The following information is associated with Network Rail Standard:
NR CIV/SD/2517 Rev A

Additional Content Access

Click the link below to access CAD version of this drawing.

CAD Drawing

- CIV/SD/2517

If you have any questions, or need assistance, please contact **IHS Support**

Information accessed via the links above is the property of the Copyright holder

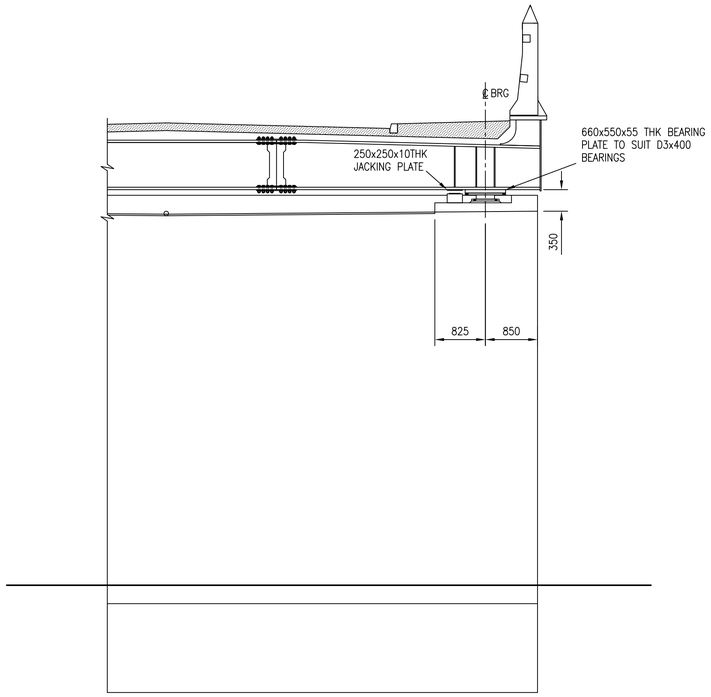
IHS Additional Content Page

Documents
Document Sharing Hub

Copyright Network Rail
Provided by IHS under license with Network Rail
No reproduction or networking permitted without license from IHS
Full document details: NR NR-CIV-SD-2517 ISSUE A 2010

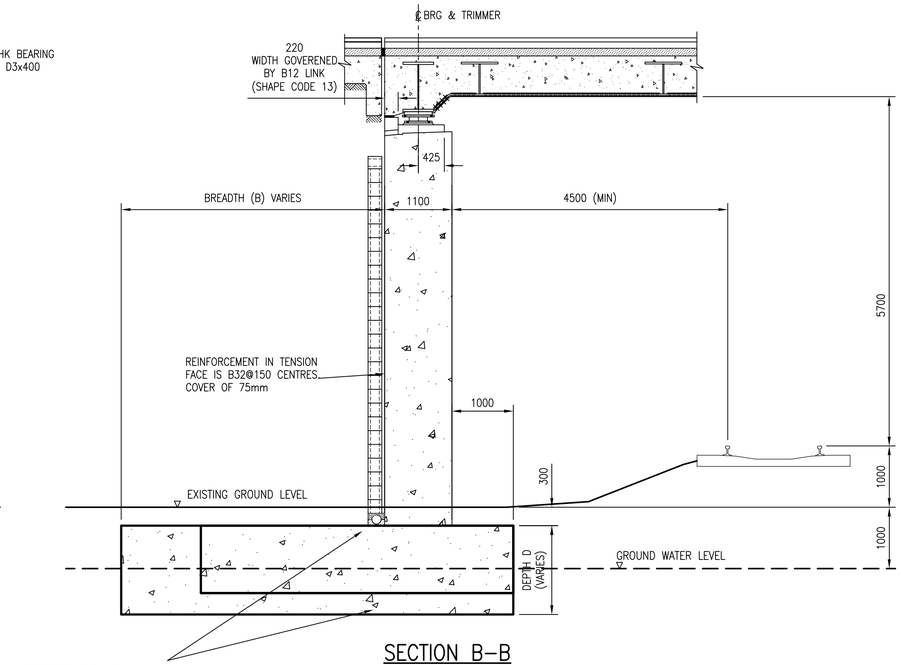
Licensee=Weston Williamson/5989497001, User=sam, albett
Not for Resale, 03/27/2016 21:16:12 MDT

DRAWING No. NR/CIV/SD/2517



PART SECTION A–A ON END TRIMMER
(SECTION TAKEN NORMAL TO MAIN GIRDERS)
(BASED ON DWG NR/CIV/SD/2506)

1:50



SECTION B–B
(SECTION TAKEN NORMAL TO TRIMMER)
(BASED ON DWG NR/CIV/SD/2506)

1:50

Accommodation				
Span	Bearing	Height (min)	Height (max)	Plinth Max	Plinth Min
8.5m Span	D3T100	163	193	187	157
10m Span	D3T125	167	202	183	148
12m Span	D3T125	167	202	183	148
14m Span	D3T160	171	206	179	144
16m Span	D3T160	171	206	179	144
18m Span	D3T160	171	206	179	144
20m Span	D3T160	171	206	179	144
22m Span	D3T200	177	214	173	136
24m Span	D3T200	177	214	173	136
25.4m Span	D3T250	182	214	168	136
Rural					
Span	Bearing	Height (min)	Height (max)	Plinth Max	Plinth Min
8.5m Span	D3T200	177	214	173	136
10m Span	D3T200	177	214	173	136
12m Span	D3T200	177	214	173	136
14m Span	D3T250	182	214	168	136
16m Span	D3T250	182	214	168	136
18m Span	D3T325	197	223	153	127
20m Span	D3T325	197	223	153	127
22m Span	D3T325	197	223	153	127
24m Span	D3T325	197	223	153	127
25.4m Span	D3T400	212	243	138	107
Urban					
Span	Bearing	Height (min)	Height (max)	Plinth Max	Plinth Min
8.5m Span	D3T200	177	214	173	136
10m Span	D3T200	177	214	173	136
12m Span	D3T250	182	214	168	136
14m Span	D3T250	182	214	168	136
16m Span	D3T325	197	223	153	127
18m Span	D3T325	197	223	153	127
20m Span	D3T325	197	223	153	127
22m Span	D3T400	212	243	138	107
24m Span	D3T400	212	243	138	107
25.4m Span	D3T400	212	243	138	107

TABLE 1
BEARING TYPES
& PLINTH VARIATIONS

Accommodation:					
Span	SLS/ULS** Jacking Load (kN)	Enerpac Jack Reference	Enerpac Jack Ht (mm)	Available Height (mm)	Clearance Above Jack (mm)
8.5m Span	1203	CLP-1602	148	153	5
10m Span	1432	CLP-1602	148	157	9
12m Span	1619	CLP-2002	155	157	2
14m Span	1737	CLP-2002	155	161	6
16m Span	1940	CLP-2002	155	161	6
18m Span	1985	CLP-2002	155	161	6
20m Span	2127	CLP-2502	159	161	2
22m Span	2428	CLP-2502	159	161	8
24m Span	2687	**CLP-2502**	159	167	8
25.4m Span	2900	**CLP-2502**	159	172	13
Rural:					
Span	SLS/ULS** Jacking Load (kN)	Enerpac Jack Reference	Enerpac Jack Ht (mm)	Available Height (mm)	Clearance Above Jack (mm)
8.5m Span	1668	2002	155	167	12
10m Span	1796	2002	155	167	12
12m Span	1902	2002	155	167	12
14m Span	2109	2502	159	172	13
16m Span	2319	2502	159	172	13
18m Span	2523	4002	178	187	9
20m Span	2735	4002	178	187	9
22m Span	3065	4002	178	187	9
24m Span	3119	4002	178	187	9
25.4m Span	3397	4002	178	202	24
Urban:					
Span	SLS/ULS** Jacking Load (kN)	Enerpac Jack Reference	Enerpac Jack Ht (mm)	Available Height (mm)	Clearance Above Jack (mm)
8.5m Span	1776	2002	155	167	12
10m Span	1933	2002	155	167	12
12m Span	2192	2502	159	172	13
14m Span	2420	2502	159	172	13
16m Span	2662	4002	178	187	9
18m Span	2903	4002	178	187	9
20m Span	3150	4002	178	187	9
22m Span	3395	4002	178	202	24
24m Span	3654	4002	178	202	24
25.4m Span	3836	4002	178	202	24

CLP-2502

DENOTES JACK CAPACITY <ULS LOAD BUT CAPACITY >SLS LOAD. CONSIDER ACCEPTABLE DUE TO SHORT–DURATION LOADING.

** BASED ON FULL ULS LOADS FOR ACCOMMODATION DECKS (NO TRAFFIC RESTRICTION) AND SLS LOADS FOR RURAL AP AMD URBAN DECKS
(SIMULATING EFFECT OF SINGLE LANE TRAFFIC RESTRICTION)

TABLE 2
JACKING EQUIPMENT
VARIATIONS

	Accommodation			Rural			Urban		
	Breadth, B	Depth, D	Base Reinf	Breadth, B	Depth, D	Base Reinf	Breadth, B	Depth, D	Base Reinf
8.5m Span	3000	1100	32	3000	1100	32	3000	1100	32
10m Span	3500	1100	32	3000	1100	32	3000	1100	32
12m Span	3500	1100	32	3000	1100	32	3000	1100	32
14m Span	3500	1100	32	3000	1100	32	3000	1100	32
16m Span	3500	1100	32	3500	1100	32	3500	1100	32
18m Span	3500	1100	32	3500	1100	32	3500	1100	32
20m Span	4300	1450	40	3500	1100	32	3500	1100	32
22m Span	4300	1450	40	3500	1100	32	3500	1100	32
24m Span	4300	1450	40	3750	1100	32	3750	1100	32
25.4m Span	4300	1450	40	3750	1100	32	3750	1100	32

TABLE 3A
PAD FOOTING VARIATIONS
FOR 1000mm HEEL

	Accommodation			Rural			Urban		
	Breadth, B	Depth, D	Base Reinf	Breadth, B	Depth, D	Base Reinf	Breadth, B	Depth, D	Base Reinf
8.5m Span	4000	1100	32	4000	1100	32	4000	1100	32
10m Span	4500	1400	32	4000	1100	32	4000	1100	32
12m Span	4500	1400	32	4000	1100	32	4000	1100	32
14m Span	4500	1400	32	4500	1400	32	4500	1400	32
16m Span	5000	1600	40	4500	1400	32	4500	1400	32
18m Span	5000	1600	40	4500	1400	32	4500	1400	32
20m Span	5000	1600	40	4500	1400	32	4500	1400	32
22m Span	5000	1600	40	5000	1450	40	5000	1450	40
24m Span	5500	1800	50	5000	1450	40	5000	1450	40
25.4m Span	5500	1800	50	5000	1450	40	5000	1450	40

TABLE 3B
PAD FOOTING VARIATIONS
FOR 500mm HEEL

EINFORCED CONCRETE ABUTMENT PARAMETRS

1. CONCRETE IS ASSUMED TO BE C40/50, BUT CAN BE CHANGED IF REQUIRED.

2. REINFORCEMENT SIZE WILL BE DICTATED BY EARLY THERMAL CRACKING U.N.O.

3. PROPERTIES OF TOP OF ABUTMENT ARE THE SAME AS CILL / REINFORCED EARTH DETAILS, SEE TABLE 1 AND TABLE 2.

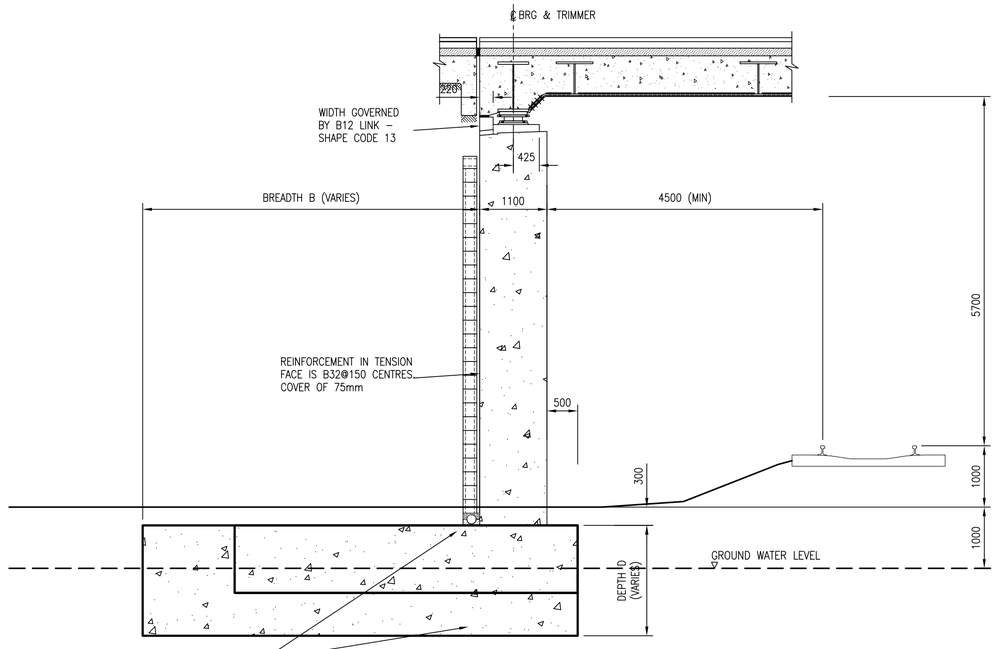
4. EXPOSURE CLASS XD3 ASSUMED AROUND TOP OF WALL.

5. FOR SUBSTRUCTURE DESIGN TO BS EN 1997, ONLY DESIGN APPROACH 1 IS CONSIDERED. BASED ON THE GRANULAR SOIL (c'=0kN/m2 AND ϕ'=35 DEGREES) THE FOLLOWING PROPERTIES WERE CALCULATED FOR COMBINATION 1 AND 2. (IN COMB 1, FACTORS ARE APPLIED TO THE LOADS AND IN COMB 2, FACTORS ARE APPLIED TO THE SOIL MATERIAL)
Combination 1 – Nc=46.12, Nq=33.30 AND N =45.23
Combination 2 – Nc=28.42, Nq=16.92 AND N =17.84
THE SIZES IN TABLE 3 ARE BASED ON SATISFYING COMBINATION 1 ONLY. COMBINATION 2 PROVIDES A MUCH LOWER BEARING CAPACITY AND A PAD FOOTING IS NOT APPROPRIATE.

6. FOR SUBSTRUCTURE DESIGN TO BRITISH STANDARDS, IT HAS BEEN ASSUMED THAT THE GRANLUAR SOIL PROPERTIES PROVIDED ARE DESIGN VALUES, SO THAT THE SOIL PROPERTIES ARE THE SAME AS COMBINATION 1 ABOVE.

7. FOR COHESIVE GROUND WITH c'=5kN/m2 AND ϕ'=28 DEGREES THE BEARING CAPACITIES ARE MUCH LOWER THAN FOR GRANULAR SOIL AND A PAD FOOTING IS NOT APPROPRIATE. PILES FOUNDATIONS WOULD BE REQUIRED.

8. ALL FOUNDATIONS ARE SITE SPECIFIC AND ARE TO BE DESIGNED BASED ON ACTUAL SOIL PROPERTIES.



SECTION B–B
(SECTION TAKEN NORMAL TO TRIMMER)
(BASED ON DWG 1909–106)

1:50

FOR FORM B APPROVAL

Rev	Date	Description of revision	Design'd	C'kd
A	Aug '10	1st Issue	SB	AM

Network Rail

Network Rail Infrastructure Ltd.
Registered Office:
Kings Place
90 York Way
London
N1 9AG

Approved	P Clark	Senior Prog. Eng. Manager Infrastructure Projects, Bulding & Civils	PC	Sept '10
	Name	Position	Signature	Date

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

© COPYRIGHT NETWORK RAIL 2010

OVERBRIDGE

REINFORCED CONCRETE PAD FOUNDATIONS

Scale	AS NOTED
Drawing Number	NR/CIV/SD/2517 A

1. Bearing and jack details tentatively based on PSC Tetron D3 proprietary pot bearings, and Enerpac CLP–Series hydraulic jacks. Bearings/jacks to be chosen on a project specific basis to suit Territory preferences.

2. Jacks to be chosen to suit operational requirements during bearing replacement. Decks designed to facilitate following operational loads during jacking:

2. (Cont'd):
o Accommodation decks – Full live load (no lane restrictions). Short–term duration.
o Rural AP & Urban decks – Single lane live load (carriageways narrowed and subject to traffic signal control).

Traffic lane to be offset relative to jacks. Short–term duration.
Refer to Technical User Manual for further guidance on jacking parameters/constraints.

3. Jacking height to be limited to ensure longitudinal/transverse restraint at fixed/guided bearings maintained during jacking.

Full document details: NR NR-CIV-SD-2517 ISSUE A 2010
Document Sharing Hub
Licensed Network Rail Document Sharing Hub
Copyright Network Rail
Provided by IHS under licence with Network Rail
Reproduced by permission of Network Rail. Extracts may be reproduced from IHS