Supplementary Information

The following information is associated with Network Rail Standard:
NR CIV/SD/673 Rev A

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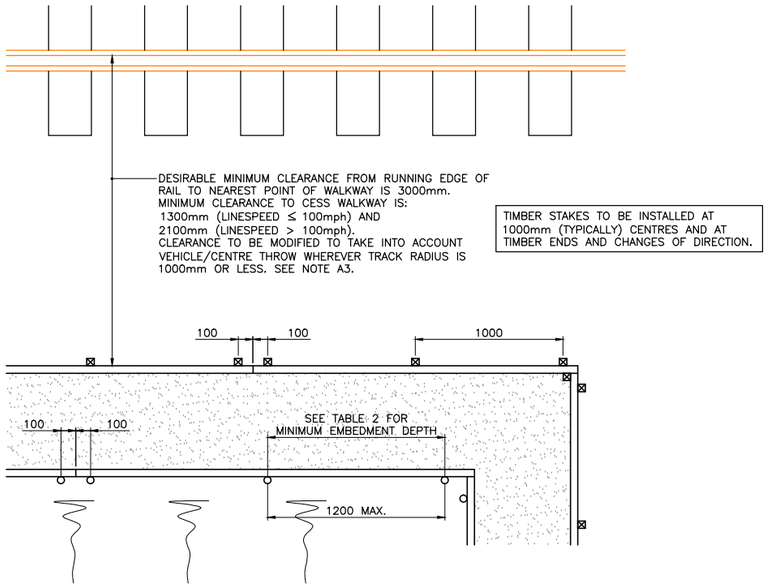
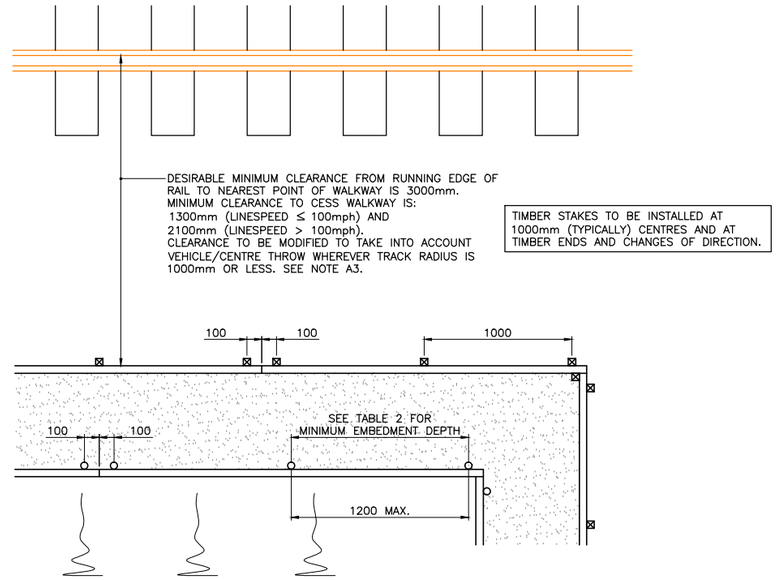


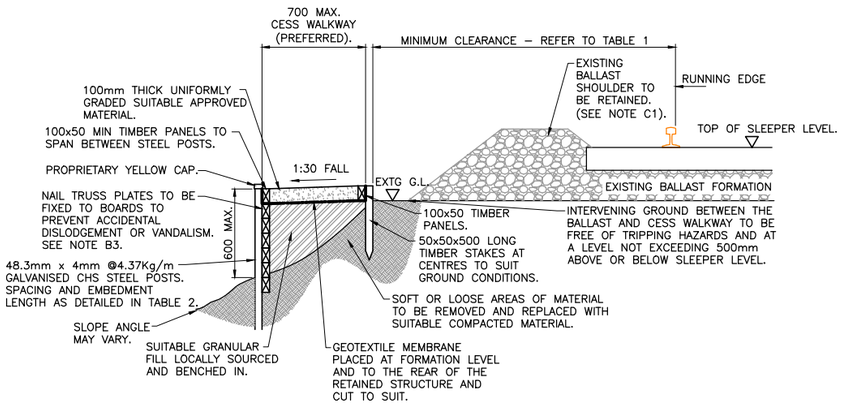
TYPICAL PLAN ON TYPE 'D' WALKWAY

SCALE 1:20



TYPICAL PLAN ON TYPE 'E' WALKWAY

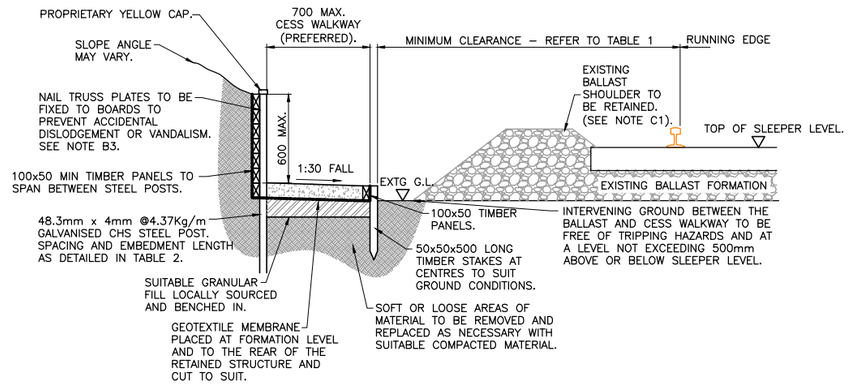
SCALE 1:20



TYPE 'D' WALKWAY

(FOR USE ON EMBANKMENT)

SCALE 1:20



TYPE 'E' WALKWAY

(FOR USE IN CUTTING)

SCALE 1:20

TABLE 1: MINIMUM CLEARANCE FROM RUNNING EDGE OF RAIL TO EDGE OF SAFE CESS

TRACK RADIUS (m)	INSIDE CURVE		OUTSIDE CURVE	
	≤100mph	>100mph	≤100mph	>100mph
0 (STRAIGHT)	1300	1300	2100	2100
1000	1475	2275	1350	2150
500	1500	2300	1400	2200
250	1550	2350	1475	2275
125	1650	2450	1650	2450

TABLE 2: CHS MINIMUM EMBEDMENT DEPTHS

TYPE 'D' & 'E' WALKWAYS		MODULUS OF SUBGRADE REACTION = 20000kN/m³		MODULUS OF SUBGRADE REACTION = 35000kN/m³	
FINAL RETAINED HEIGHT	MAXIMUM SPACING OF T–SECITONS (m)	MINIMUM EMBEDMENT DEPTH (m)	MINIMUM PILE LENGTH (m)	MINIMUM EMBEDMENT DEPTH (m)	MINIMUM PILE LENGTH (m)
300mm – 400mm	1.2	1.2	1.6	1.1	1.5
400mm – 500mm			1.7		1.6
500mm – 600mm			1.8		1.7

Notes: Minimum embedment depths have been calculated using a unit subgrade modulus for medium dense sand = 20,000kN/m³ and a unit subgrade modulus for stiff clay = 35,000kN/m³. Depending on the site specific soil parameters, this may vary and spacings of sections to be altered accordingly.
Maximum slope angle of retained material equal to 30 degrees.
Steel to be S235 J0.

C7. NO WORKS ARE TO BE UNDERTAKEN ON EMBANKMENTS OR CUTTINGS PRIOR TO A STABILITY RISK ASSESSMENT.

C8. GUIDANCE FROM NETWORK RAIL EARTHWORKS ENGINEER MUSH BE SOUGHT FOR ANY PROPOSED CONSTRUCTION OR ALTERATION WHERE SIGNIFICANT DEFECTS OR MONITORING INSTRUMENTATION ARE PRESENT.

C9. VEGETATION AND DEBRIS TO BE CLEARED PRIOR TO CONSTRUCTION OF CESS WALKWAY.

C10. MINIMUM HEADROOM OF 2000mm REQUIRED AT ALL POSITIONS. HEADROOM CLEARANCE NOT TO ENCROACH WITHIN 2750mm OF OHLE.

C11. MAXIMUM LONGITUDINAL GRADIENT OF CESS WALKWAY TO BE 1:8. STEPS LONGITUDINALLY AND REDUCED WALKWAY WIDTH MAY BE PERMISSIBLE. FOR STEP DETAILS REFER TO DRAWING NTPO/SITE/SD/008 REV 02.

C12. WHERE POSSIBLE CESS WALKWAY SHOULD BE DISTINCT IN COLOUR FROM THE SURROUNDING BALLAST OR ADJACENT GROUND.

C13. TIMBER STAKES MAY BE PLACED ON THE INSIDE OF THE TIMBER PANELS WHERE NEW TROUGHING IS TO BE INSTALLED BY OTHERS, HOWEVER CONSTRUCTION MUST NOT ENCROACH INTO 2100mm MINIMUM CABLE TROUGHING ZONE UNLESS THE PRIOR AGREEMENT OF THE RELEVANT TROUGHING INSTALLER HAS BEEN OBTAINED.

C14. ANY METAL HANDRAILS THAT MAY NEED TO BE INSTALLED IN AN AC ELECTRIFIED AREA ARE TO BE ELECTRICALLY BONDED IN LINE WITH NETWORK RAIL STANDARD NR/SP/ELP/21085.

C15. WHERE REASONABLY PRACTICABLE WALKWAYS SHALL NOT BE CONSTRUCTED ADJACENT TO CONDUCTOR RAILS. WHERE THIS IS UNAVOIDABLE GUARD BOARDING TO NR STANDARD NR/SP/ELP/21104 – DESIGN & INSTALLATION OF ELECTRIC TRACK EQUIPMENT FOR DC ELECTRIFIED LINES, MAY BE PROVIDED.

C16. NO STEELWORK OR TIMBER SHOULD PROTRUDE ABOVE THE LEVEL OF THE WALKWAY SURFACE.

D. ASSUMPTIONS

D1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE ADOPTED DESIGN IS APPLIED TO THE SPECIFIC SITE BY A SUITABLY QUALIFIED ENGINEER.

DRAWING No. NR/CIV/SD/673

NOTES

A. GENERAL NOTES

A1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED.

A2. ALL WORK TO BE IN ACCORDANCE WITH NR STANDARD NR/L3/CIV/140 MODEL CLAUSES FOR CIVIL ENGINEERING WORKS.

A3. REFER TO SPECIFICATION DOCUMENT: NR/SP/OHS/069 – LINESIDE FACILITIES FOR PERSONNEL SAFETY.

A4. ALL SERVICES TO BE LOCATED PRIOR TO CONSTRUCTION. AN INSPECTION FOR UNDERGROUND SERVICES NOT CLEARLY VISIBLE ON SITE SHALL BE UNDERTAKEN USING AN APPROVED CAT SCANNER.

A5. ALL CULVERTS TO BE LOCATED PRIOR TO CONSTRUCTION AND DRIVEN SECTIONS ARE TO BE POSITIONED TO ENSURE THEY ARE CLEAR OF ALL CULVERTS.

A6. SPLIT OR RE–USED TIMBER OR CONCRETE SLEEPERS CAN BE USED ALONG THE CHS SIDE OF THE WALKWAY.

A7. ROUTE GEOTECHNICAL ENGINEER SHALL BE CONSULTED WHEN INSTALLING AT THE BASE OR CREST OF AN EARTH SLOPE.

A8. FOR A LIST OF THE RISKS ASSOCIATED WITH THESE WORKS REFER TO – SAFETY, HEALTH AND ENVIRONMENTAL RISK ASSESSMENT ON DRAWING NR/CIV/SD/670 REV A.

B. SPECIFICATION

B1. ALL TIMBER IS TO BE TANALISED TIMBER OR SIMILARLY PRESERVED TIMBER IN ACCORDANCE WITH BS EN 8417.

B2. ALL TIMBER SHALL BE GRADE C24 TO BS EN 14081–1.

B3. ALL METAL CHS SUPPORT SECTIONS TO BE GRADE S275 J0 STEEL.

B4. ALL METALWORK COMPONENTS OF THE WALKWAY ARE TO BE GALVANISED FINISH.

C. INSTALLATION GUIDANCE

C1. NO WORK IS TO ENCROACH ON THE AREA OCCUPIED BY THE BALLAST SHOULDER. THE BALLAST SHOULDER IS 450mm WIDE AND 150mm HIGH MINIMUM.

C2. CONSTRUCTION OF WALKWAYS SHOULD NOT ADVERSELY AFFECT TRACK DRAINAGE.

C3. SAFE CESS TO BE POSITIONED TO ENSURE ACCESS TO EXISTING LINESIDE INFRASTRUCTURE IS NOT IMPEDED.

C4. WHERE SIGNAL POSTS OR OTHER OBSTRUCTIONS PREVENT ACHIEVEMENT OF THE MINIMUM CLEARANCE DIMENSIONS, CESS WALKWAYS, WHERE PRACTICABLE, SHOULD BE TAKEN AROUND THE OBSTRUCTION ON THE SIDE AWAY FROM THE NEAREST TRACK, PROVIDED THAT THIS DOES NOT CREATE A MORE SEVERE CONFLICT WITH ANOTHER TRACK.

C5. SIGNS ARE REQUIRED WHERE OBSTRUCTIONS PRECLUDE THE PROVISION OF ADEQUATE LINESIDE FACILITIES FOR PERSONAL SAFETY IN ACCORDANCE WITH NR/SP/OHS/069 – LINESIDE FACILITIES FOR PERSONNEL SAFETY.

C6. WHERE IT IS NECESSARY FOR A CABLE TO CROSS A WALKWAY, A SUITABLE DUCT SHALL BE PROVIDED. CABLE TROUGHING SHALL NOT BE ACCOMMODATED WITHIN THE WALKING SURFACE.

Rev	Date	Description of revision	Design'd	C'kd

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Approved				
	Name	Position	Signature	Date

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

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MISCELLANEOUS & ANCILLARY STRUCTURES

CESS WALKWAY TYPES 'D' & 'E'

Scale	AS SHOWN	
Drawing Number	NR/CIV/SD/673	A

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