Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/266 Rev A

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CAD Drawing

- CIV/SD/266

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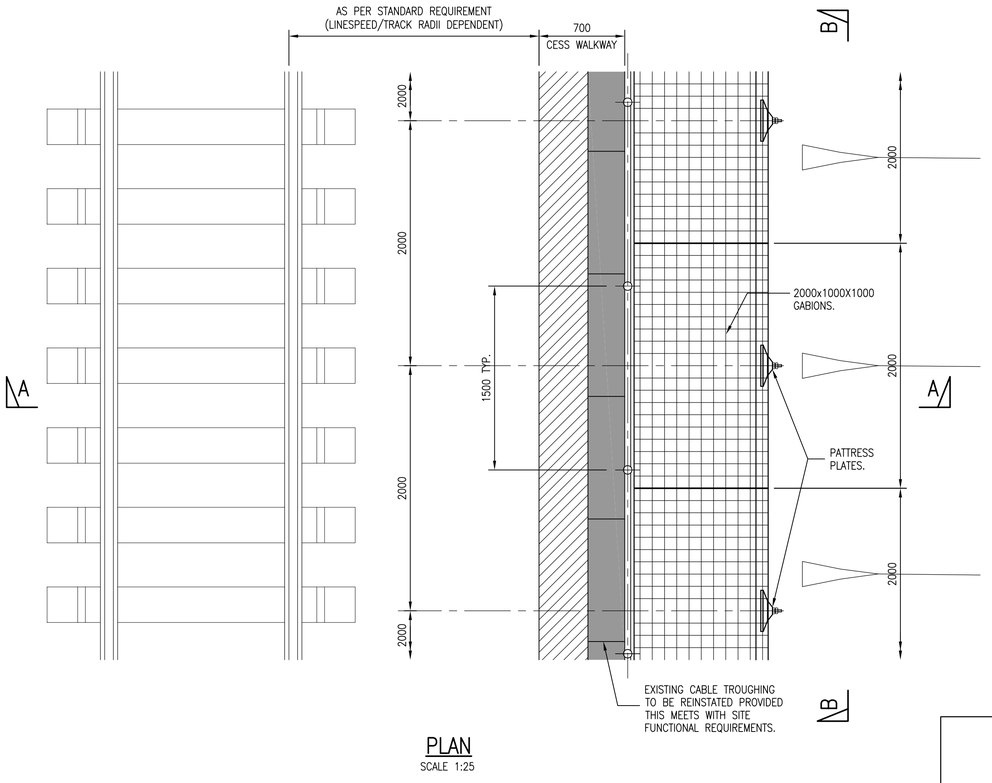
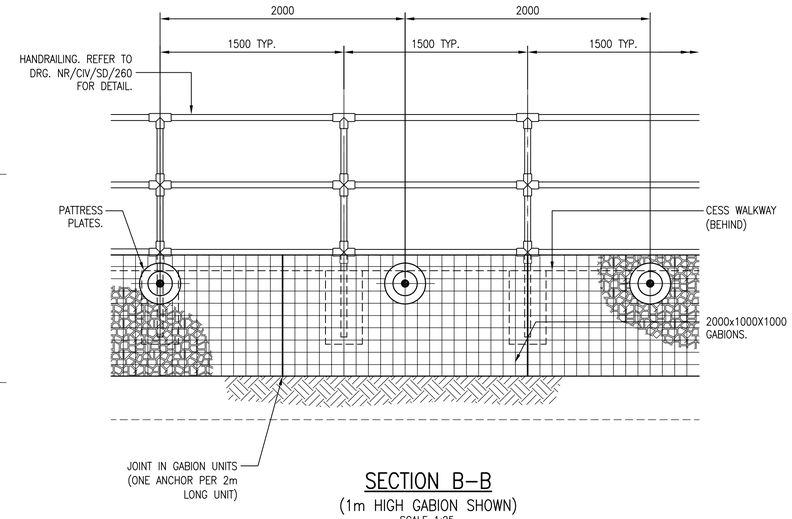


PLAN

SCALE 1:25



SECTION B–B

(1m HIGH GABION SHOWN)

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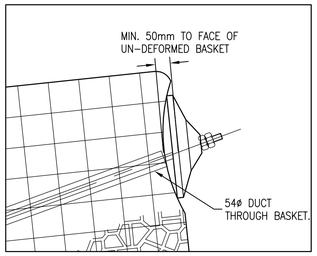
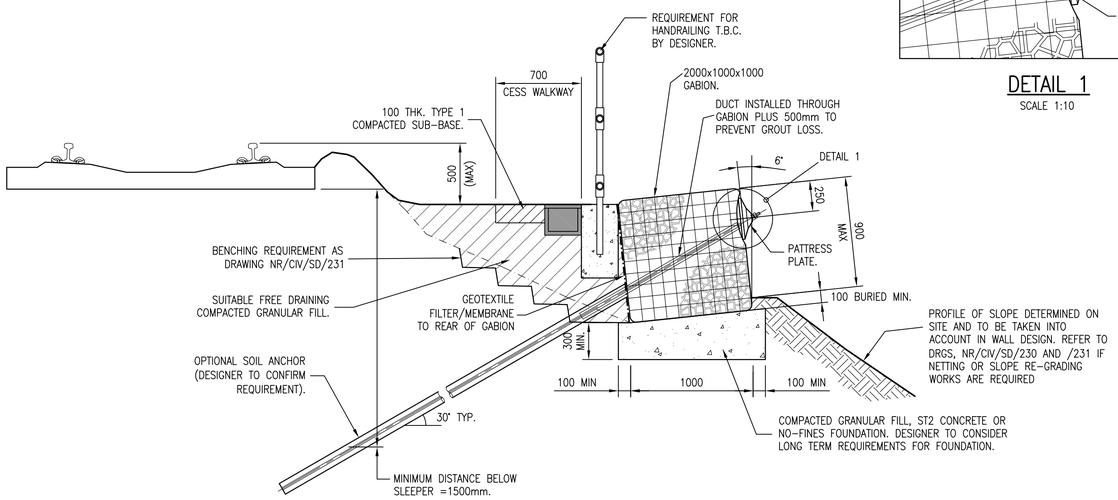


DETAIL 1

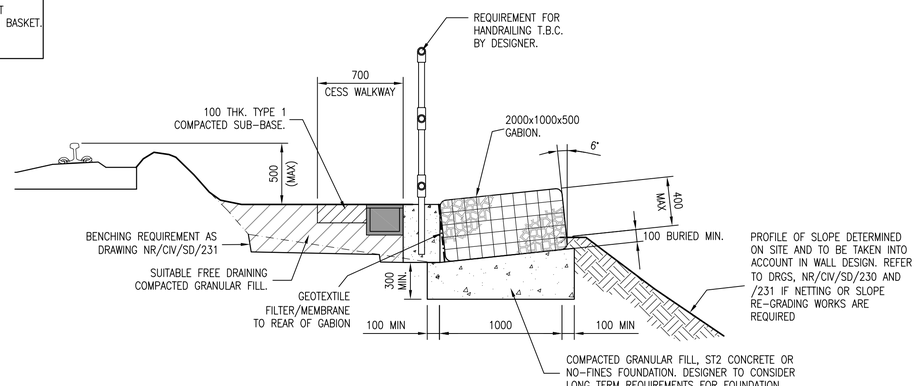
SCALE 1:10



SECTION A–A

MAX. RETAINED HEIGHT 900

SCALE 1:25



SECTION A–A

MAX. RETAINED HEIGHT 400

SCALE 1:25

NOTES (CONT.)	
C10	SIZING ALL COMPONENTS OF THE SOIL ANCHOR. CONSIDERATION SHALL BE GIVEN TO THE FOLLOWING:– • INCLINATION • GROUT BORE DIA. • ANCHOR STRENGTH (TAKING ACCOUNT ANY SACRIFICIAL LOSS) • FACE PLATE SIZE AND THICKNESS. • CORROSION PROTECTION
C11	SOIL ANCHORS SHALL BE A MINIMUM OF 1500MM BELOW THE SLEEPERS.
C12	SOIL ANCHORS TO BE INSTALLED AND TESTED IN ACCORDANCE WITH THE PROJECT SPECIFIC SPECIFICATION.
	GROUT
C13	CEMENTITIOUS GROUT FOR SOIL ANCHOR INSTALLATION SHALL HAVE A MINIMUM CUBE STRENGTH OF 40N/mm² (28 DAYS). WATER/CEMENT RATIO NOT TO EXCEED 0.45 GROUT CUBE SAMPLES (3No.) ARE TO BE TAKEN AND TESTED INITIALLY EVERY 5th SOIL NAIL INSTALLATION.
	BACKFILL
C14	GRANULAR FILL MATERIALS TO BE FREE DRAINING AND PLACED AND COMPACTED IN ACCORDANCE WITH THE SPECIFICATION FOR HIGHWAYS WORKS. SUITABLE FILL IS HA CLASS 6N GRANULAR FILL. OTHER CLASSES OF BACKFILL CAN BE CONSIDERED FOR USE BEHIND THE WALL SUBJECT TO THE NECESSARY LABORATORY CLASSIFICATION AND STRENGTH TESTS AND WALL STABILITY DESIGN.
	INSTALLATION GUIDANCE
C15	ALL GABION TO BE ASSEMBLED, FILLED AND JOINED IN ACCORDANCE WITH MANUFACTURES INSTRUCTIONS. TYPICAL BEST PRACTICE INSTALLATION METHODS ARE SHOWN ON THIS DRAWING.
C16	THE FRONT FACE OF GABIONS TO BE HAND PACKED TO CREATE DRY STONE WALL APPEARANCE. GABIONS SHALL BE CONSTRUCTED TO HAVE BULGE OF DEPRESSION NOT GREATER THAN 1 IN 100 OVER ANY VERTICAL OR HORIZONTAL DIMENSION OF AN INDIVIDUAL BASKET.
C17	DESIGNER TO CONSIDER THE STABILITY OF THE SLOPE ABOVE AT ALL TIMES (TRENCH EXCAVATION, BENCH BACKING, TOE EXCAVATION). METHOD OF CONSTRUCTION TO BE ASSESSED BY THE DESIGNER. EXCAVATIONS TO BE COMMENCED IMMEDIATELY PRIOR TO BACKFILLING AND COMPACTING.
C18	CLASS 6N GRANULAR BACKFILL TO BE COMPACTED BEHIND THE GABION WALLS. OTHER CLASSES OF BACKFILL CAN BE CONSIDERED FOR USE BEHIND THE WALL SUBJECT TO THE NECESSARY LABORATORY CLASSIFICATION AND STRENGTH TESTS AND WALL STABILITY DESIGN.

DRAWING No. NR/CIV/SD/266

NOTES	
A1	FOR GENERAL NOTES SEE DRG NR/CIV/SD/260.
A2	FOR GENERIC RISK ASSESSMENT, REFER TO DRG NR/CIV/SD/260 TABLE 1. DESIGNER TO COMPILE SITE SPECIFIC RISK ASSESSMENT.
B	GENERAL
B1	DESIGNER WILL NEED TO CONFIRM THE WALL AND SLOPE STABILITY AT ALL THE CONSTRUCTION STAGES.
B2	ANY REQUIREMENT TO ALLOW FOR FUTURE TRACK LIFTS WHEN DEFINING THE CESS WALKWAY LEVEL WILL NEED TO BE AGREED WITH THE ASSET ENGINEER AS PART OF THE PROJECT REMIT.
C	SPECIFICATION
	FOUNDATION
C1	NO FINES CONCRETE TO HAVE NOMINAL 20 TO 40mm SINGLE–SIZE AGGREGATE. AGGREGATE TO CEMENT RATIO TO BE 8 TO 1 BY VOLUME AND MAXIMUM CEMENT RATIO 0.27.
C2	CONCRETE TO BE IN ACCORDANCE WITH BS8500 AND EN 206–1.
C3	A GRANULAR FILL FOUNDATION SHALL HAVE A MINIMUM CHARACTERISTIC PHI VALUE OF 35'.
	GABION SPECIFICATION
C4	GABION FILL MATERIAL TO BE HIGHWAY AGENCY CLASS 6G GRADED BETWEEN 100 AND 200mm.
C5	GABION BASKETS TO BE CONSTRUCTED FROM GALVANISED RIGID WELDED WIRE WESH. MESH THICKNESS 4.0mm. MESH SIZE 75x75mm. ALTERNATIVE MATERIALS MAY BE PROPOSED BY THE DESIGNER IN A PROJECT SPECIFIC FORM A / FORM B SUBMISSION.
C6	ON AC ELECTRIFIED LINES GABIONS SHALL BE ELECTRICAL BONDED AND EARTHED IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/SP/ELP/21085.
	SOIL ANCHORS
C7	IF THE WALL DESIGN REQUIRES ADDITIONAL SUPPORT SOIL ANCHORS SHALL BE PROVIDED, DESIGNED TO BS EN 1997. DESIGNER TO CONFIRM REQUIREMENT IN SITE SPECIFIC FORM A / FORM B. THE PROPERTIES OF THE SOIL ANCHORS SHALL BE CONFIRMED BY THE DESIGNER (LENGTH, BORE DIAMETER ETC). IT IS ENVISAGED SUITABILITY TESTS WILL BE REQUIRED TO VERIFY THE ANCHOR DESIGN.
C8	THE DESIGNER SHALL CONFIRM THE MOVEMENTS REQUIRED TO MOBILISE THE REQUIRED LOADS IN THE SOIL ANCHORS ARE ACCEPTABLE. DESIGNER TO CONSIDER PROVIDING A PRELOAD TO REDUCE MOVEMENTS.
C9	SOIL ANCHORS SHALL BE DOUBLE CORROSION–PROTECTED. THE REQUIREMENT FOR PROTECTIVE COATING SHALL BE DETERMINED BY THE DESIGNER IN DETERMINING THE APPROPRIATE SACRIFICIAL THICKNESS. REFERENCE CAN BE MADE TO SECTION 9 OF CIRIA GUIDE C637. APPROPRIATE ANCHOR HEAD PROTECTION FOR THE ENVIRONMENT SHALL BE PROVIDED IF NECESSARY.

Rev	Date	Description of revision	Design'd	C'kd
A	MAY 2011	FIRST ISSUE	RKA	AW

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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CESS SUPPORT STRUCTURES

GABION WALL

Scale	AS SHOWN	
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