS

1. OVERBURDEN / DEBRIS	
2. QUARTZITE PHYLLITE	
3. ROAD	
4. TRACES OF JOINTS	
5. SELF DRIVEN HOLLOW ANCHORS	
6. HIGH TENSILE WIRE MESH AND DT MESH	

NOTE:

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.

SCALE : 0 5 10 15 20 25m

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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

(SECTION A-A')
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 8.200KM TO CH. 8.370KM ON
SEVOKE - RANGPOO ROAD, NH-10

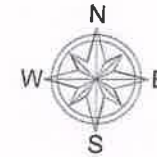
SHEET 2 OF 3

SECTION A-A' (CH 08.270KM)





The logo of NHIDCL (North Hoogly Industrial Development Corporation Limited) is circular. It features the text "NHIDCL" at the top and "PMU SILIGURI" at the bottom. Inside the circle, it says "Floor. Home Square Salugara" and "5th". There is a stylized graphic in the center.



APPLICATION OF HIGH TENSILE ROLLED CABLE NET HAVING APERTURE SIZE NOT MORE THAN 300MM IN ONE DIRECTION AND MINIMUM LONGITUDINAL TENSILE STRENGTH 100 KN/M AND PUNCHING RESISTANCE 200 KN, COMPRISING OF MINIMUM 8MM DIA WIRE ROPE CABLE WITH A MINIMUM BREAKING LOAD OF 40.7KN. THE TENSILE STRENGTH OF WIRE OF THE CABLE SHOULD BE 1770 N/SQMM HAVING CORROSION PROTECTION OF ZN COATING CLASS A OR 95% ZN + 5% AL CLASS-B (GALFAN) COATING AS PER IS/ISO-17746-2016 FOR TREATMENT OF SLOPES INCLUDING (NET, BOUNDARY ROPE & ROPE ANCHOR ETC. COMPRISING OF THE COMPLETE SYSTEM), LABOUR, SPECIAL LABOUR AND T&P REQUIRED TO COMPLETE THE WORK IN ALL RESPECT IN AVG. AREA OF (11437SQM) WITH SECONDARY WIRE MESH OF 50MMX50MM SIZE AND INSTALLATION OF 38/19 MM DIA, 7.0M DEEP SELF DRIVEN HOLLOW ANCHORS (400KN YIELD LOAD) @ 2.0M C/C (STAGGERED) WITH BASE PLATES FROM CH. 11.280 KM TO CH 11.680 KM AT ELEVATION RANGING FROM. EL ±360M TO EL ±400M
REFER DETAIL-D ON SHEET 7 OF 7

APPLICATION OF HIGH TENSILE ROLLED CABLE NET HAVING APERTURE SIZE NOT MORE THAN 300MM IN ONE DIRECTION AND MINIMUM LONGITUDINAL TENSILE STRENGTH 100 KN/M AND PUNCHING RESISTANCE 200 KN, COMPRISING OF MINIMUM 8MM DIA WIRE ROPE CABLE WITH A MINIMUM BREAKING LOAD OF 40.7KN. THE TENSILE STRENGTH OF WIRE OF THE CABLE SHOULD BE 1770 N/SQMM HAVING CORROSION PROTECTION OF ZN COATING CLASS A OR 95% ZN + 5% AL CLASS-B (GALFAN) COATING AS PER IS/ISO-17746-2016 FOR TREATMENT OF SLOPES INCLUDING (NET, BOUNDARY ROPE & ROPE ANCHOR ETC. COMPRISING OF THE COMPLETE SYSTEM), LABOUR, SPECIAL LABOUR AND T&P REQUIRED TO COMPLETE THE WORK IN ALL RESPECT IN AVG. AREA OF (26075SQM) WITH SECONDARY WIRE MESH OF 50MMX50MM SIZE AND INSTALLATION OF 38/19 MM DIA, 7.0M DEEP SELF DRIVEN HOLLOW ANCHORS (400KN YIELD LOAD) @ 2.0M C/C (STAGGERED) WITH BASE PLATES FROM CH. 11.000 KM TO CH 11.750 KM AT ELEVATION RANGING FROM. EL ±280M TO EL ±315M
REFER DETAIL-D ON SHEET 7 OF 7

PROVISION OF 1.5M HIGH 7.45M LONG CC CLADDING WITH DRAIN I/C INSTALLATION OF 38/19 MM DIA., 8.0M DEEP SDRA FROM CH. 11.631 KM TO CH 11.750 KM AND ELEVATION AT EL ±276M
REFER DETAIL-A ON SHEET 4 OF 7

PROVISION OF 6M WIDE, 75M HIGH CC CLADDING I/C INSTALLATION OF 38/19 MM DIA., 7m DEEP SDRA FROM CH. 11.625 KM TO CH 11.631 KM AT ELEVATION RANGING FROM. EL ±275M TO EL ±350M
REFER DETAIL-B ON SHEET 5 OF 7

PROVISION OF 50.0M LENGTH, 6.0M HIGH, 5000KJ ROCKFALL BARRIER SYSTEM BETWEEN CH 11.625 KM TO CH. 11.675KM AND ELEVATION AT EL±350M.
REFER TYPICAL DETAIL-C ON SHEET 6 OF 7

PROVISION OF 80.0M LENGTH, 6.0M HIGH, 5000KJ ROCKFALL BARRIER SYSTEM BETWEEN CH 11.630KM TO CH.11.710KM AND ELEVATION AT EL±320M
REFER TYPICAL DETAIL-C ON SHEET 6 OF 7

LEGEND		
1.	AFFECTED AREA	
2.	NALLA	
3.	STRUCTURE	
4.	CONTOUR	
5.	ROAD	
6.	HT ROLLED CABLE NET	
7.	SDRA 38/19 MM	
8.	1.5 M HIGH CC CLADDING	
9.	75M HIGH CC CHANNEL	
10.	ROCKFALL BARRIER	

NOTES:-

1. ALL DIMENSIONS ARE IN M UNLESS OTHERWISE SPECIFIED.



FOR TENDER PURPOSE ONLY

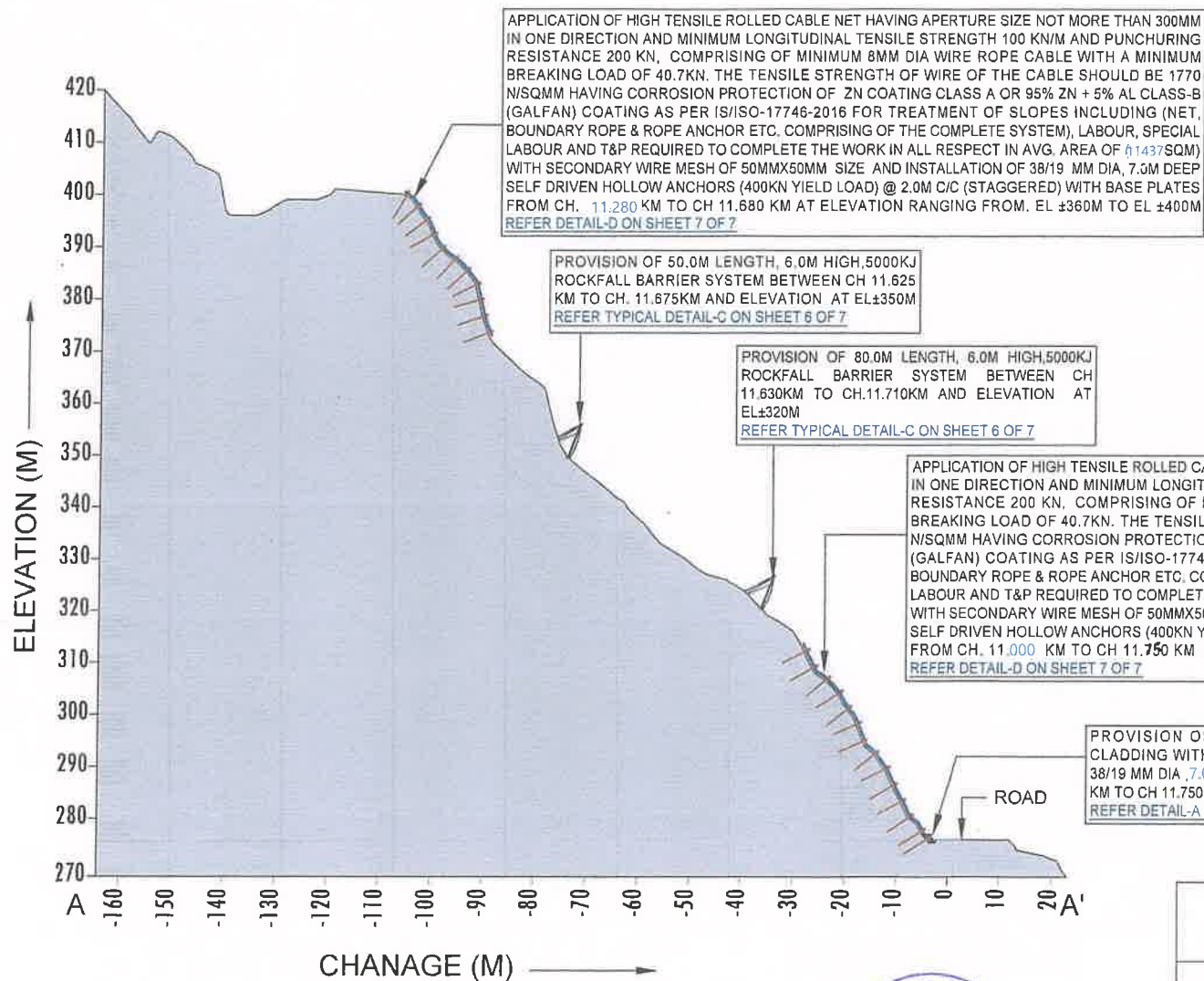


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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 11.000km TO CH.11.875 km ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 1 OF 7



SECTION: A-A'(CH11.640KM)



LEGENDS

1.	QUARTZITE PHYLLITE	
2.	HT ROLLED CABLE NET	
3.	38/19MM SDRA	
4.	ANCHORED CC CLADDING	
5.	ROCKFALL BARRIER	

NOTES:-

1. ALL DIMENSIONS ARE IN M UNLESS OTHERWISE SPECIFIED.

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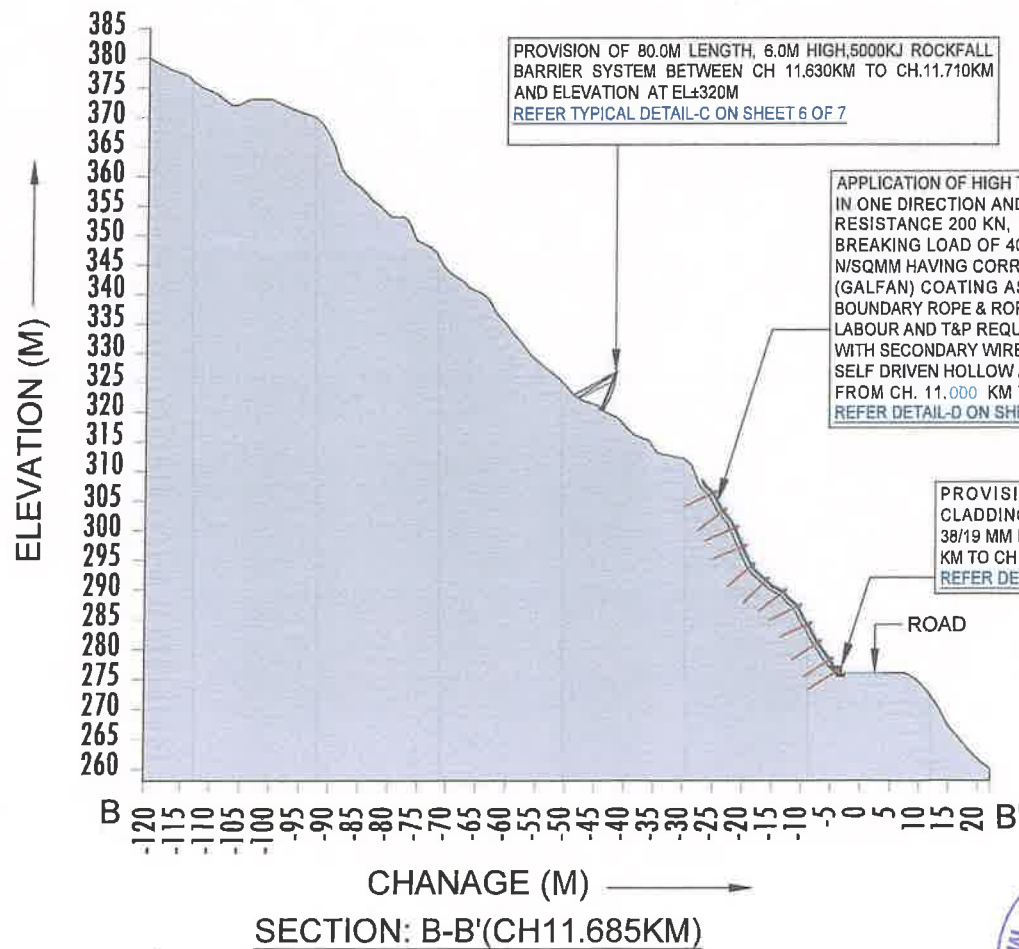


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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH-10

(X-SECTION A-A')
STABILITY MEASURES
FOR LOCATION BETWEEN CH.11.000 km TO CH.11.875 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 7



LEGENDS

1.	QUARTZITE PHYLLITE	
2.	HT ROLLED CABLE NET	
3.	38/19MM SDRA	
4.	ANCHORED CC CLADDING	
5.	ROCKFALL BARRIER	

NOTES:-

1. ALL DIMENSIONS ARE IN M UNLESS OTHERWISE SPECIFIED.

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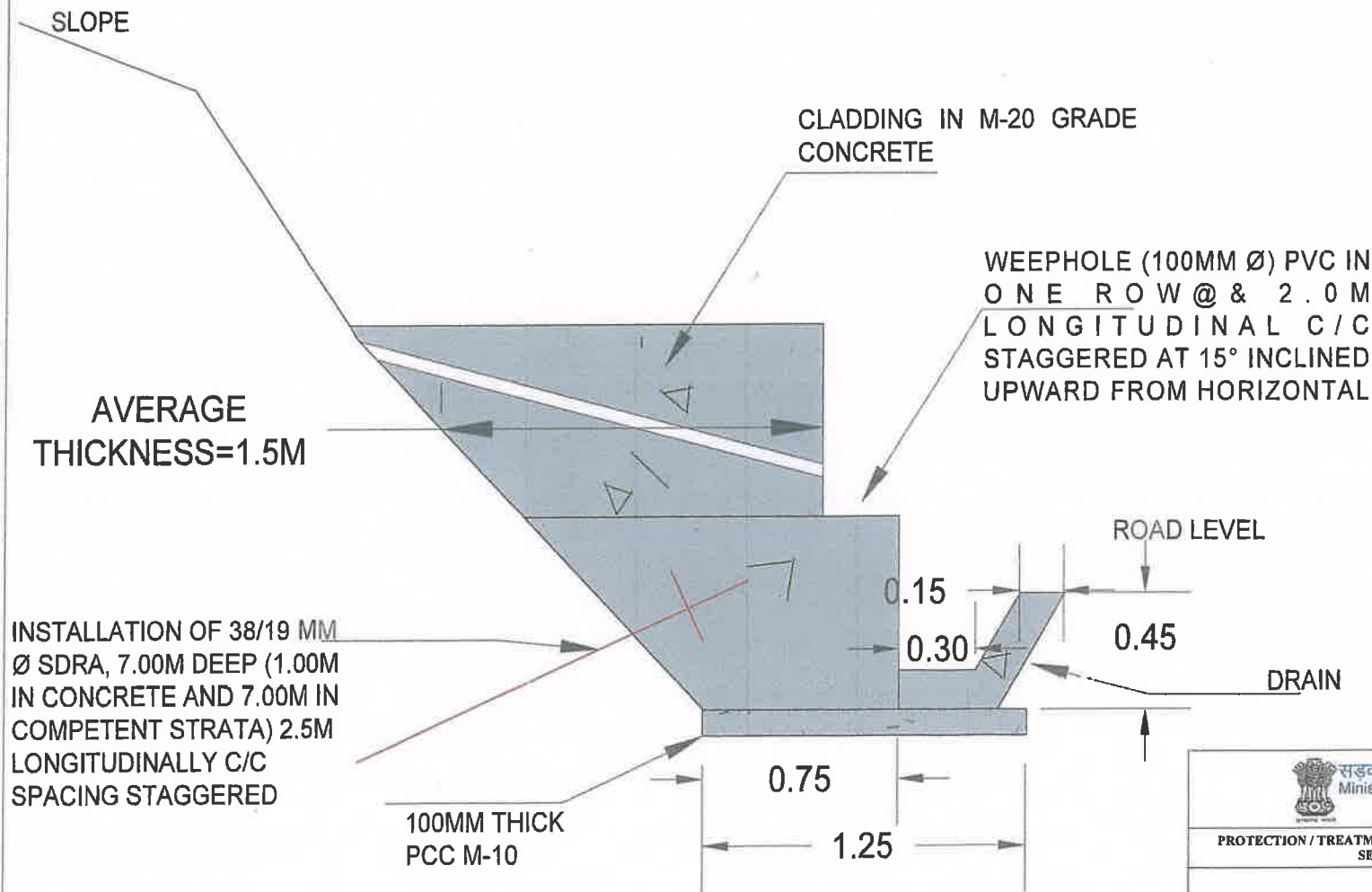
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Ministry of Road Transport and Highways

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(X-SECTION B-B')
STABILITY MEASURES
FOR LOCATION BETWEEN CH.11.000km TO CH. 11.875 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 3 OF 7





NOTES:-

1. ALL DIMENSIONS ARE IN M OTHERWISE SPECIFIED.
2. THE ORIGINAL GROUND PROFILE (ELEVATION AND SECTIONS) ARE TENTATIVE AND MAY VARY AS PER SITE CONDITION.
3. THE CONCRETE SHALL BE PLACED IN SUCH A WAY THAT IT SHOULD HUG THE EXISTING SLOPE FROM SURFACE AND BOTH EDGES COMPLETELY & SHALL BE PLANNED AS PER SITE CONDITIONS.
4. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
5. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PER CUM AND 0.45 RESPECTIVELY.
6. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
7. CC CLADDING - M20.
8. LEVELING COURSE - M10.
9. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.

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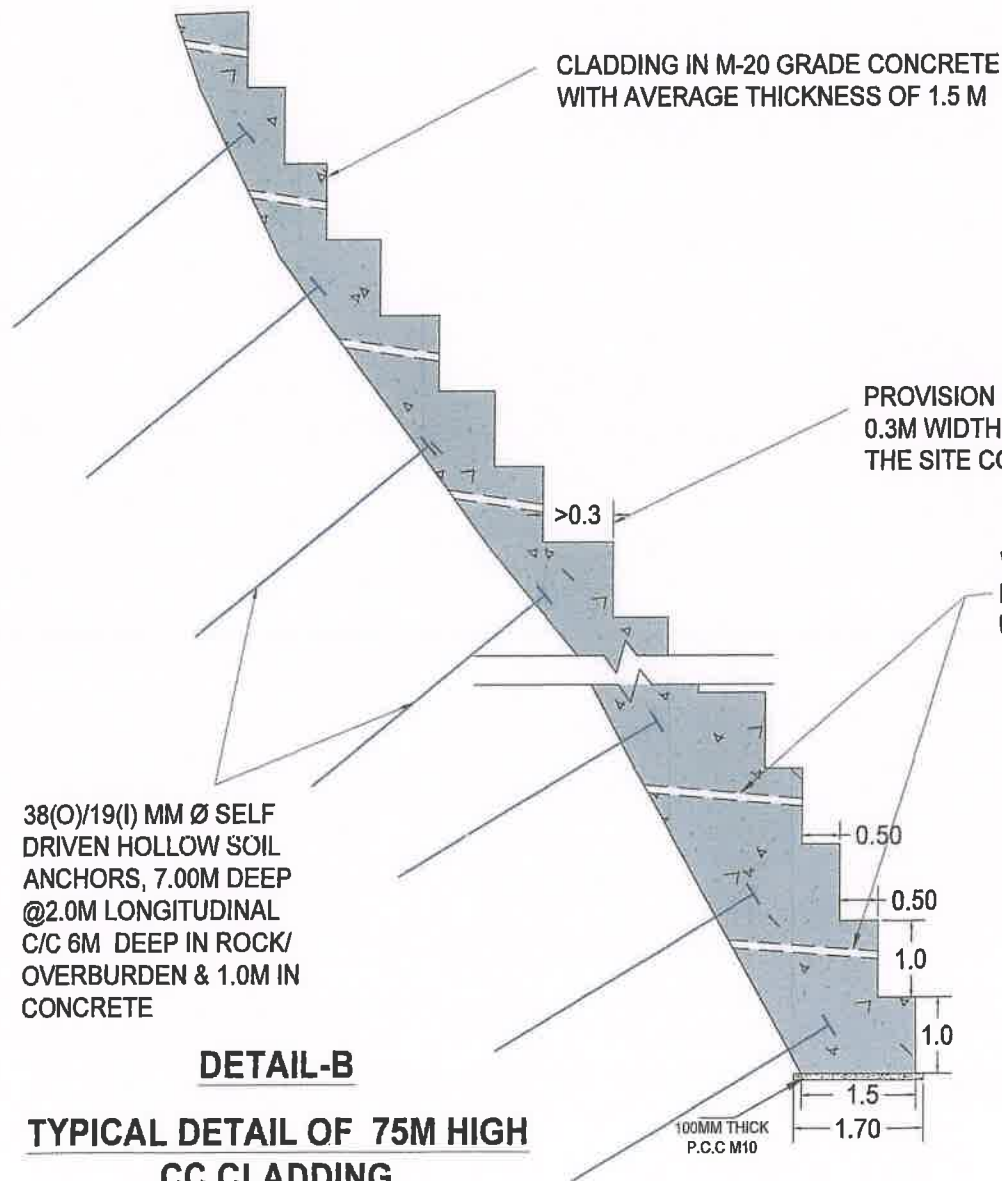
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

DETAIL A
STABILITY MEASURES
FOR LOCATION BETWEEN CH.11.000 km TO CH.11.875 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 4 OF 7





NOTES:-

1. ALL DIMENSIONS ARE IN M OTHERWISE SPECIFIED.
2. THE ORIGINAL GROUND PROFILE (ELEVATION AND SECTIONS) ARE TENTATIVE AND MAY VARY AS PER SITE CONDITION.
3. THE CONCRETE SHALL BE PLACED IN SUCH A WAY THAT IT SHOULD HUG THE EXISTING SLOPE FROM SURFACE AND BOTH EDGES COMPLETELY & SHALL BE PLANNED AS PER SITE CONDITIONS.
4. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
5. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PR CUM AND 0.45 RESPECTIVELY.
6. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
7. CC CLADDING - M20.
8. LEVELING COURSE - M10.
9. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.

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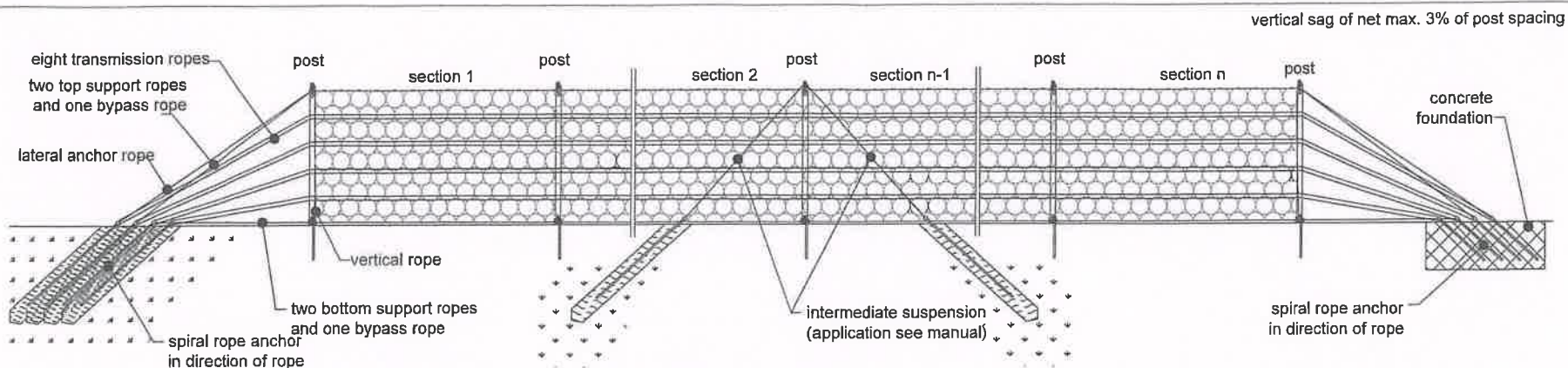
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

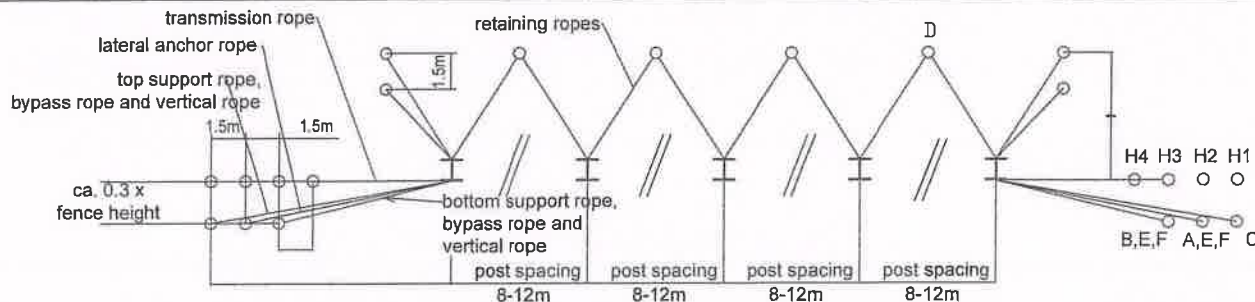
DETAIL B
STABILITY MEASURES
FOR LOCATION BETWEEN CH.11.000 km TO CH.11.875 km ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 5 OF 7

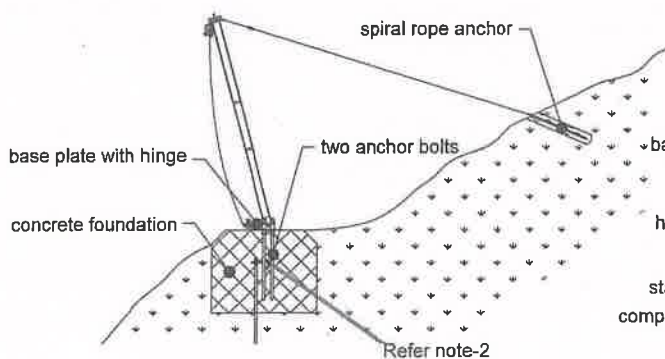




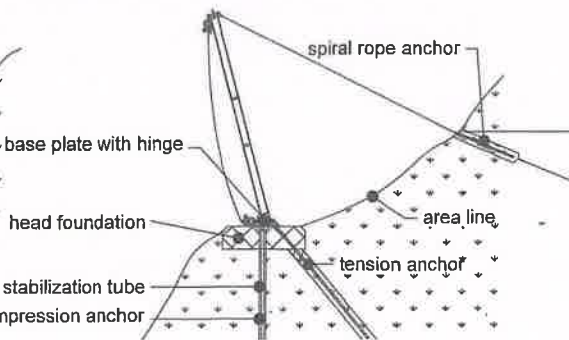
layout of anchor points



anchoring concrete foundation for all types of soil



anchoring in loose soil: with tension and compression anchor
anchoring in bedrock: with rock anchors



NOTE:

1. Inspection and maintenance of such systems are an absolute requirement to ensure the desired protection level. The system safety can also be impaired by events such as natural disasters, inadequate dimensioning parameters or failure to use the prescribed standard components, systems and original parts; and/or corrosion.
2. For anchoring of Rockfall barrier system 6.0m deep 32mm dia solid anchor shall be used for rock strata and 8.0m deep 38 mm dia SDR4 shall be used for consolidated debris strata.

ROCKFALL PROTECTION BARRIER 5000KJ SYSTEM DETAIL- C

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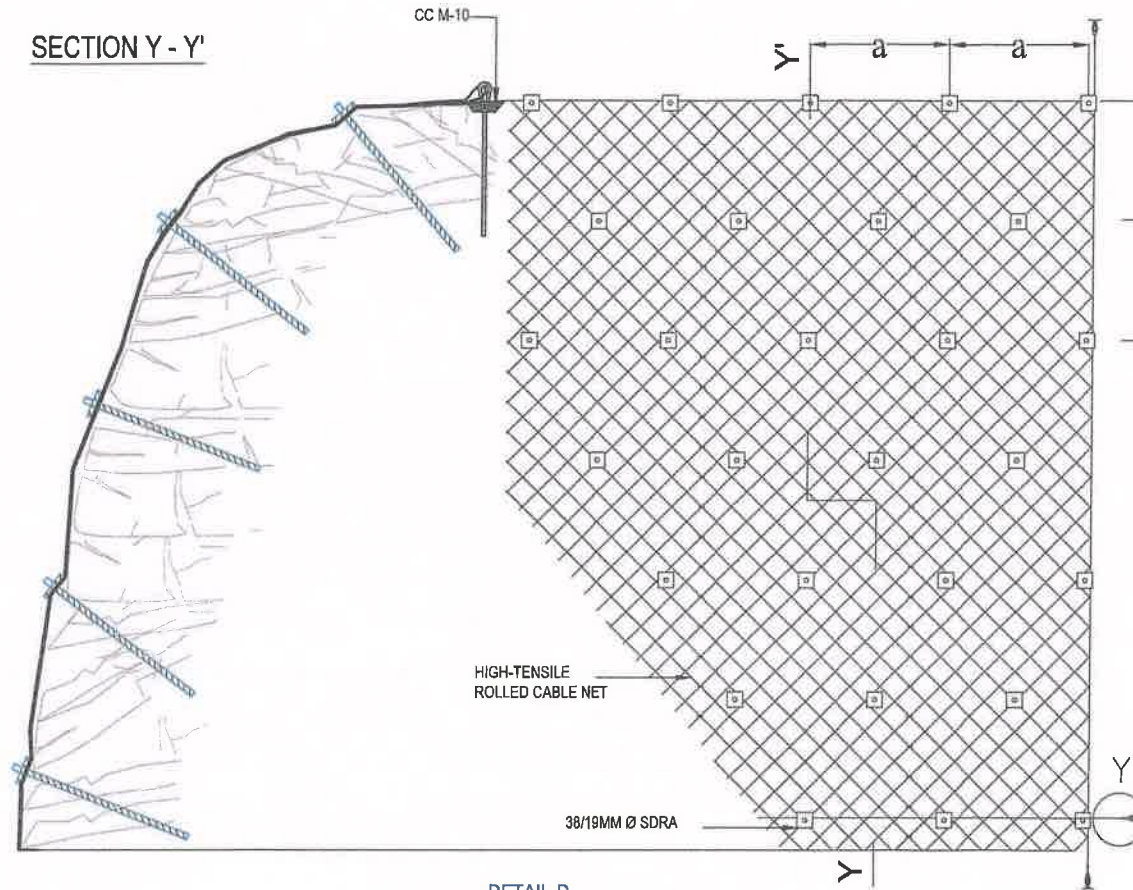
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

DETAIL C
STABILITY MEASURES
FOR LOCATION BETWEEN CH.11.000km TO CH.11.875 km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 6 OF 7

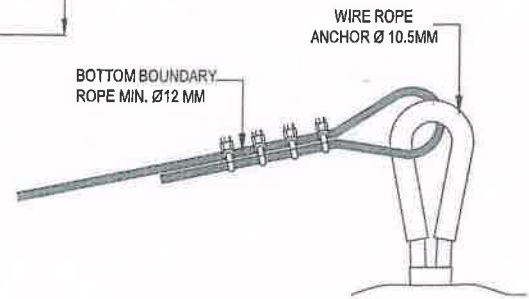


SECTION Y - Y'



DETAIL-D

TYPICAL DETAIL OF HT ROLLED CABLE NET & ANCHORS



DETAIL-Y

1. THE GENERAL SPECIFICATIONS OF THE SYSTEM SHALL BE AS BELOW. HOWEVER, MENTIONED BELOW ARE THE MINIMUM VALUES.
2. THE HIGH-TENSILE ROLLED CABLE NETS SHOULD INCLUDE THE SECONDARY MESH.
3. FOR THE INSTALLATION OF HIGH-TENSILE ROLLED CABLE NETS STANDARD SUPPORT ROPES, SEAMING ROPES AND SHACKLES SHOULD BE USED. FOR THE HORIZONTAL CONNECTION STANDARD SHACKLES OR LACES SHALL BE USED.
 - a. MINIMUM TENSILE STRENGTH OF THE NET SHALL BE 100 KN/M;
 - b. MINIMUM DIA OF CABLE SHALL BE 8MM HAVING BREAKING LOAD OF 40.7 KN
 - c. COMPOUND FOR CORROSION PROTECTION : 95% ZN AND 5% AL CLASS B OR ZINC COATING CLASS A AS PER IS/ISO-17746-2016.
 - d. AVERAGE LENGTH OF THE 38/19MM DIA. 40 CR SDRA : 7.0 M (6.7M GROUTED+0.3M ABOVE SLOPE SURFACE)
 - e. DRILL BIT SIZE : 76MM
 - f. GRID PATTERN : STAGGERED
 - g. SPACING OF ANCHORS, i.e. (a=b) : 2.0M (AVG.) (DEPENDING ON THE SLOPE ANGLE/ PROFILE, STRATA AT SITE)
 - h. GROUTING MATERIAL : CEMENT GROUT
4. SECONDARY MESH: SIZE OF MESH SHALL BE 50MMX50MM, COMPRISING OF 2.7MM DIA GI WIRE HAVING YIELD STRENGTH OF 400-550 N/MM² AND CORROSION PROTECTION ZN COATING OF 240 G/M².

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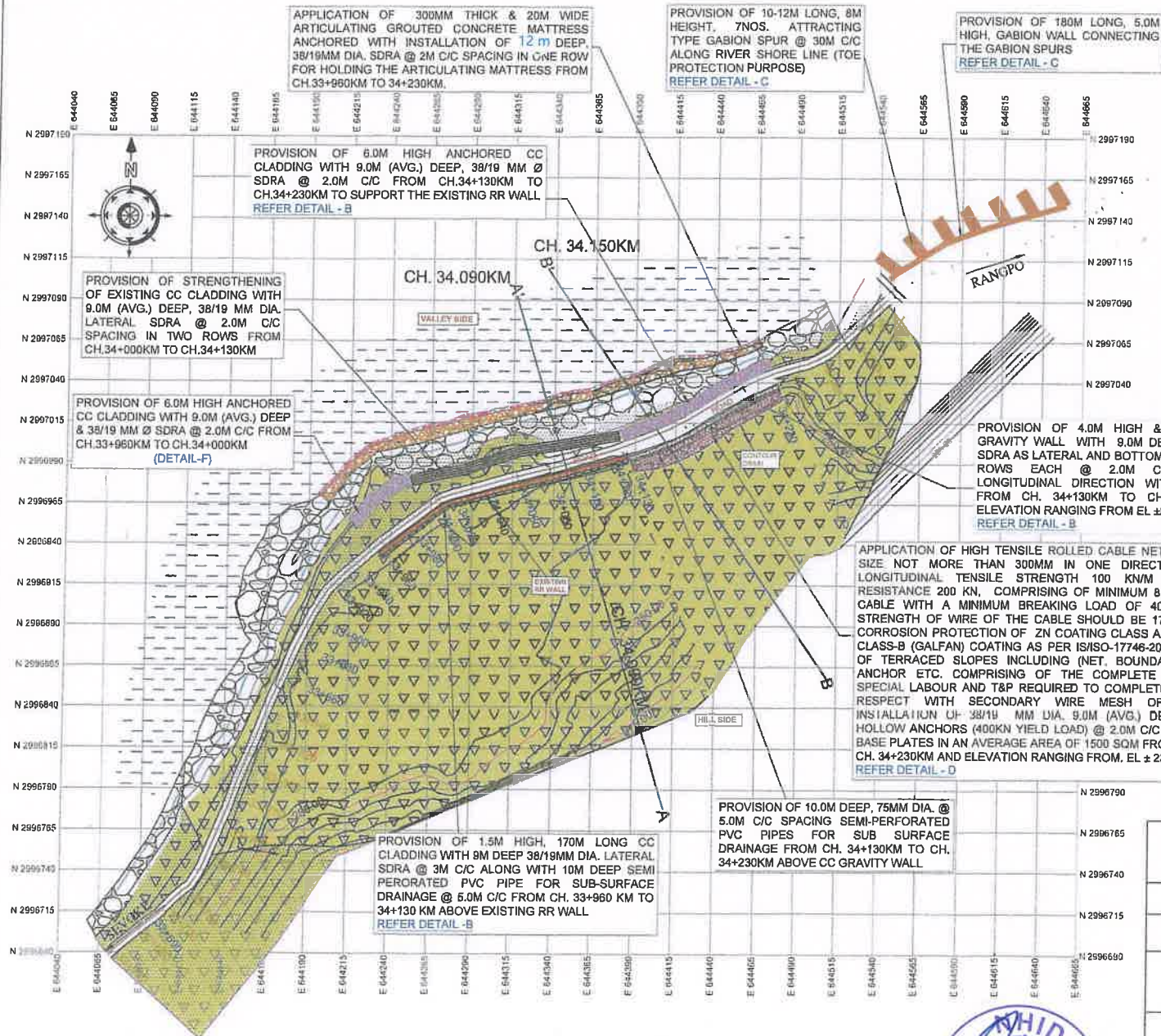
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

DETAIL D
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 11.000km TO CH. 11.875km ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 7 OF 7





LEGENDS

1. CONTOUR	
2. OVERBURDEN	
3. RBM	
4. ROAD	
5. RIVER	
6. ARTICULATING GROUTED CONCRETE MATTRESS	
7. CC WALL WITH SDRA	
8. CC GRAVITY WALL	
9. ANCHORED CC CLADDING	
10. GABION WALL CONNECTING THE GABION SPURS	
11. GABION SPUR	

SCALE : 0 10 20 30 40 50m

FOR TENDER PURPOSE ONLY



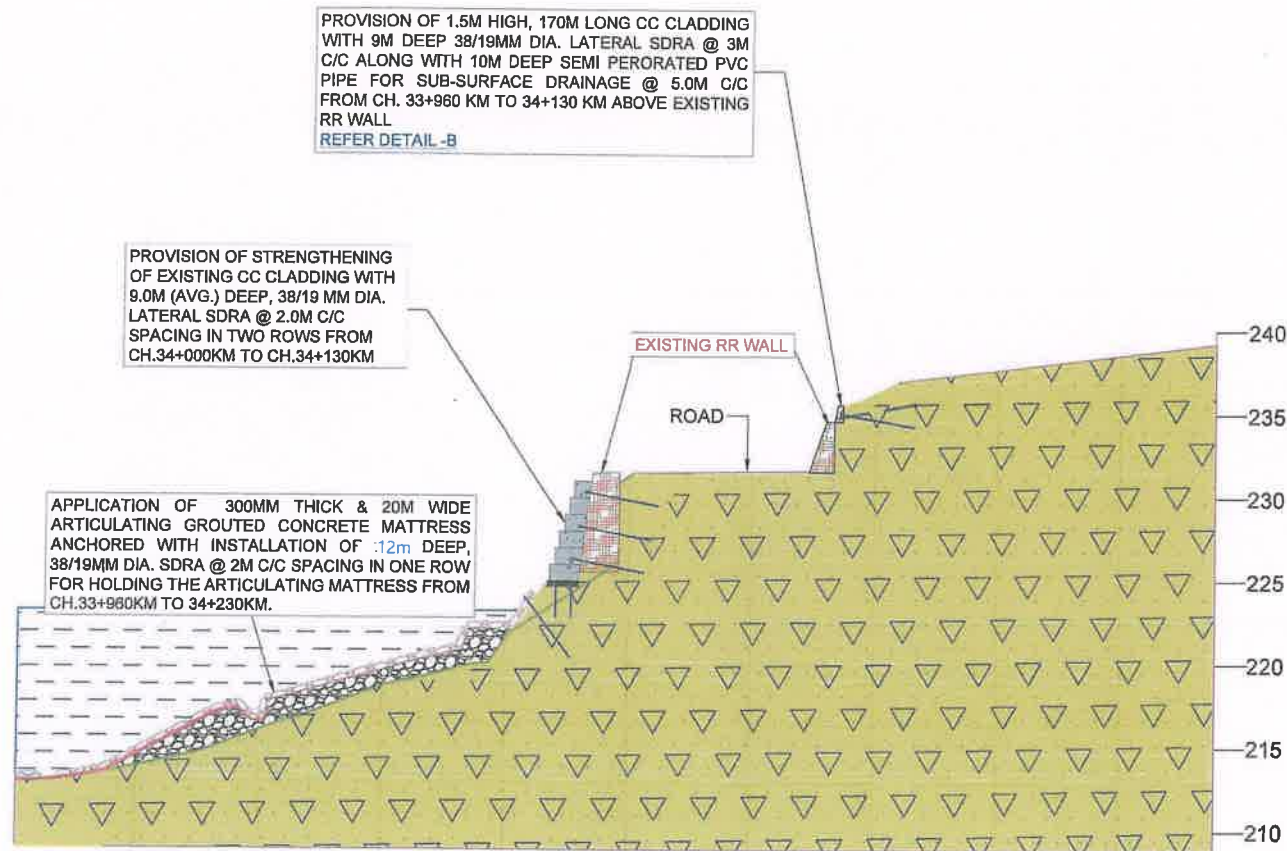
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH 33 960KM TO CH 34 230KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 1 OF 7





SECTION A-A' (CH. 34.090KM)

LEGENDS	
1. OVERBURDEN	
2. RBM	
3. EXISTING RR WALL	
4. ANCHORED CC CLADDING	
5. ARTICULATING GROUTED CONCRETE MATTRESS	
6. 1.0M HIGH CC WALL	

FOR TENDER PURPOSE ONLY



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Ministry of Road Transport and Highways

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(SECTION - A)

STABILITY MEASURES

FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 7



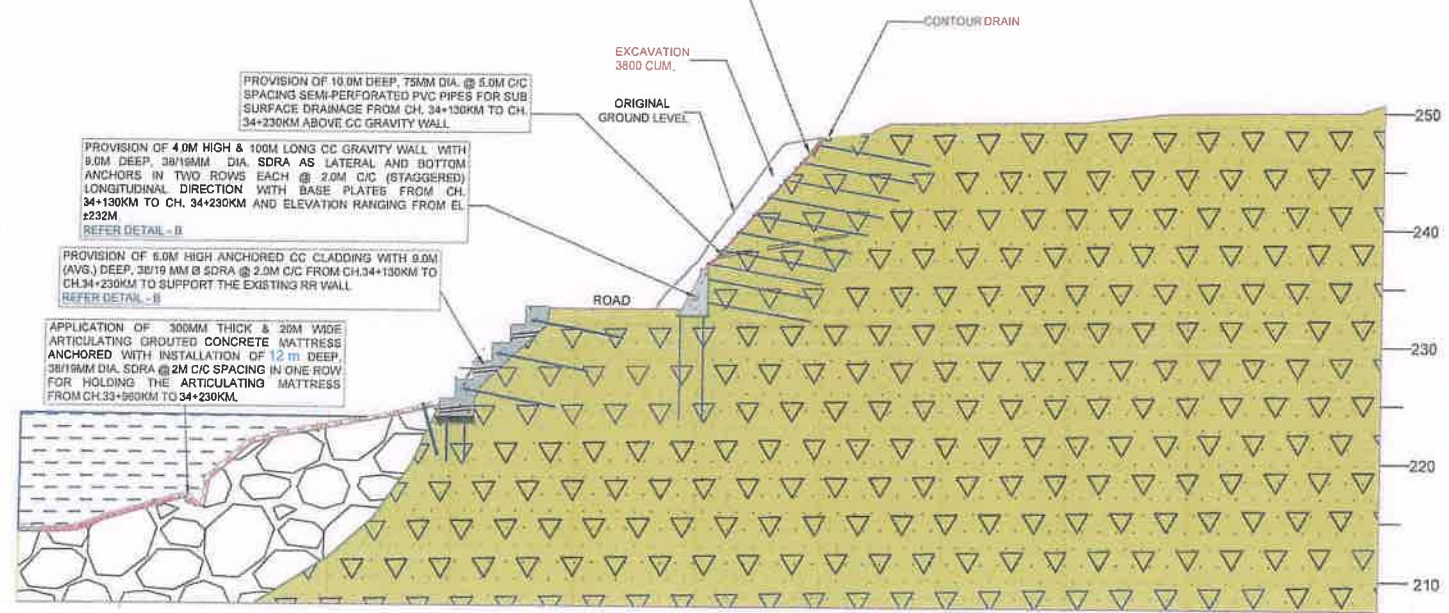
APPLICATION OF HIGH TENSILE ROLLED CABLE NET HAVING APERTURE SIZE NOT MORE THAN 300MM IN ONE DIRECTION AND MINIMUM LONGITUDINAL TENSILE STRENGTH 100 KN/M AND PUNCTURING RESISTANCE 200 KN, COMPRISING OF MINIMUM 8MM DIA WIRE ROPE CABLE WITH A MINIMUM BREAKING LOAD OF 40.7KN. THE TENSILE STRENGTH OF WIRE OF THE CABLE SHOULD BE 1770 N/50MM HAVING CORROSION PROTECTION OF ZN COATING CLASS A OR 95% ZN + 5% AL CLASS-B (GALFAN) COATING AS PER IS/ISO-17746-2016 FOR TREATMENT OF TERRACED SLOPES INCLUDING (NET, BOUNDARY ROPE & ROPE ANCHOR ETC, COMPRISING OF THE COMPLETE SYSTEM), LABOUR, SPECIAL LABOUR AND T&P REQUIRED TO COMPLETE THE WORK IN ALL RESPECT WITH SECONDARY WIRE MESH OF 50MMX50MM I/C INSTALLATION OF 38/19 MM DIA, 9.0M (AVG.) DEEP SELF DRILLING HOLLOW ANCHORS (400KN YIELD LOAD) @ 2.0M C/C (STAGGERED) WITH BASE PLATES IN AN AVERAGE AREA OF 1000 SQM FROM CH. 34+130KM TO CH. 34+230KM AND ELEVATION RANGING FROM EL. ± 235M TO EL. ± 250M
REFER DETAIL - D

PROVISION OF 10.0M DEEP, 75MM DIA. @ 5.0M C/C SPACING SEMI-PERFORATED PVC PIPES FOR SUB SURFACE DRAINAGE FROM CH. 34+130KM TO CH. 34+230KM ABOVE CC GRAVITY WALL.

PROVISION OF 4.0M HIGH & 100M LONG CC GRAVITY WALL WITH 9.0M DEEP, 38/19MM DIA SDRA AS LATERAL AND BOTTOM ANCHORS IN TWO ROWS EACH @ 2.0M C/C (STAGGERED) LONGITUDINAL DIRECTION WITH BASE PLATES FROM CH. 34+130KM TO CH. 34+230KM AND ELEVATION RANGING FROM EL. ± 232M
REFER DETAIL - B

PROVISION OF 6.0M HIGH ANCHORED CC CLADDING WITH 9.0M (AVG.) DEEP, 38/19 MM Ø SDRA @ 2.0M C/C FROM CH.34+130KM TO CH.34+230KM TO SUPPORT THE EXISTING RR WALL.
REFER DETAIL - B

APPLICATION OF 300MM THICK & 20M WIDE ARTICULATING GROUTED CONCRETE MATTRESS ANCHORED WITH INSTALLATION OF 12m DEEP, 38/19MM DIA. SDRA @ 2M C/C SPACING IN ONE ROW FOR HOLDING THE ARTICULATING MATTRESS FROM CH.33+960KM TO 34+230KM.



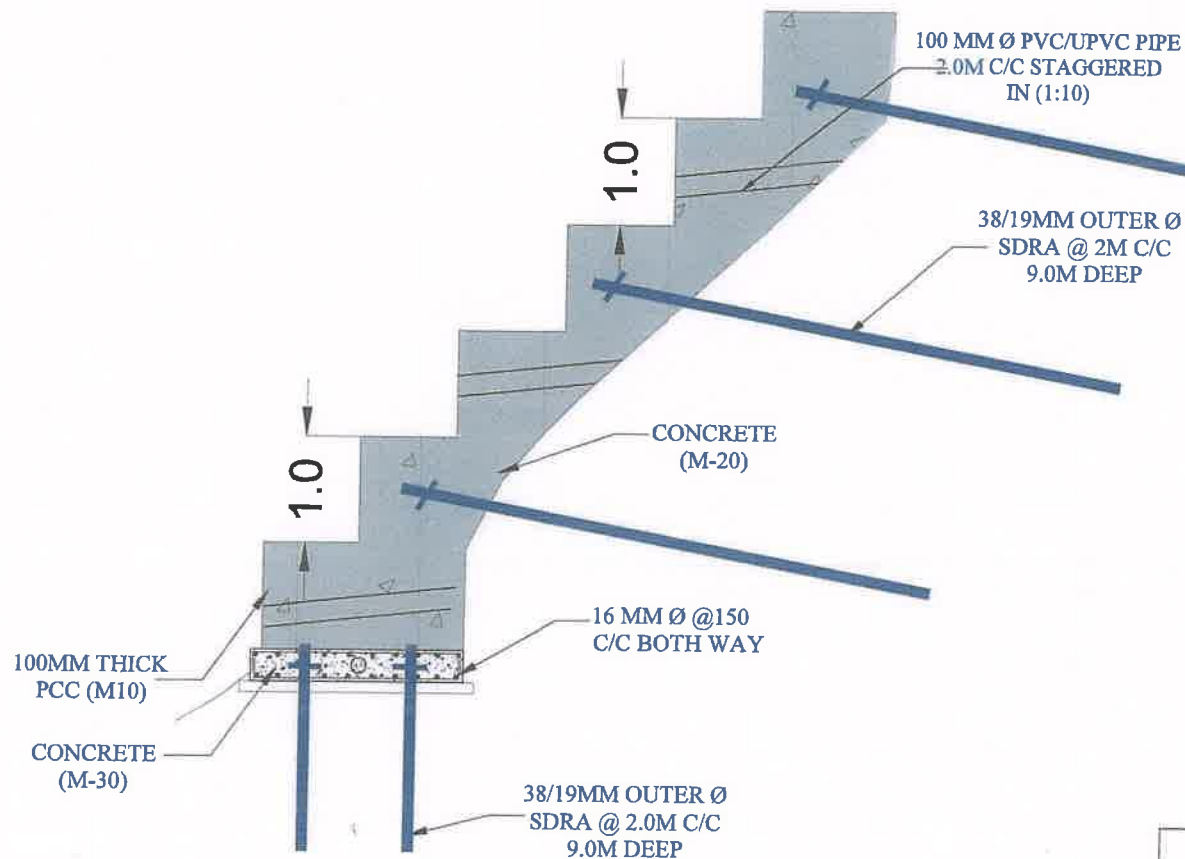
LEGENDS	
1.	OVERBURDEN
2.	RBM
3.	CC GRAVITY WALL WITH SDRA
4.	HIGH TENSILE ROLLED CABLE NET
5.	ARTICULATING GROUTED CONCRETE MATTRESS

SECTION B-B' (CH. 34.150KM)

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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10	
(SECTION- B) STABILITY MEASURES FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON SEVOKE - RANGPOO ROAD, NH-10	
SHEET 3 OF 7	



TYPICAL DETAIL OF 6.0M HIGH CC CLADDING

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING.
3. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
4. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PR CUM AND 0.45 RESPECTIVELY.
5. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
LEVELING COURSE - M10.
RCC RAFT - M30.
6. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
7. ANY DEVIATION SHALL BE CHECKED AND ADEQUATE MEASURES MUST BE TAKEN BY ENGINEER-IN-CHARGE.

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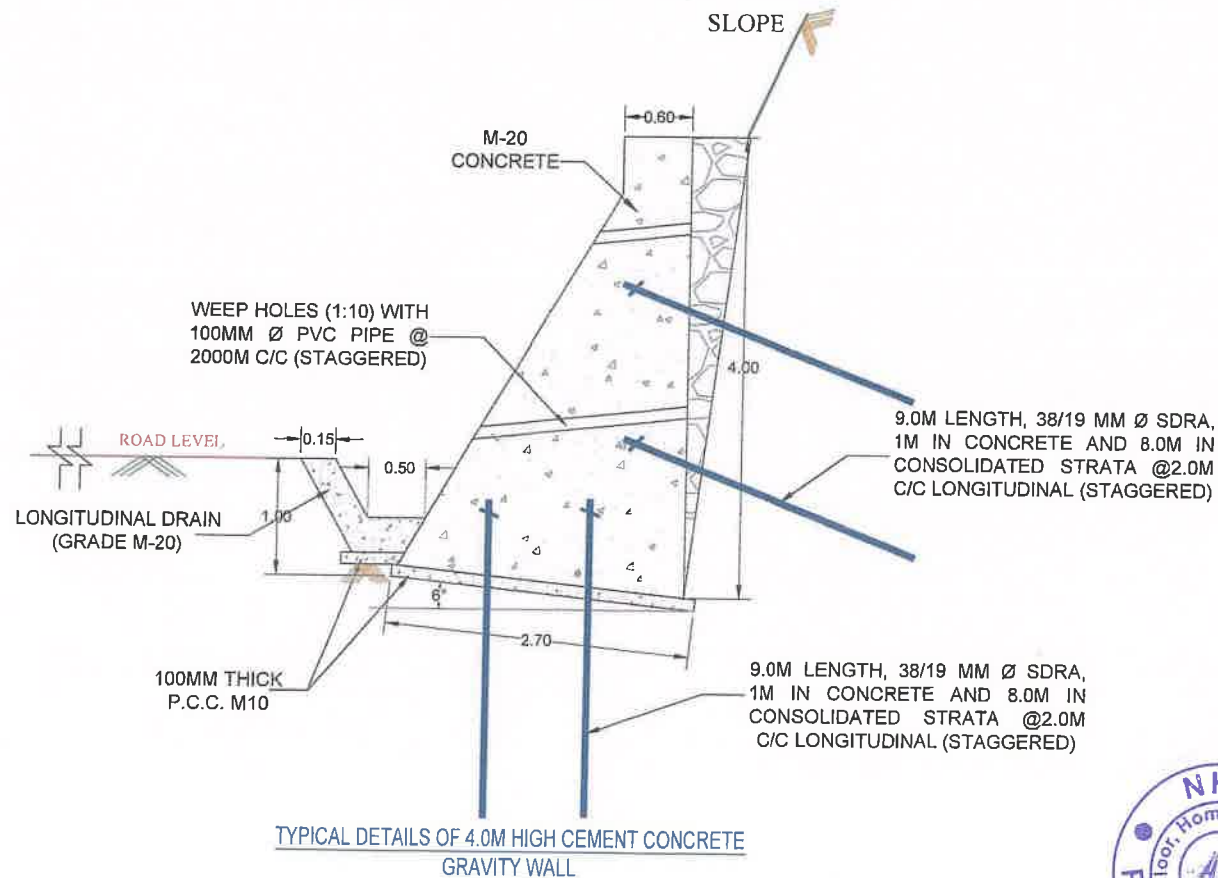
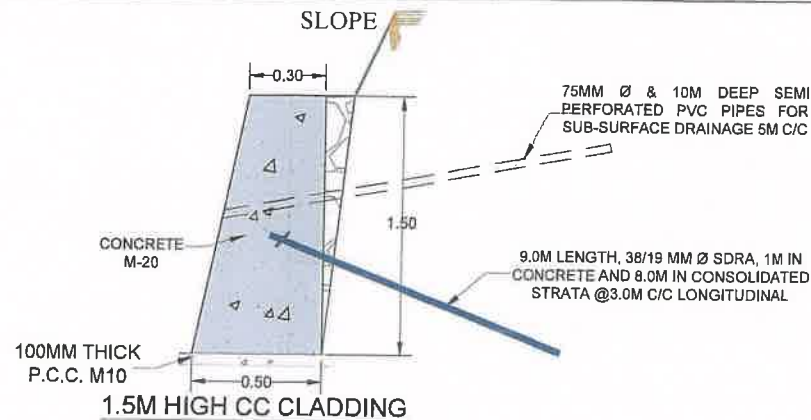
(DETAIL - A)

STABILITY MEASURES

FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 4 OF 7





NOTES:-

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
3. DOWEL BARS SHALL BE PROVIDED BETWEEN EVERY CONSECUTIVE LIFT OF CONCRETE WORK AS PER IS CODE GUIDELINES TO ENSURE MONOLITHIC CONSTRUCTION.
4. EXCAVATION FOR FOUNDATION SHALL BE DONE IN 6-8M LONG STRETCHES ONLY & TREATMENT SHALL BE COMPLETED BEFORE START OF NEW PATCH.
5. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
6. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PR CUM AND 0.45 RESPECTIVELY.
7. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
CC GRAVITY WALL - M20.
LEVELLING COURSE - M10.
8. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
9. SELF DRIVEN HOLLOW SOIL/ ROCK ANCHORS 38MM (O)/19MM(I) Ø HAVING YIELD LOAD OF 400KN SHALL BE INSERTED TO MAX. 8M DEEP IN INTO COMPATIBLE SLOPE MASS, AND SHALL BE AVOIDED INSERTING INTO SHEAR ZONE.
10. THE GROUTING SHALL BE DONE AT A PRESSURE RANGING FROM 1 TO 3 KG/SQCM.
11. LAPS AND ANCHORAGE LENGTH SHALL BE AS PER IS 456(LATEST).
12. LAPS SHALL BE STAGGERED.
13. EXCAVATION SHALL BE DONE IN 3-5M STRETCHES ONLY & TREATMENT SHALL BE COMPLETED BEFORE START OF NEW PATCH.
14. CONCRETE SURFACE SHOULD BE ROUGHED AND CLEAN BEFORE POURING THE CONCRETE/FRESH CONCRETE.
15. FOUNDATION SURFACE UPON WHICH CC WALL IS TO BE PLACED SHALL BE APPROVED BY GEOLOGIST/ ENGINEER-IN - CHARGE PRIOR TO START OF WORK.

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SEVOKE - RANGPOO ROAD NH10

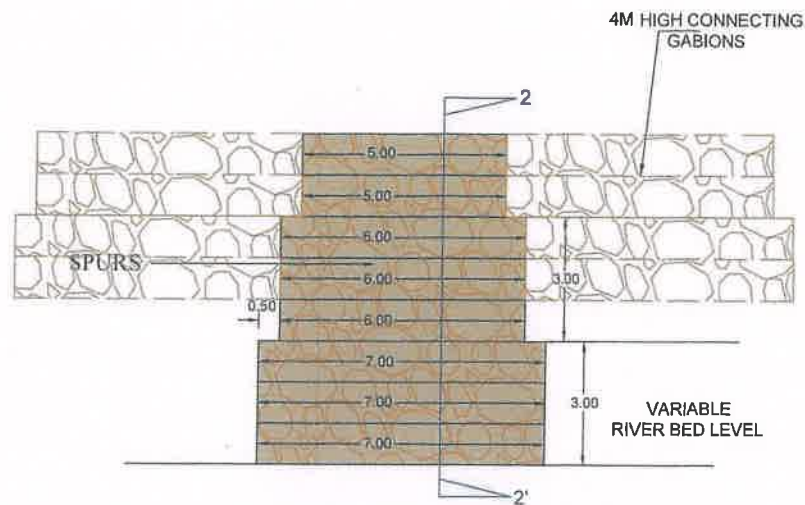
(DETAIL-B)

STABILITY MEASURES

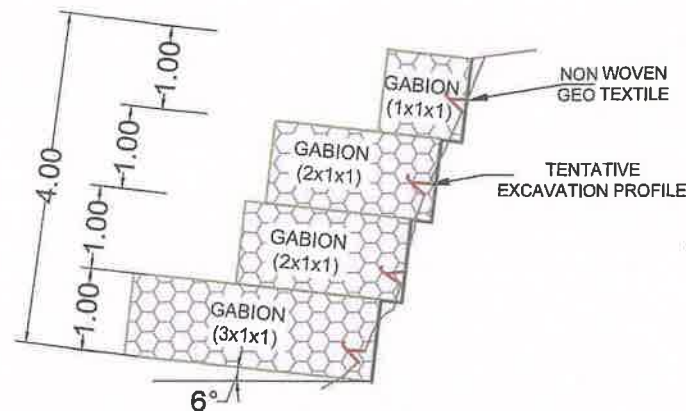
FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 5 OF 7

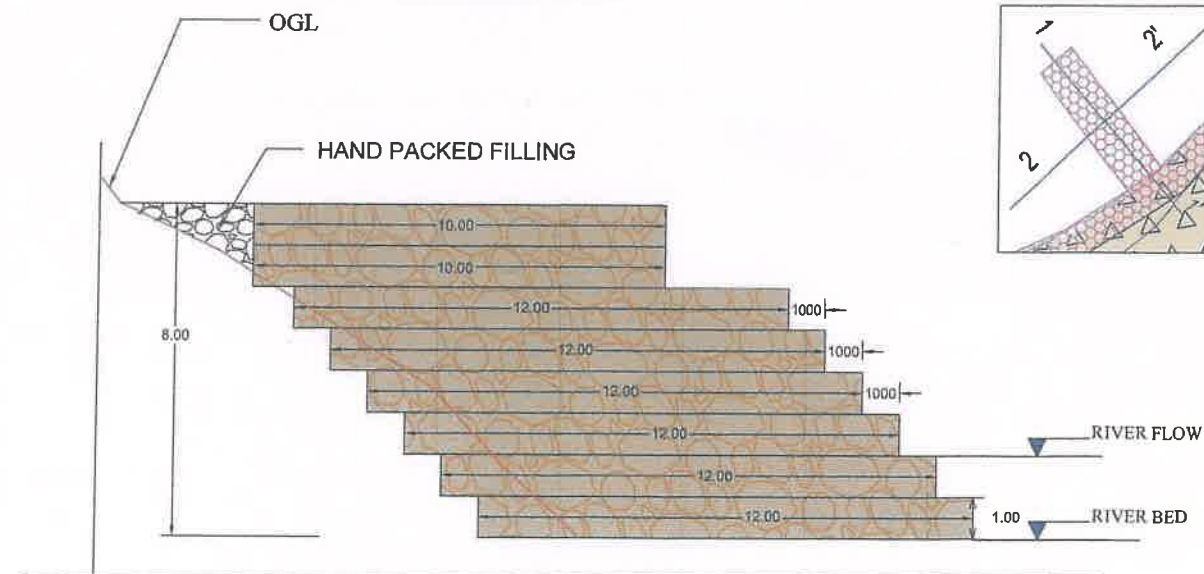




FRONT ELEVATION OF SPURS



TYPICAL SECTION OF 4M HIGH GABION WALL

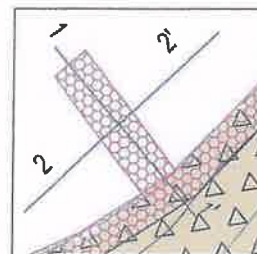


SECTIONAL VIEW AT 1-1'

TYPICAL SECTION OF 8.00M HIGH ATTRACTING GABION SPURS (VALLEY SIDE)

NOTES:

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. FOUNDATION SURFACE UPON WHICH GABION STRUCTURE BE PLACED BE TAKEN IN A STRECH OF 8-10M AT ONCE. SHALL BE APPROVED BY ENGINEER-IN-CHARGE PRIOR TO START OF WORK
3. ALL GABIONS SHALL BE CONFIRMING TO IS:16014 (LATEST) ENGINEER IN CHARGE MAY DECIDE GABION SIZE AS PER BIS CODE
4. FILL MATERIAL SHALL COMPRISE COBBLES OR ROCK FRAGMENTS THAT ARE DENSE, SOUND, RESISTANT TO ABRASION COBBLES AND ROCKS SHALL BE FREE OF CRACKS, SEAMS AND OTHER DEFECTS THAT WOULD INCREASE THE SUSCEPTIBILITY TO DESTRUCTION BY EROSION ACTION. INDIVIDUAL COBBLES OR ROCK FRAGMENTS SHALL BE ROUNDED AND WELL GRADED IN SIZE BETWEEN 120MM AND 200MM FLAT ROCK FRAGMENTS SHALL NOT BE USED.
5. AS PER IS CODE 16014 AND IRC-SP-116 LAYING OF GABION SHALL BE DONE



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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(DETAIL - C)

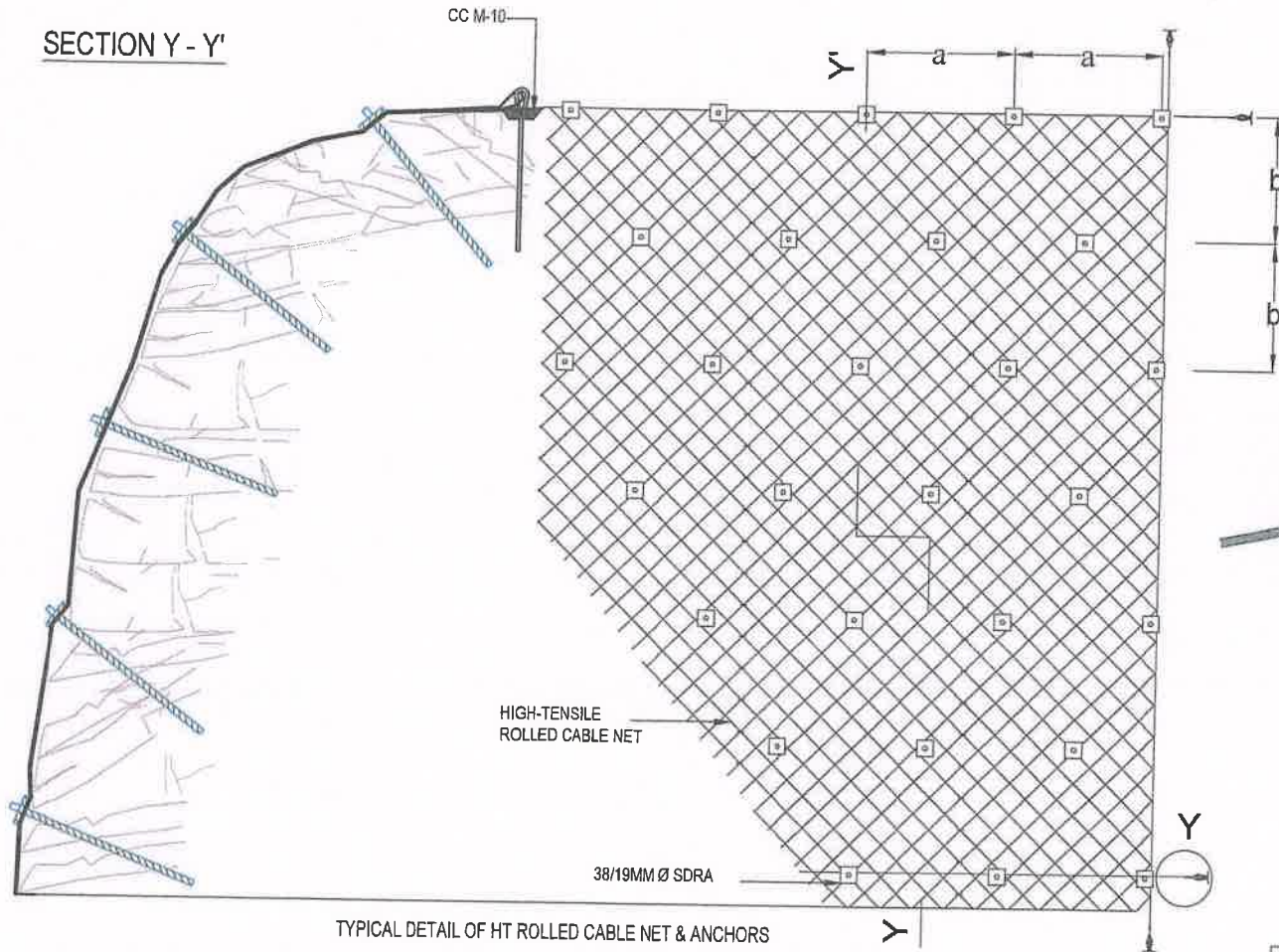
STABILITY MEASURES

FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON
SEVOKE - RANGPOO ROAD, NH-10

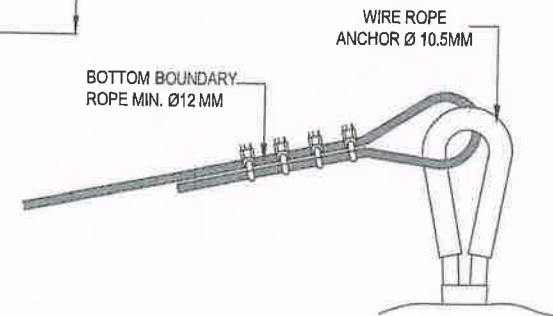
SHEET 6 OF 7



SECTION Y - Y'



TYPICAL DETAIL OF HT ROLLED CABLE NET & ANCHORS



DETAIL-Y

- THE GENERAL SPECIFICATIONS OF THE SYSTEM SHALL BE AS BELOW. HOWEVER, MENTIONED BELOW ARE THE MINIMUM VALUES.
- THE HIGH-TENSILE ROLLED CABLE NETS SHOULD INCLUDE THE SECONDARY MESH.
- FOR THE INSTALLATION OF HIGH-TENSILE ROLLED CABLE NETS STANDARD SUPPORT ROPES, SEAMING ROPES AND SHACKLES SHOULD BE USED. FOR THE HORIZONTAL CONNECTION STANDARD SHACKLES OR LACES SHALL BE USED.
 - MINIMUM TENSILE STRENGTH OF THE NET SHALL BE 100 KN/M;
 - MINIMUM DIA OF CABLE SHALL BE 8MM HAVING BREAKING LOAD OF 40.7 KN
 - COMPOUND FOR CORROSION PROTECTION : 95% ZN AND 5% AL CLASS B OR ZINC COATING CLASS A AS PER IS/ISO-17746-2016.
 - AVERAGE LENGTH OF THE 38/19MM DIA. 40 CR SDRA : 9.0 M (8.7M GROUTED+0.3M ABOVE SLOPE SURFACE)
 - DRILL BIT SIZE : 75MM
 - GRID PATTERN : STAGGERED
 - SPACING OF ANCHORS, i.e. (a=b) : 2.0M (AVG.) (DEPENDING ON THE SLOPE ANGLE/ PROFILE, STRATA AT SITE)
 - GROUTING MATERIAL : CEMENT GROUT
- SECONDARY MESH: SIZE OF MESH SHALL BE 50MMX50MM, COMPRISING OF 2.7MM DIA GI WIRE HAVING YIELD STRENGTH OF 400-550 NMM2 AND CORROSION PROTECTION ZN COATING OF 240 G/M2.

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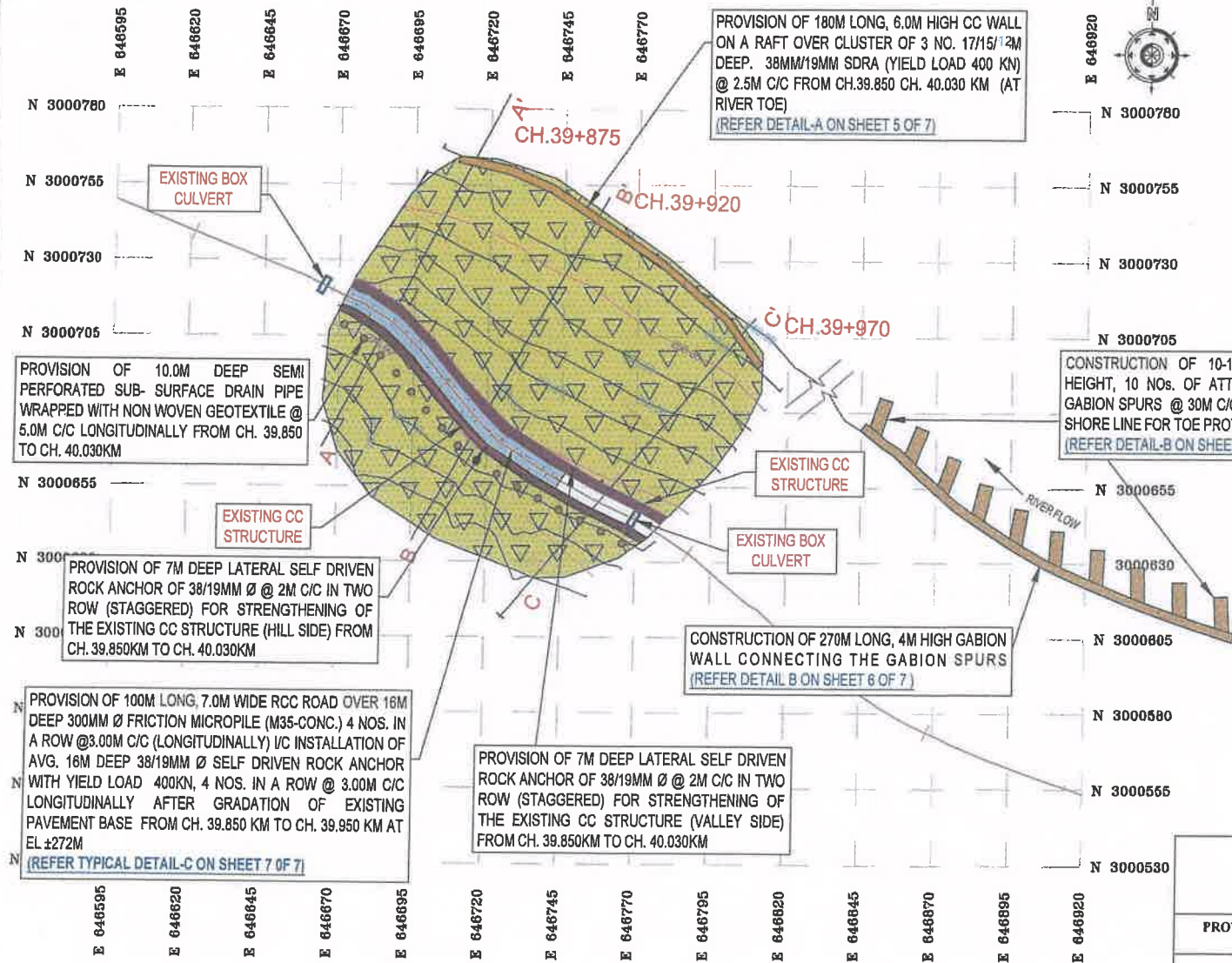
(JICAIL - D)

STABILITY MEASURES

FOR LOCATION BETWEEN CH. 33.960KM TO CH. 34.230KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 7 OF 7





LEGENDS	
1. CONTOUR	
2. OVERBURDEN	
3. ROAD	
4. CULVERT	
5. EXISTING CC STRUCTURE	
6. CC GRAVITY WALL OVER CLUSTER	
7. GABION WALL	
8. PROPOSED RCC ROAD	
9. GABION SPUR	
10. SUB SURFACE DRAINAGE PIPE	

SCALE : 0 10 20 30 40 50m
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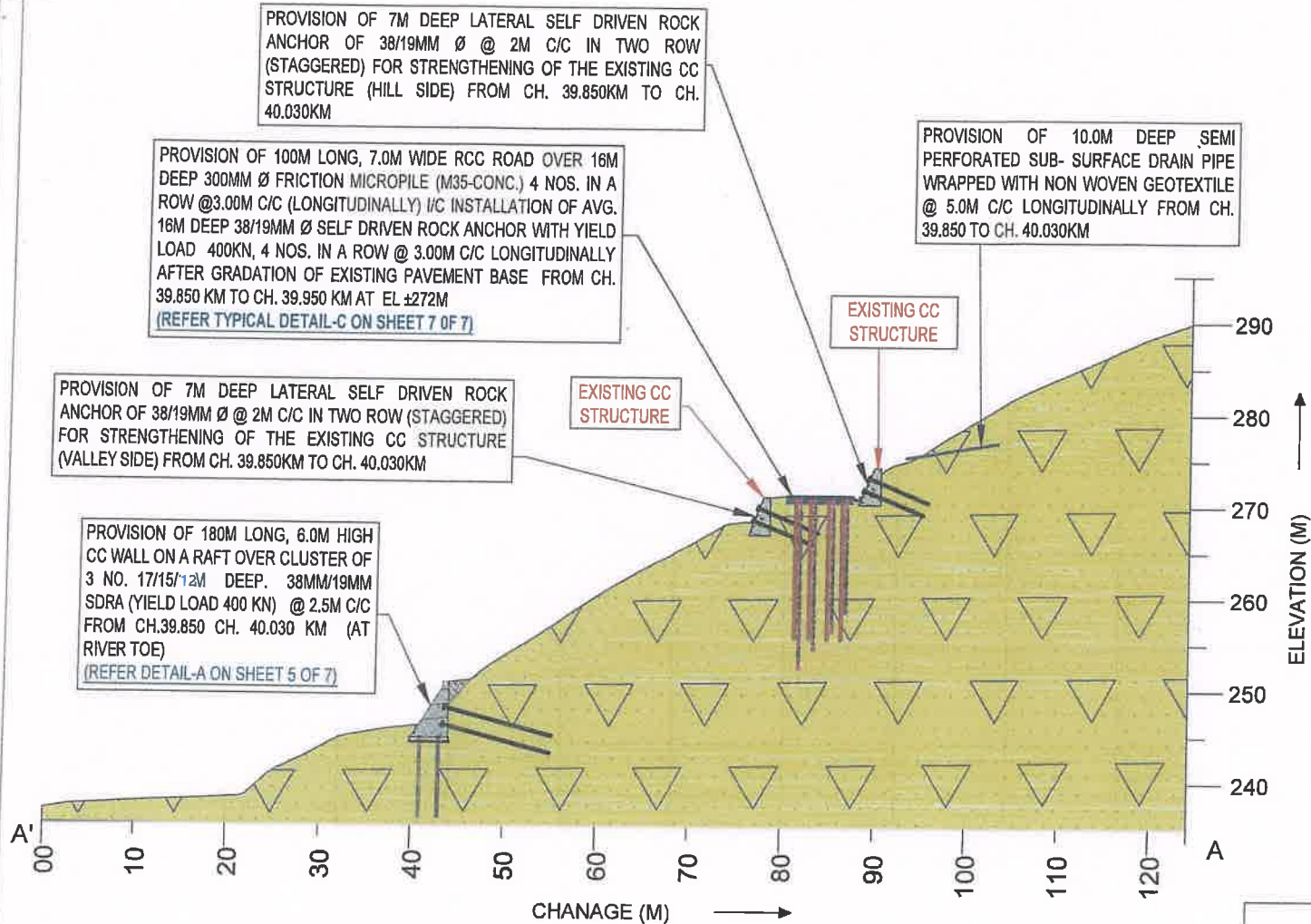


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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON SEVOKE - RANGPOO ROAD. NH-10





LEGENDS	
1. OVERBURDEN	
2. EXISTING CC STRUCTURE	
3. 38/19MM Ø SDRA	
4. CC GRAVITY WALL OVER CLUSTER	
5. RCC PAVEMENT	
6. SUB SURFACE DRAINAGE PIPE	

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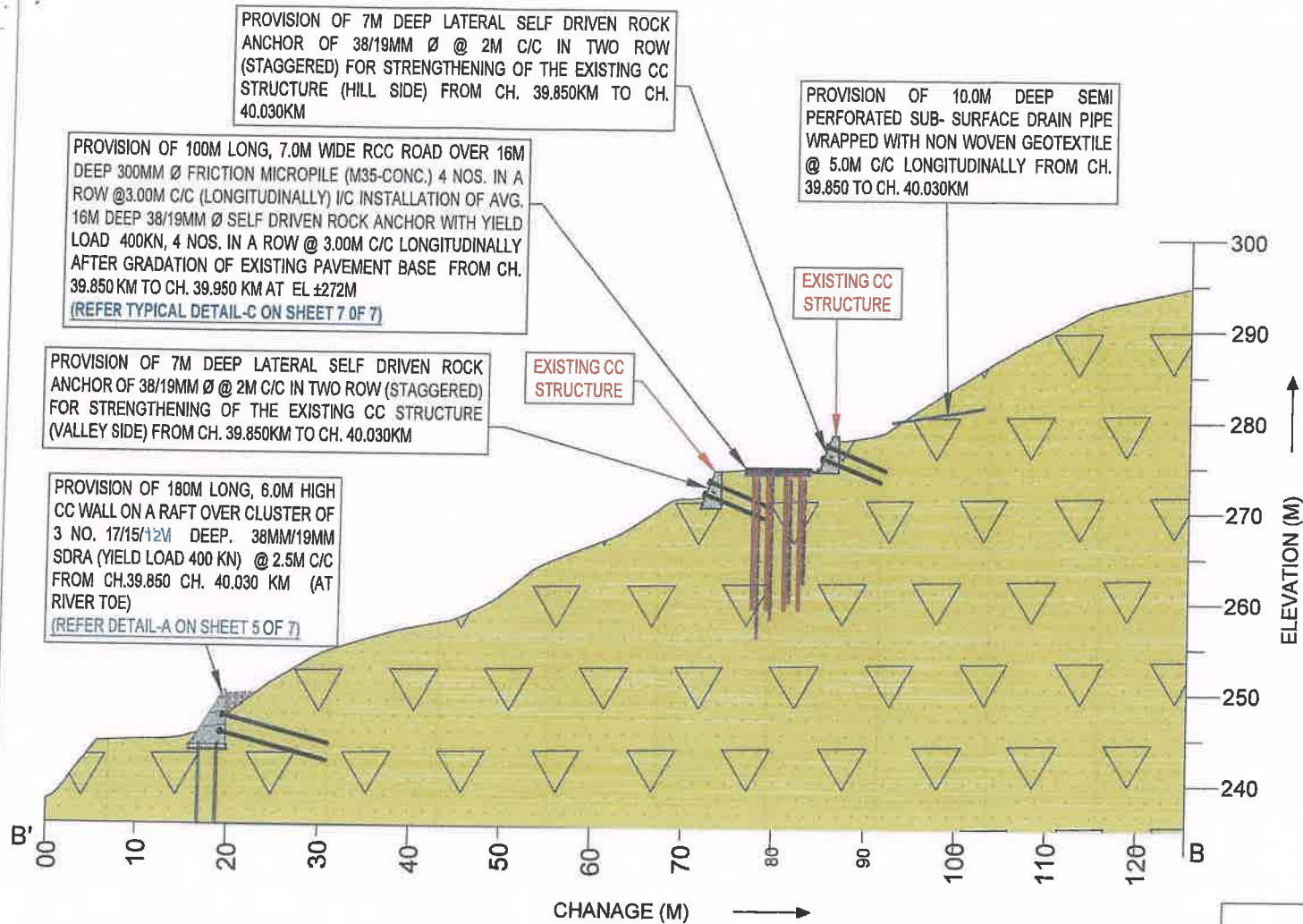
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(X-SECTION A-A')
STABILITY MEASURES

FOR LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 7





LEGENDS	
1. OVERBURDEN	
2. EXISTING CC STRUCTURE	
3. 38/19MM Ø SDRA	
4. CC GRAVITY WALL OVER CLUSTER	
5. RCC PAVEMENT	
6. SUB SURFACE DRAINAGE PIPE	

SECTION B-B' (CH.39.920KM)



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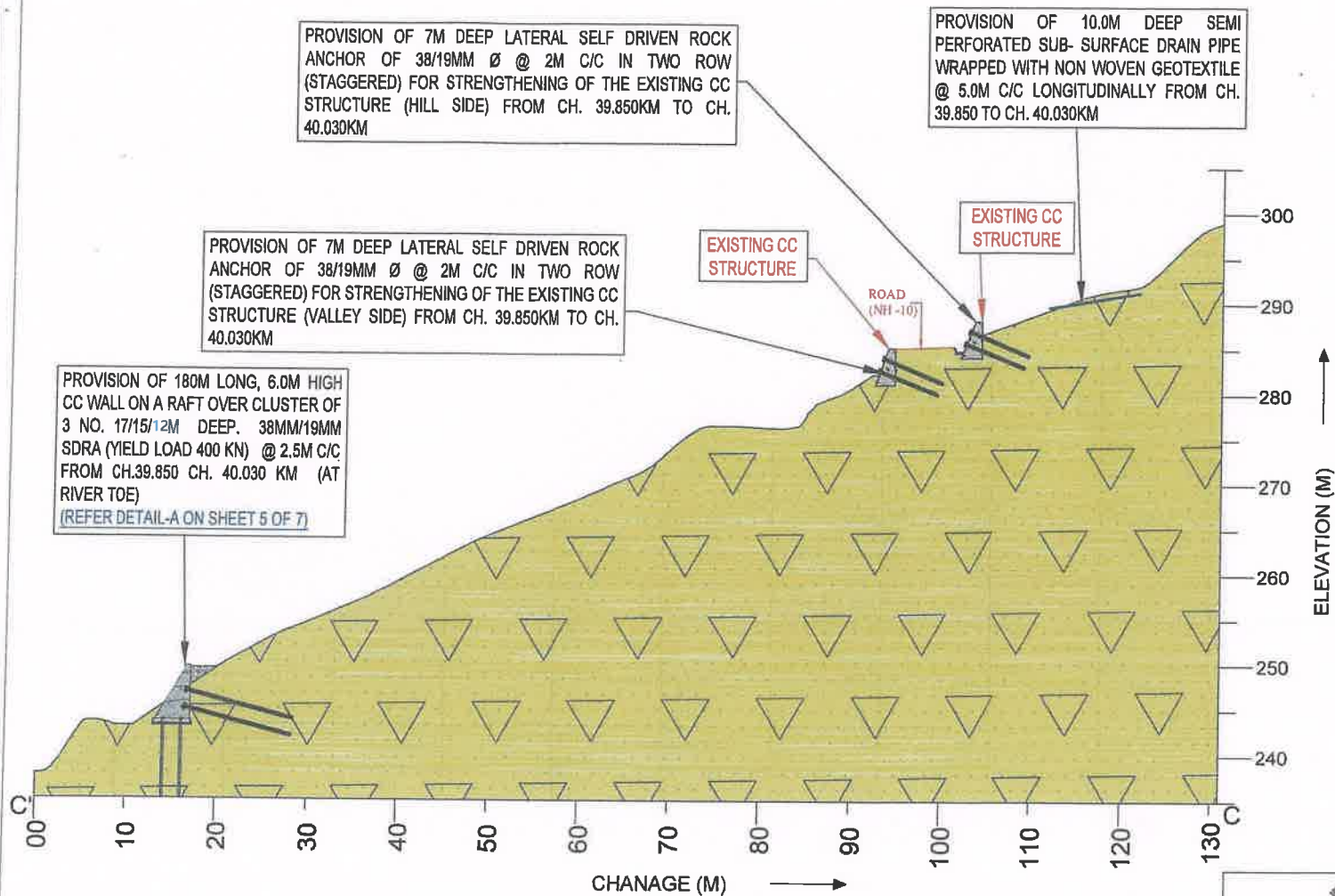


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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(X-SECTION B-B')
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 3 OF 7



LEGENDS	
1. OVERBURDEN	
2. EXISTING CC STRUCTURE	
3. 38/19MM Ø SDRA	
4. CC GRAVITY WALL OVER CLUSTER	
5. SUB SURFACE DRAINAGE PIPE	

SECTION C-C' (CH.39.970KM)



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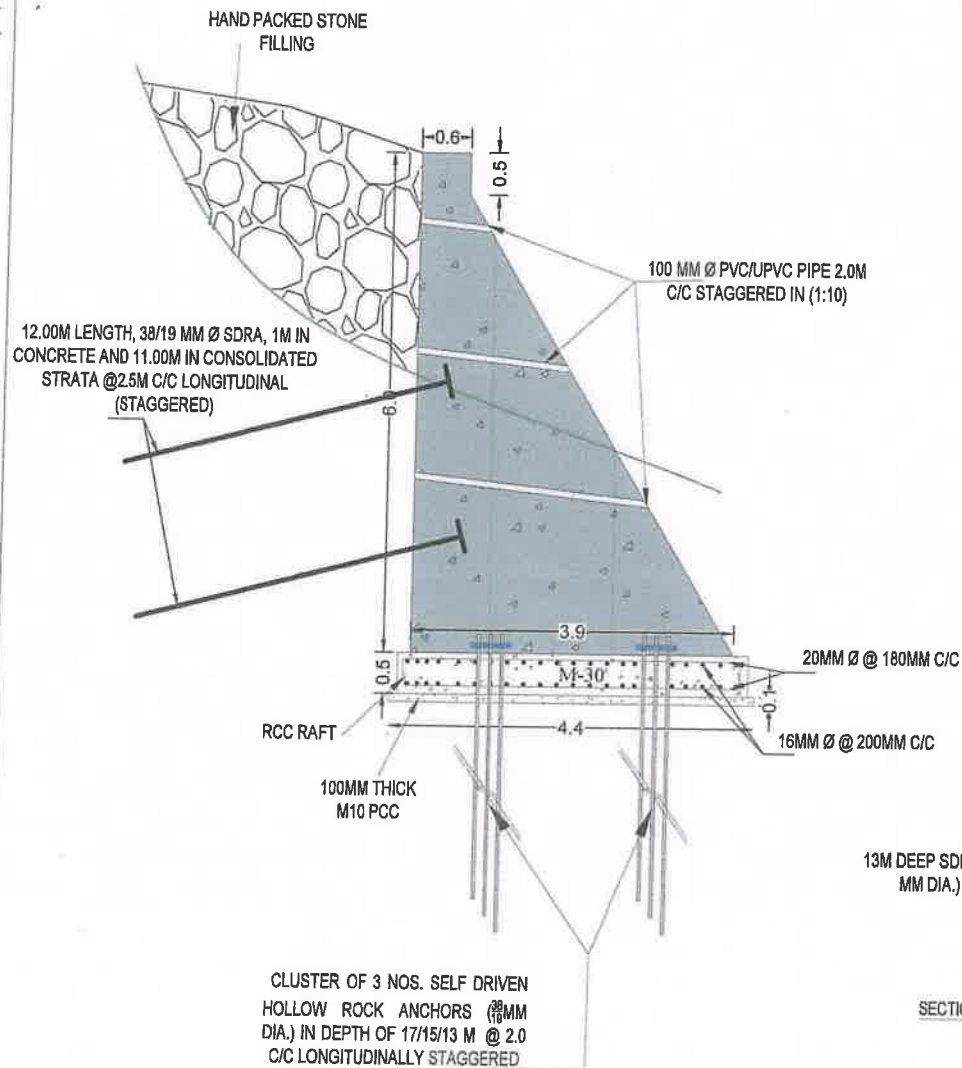


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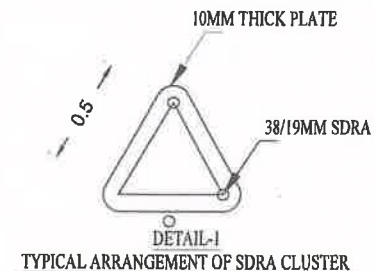
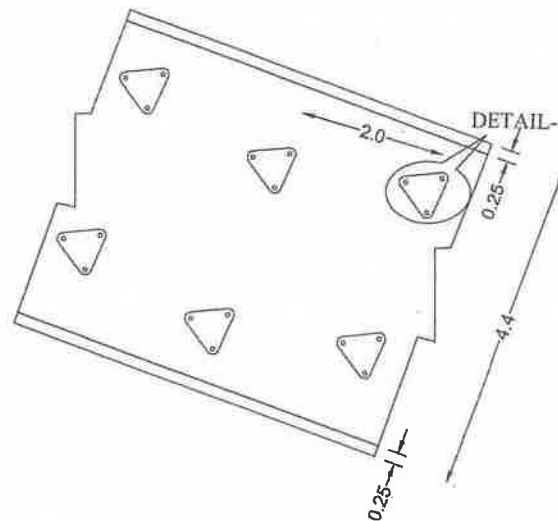
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(X-SECTION C-C')
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 4 OF 7



DETAIL-A
TYPICAL SECTION OF 6M HIGH CC GRAVITY WALL RESTING ON RCC RAFT OVER
CLUSTER OF 3 NOS. SELF DRIVEN HOLLOW ROCK ANCHORS



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SECTIONAL ELEVATION OF SDR CLUSTER WITH
500MMX500MMX10MM PLATE



- NOTES:
1. ALL DIMENSIONS ARE IN METERS & DIMENSIONS FOR REINFORCEMENT ARE IN MILLIMETERS UNLESS OTHERWISE WRITTEN.
 2. REINFORCEMENT SHALL COMPRISE OF Fe 500D GRADE DEFORMED BARS, CONFORMING TO IS: 1786.
 3. EXCAVATION FOR FOUNDATION SHALL BE DONE IN 6-M LONG STRETCHES ONLY & TREATMENT SHALL BE COMPLETED BEFORE START OF NEW PATCH.
 4. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS: 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
 5. THE MINIMUM CEMENT CONCRETE AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PR CUM AND 0.45 RESPECTIVELY.
 6. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
 7. RAFT - M30
 8. CC GRAVITY WALL - M20
 9. LEVELING COURSE - M10.
 10. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
 11. LAPS AND ANCHORAGE LENGTH SHALL BE AS PER IS 456 (LATEST).
 12. LAPS SHALL BE STAGGERED.
 13. EXCAVATION SHALL BE DONE IN 3-5M STRETCHES ONLY & TREATMENT SHALL BE COMPLETED BEFORE START OF NEW PATCH.
 14. CONCRETE SURFACE SHOULD BE ROUGHED AND CLEAN BEFORE POURING THE CONCRETE FRESH CONCRETE.
 15. FOUNDATION SURFACE UPON WHICH CC WALL IS TO BE PLACED SHALL BE APPROVED BY GEOLOGIST/ENGINEER-IN-CHARGE PRIOR TO START OF WORK.



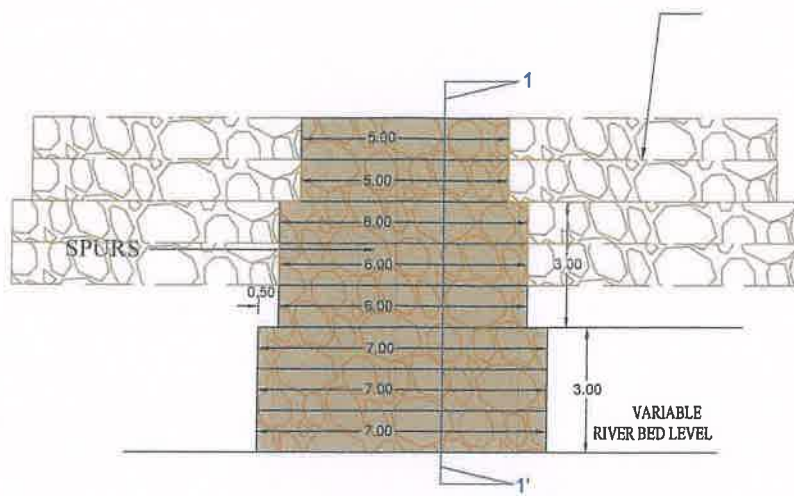
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

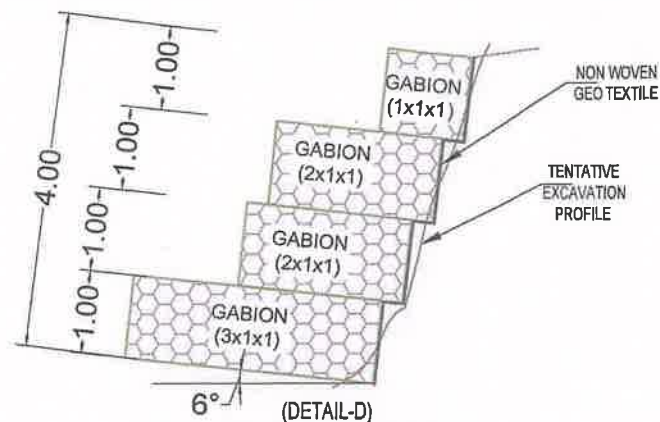
(TYPICAL DETAIL-A)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 5 OF 7

4M HIGH CONNECTING GABIONS (DETAIL-D)



FRONT ELEVATION OF SPURS



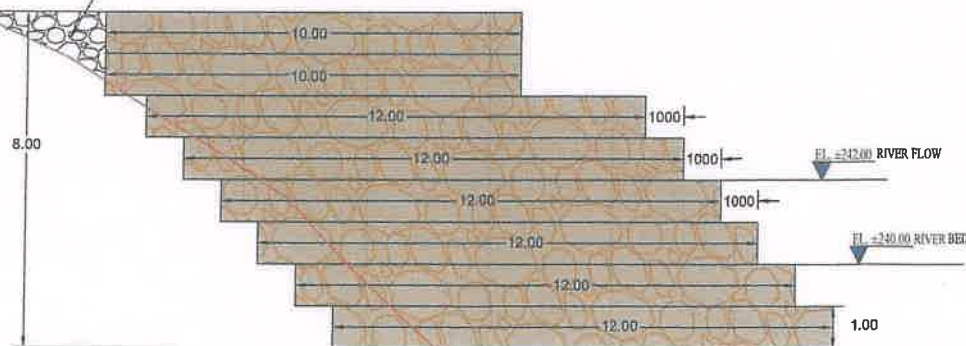
TYPICAL SECTION OF 4M HIGH GABION WALL

NOTES:

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. FOUNDATION SURFACE UPON WHICH GABION STRUCTURE BE PLACED BE TAKEN IN A STRECH OF 8-10M AT ONCE, SHALL BE APPROVED BY ENGINEER- IN- CHARGE PRIOR TO START OF WORK.
3. ALL GABIONS SHALL BE CONFIRMING TO IS:16014 (LATEST),ENGINEER IN CHARGE MAY DECIDE GABION SIZE AS PER BIS CODE.
4. FILL MATERIAL SHALL COMPRISE COBBLES OR ROCK FRAGMENTS THAT ARE DENSE, SOUND,RESISTANT TO ABRASION. COBBLES AND ROCKS SHALL BE FREE OF CRACKS, SEAMS AND OTHER DEFECTS THAT WOULD INCREASE THE SUSCEPTIBILITY TO DESTRUCTION BY EROSION ACTION. INDIVIDUAL COBBLES OR ROCK FRAGMENTS SHALL BE ROUNDED AND WELL GRADED IN SIZE BETWEEN 120MM AND 200MM. FLAT ROCK FRAGMENTS SHALL NOT BE USED.
5. LAYING OF GABION SHALL BE DONE AS PER IS CODE 16014 AND IRC-SP-116

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HAND PACKED FILLING



SECTIONAL VIEW AT 1-1'

DETAIL-B

TYPICAL SECTION OF 8.00M HIGH GABION SPURS (VALLEY SIDE)

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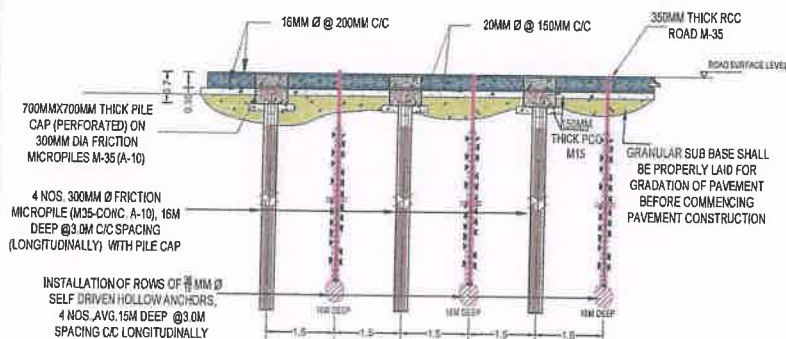
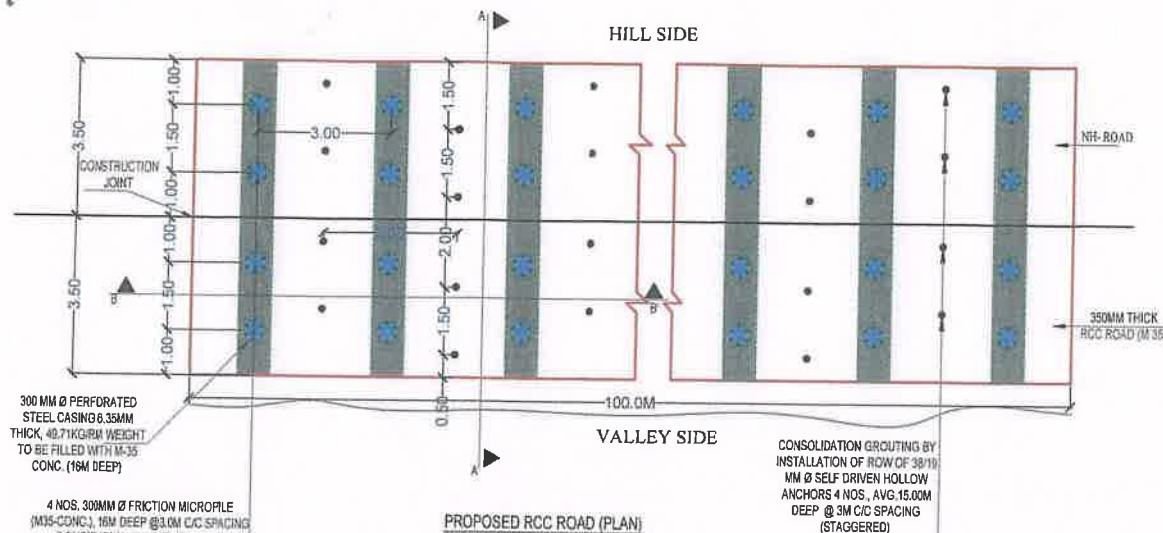
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(TYPICAL DETAIL-B)
STABILITY MEASURES

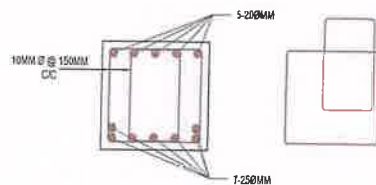
LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 6 OF 7





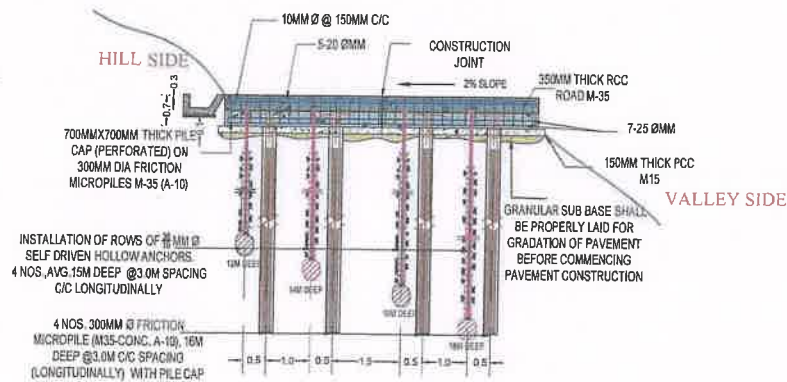
TYPICAL B-B' SECTION OF RCC ROAD OVER FRICTION MICROPILE



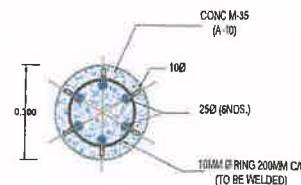
SECTIONAL VIEW OF 700X700MM PILE CAP

DETAIL-C

TYPICAL DETAIL OF RCC ROAD AND RCC ROAD OVER FRICTION MICROPILE



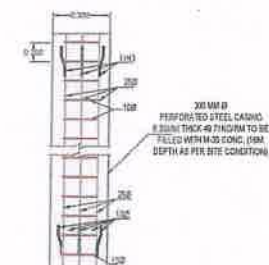
TYPICAL A-A' SECTION OF RCC ROAD OVER FRICTION MICROPILE



SECTIONAL VIEW OF 300MM Ø FRICTION MICRO-PILE

NOTES:

1. ALL DIMENSIONS ARE IN METERS & DIMENSIONS FOR REINFORCEMENT ARE IN MILLIMETERS UNLESS OTHERWISE WRITTEN.
2. NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING.
3. THE THICKNESS OF 300MM Ø PERFORATED STEEL CASING PIPE SHALL BE 6.35 MM AND WEIGHT 49.71KG/RM.
4. THE DEPTH OF PERFORATED CASING SHALL BE DRIVEN UPTO THE ENTIRE DEPTH OF MICRO-PILE.
5. AGGREGATES (FINE & COARSE) TO BE USED IN CONCRETE WORK SHALL CONFORM TO IS:383.
6. ALL CONCRETE WORKS SHALL CONFORM TO IS: 456-2000 AND HAND BOOK ON INDIAN STANDARD CODE OF PRACTICE FOR PLAIN AND REINF. CONCRETE. THE GRADE OF CONCRETE SHALL BE M25 UNLESS SPECIFIED OTHERWISE.
7. REINFORCEMENT SHALL COMPRISE OF Fe 500D GRADE DEFORMED BARS, CONFORMING TO IS: 1786.
8. MINIMUM LAP LENGTH FOR REINFORCING SHALL BE AT LEAST 50 TIMES THE DIAMETER OF SUCH BAR.
9. CONTRACTION JOINT SHALL BE PROVIDED AS PER IS CODE



TYPICAL DETAILS OF 300MM Ø FRICTION MICRO-PILE

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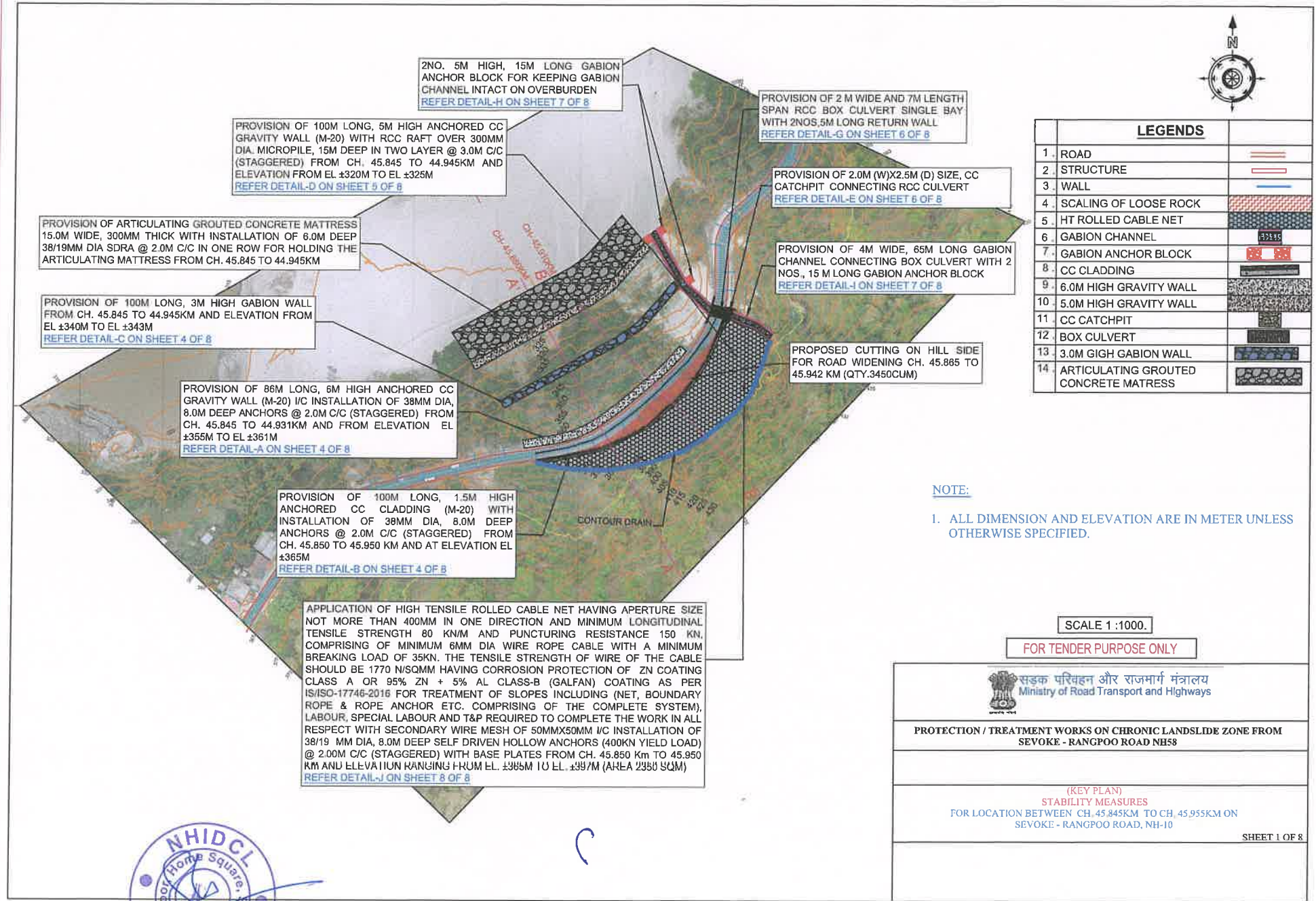
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

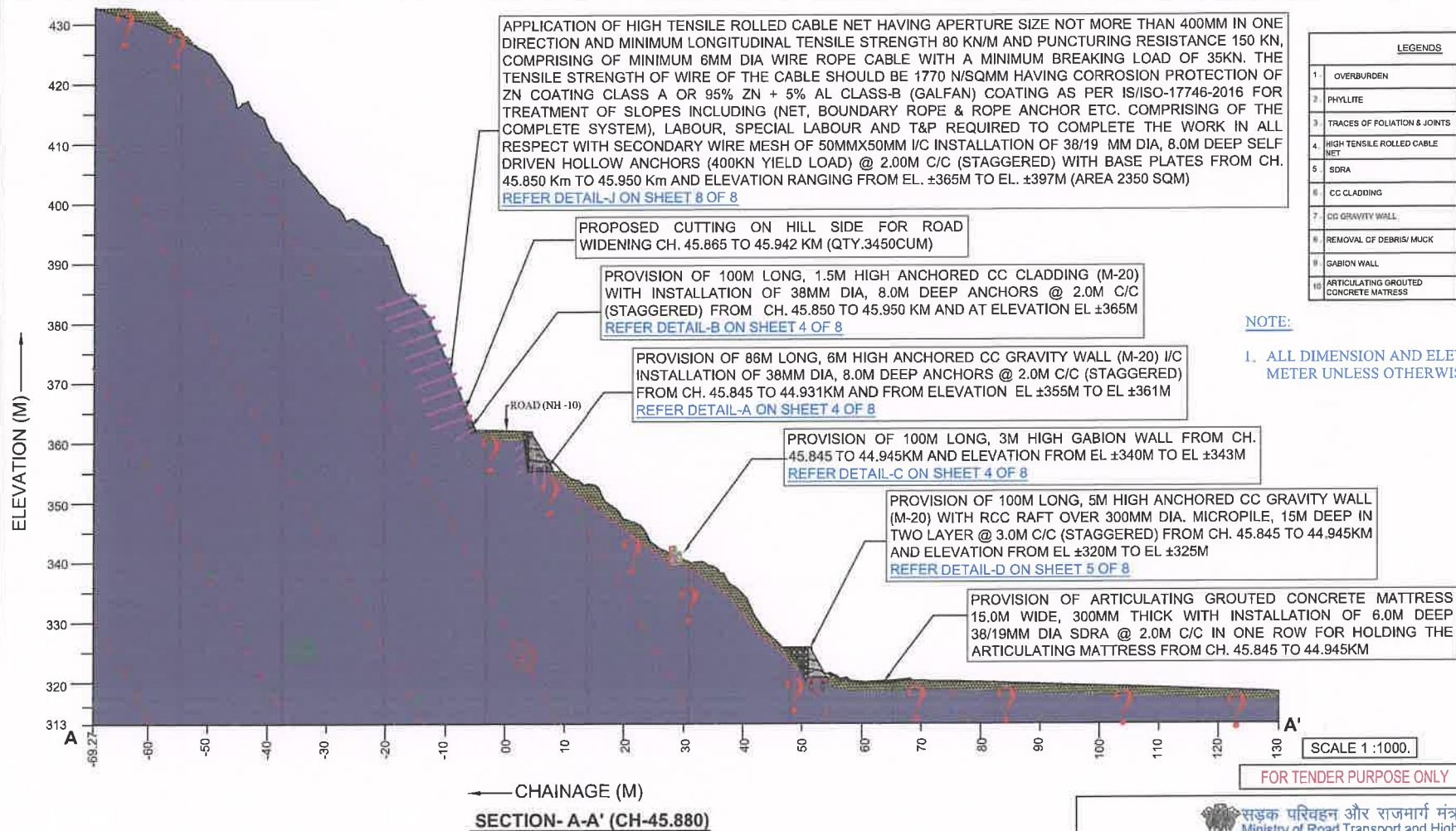
(TYPICAL DETAIL-C)
STABILITY MEASURES
LOCATION BETWEEN CH. 39.850KM TO CH. 40.030KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 7 OF 7



Revised THDC → Km 45.850 to 45.955





LEGENDS	
1	OVERBURDEN
2	PHYLLITE
3	TRACES OF FOLIATION & JOINTS
4	HIGH TENSILE ROLLED CABLE NET
5	SDRA
6	CC CLADDING
7	CC GRAVITY WALL
8	REMOVAL OF DEBRIS/ MUCK
9	GABION WALL
10	ARTICULATING GROUTED CONCRETE MATTRESS

NOTE:

1. ALL DIMENSION AND ELEVATION ARE IN METER UNLESS OTHERWISE SPECIFIED.

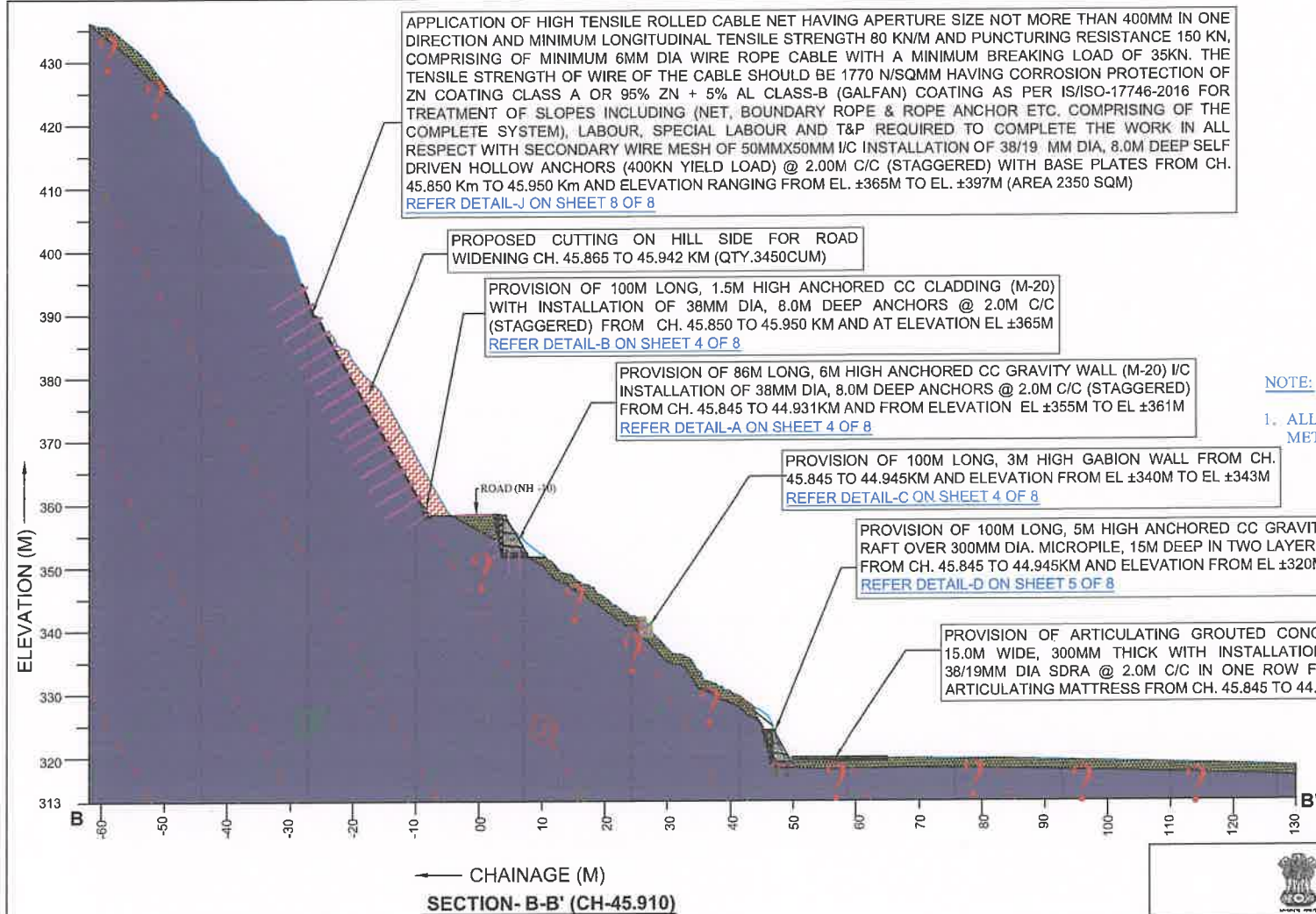


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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

(SECTION - A-A')
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 45.845KM TO CH. 45.955KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 8



LEGENDS	
1. OVERBURDEN	
2. PHYLLITE	
3. TRACES OF FOLIATION & JOINTS	
4. HIGH TENSILE ROLLED CABLE NET	
5. SDRA	
6. CC CLADDING	
7. CC GRAVITY WALL	
8. REMOVAL OF DEBRIS/ MUCK	
9. GABION WALL	
10. ARTICULATING GROUTED CONCRETE MATTRESS	

NOTE:

1. ALL DIMENSION AND ELEVATION ARE IN METER UNLESS OTHERWISE SPECIFIED.

SCALE 1:1000.

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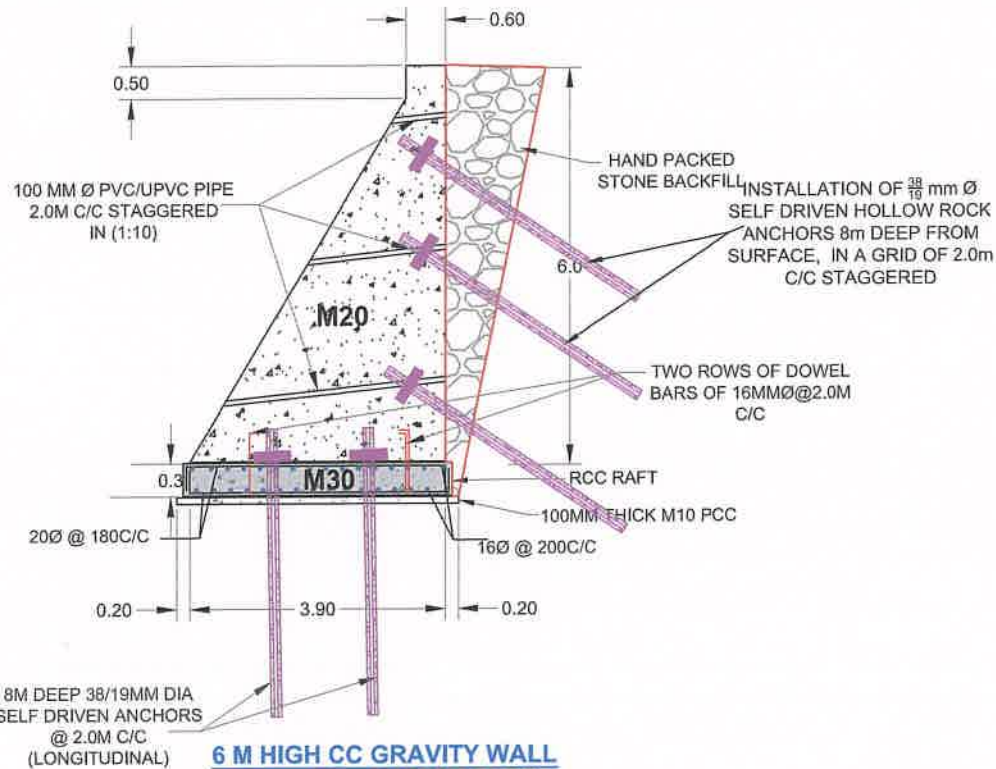
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

(SECTION-B-B')
STABILITY MEASURES

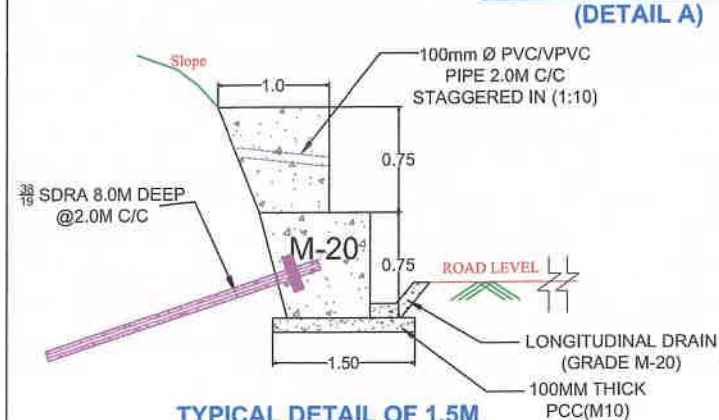
FOR LOCATION BETWEEN CH. 45.845KM TO CH. 45.955KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 3 OF 8

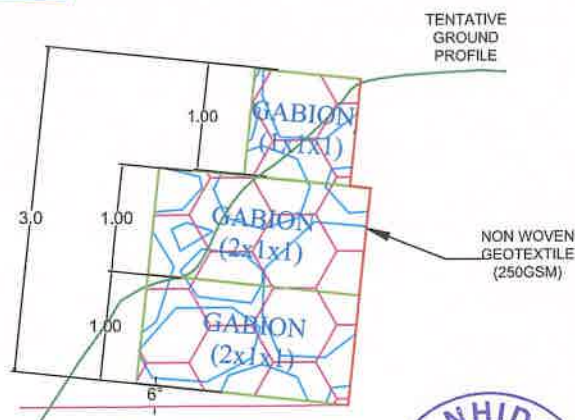




**6 M HIGH CC GRAVITY WALL
OVER RAFT FOUNDATION
(DETAIL A)**



**TYPICAL DETAIL OF 1.5M
HIGH CC CLADDING
(DETAIL-B)**



**3M HIGH GABION WALL
DETAIL- C**

NOTE:-

1. ALL DIMENSIONS ARE IN METERS & DIMENSIONS FOR REINFORCEMENT ARE IN MILLIMETERS UNLESS OTHERWISE WRITTEN.
2. NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWING.
3. ORDINARY PORTLAND CEMENT (GRADE 43) CONFORMING TO IS:8112 SHALL BE USED IN GENERAL, UNLESS SPECIFIED OTHERWISE.
4. AGGREGATES (FINE & COARSE) TO BE USED IN CONCRETE WORK SHALL CONFORM TO IS:383.
5. REINFORCEMENT SHALL COMPRISE OF Fe 500D GRADE DEFORMED BARS, CONFORMING TO IS: 1786.
6. MINIMUM LAP LENGTH FOR REINFORCING SHALL BE AT LEAST 50 TIMES THE DIAMETER OF SUCH BAR.

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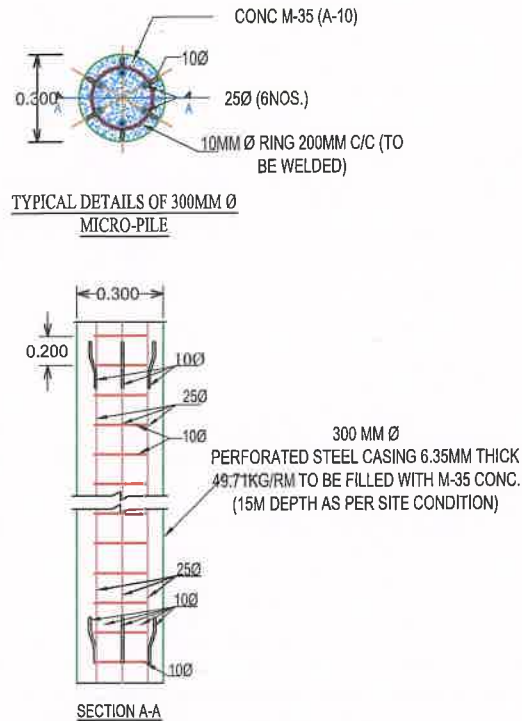
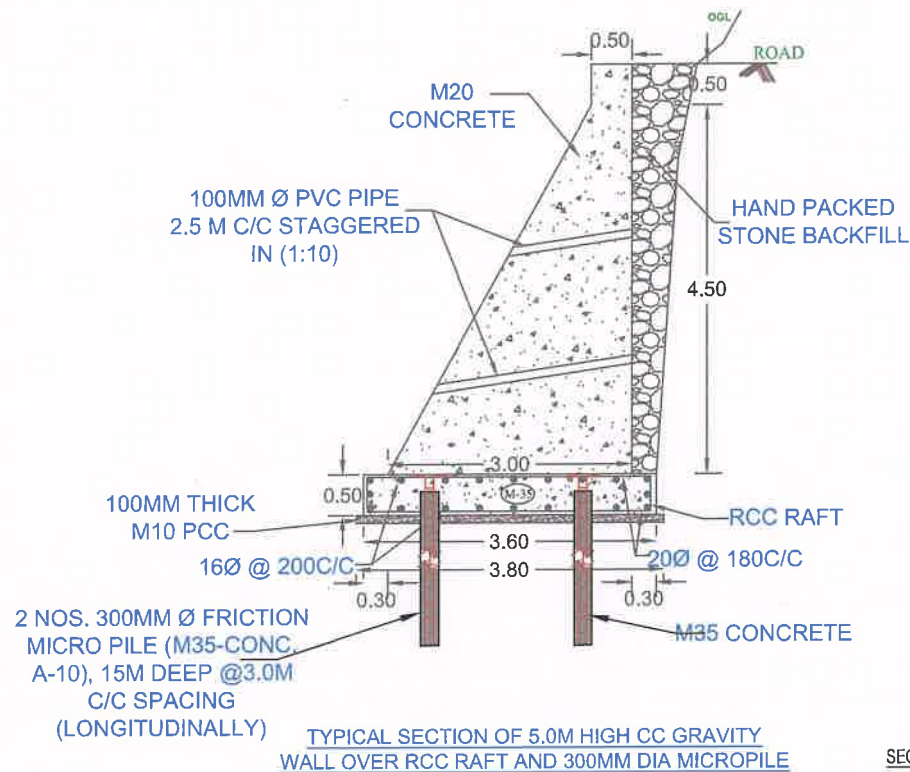
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH58

(REFER DETAILS -A, B & C)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 45.845KM TO CH. 45.955KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 4 OF 8

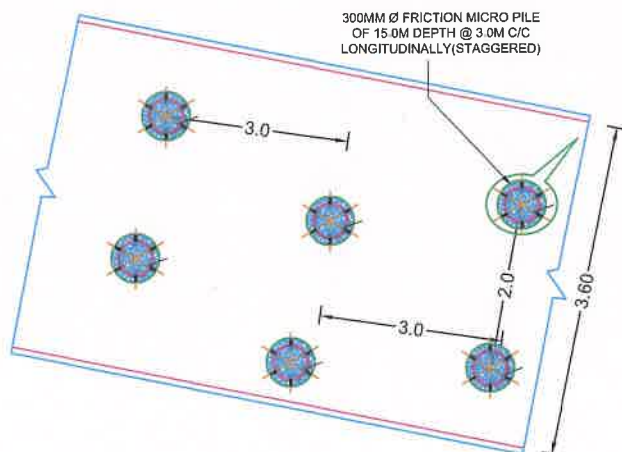




SECTIONAL VIEW OF 300MM Ø MICRO-PILE

NOTES:

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM THE DRAWING.
3. HIGH STRENGTH ORDINARY PORTLAND CEMENT CONFORMING TO IS : 8112 CAPABLE OF ACHIEVING THE REQUIRED DESIGN CONCRETE STRENGTH SHALL ONLY BE USED.
4. THE MINIMUM CEMENT CONTENT AND WATER CEMENT RATIO IN THE CONCRETE DESIGN MIX SHALL BE 310 KG PER CUM AND 0.45 RESPECTIVELY.
5. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
LEVELING COURSE - M10.
CC GRAVITY WALL - M20.
RCC RAFT - M35.
6. REINFORCEMENT SHALL COMPRISE OF FE 500D GRADE DEFORMED BARS, CONFORMING TO IS:1786.
7. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.
8. THE THICKNESS OF 400MM Ø PERFORATED STEEL CASING PIPE SHALL BE 7.55 MM AND WEIGHT 74.25KG/RM
9. DESIGN CONSIDERATION FOR MICRO PILE ARE AS PER IS 2911 PART 1 SECTION 1.
10. LAPS AND ANCHORAGE LENGTH SHALL BE AS PER IS 456 (LATEST).
11. FOR WORKMANSHIP IS 2911 PART 1 SHALL BE CONSIDERED FOR MICRO PILES.
12. EXCAVATION SHALL BE DONE IN 6-8M STRETCHES ONLY & TREATMENT SHALL BE COMPLETED BEFORE START OF NEW PATCH.



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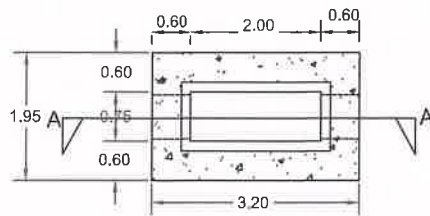
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

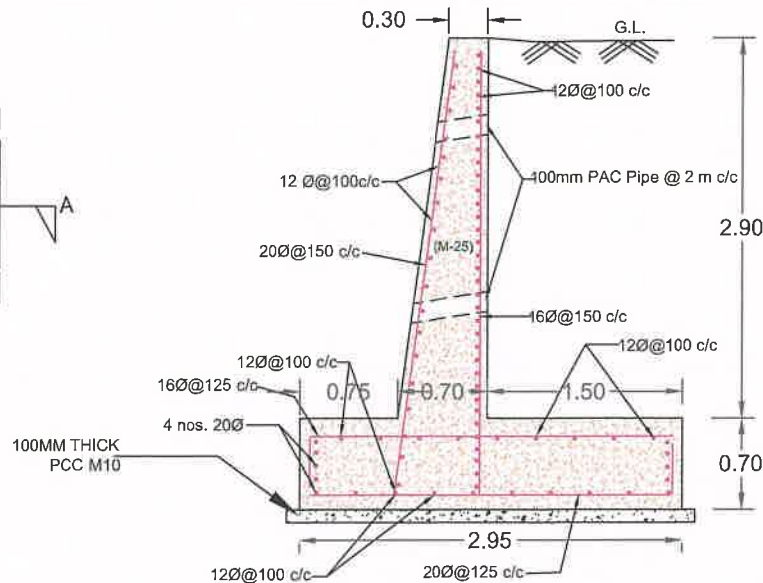
(REFER DETAIL-D)
STABILITY MEASURES
FOR LOCATION BETWEEN CH.45.845KM TO CH.45.955KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 5 OF 8

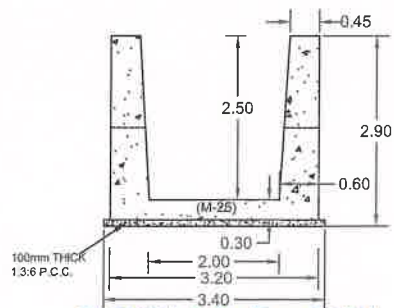




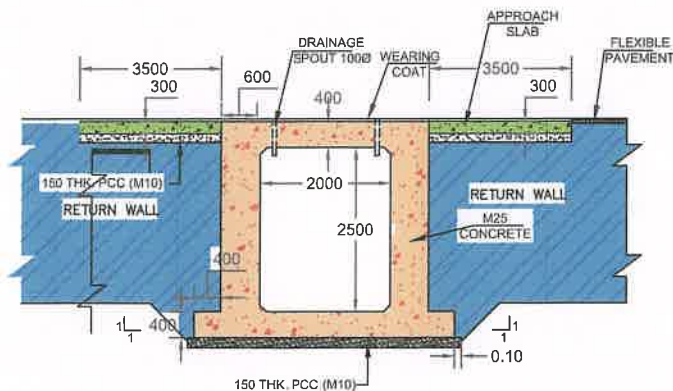
PLAN OF CC OPEN CATCHPIT AT RCC CULVERT (1 BAY)



TYPICAL SECTION OF RETURN WALL



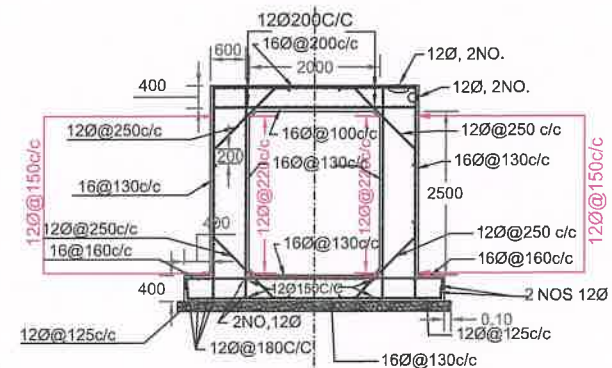
SECTION A-A OF CC OPEN CATCHPIT AT RCC CULVERT (1BAY)



SECTIONAL ELEVATION OF RCC (1BAY) BOX CULVERT

NOTES:-

1. ALL DIMENSIONS ARE IN MM UNLESS OTHERWISE SPECIFIED.
2. THE DETAILS PROVIDED IN THE DRAWING ARE BASED ON AVAILABLE DATA / INFORMATION AND SAME MAY NEED TO BE UP DATED / CHANGED AS PER ACTUAL SITE CONDITION DURING EXECUTION.
3. ALL REINFORCEMENT (R/F) SHALL BE OF HIGH YIELD STRENGTH COLD TWISTED DEFORMED BARS Fe 500D CONFORMING TO IS:1786 (LATEST).
4. CONCRETE USED SHALL BE OF GRADES AS SPECIFIED BELOW CONFORMING TO IS 456 (LATEST):
BOX CULVERT - M25.
RETURN WALL - M25.
LEVELLING COURSE - M10.
5. MINIMUM CLEAR COVER TO ANY REINFORCEMENT INCLUDING STIRRUPS SHALL BE 50MM UNLESS OTHERWISE SHOWN IN THE DRAWINGS.
6. LAPS IN REINFORCEMENT :
(i) MINIMUM LAP LENGTH OF REINFORCEMENT SHALL BE DECIDED AS PER THEREINFORCEMENT ARRANGEMENT BASED ON THE CLAUSE - 304.6.6 OF IRC : 21-1987.
(ii) NOT MORE THAN 50% OF REINFORCEMENT SHALL BE LAPPED AT ANY ONE LOCATION.
7. PROPERLY BRACED STEEL PLATES SHALL BE USED AS SHUTTERING.



REINFORCEMENT DETAILS OF RCC (1BAY) BOX CULVERT

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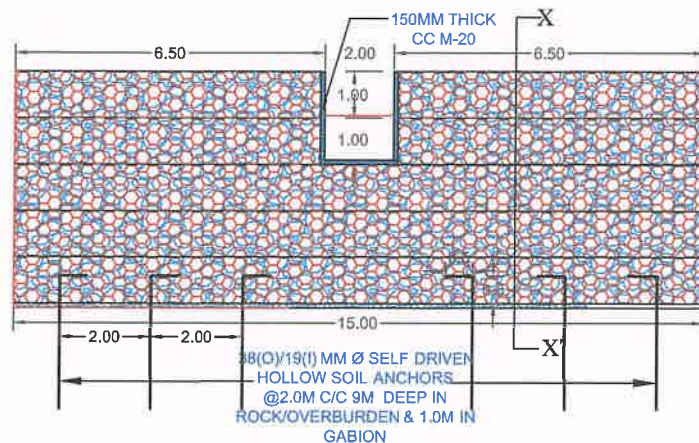


PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

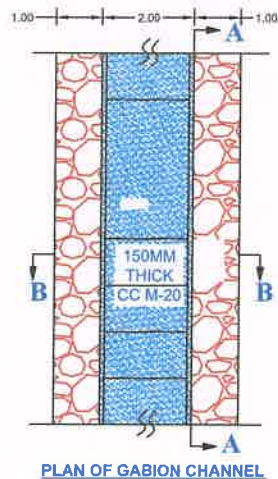
(REFER DETAIL-E, F & G)
STABILITY MEASURES
FOR LOCATION BETWEEN CH.45.845KM TO CH.45.955KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 6 OF 8

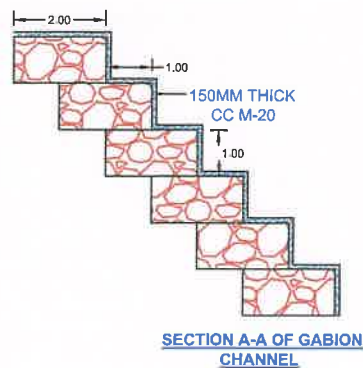




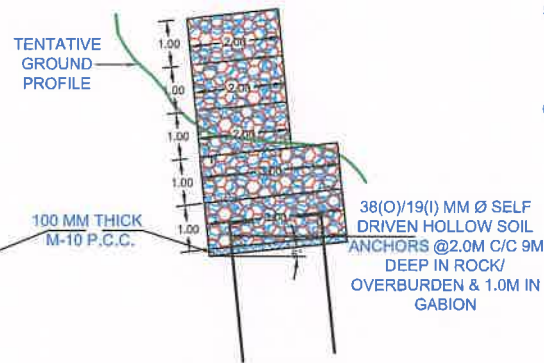
TYPICAL SECTION OF GABION ANCHOR BLOCK AT NALA



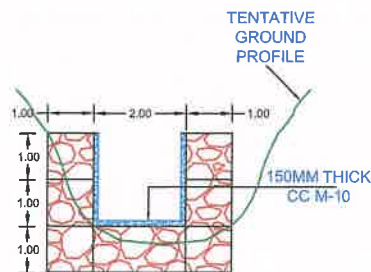
PLAN OF GABION CHANNEL



SECTION A-A OF GABION CHANNEL



SECTION X-X' OF 5.0M HIGH GABION ANCHOR BLOCK



SECTION B-B OF GABION CHANNEL

NOTES:-

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. THE DETAILS PROVIDED IN THE DRAWING ARE BASED ON AVAILABLE DATA / INFORMATION AND SAME MAY NEED TO BE UP DATED / CHANGED AS PER ACTUAL SITE CONDITION DURING EXECUTION.
3. FOUNDATION SURFACE UPON WHICH GABION STRUCTURE IS PLACED BE TAKEN IN A STRECH OF 8-10M AT ONCE, SHALL BE APPROVED BY ENGINEER- IN- CHARGE PRIOR TO START OF WORK.
4. LAYING OF GABION SHALL BE DONE AS PER IS CODE 16014 AND IRC-SP-116
5. FILL MATERIAL SHALL COMPRISE COBBLES OR ROCK FRAGMENTS THAT ARE DENSE, SOUND, RESISTANT TO ABRASION, COBBLES AND ROCKS SHALL BE FREE OF CRACKS, SEAMS AND OTHER DEFECTS THAT WOULD INCREASE THE SUSCEPTIBILITY TO DESTRUCTION BY EROSION ACTION. INDIVIDUAL COBBLES OR ROCK FRAGMENTS SHALL BE ROUNDED AND WELL GRADED IN SIZE BETWEEN 120MM AND 200MM. FLAT ROCK FRAGMENTS SHALL NOT BE USED.
6. GABIONS:
 - A. GABIONS SHALL BE ASSEMBLED, CONNECTED TOGETHER AND FILLED AS DESCRIBED HEREIN.
 - B. FOUNDATION SURFACES UPON WHICH GABIONS ARE TO BE PLACED SHALL BE REASONABLY SMOOTH AND EVEN, WITH EXCESSIVE HIGH SPOTS REMOVED AND VOIDS FILLED WITH SMALL ROCK FRAGMENTS GABIONS TO BE PLACED AT TOE OF THE SLOPES SHALL BE LAID IN A TRENCH AT LEAST 250MM DEEP.
 - C. GABIONS SHALL BE SECURED IN POSITION BY TYING TO ADJACENT GABIONS. INTERNAL GALVANIZED WIRE TENSION RODS SHALL BE PROVIDED TO REDUCE DISTORTION OF THE CAGES.
 - D. AFTER SEVERAL GABIONS HAVE BEEN PLACED IN POSITION ADJACENT TO ONE ANOTHER AND CHECKED FOR THE ALIGNMENT, THEY SHALL BE SECURELY TIED TOGETHER CONTINUOUSLY AT THEIR CORNERS OVER THEIR FULL HEIGHT, AND FILLED BY HAND WITH COBBLES AND ROCK FRAGMENTS AS SPECIFIED. PLACE THE COBBLES/STONE FRAGMENTS IN 300MM LIFTS, DISTRIBUTE EVENLY BY AND TO MINIMIZE VOIDS AND ENSURE A PLEASING APPEARANCE ALONG THE EXPOSED FACES. THE FILL IN ADJOINING CELLS SHOULD NOT VARY IN HEIGHT BY MORE THAN 300MM, LEVEL THE FINAL STONE LAYER ALLOWING THE DIAPHRAGM'S TOPS TO BE VISIBLE. ONCE FULL, THE CAGE LID SHALL BE PLACED IN POSITION AND SECURELY TIED ALL ALONG THE PERIMETER OF EDGES OF GABIONS AND DIAPHRAGMS.
7. CONCRETE MIX FOR ALL RCC AND CC WORK SHALL BE AS SPECIFIED IN DRAWING CONFORMING TO IS 456 (LATEST).
8. ALL REINFORCEMENT (R/F) SHALL BE OF HIGH YIELD STRENGTH COLD TWISTED DEFORMED BARS Fe 500 CONFIRMING TO IS:1786 (LATEST).
9. SELF DRIVEN HOLLOW ROCK ANCHORS SHALL BE OF HIGH YIELD STRENGTH COLD TWISTED BARS Fe-500 CONFIRMING TO IS-1786(LATEST). LAPS AND ANCHORAGE LENGTH SHALL BE AS PER IS 456(LATEST).
10. ROCK SURFACE/CONCRETE SURFACE SHOULD BE ROUGHED AND CLEAN BEFORE POURING THE NEXT CONCRETE/FRESH CONCRETE.

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Ministry of Road Transport and Highways**

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH58

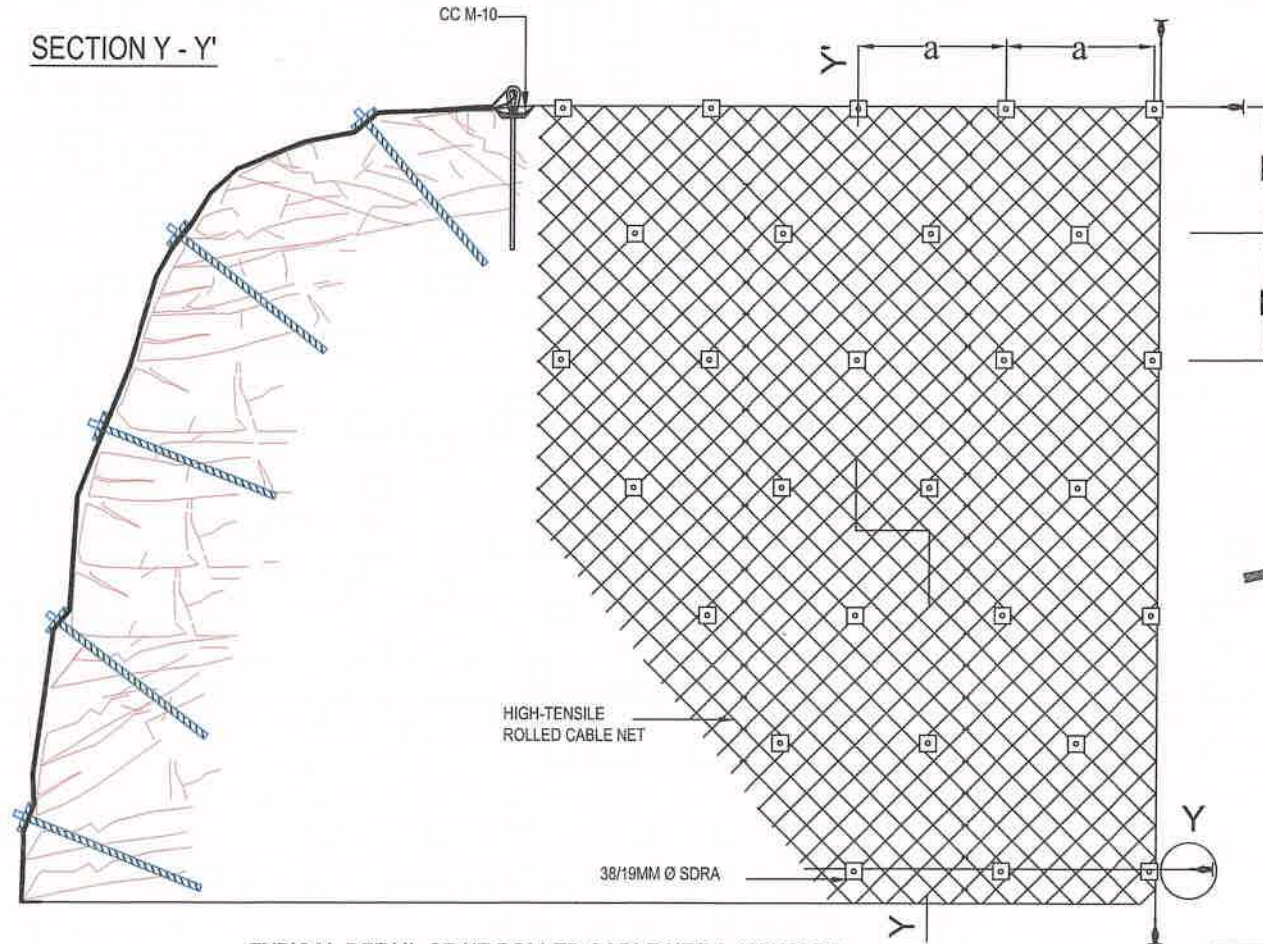
**(REFER DETAIL-41 & 1)
STABILITY MEASURES**

FOR LOCATION BETWEEN CH. 45.845KM TO CH. 45.955KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 7 OF 8



SECTION Y - Y'



**TYPICAL DETAIL OF HT ROLLED CABLE NET & ANCHORS
DETAIL-J**

1. THE GENERAL SPECIFICATIONS OF THE SYSTEM SHALL BE AS BELOW, HOWEVER, MENTIONED BELOW ARE THE MINIMUM VALUES.
2. THE HIGH-TENSILE ROLLED CABLE NETS SHOULD INCLUDE THE SECONDARY MESH.
3. FOR THE INSTALLATION OF HIGH-TENSILE ROLLED CABLE NETS STANDARD SUPPORT ROPES, SEAMING ROPES AND SHACKLES SHOULD BE USED. FOR THE HORIZONTAL CONNECTION STANDARD SHACKLES OR LACES SHALL BE USED.
 - a. MINIMUM TENSILE STRENGTH OF THE NET SHALL BE 80KN/M.
 - b. MINIMUM DIA OF CABLE SHALL BE 8MM HAVING BREAKING LOAD OF 35 KN.
 - c. COMPOUND FOR CORROSION PROTECTION : 95% ZN AND 5% AL. CLASS B OR ZINC COATING CLASS A AS PER IS/ISO-17746-2016.
 - d. AVERAGE LENGTH OF THE 38/19MM DIA. 40 CR SDRA : 8.0 M (7.7M GROUTED+0.3M ABOVE SLOPE SURFACE)
 - e. DRILL BIT SIZE : 76MM
 - f. GRID PATTERN : STAGGERED
 - g. SPACING OF ANCHORS, i.e. (a+b) : 2.0M (AVG.) (DEPENDING ON THE SLOPE ANGLE/ PROFILE, STRATA AT SITE)
 - h. GROUTING MATERIAL : CEMENT GROUT
4. SECONDARY MESH: SIZE OF MESH SHALL BE 50MMX50MM, COMPRISING OF 2.7MM DIA GI WIRE HAVING YIELD STRENGTH OF 400-550 N/MM² AND CORROSION PROTECTION ZN COATING OF 240 G/M².

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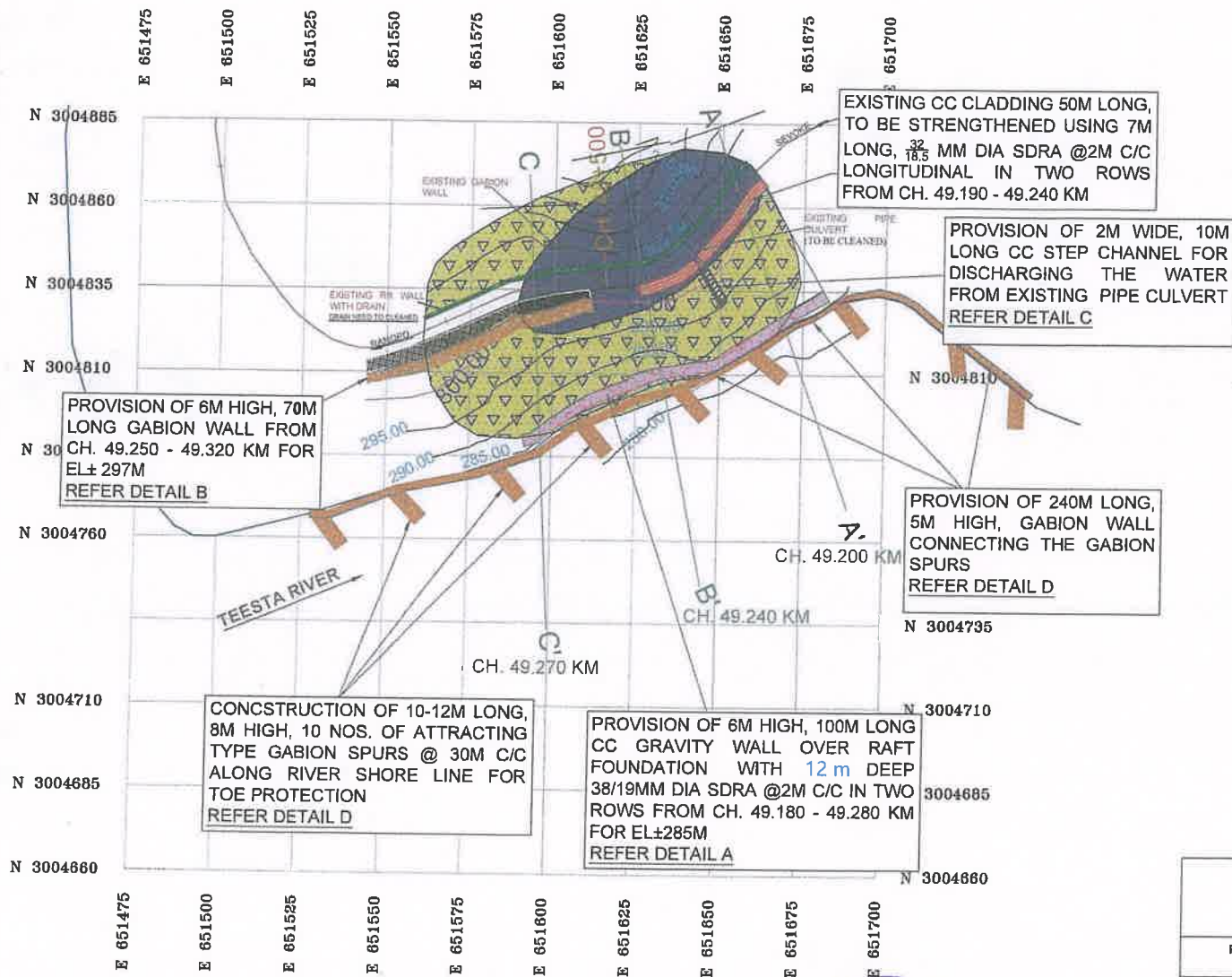
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH58

(REFER DETAIL-J)
STABILITY MEASURES

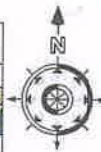
FOR LOCATION BETWEEN CH. 45.845KM TO CH. 45.955KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 8 OF 8





LEGENDS	
1. CONTOUR	
2. OVERBURDEN	
3. PHYLLITE	
4. ROAD	
5. EXISTING RR WALL	
6. EXISTING GABION WALL	
7. EXISTING CC CLADDING	
8. GABION WALL	
9. CC WALL OVER RAFT	
10. CC STEP CHANNEL	
11. GABION SPUR WITH GABION WALL	



NOTES:-

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

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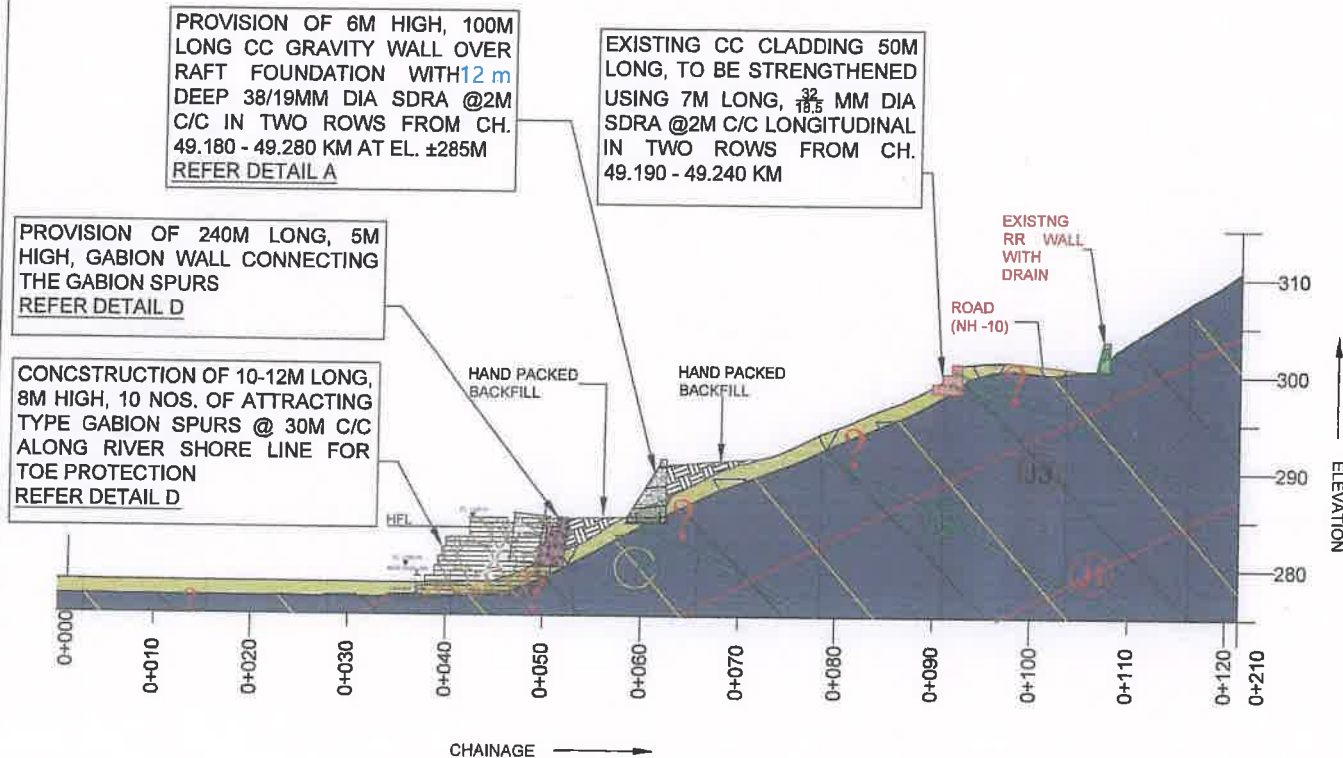
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

KEY PLAN
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 49.180KM TO CH. 49.320KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 1 OF 6





SECTION A-A' (CH. 49.200 KM)

LEGENDS

1.	OVERBURDEN	
2.	PHYLLITE	
3.	TRACES OF JOINTS	
4.	EXISTING RR WALL	
5.	EXISTING CC CLADDING TO BE ANCHORED	
6.	CC GRAVITY WAL OVER RAFT FOUNDATION WITH SDRA	
7.	GABION SPUR WITH GABION CONNECTING WALL	

NOTES:-

- ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.

SCALE : 0 10 20 30

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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10

SECTION A-A'
STABILITY MEASURES

FOR LOCATION BETWEEN CH. 49.180KM TO CH.
49.320KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 2 OF 6

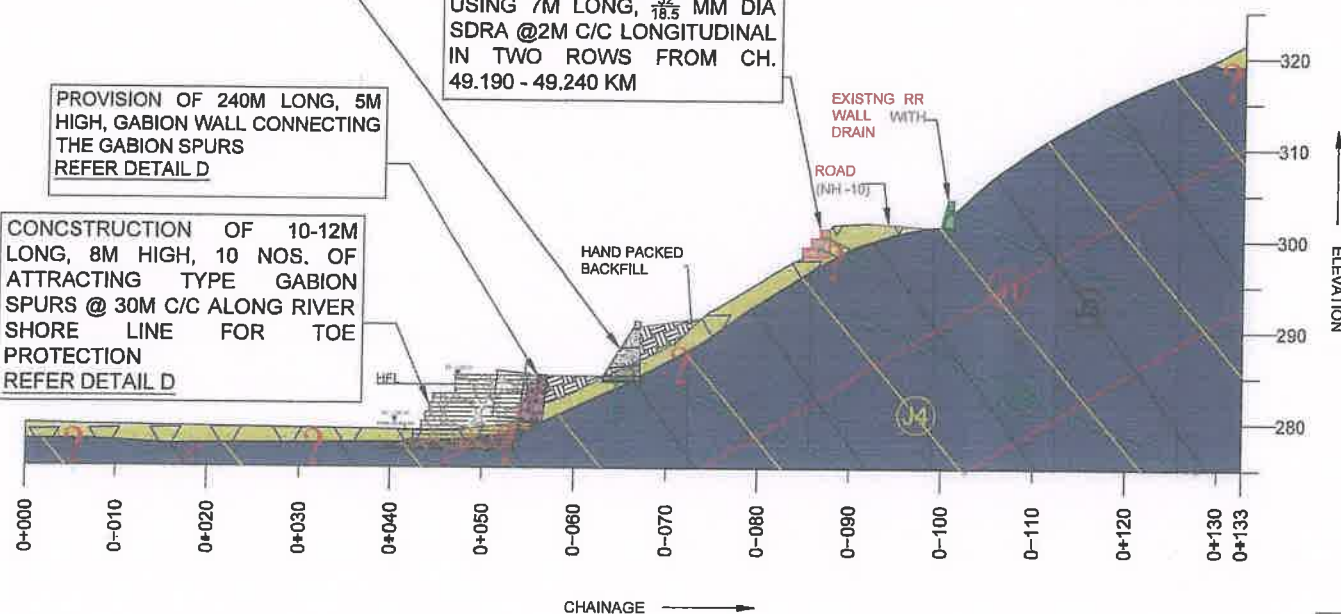


PROVISION OF 6M HIGH, 100M LONG CC GRAVITY WALL OVER RAFT FOUNDATION WITH 12 m DEEP 38/19MM DIA SDRA @2M C/C IN TWO ROWS FROM CH. 49.180 - 49.280 KM AT EL. ±285M REFER DETAIL A

EXISTING CC CLADDING 50M LONG, TO BE STRENGTHENED USING 7M LONG, $\frac{32}{18.5}$ MM DIA SDRA @2M C/C LONGITUDINAL IN TWO ROWS FROM CH. 49.190 - 49.240 KM

PROVISION OF 240M LONG, 5M HIGH, GABION WALL CONNECTING THE GABION SPURS REFER DETAIL D

CONSTRUCTION OF 10-12M LONG, 8M HIGH, 10 NOS. OF ATTRACTING TYPE GABION SPURS @ 30M C/C ALONG RIVER SHORE LINE FOR TOE PROTECTION REFER DETAIL D



SECTION B-B' (CH. 49.240 KM)

LEGENDS

1.	OVERBURDEN	
2.	PHYLLITE	
3.	TRACES OF JOINTS	
4.	EXISTING RR WALL	
5.	EXISTING CC CLADDING TO BE ANCHORED	
6.	CC GRAVITY WAL OVER RAFT FOUNDATION	

NOTES:-

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.



FOR TENDER PURPOSE ONLY



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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10

SECTION B-B'
STABILITY MEASURES

FOR LOCATION BETWEEN CH. 49.180KM TO CH.
49.320KM ON SEVOKE - RANGPOO ROAD, NH-10

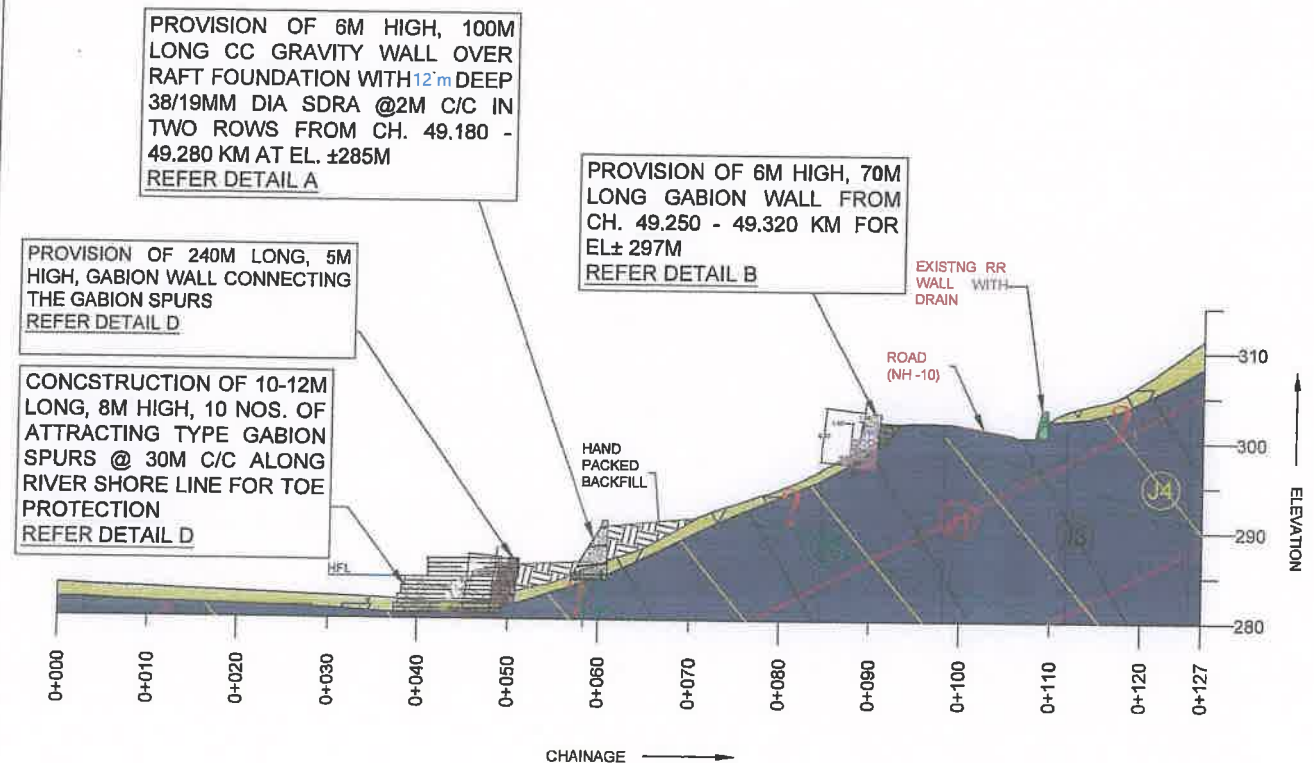
SHEET 3 OF 6



LEGENDS		
1.	OVERBURDEN	
2.	PHYLLITE	
3.	TRACES OF JOINTS	
4.	EXISTING RR WALL	
5.	GABION WALL	
6.	CC GRAVITY WAL OVER RAFT FOUNDATION	

NOTES:-

1. ALL DIMENSIONS ARE IN METERS UNLESS OTHERWISE SPECIFIED.



SECTION C-C' (CH. 49.270 KM)



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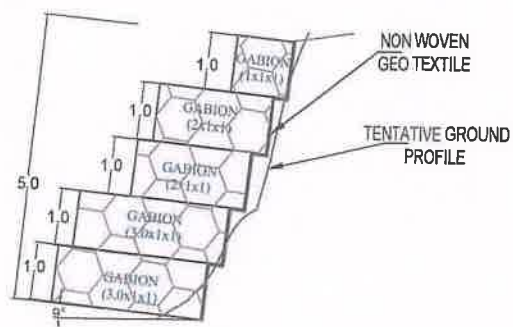
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10

SECTION C-C'
STABILITY MEASURES

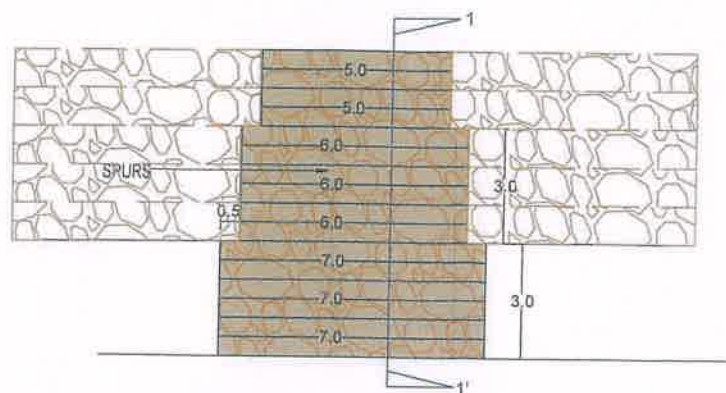
FOR LOCATION BETWEEN CH. 49.180KM TO CH.
49.320KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 4 OF 6

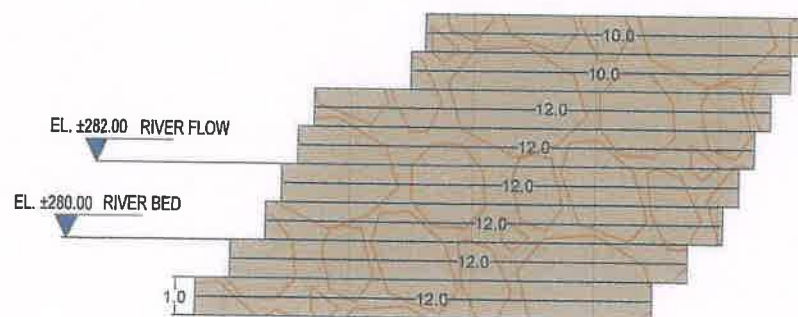




**TYPICAL DETAIL OF 5 M HIGH
GABION WALL**



FRONT ELEVATION OF SPURS



SECTIONAL VIEW AT 1-1'

**DETAIL D
TYPICAL SECTION:- GABION SPURS AND CONNECTING GABION WALL**

NOTES:

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. FOUNDATION SURFACE UPON WHICH GABION STRUCTURE BE PLACED BE TAKEN IN A STRECH OF 8-10M AT ONCE, SHALL BE APPROVED BY ENGINEER-IN-CHARGE PRIOR TO START OF WORK.
3. ALL GABIONS SHALL BE CONFIRMING TO IS:16014 (LATEST).ENGINEER IN CHARGE MAY DECIDE GABION SIZE AS PER BIS CODE.
4. FILL MATERIAL SHALL COMPRISE COBBLES OR ROCK FRAGMENTS THAT ARE DENSE, SOUND,RESISTANT TO ABRASION. COBBLES AND ROCKS SHALL BE FREE OF CRACKS, SEAMS AND OTHER DEFECTS THAT WOULD INCREASE THE SUSCEPTIBILITY TO DESTRUCTION BY EROSION ACTION. INDIVIDUAL COBBLES OR ROCK FRAGMENTS SHALL BE ROUNDED AND WELL GRADED IN SIZE BETWEEN 120MM AND 200MM. FLAT ROCK FRAGMENTS SHALL NOT BE USED.
5. LAYING OF GABION SHALL BE DONE AS PER IS:16014 AND IRC-SP:116

FOR TENDER PURPOSE ONLY



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Ministry of Road Transport and Highways

**PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE
ZONE FROM SEVOKE - RANGPOO ROAD NH10**

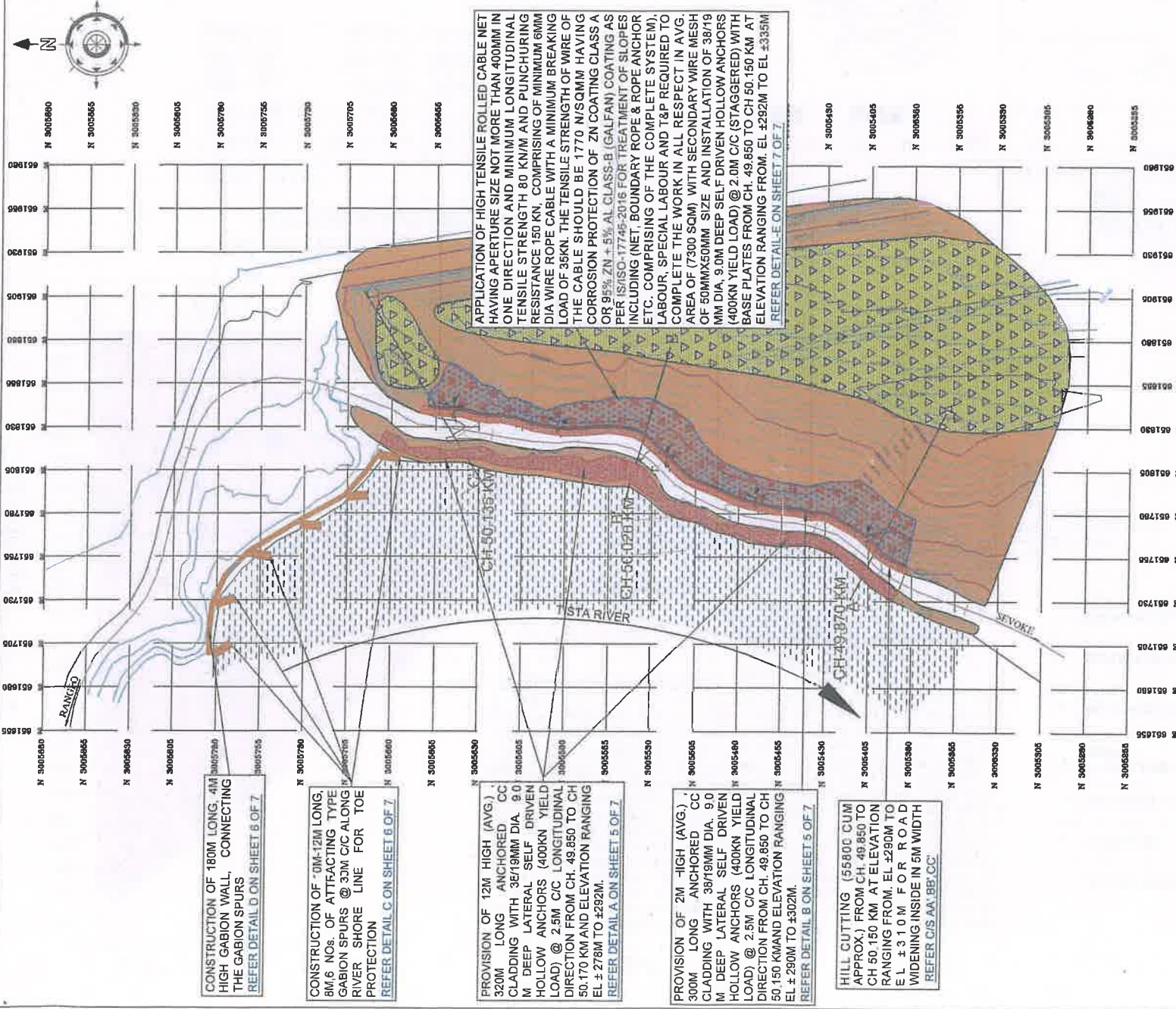
DETAIL - D

STABILITY MEASURES

FOR LOCATION BETWEEN CH. 49.180KM TO CH.
49.320KM ON SEVOKE - RANGPOO ROAD, NH-10

SHEET 6 OF 6





CONSTRUCTION OF 180M LONG, 4M HIGH GABION WALL, CONNECTING THE GABION SPURS
REFER DETAIL D ON SHEET 6 OF 7

CONSTRUCTION OF 70M-12M LONG, 8M/6 NOS. OF ATTRACTING TYPE GABION SPURS @ 3M C/C ALONG RIVER SHORE LINE FOR TOE PROTECTION
REFER DETAIL C ON SHEET 6 OF 7

PROVISION OF 12M HIGH (AVG.) 320M LONG ANCHORED CC CLADDING WITH 38/19MM DIA. 9.0 M DEEP LATERAL SELF DRIVEN HOLLOW ANCHORS (400KN YIELD LOAD) @ 2.5M C/C LONGITUDINAL DIRECTION FROM CH. 49.850 TO CH 50.170 KM AND ELEVATION RANGING EL. ± 278M TO ±292M.
REFER DETAIL A ON SHEET 5 OF 7

PROVISION OF 2M HIGH (AVG.) 300M LONG ANCHORED CC CLADDING WITH 38/19MM DIA. 9.0 M DEEP LATERAL SELF DRIVEN HOLLOW ANCHORS (400KN YIELD LOAD) @ 2.5M C/C LONGITUDINAL DIRECTION FROM CH. 49.850 TO CH 50.150 KM AND ELEVATION RANGING EL. ± 290M TO ±302M.
REFER DETAIL B ON SHEET 5 OF 7

HILL CUTTING (55800 CUM APPROX.) FROM CH. 49.850 TO CH 50.150 KM AT ELEVATION RANGING FROM EL. ±290M TO EL. ±310M FOR ROAD WIDENING INSIDE IN 5M WIDTH
REFER C/S AA, BB, CC

LEGENDS

1	CONTOUR
2	OVERBURDEN
3	QUARTZITE
4	ROAD
5	DIP OF FOLIATION / JOINTS
6	HT CABLE NET
7	38/19 MM SDR
8	SPUR GABIONS
9	SCALING OF ROCK
10	ANCHORED CC CLADDING 12M HIGH
11	ANCHORED CC CLADDING 2M HIGH

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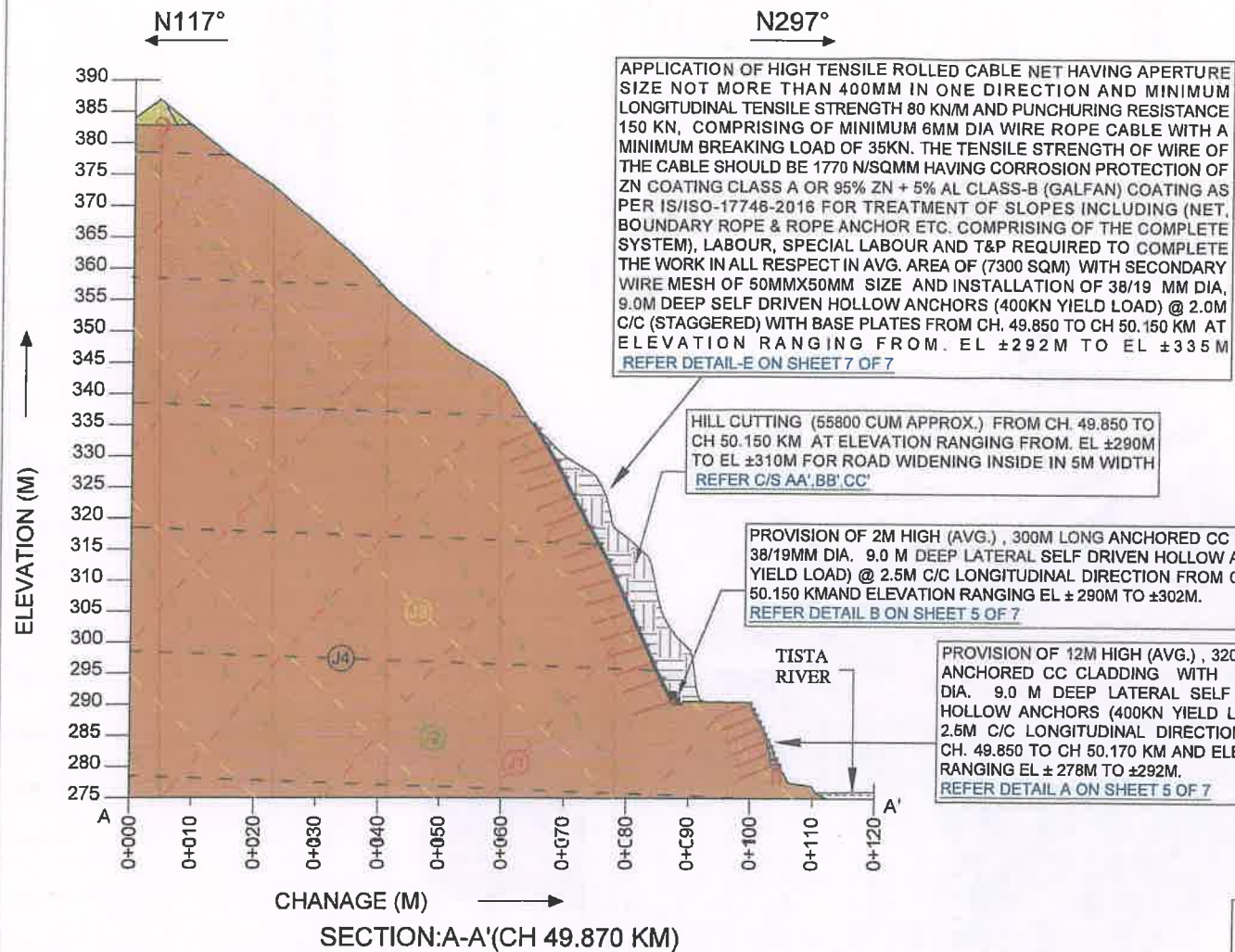
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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10

(KEY PLAN)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON SEVOKE - RANGPOO ROAD, NH-10



SCALE: 1:10,000



LEGENDS		
1.	OVERBURDEN	
2.	QUARTZITE	
3.	TRACES OF FOLIATION & JOINTS	
4.	HT CABLE NET WITH 38/19MM SDRA	
5.	ANCHORED CC CLADDING 12M HIGH	
6.	SCALING OF ROCK	
7.	ANCHORED CC CLADDING 2M HIGH	

JOINT DETAILS

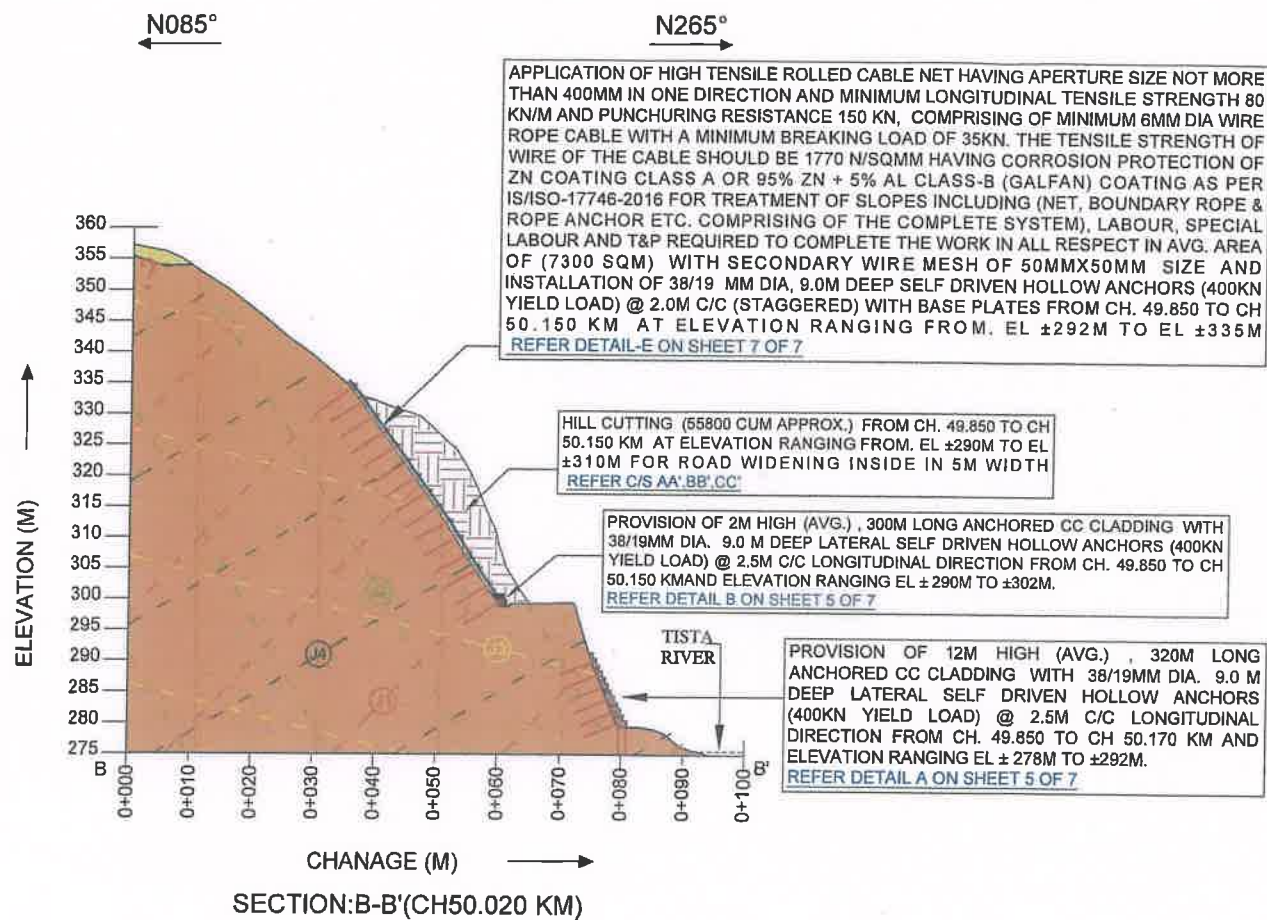
Joint Set	Dip Amount	Dip Direction
FOLIATION (J1)	50°	N110°
JOINT (J2)	50° - 65°	N245° - N260°
JOINT (J3)	55° - 58°	N345° - N350°
JOINT (J4)	45° - 55°	N010° - N035°

SCALE: 0 10 20 30 40 50m



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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM SEVOKE - RANGPOO ROAD NH10	
(X-SECTION C/D - 49A) STABILITY MEASURES FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON SEVOKE - RANGPOO ROAD, NH-10	
SHEET 2 OF 7	



JOINT DETAILS

Joint Set	Dip Amount	Dip Direction
FOI IATION (J1)	50°	N110°
JOINT (J2)	50° - 65°	N245° - N260°
JOINT (J3)	55° - 58°	N345° - N350°
JOINT (J4)	45° - 55°	N010° - N035°

SCALE: 0 10 20 30 40 50m

LEGENDS

1.	OVERBURDEN	
2.	QUARTZITE	
3.	TRACES OF FOLIATION & JOINTS	
4.	HT CABLE NET WITH 38/19MM SDRA	
5.	ANCHORED CC CLADDING 12M HIGH	
6.	SCALING OF ROCK	
7.	ANCHORED CC CLADDING 2M HIGH	

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Ministry of Road Transport and Highways

PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(X-SECTION C/S - 498)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 3 OF 7



ROAD LEVEL

M-20
CONCRETE

100MM DIA PVC
DRAIN PIPE @ 2M
C/C.

VARYING THICKNESS
(0.75-1.5M)

INSTALLATION OF
38/19MM DIA. 9M
DEEP SELF
DRIVEN HOLLOW
ANCHORS (400KN
YIELD LOAD)
@ 2.5 M C/C
LONGITUDENAL
DIRECTION.

(DETAIL-A)
TYPICAL SECTION OF 12M HIGH
CC CLADDING

M10-PCC
100MM

SLOPE

M-20
CONCRETE

AVERAGE
THICKNESS 1.5M

INSTALLATION OF
38/19MM DIA. 9M
DEEP SELF DRIVEN
HOLLOW ANCHORS
(400KN YIELD LOAD)
@ 2.5 M C/C
LONGITUDENAL
DIRECTION.

M10-100MM
THICK PCC

100MM DIA
PVC DRAIN
PIPE @ 2M
C/C.

ROAD
LEVEL

(DETAIL-B)

TYPICAL SECTION OF 2M HIGH CC CLADDING

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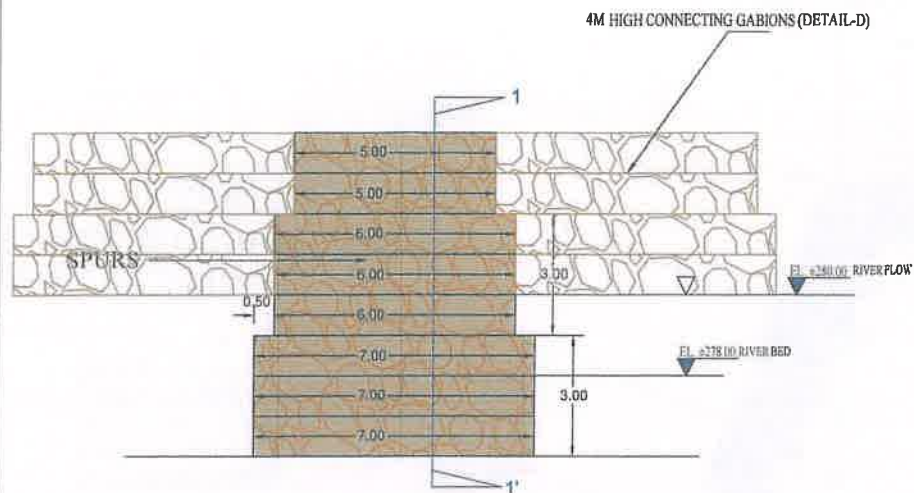
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(TYPICAL DETAIL OF STRUCTURE 1)
STABILITY MEASURES

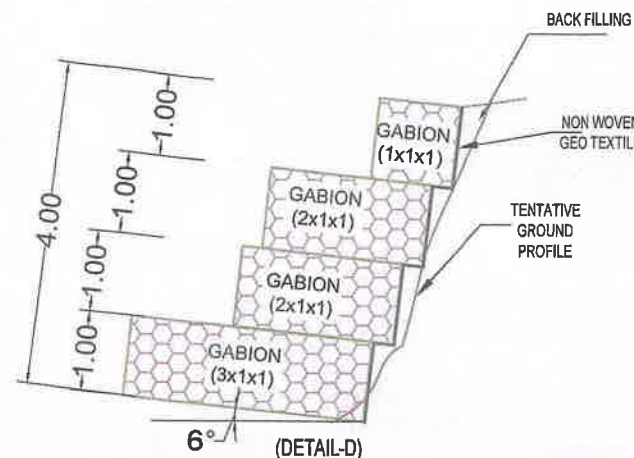
FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 5 OF 7

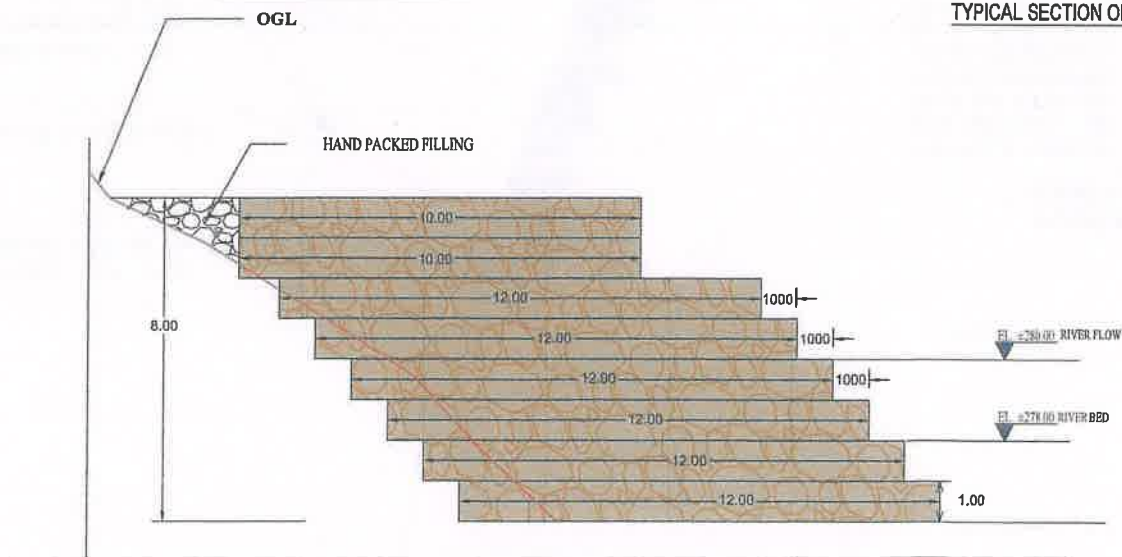




FRONT ELEVATION OF SPURS



TYPICAL SECTION OF 4M HIGH GABION WALL



SECTIONAL VIEW AT 1-1'

DETAIL-C
TYPICAL SECTION OF 8.00M HIGH GABION SPURS (VALLEY SIDE)

NOTES:

1. ALL DIMENSIONS & ELEVATIONS ARE IN METRES UNLESS OTHERWISE SPECIFIED.
2. FOUNDATION SURFACE UPON WHICH GABION STRUCTURE BE PLACED BE TAKEN IN A STRECH OF 8-10M AT ONCE, SHALL BE APPROVED BY ENGINEER- IN- CHARGE PRIOR TO START OF WORK.
3. ALL GABIONS SHALL BE CONFIRMING TO IS:16014 (LATEST),ENGINEER IN CHARGE MAY DECIDE GABION SIZE AS PER BIS CODE.
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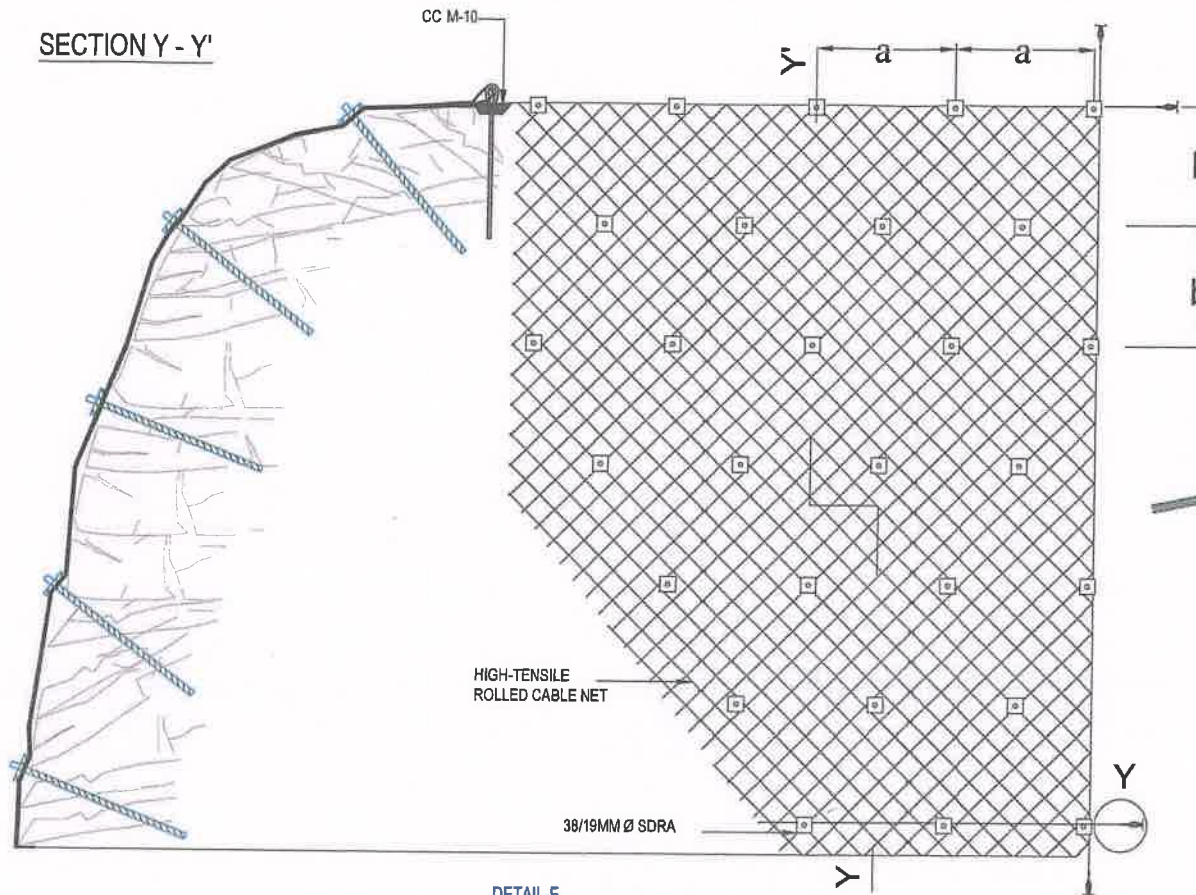
PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
SEVOKE - RANGPOO ROAD NH10

(TYPICAL DETAIL OF STRUCTURES-II)
STABILITY MEASURES
FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 6 OF 7



SECTION Y - Y'



DETAIL-E

TYPICAL DETAIL OF HT ROLLED CABLE NET & ANCHORS

1. THE GENERAL SPECIFICATIONS OF THE SYSTEM SHALL BE AS BELOW, HOWEVER, MENTIONED BELOW ARE THE MINIMUM VALUES.
2. THE HIGH-TENSILE ROLLED CABLE NETS SHOULD INCLUDE THE SECONDARY MESH.
3. FOR THE INSTALLATION OF HIGH-TENSILE ROLLED CABLE NETS STANDARD SUPPORT ROPES, SEAMING ROPES AND SHACKLES SHOULD BE USED. FOR THE HORIZONTAL CONNECTION STANDARD SHACKLES OR LACES SHALL BE USED.
 - a. MINIMUM TENSILE STRENGTH OF THE NET SHALL BE 80 KN/M;
 - b. MINIMUM DIA OF CABLE SHALL BE 6MM HAVING BREAKING LOAD OF 35 KN
 - c. COMPOUND FOR CORROSION PROTECTION : 95% ZN AND 5% AL CLASS B OR ZINC COATING CLASS A AS PER IS/ISO-17746-2016.
 - d. AVERAGE LENGTH OF THE 38/19MM DIA. 40 CR SDRA : 9.0 M (8.7M GROUTED+0.3M ABOVE SLOPE SURFACE)
 - e. DRILL BIT SIZE : 76MM
 - f. GRID PATTERN : STAGGERED
 - g. SPACING OF ANCHORS, i.e. (a=b) : 2.0M (AVG.) (DEPENDING ON THE SLOPE ANGLE/ PROFILE, STRATA AT SITE)
 - h. GROUTING MATERIAL : CEMENT GROUT
4. SECONDARY MESH: SIZE OF MESH SHALL BE 50MMX50MM, COMPRISING OF 2.7MM DIA GI WIRE HAVING YIELD STRENGTH OF 400-550 N/MM2 AND CORROSION PROTECTION ZN COATING OF 240 G/M2.

DETAIL-Y

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PROTECTION / TREATMENT WORKS ON CHRONIC LANDSLIDE ZONE FROM
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(TYPICAL DETAIL OF STRUCTURES-III)

STABILITY MEASURES

FOR LOCATION BETWEEN CH. 49.850KM TO CH. 50.140KM ON
SEVOKE - RANGPOO ROAD, NH-10

SHEET 7 OF 7



