Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/231 Rev B

Additional Content Access

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CAD Drawing

- CIV/SD/231

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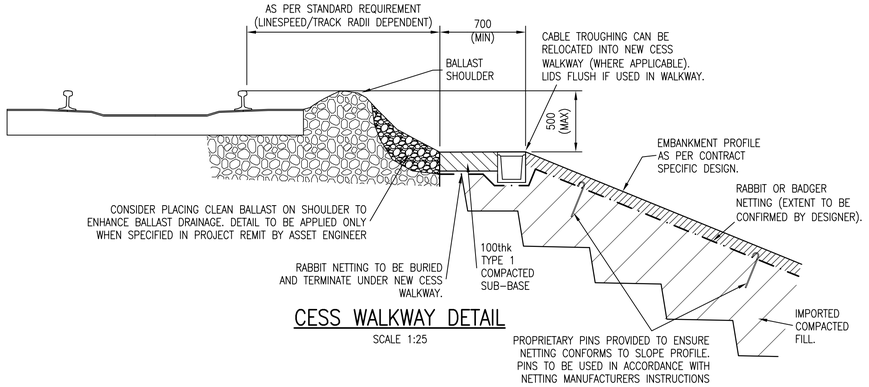
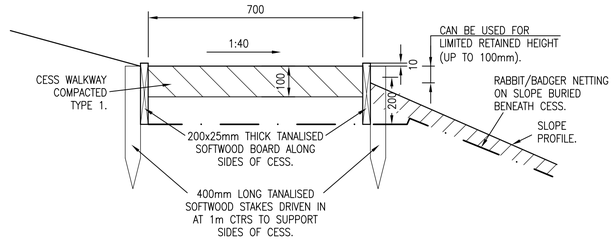


CESS WALKWAY DETAIL

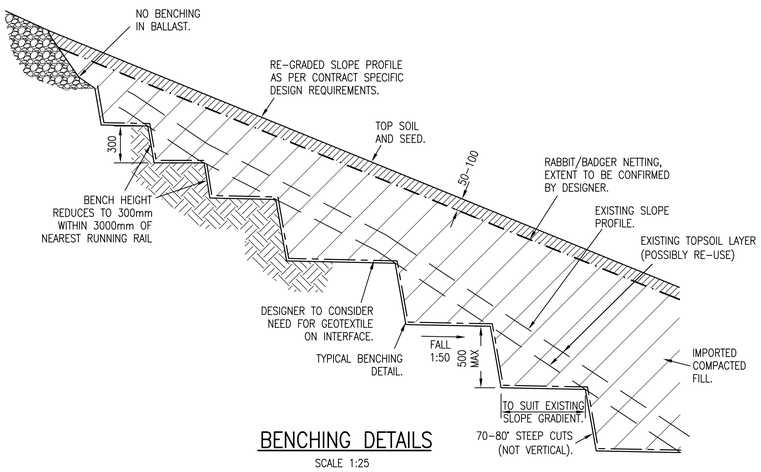
SCALE 1:25



TIMBER STAKED CESS WALKWAY DETAIL

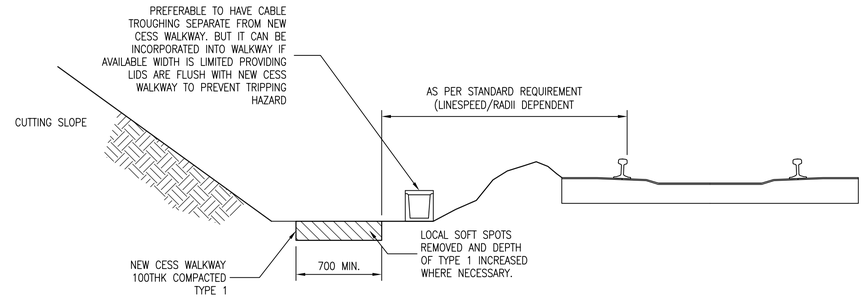
(PROVIDED WHERE REQUIRED, MAINLY IN AREAS NOT RECEIVING HIGH-LEVEL RE-GRADE)

SCALE 1:10



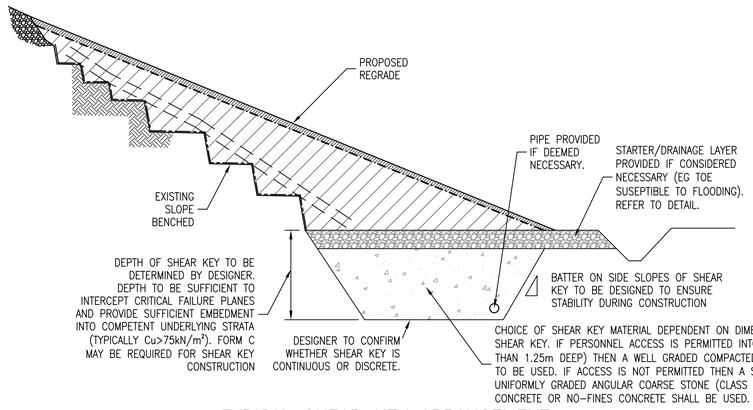
BENCHING DETAILS

SCALE 1:25



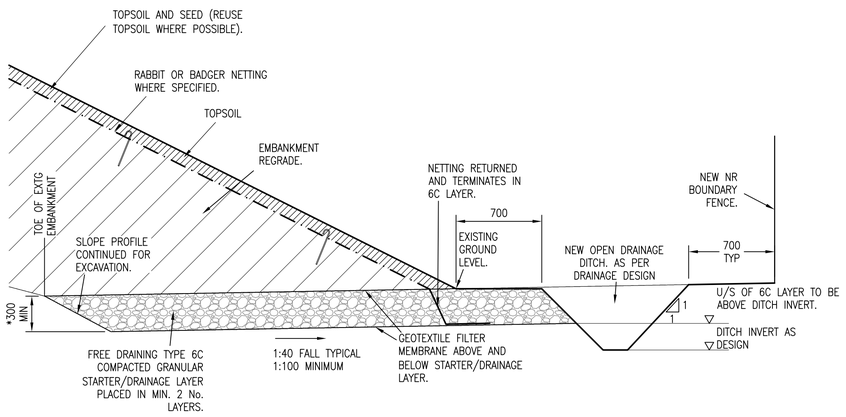
TYPICAL CESS WALKWAY DETAIL AT TOE OF CUTTING/LEVEL GROUND

SCALE 1:25



TYPICAL SHEAR KEY ARRANGEMENT

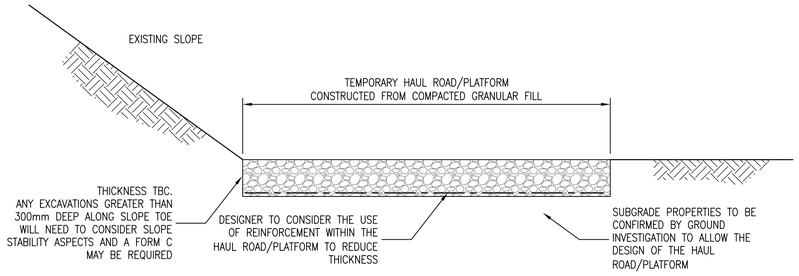
SCALE 1:50



TOE PREPARATION DETAIL ON SATURATED GROUND

* ANY EXCAVATIONS GREATER THAN 300mm DEEP ALONG SLOPE TOE WILL NEED TO CONSIDER SLOPE STABILITY ASPECTS AND POSSIBLY A FORM C WILL BE REQUIRED

SCALE 1:25



TEMPORARY HAUL ROAD OR WORKING PLATFORM

SCALE 1:25

DRAWING No. NR/CIV/SD/231

NOTES

A1 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH NETWORK RAIL STANDARD DRAWING NR/CIV/SD/230.

B SPECIFICATION

B2 ALL WORKS TO BE IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/L3/CIV/140 MODEL CLAUSES FOR SPECIFYING CIVIL ENGINEERING WORKS. IN PARTICULAR SECTION 50 : GENERAL REQUIREMENTS FOR EARTHWORKS AND EXCAVATIONS.

B3 GRANULAR FILL SHALL HAVE A MINIMUM CHARACTERISTIC PHI VALUE OF 35° TO PROVIDE SUFFICIENT RESISTANCE AGAINST NEAR-SURFACE SHALLOW FAILURES, FOR SLOPE GRADIENTS UP TO 1V IN 2H. TYPICALLY GRANULAR FILL SHALL BE CLASS 1A IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAYS WORKS.

B4 WHEN USING COHESIVE FILL THE CHARACTERISTIC UNDRAINED AND DRAINED PARAMETERS SHALL BE CONFIRMED PRIOR TO DEFINING THE DESIGN SLOPE GRADIENTS, TO ENSURE SHALLOW AND DEEP-SEATED STABILITY. IT IS ENVISAGED SITE-WON COHESIVE FILL OF POOR ENGINEERING VALUE SHALL BE ONLY BE USED AT THE TOE OF EXISTING SLOPES WHERE THEY WILL ONLY ENHANCE THE GLOBAL STABILITY OF THE SLOPE, SUBJECT TO THE NECESSARY DESIGN TO ENSURE ITS OWN STABILITY. DESIGNER TO CONSIDER SOIL-MIXING AND/OR BLENDING TO IMPROVE THE ENGINEERING PROPERTIES OF ANY SITE-WON MATERIAL.

B5 TYPICALLY COHESIVE FILL SHALL BE CLASS 2C IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAYS WORKS.

B6 THE CHARACTERISTIC PROPERTIES OF ALL IMPORTED FILL, SITE-WON MATERIAL, AND/OR SOIL-MIXED MATERIAL SHALL BE CONFIRMED BY APPROPRIATE SAMPLING AND LABORATORY TESTING IN ACCORDANCE WITH EN-1997. PRIOR TO ACCEPTANCE THE CLASSIFICATION, STRENGTH AND COMPACTION PROPERTIES SHALL BE CONFIRMED.
LIVE AND SURCHARGE LOADS ARE TO BE APPLIED IN ACCORDANCE WITH SECTION 15 OF NETWORK RAIL COMPANY STANDARD NR/L3/CIV/071: GEOTECHNICAL DESIGN.

B7 ALL GEOTEXTILES TO COMPLY WITH NETWORK RAIL SPECIFICATION NR/SP/TRK/010. NEEDLE PUNCHED TYPE.

B8 SEED MIX TO BE CONFIRMED BY CONTRACTOR. TYPICALLY A DENSE GRASS MIX OF LOW MAINTENANCE IS DESIRED FOR NETWORK RAIL EMBANKMENTS. TIME OF YEAR AND THE SITUATION OF THE SITE TO BE CONSIDERED WHEN SPECIFYING SEED MIX.

B9 DESIGNER TO CONSIDER REQUIREMENT FOR GEOTEXTILE IN BENCHING. IT IS IMPORTANT GOOD CONTACT IS MADE BETWEEN THE EXISTING SLOPE AND PLACED FILL WHICH MAY BE REDUCED BY THE INCLUSION OF A GEOTEXTILE. GEOTEXTILES ARE PROVIDED TO PRESERVE DRAINAGE LAYERS OR REINFORCING A GRANULAR LAYER.

Rev	Date	Description of revision	Design'd	C'kd
B	MAY 2011	SECOND ISSUE	RKA	AW
A	08.08.06	FIRST ISSUE	GPR	NGAY

Network Rail

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Approved	P CLARK	Senior Prog. Eng. Manager Investment Projects Building & Civils	PC	MAY 2011
	Name	Position	Signature	Date

Master copy with original signatures held by Network Rail HQ CIVIL ENGINEERING STANDARD DESIGN

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EMBANKMENT REGRADES

SLOPE REGRADE DETAILS

Scale	AS SHOWN @ A1	
Drawing Number	NR/CIV/SD/231	REV. B

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