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NR CIV/SD/370 Rev A

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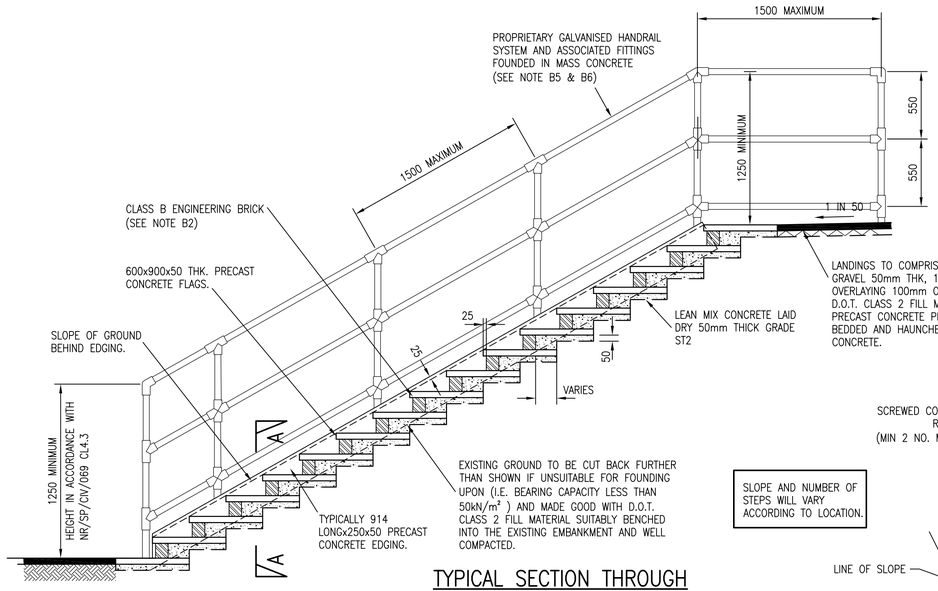
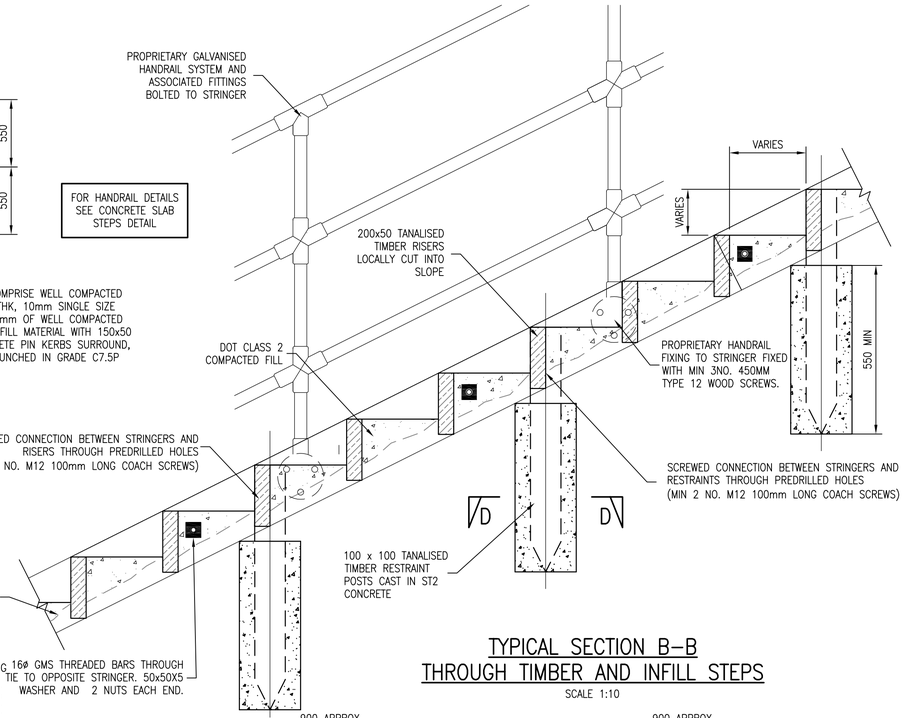


FOR HANDRAIL DETAILS SEE CONCRETE SLAB STEPS DETAIL

SLOPE AND NUMBER OF STEPS WILL VARY ACCORDING TO LOCATION.

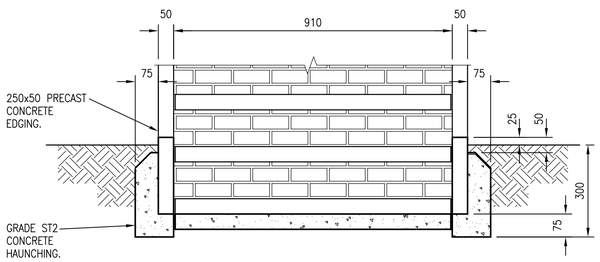
TYPICAL SECTION THROUGH CONCRETE SLAB STEPS

SCALE 1 : 25



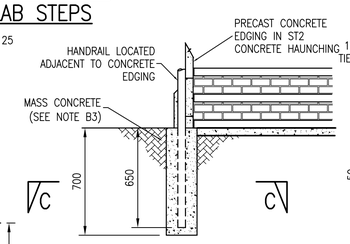
TYPICAL SECTION B–B THROUGH TIMBER AND INFILL STEPS

SCALE 1:10



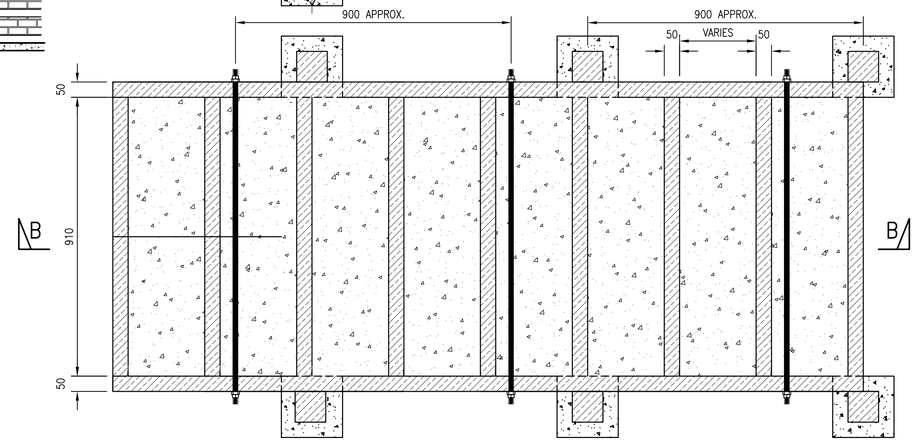
SECTION A – A

SCALE 1 : 10



ELEVATION ON HANDRAIL FOUNDATION

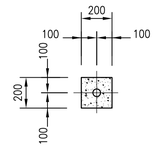
SCALE 1:20



TYPICAL PLAN ON TIMBER AND INFILL STEPS

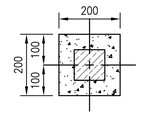
NOTE: HANDRAIL FOUNDATION OMMITED FOR CLARITY

SCALE 1:10



SECTION C–C

SCALE 1:20



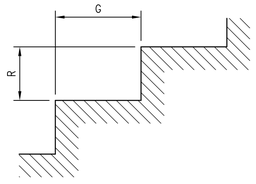
SECTION D–D

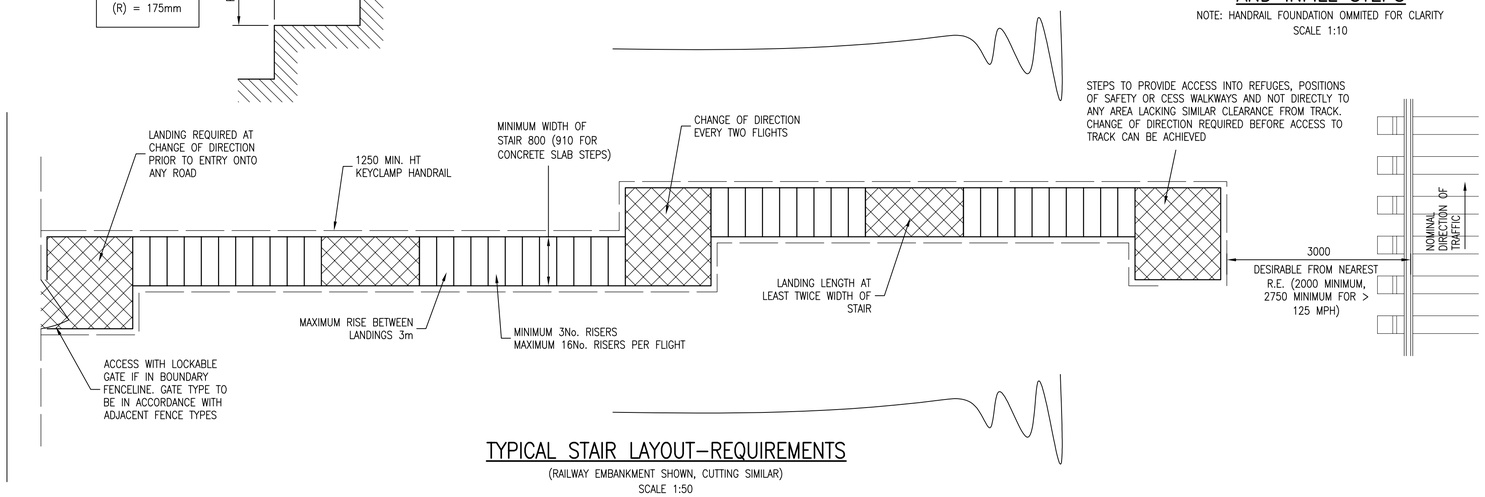
SCALE 1:10

(2R+G) TO BE BETWEEN 600 & 630MM

MINIMUM GOING (G) = 280mm

MAXIMUM RISE (R) = 175mm





TYPICAL STAIR LAYOUT–REQUIREMENTS

(RAILWAY EMBANKMENT SHOWN, CUTTING SIMILAR)

SCALE 1:50

NOTES

GENERAL NOTES:

A1 ALL DIMENSIONS ARE IN MILLIMETRES.

A2 THIS IS A GENERIC DRAWING AND IS IN ACCORDANCE WITH THE STANDARDS APPLICABLE AT THE DATE OF APPROVAL OF THE DRAWING. THE CONTRACTOR IS REQUIRED TO ENSURE THAT ANY SUBSEQUENT CHANGES TO STANDARDS OR EQUIPMENT SIZES ARE INCORPORATED INTO THE PERMANENT WORKS.

A3 IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ADOPTED DESIGN IS APPLIED TO THE SPECIFIC SITE BY A SUITABLY QUALIFIED ENGINEER, SUCH THAT RISKS OF SOIL INSTABILITY ARE NOT IMPORTED TO THE SLOPE SYSTEM.

A4 DIMENSIONAL REQUIREMENTS OF STAIRS ARE IN ACCORDANCE WITH BS 5395 PART 1 2000 AND NR/SP/OHS/069 APPENDIX A.

A5 FOR LOCATION, SETTING OUT AND ORIENTATION, SEE SITE SPECIFIC LAYOUT PLAN.

A6 ALL DETAILS ON THIS DRAWING ARE SUBJECT TO CONFIRMATION BY DETAILED SITE SPECIFIC DESIGN FOLLOWING A COMPREHENSIVE GROUND INVESTIGATION AND TOPOGRAPHICAL SURVEY.

A7 ALL WORK TO BE IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/GN/CIV/008. MODEL CLAUSES FOR SPECIFYING CIVIL ENGINEERING WORKS, (THE SPECIFICATION).

A8 SERVICES:–
1. THE CONTRACTOR MUST UNDERTAKE A SERVICES SEARCH IN THE VICINITY OF THE PROPOSED WORKS, BOTH VISUALLY AND USING APPROVED CAT EQUIPMENT.
2. THE CONTRACTOR IS RESPONSIBLE FOR LOCATING, UPHOLDING AND PROTECTING ALL SERVICES AFFECTED BY THE WORKS.
3. EXCAVATION AND GROUND DISTURBANCE MUST BE PLANNED IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/SP/OHS/011; PREVENTION OF DAMAGE TO AND DANGER FROM SURFACE AND BURIED SERVICES.
4. ALL WORKS ARE TO BE COMPLETED IN ACCORDANCE WITH NETWORK RAIL PROCEDURES:
   A. NR/PRC/MPI/C10024 CONTROL AND USE OF METAL PINS AND SPIKES ON NETWORK RAIL INFRASTRUCTURE
   B. NR/PRC/MPI/C10026 PROCESS FOR LOCATING BURIED SERVICES PRIOR TO GROUND INVESTIGATION.

A9 GUIDANCE FROM NETWORK RAIL EARTHWORKS ENGINEER MUST BE SOUGHT FOR ANY PROPOSED CONSTRUCTION OR ALTERATION TO A SLOPE WHERE SIGNIFICANT DEFECTS OR MONITORING INSTRUMENTATION ARE PRESENT.

B SPECIFICATION:

B1 PRECAST CONCRETE FLAGS, KERBS AND EDGINGS TO BE MANUFACTURED AND LAID TO BS. 7263 PARTS 1 AND 2.

B2 BRICKWORK TO BE ENGINEERING BRICKS, CLASS B TO B.S. 3921 IN 1: 1: 5 CEMENT: LIME: MORTAR. COLOUR TO BE AGREED WITH CLIENT.

B3 CONCRETE TO BE STANDARD MIX ST2 TO BS. 8500.

B4 ALL HANDRAIL AND FITTINGS TO BE SIZE 8 TUBING, HOT DIPPED GALVANISED.

B5 HANDRAILINGS SHALL BE CAPABLE OF WITHSTANDING A HORIZONTAL FORCE OF 400N/m ACTING AT THE HEIGHT OF THE HANDRAILS IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/SP/OHS/069

B6 HANDRAILS AT RISK OF VANDALISM MAY REQUIRE SECURITY FIXINGS. SCHEME REQUIREMENTS SHALL BE SUBJECT TO RISK ASSESSMENT.

B7 TIMBER TO BE GRADE C24 AND PRESERVED IN ACCORDANCE WITH BS 5268. ALL TIMBER COMPONENTS TO BE "CAC" PRESSURE TREATED IN ACCORDANCE WITH BS 4072.

B8 ALL STEEL COMPONENTS TO BE SUPPLIED TO CORRECT LENGTHS. WHERE SITE CUTTING/ALTERATION IS REQUIRED, CORROSION PROTECTION TO BE APPLIED (ZINC RICH PRIMER, TO PROVIDE 140mm DRY FILM THICKNESS).

B9 ALL TIMBER FIXINGS TO BE GALVANISED

B10 WHERE SPECIFIED GALVANISING AND OTHER PROTECTIVE TREATMENTS TO COMPONENTS SHALL BE IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARDS NR/GN/CIV/002 AND NR/SP/CIV/039 (SPECIFICATION RT98)

C INSTALLATION GUIDANCE:

C1 LOCATION AND ANY FENCING REQUIREMENTS TO BE SUBJECT TO SITE SPECIFIC FORM A/B DESIGN. ANY FENCING MUST BE LOCATED AT LEAST 3000mm FROM NEAREST RUNNING EDGE AND AT 2750mm MINIMUM TOUCH POTENTIAL FROM ANY ANY OHLE STRUCTURE.

C2 GALVANISED MENDING PLATES SECURED WITH NAILS TO BE USED ON BOTH FACES OF TIMBER AT SPLICE JOINTS.

C3 LINE OF STEPS AND WALKWAYS TO BE CLEARED OF ALL VEGETATION. AND TREATED WITH NON–TOXIC HERBICIDE.

C4 ARISINGS FROM EXCAVATIONS MAY BE SPREAD EVENLY AND NEATLY OVER THE SITE SUBJECT TO APPROVAL OF EMPLOYER'S REPRESENTATIVE. HOWEVER, IF SITE INVESTIGATION HAS DETERMINED THAT THE EXCAVATED MATERIAL IS CONTAMINATED IT MUST BE REMOVED FROM SITE TO A SUITABLY LICENSED TIP.

C5 ON AC ELECTRIFIED LINES ALL HANDRAIL AND ASSOCIATED FITTINGS SHALL BE ELECTRICALLY BONDED AND EARTHED IN ACCORDANCE WITH NETWORK RAIL COMPANY STANDARD NR/SP/ELP/21085.

D DESIGN ASSUMPTIONS

D1 SLOPE ANGLE IS ASSUMED TO BE BETWEEN 26° & 42°

D2 UNDERLYING GROUND BEARING CAPACITY IS GREATER THAN 50kN/m².

D3 NORMAL GROUND CONDITIONS ARE PRESENT ON SITE. I.E. NO HIGH WATER TABLE, NO WATER LOGGED GROUND, NO SERVICES OR S & T CABLE DIVERSIONS REQUIRED.

TABLE 1

SAFETY, HEALTH & ENVIRONMENT RISK ASSESSMENT

DESIGNERS' NOTE – CDM REG. 13(2)(b)

THE FOLLOWING ARE SIGNIFICANT HAZARDS WHICH MIGHT AFFECT THE HEALTH AND SAFETY OF THOSE UNDERTAKING THE WORKS OUTLINED IN THIS SET OF DRAWINGS ON RAILWAY STRUCTURES OR THOSE AFFECTED BY THESE ACTIVITIES. A SITE SPECIFIC RISK ASSESSMENT SHOULD ALWAYS BE UNDERTAKEN PRIOR TO COMMENCING ANY OF THE WORKS DESCRIBED ON SITE.

IT IS ASSUMED THAT A COMPETENT CONTRACTOR IS AWARE OF THE RISKS ASSOCIATED WITH GENERAL CONSTRUCTION ACTIVITIES UNDERTAKEN WITHIN THE RAILWAY ENVIRONMENT.

RISK	STAGE	MITIGATING MEASURES
LOCALISED EXCAVATION COLLAPSE.	C	ENSURE COMPETENT PERSONNEL TO EXCAVATE THE WORKS AND EXCAVATIONS ARE KEPT CLEAR OF WATER.
BURIED SERVICES/ S & T CABLES	D/C	ENSURE ALL CABLE/SERVICE LOCATIONS ARE CAT SCANNED, EXPOSED BY HAND DIGGING AND IDENTIFIED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK. (REFER TO NOTES AND A8)
FALLING FROM HEIGHT OFF SLOPE CREST	D/C	STAIRS TO BE CONSTRUCTED FROM THE TOE OF SLOPE UP TO THE CREST TO ENSURE LEVEL WORKING PLATFORM.
CONTAMINATED LAND	D/C	SITE INVESTIGATION TO CHECK FOR CONTAMINATION. IN ACCORDANCE WITH BS10175:2001 INVESTIGATION OF POTENTIALLY CONTAMINATED LAND
UNSUITABLE GROUND CONDITIONS	D/C	DESIGNER RESPONSIBLE FOR STANDARD DETAIL APPLICATION TO ENSURE GROUND CONDITIONS ARE WITHIN ASSUMED LIMITS.

NOTE : C=CONSTRUCTION, D=DESIGN, O=OPERATION

Rev	Date	Description of revision	Design'd	C'kd
A	08.08.06	FIRST ISSUE	GPR	NGAY
P3	04.08.06	REVISED FORM B	GPR	NGAY
P2	16.06.06	FORM B	GPR	NGAY
P1	24.03.06	FORM A	GPR	NGAY

Network Rail
40 Melton Street
London NW1 2EE
Tel: 020–7557–8000

Approved	P. CLARK	Programme Eng. Manager Civils, MP & I	PC	08.08.06
Authorised	K. TEAGER	Director of Civil Engineering	KT	08.08.06
	Name	Position	Signature	Date

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

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EARTHWORKS AND ASSOCIATED DRAINAGE

TYPICAL ACCESS STEPS

Scale	AS SHOWN	
Drawing Number	NR/CIV/SD/370	REV. A

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