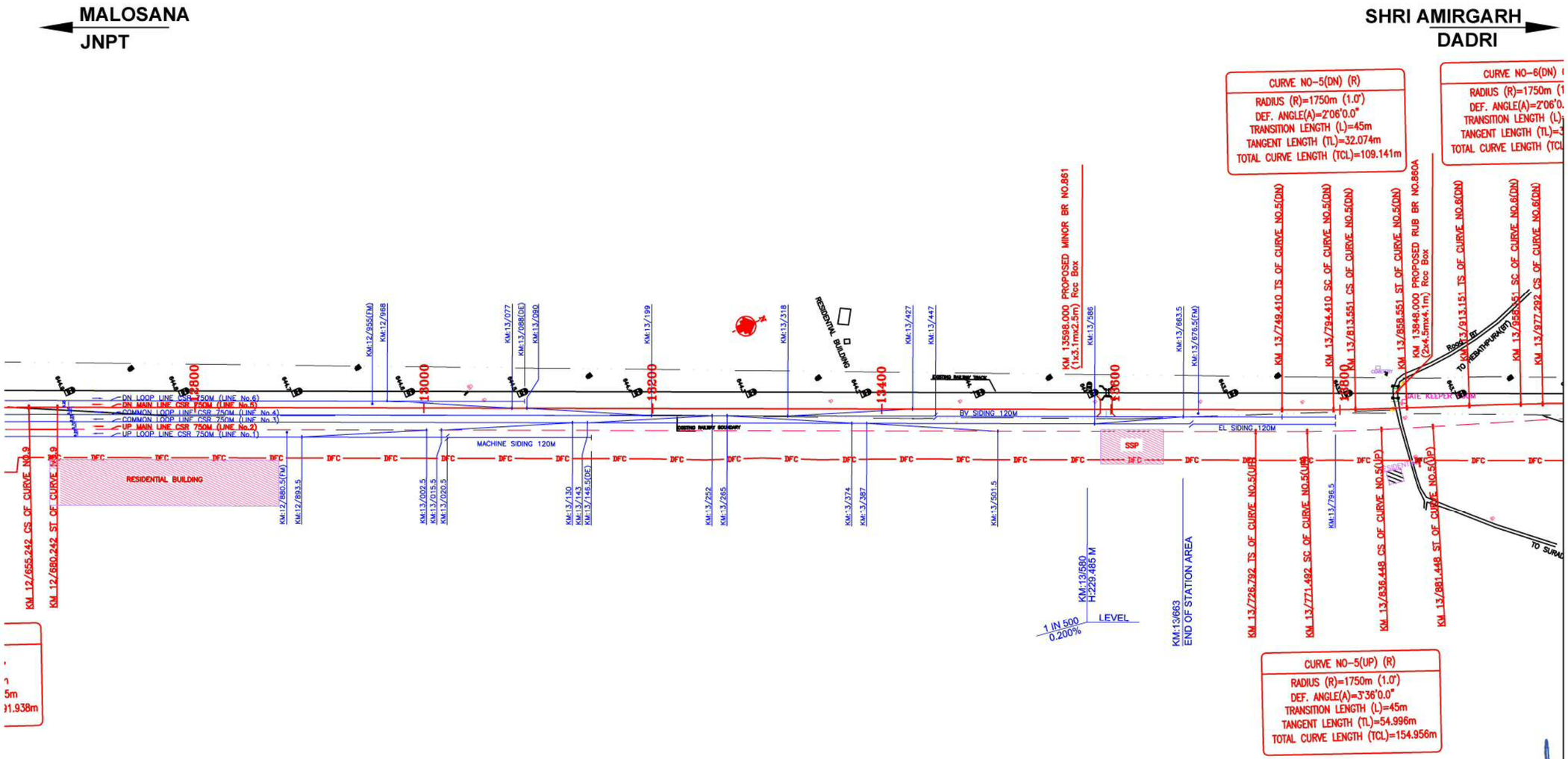
PALANPUR JUNCTION STATION

(CENTRE OF STATION AREA: KM 12/151) (SEC.9)

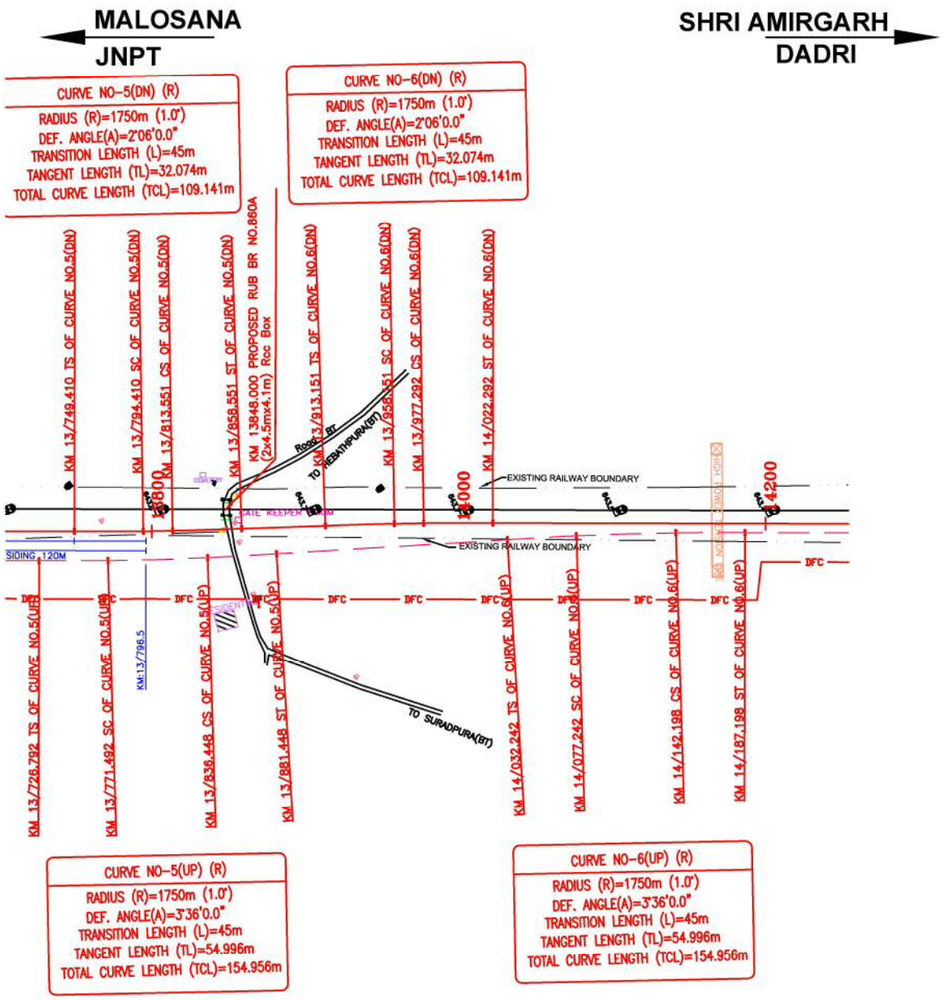


This drawing was originally prepared by Sub Consultant (Unknown) and reviewed/ modified by NK Consortium and combined with drawing prepared by Rodic Consultants Pvt. Ltd. and reviewed/ modified by NK Consortium.

Title :	Client :	Drawing Title :	Drawing Number :	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	LAYOUT OF BUILDING AT PALANPUR JUNCTION STATION	NKS-CTS-BLD-AJ-00010 (SHEET 3 OF 4)	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA
			Scale : 1:2000	
			Reference :	

PALANPUR JUNCTION STATION

(CENTRE OF STATION AREA: KM 12/151) (SEC.9)

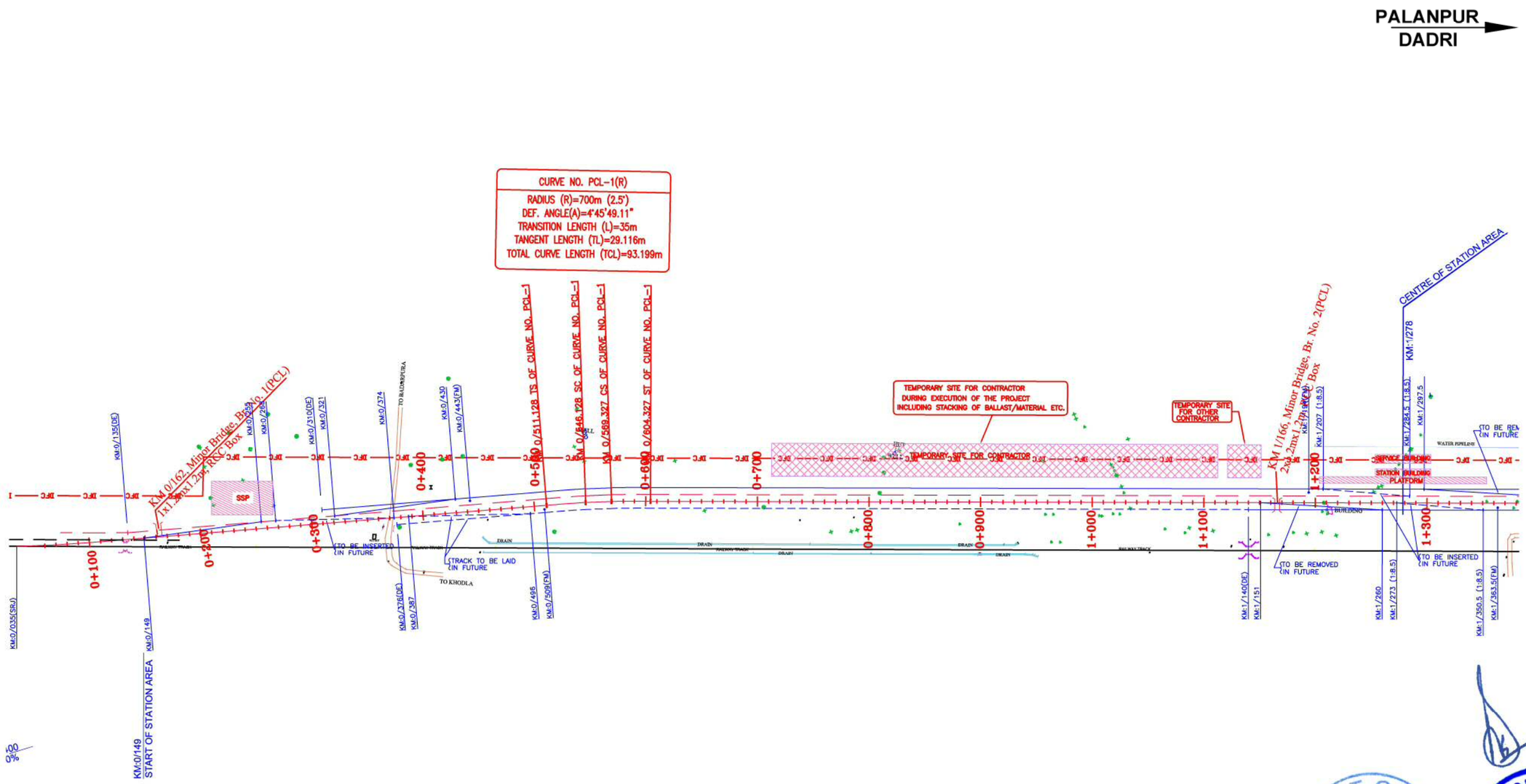


This drawing was originally prepared by Sub Consultant (Unknown) and reviewed/ modified by NK Consortium and combined with drawing prepared by Rodic Consultants Pvt. Ltd. and reviewed/ modified by NK Consortium.

Title :	Client :	Drawing Title :	Drawing Number :	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	LAYOUT OF BUILDING AT PALANPUR JUNCTION STATION	NKS-CTS-BLD-AJ-00010 (SHEET 4 OF 4)	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA
			Scale : 1:2000	
			Reference :	

CHADOTAR STATION

(CENTRE OF STATION AREA: KM 1/278) (SEC.9)

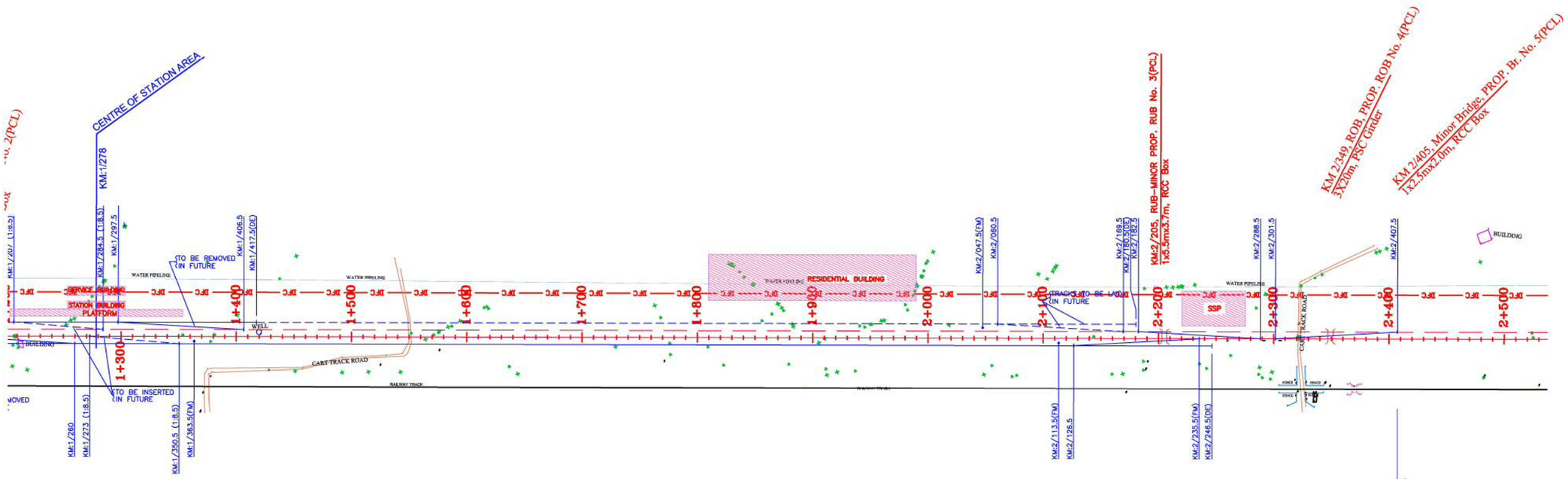


This drawing was originally prepared by Sub Consultant (Unknown) and reviewed/ modified by NK Consortium and combined with drawing prepared by Rodic Consultants Pvt. Ltd. and reviewed/ modified by NK Consortium.

Title :	Client :	Drawing Title :	Drawing Number :	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	LAYOUT OF BUILDING AT CHADOTAR STATION	NKS-CTS-BLD-AH-00011 (SHEET 1 OF 2)	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA
			Scale : 1:2000	
			Reference :	

CHADOTAR STATION

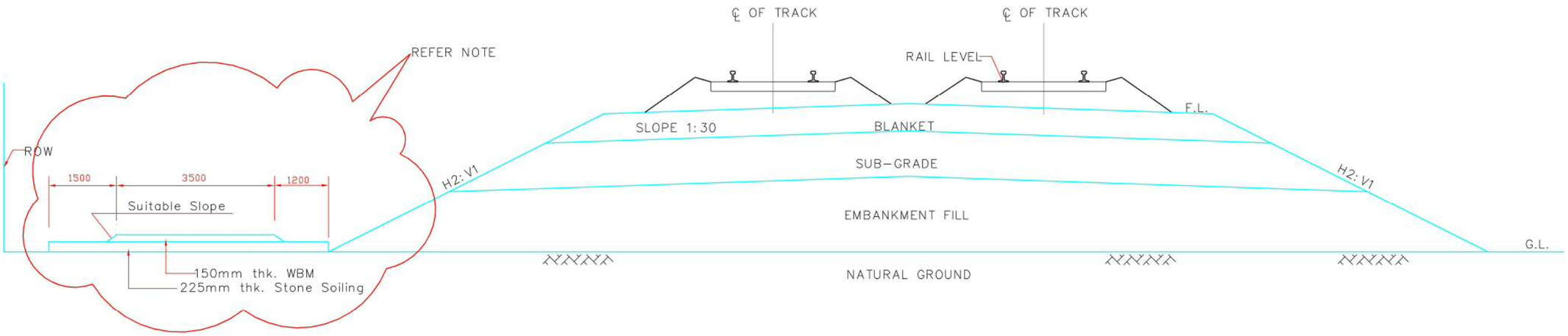
(CENTRE OF STATION AREA: KM 1/278) (SEC.9)



This drawing was originally prepared by Sub Consultant (Unknown) and reviewed/ modified by NK Consortium and combined with drawing prepared by Rodic Consultants Pvt. Ltd. and reviewed/ modified by NK Consortium.

Title :	Client :	Drawing Title :	Drawing Number :	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	LAYOUT OF BUILDING AT CHADOTAR STATION	NKS-CTS-BLD-AH-00011 (SHEET 2 OF 2)	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA
			Scale : 1:2000	
			Reference :	

TYPICAL X-SECTION OF SERVICE ROAD (TO BE TAKEN UP IN FUTURE)



WBM: Water Bounded Macadam II
(= Agregates, w/o binding bitumen)

Stone Soiling: Boulders or Stones set on their edges or graded stone ballast or hard stony moorum, or hard laterite, or kankar or well burnt bricks or brick jhama or similar material

Source: NORTHERN RAILWAY, STANDARD SPECIFICATIONS FOR MATERIALS AND WORKS

NOTE:

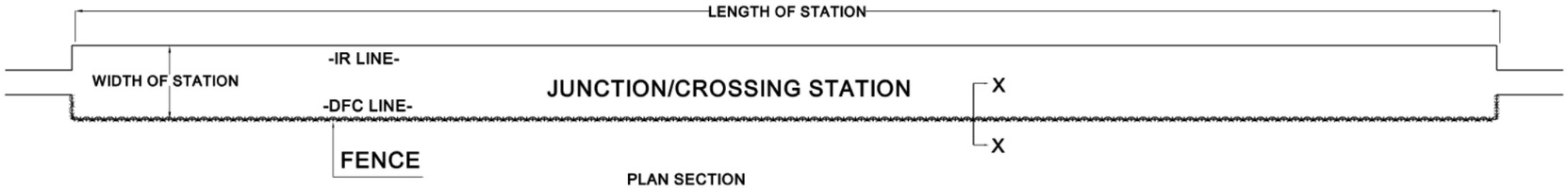
1. DESIGN & CONSTRUCTION OF SERVICE ROAD IS NOT IN SCOPE OF THE CONTRACTOR.

2. SUITABLE DRAINAGE SHALL BE PROVIDED BASED ON SITE/ENVIRONMENTAL CONDITIONS. (REFER Design Criteria.)

3. PROVISION FOR SIGNALLING CABLES TO BE MADE BY THE OTHER CONTRACTOR AT END OF ROW.

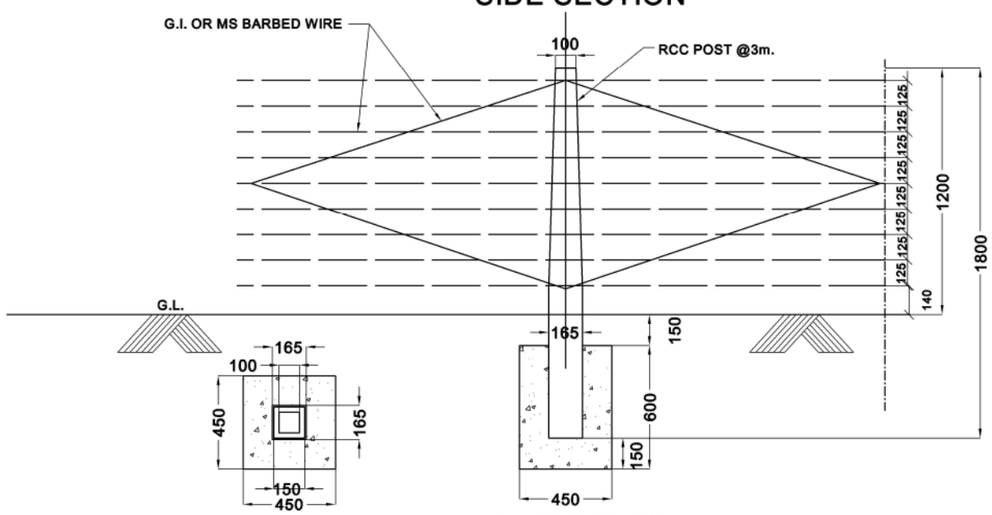
Project Title :	Client :	Drawing Title :	Drawing Number : NKC-CTS-EWS-AL-00004	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	All Weather Service Road (FUTURE)	Scale : 1:50 Reference : Drawn By : DANISH 19/11/2010 Checked By : H.KAWAHARA 19/11/2010 Approved By : K.ENDO 19/11/2010	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA

FENCING



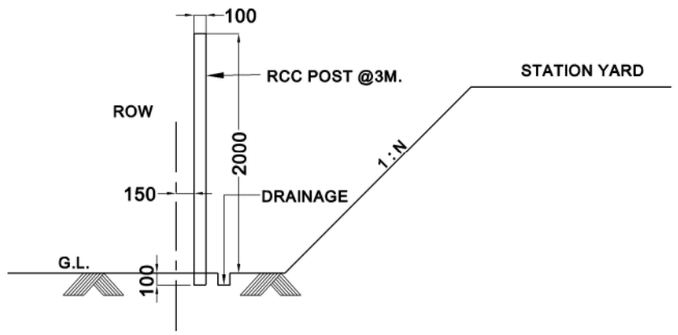
PLAN SECTION

SIDE SECTION

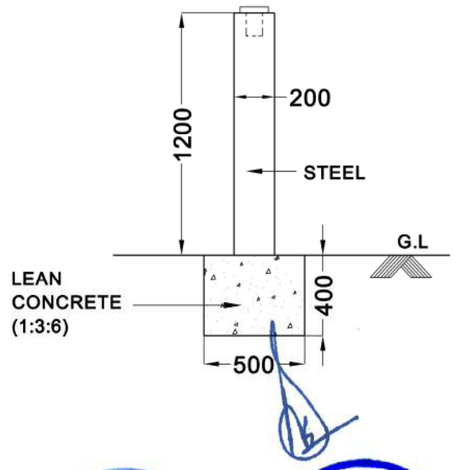


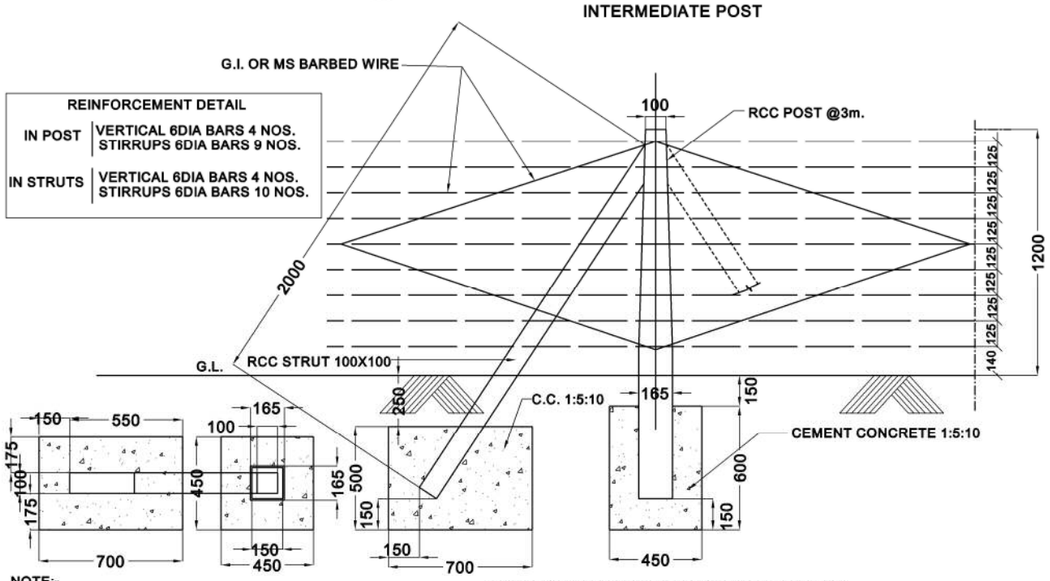
INTERMEDIATE POST

X- SECTION



BENCH MARK





REINFORCEMENT DETAIL

IN POST	VERTICAL 6DIA BARS 4 NOS. STIRRUPS 6DIA BARS 9 NOS.
IN STRUTS	VERTICAL 6DIA BARS 4 NOS. STIRRUPS 6DIA BARS 10 NOS.

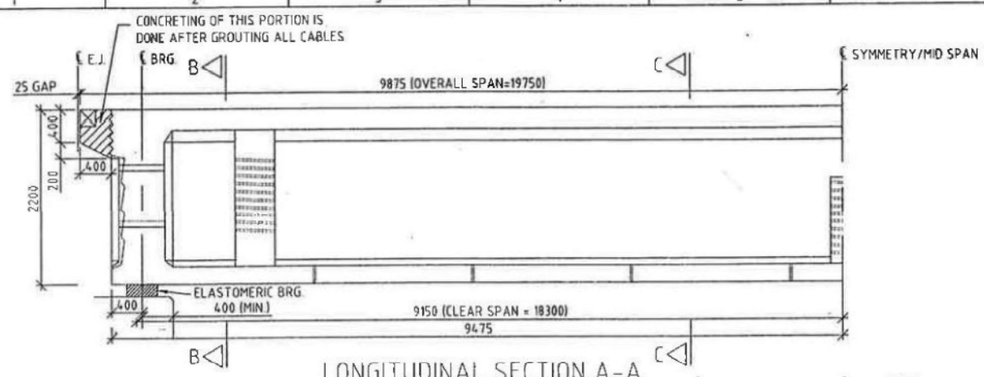
NOTE:-
EVERY 15TH ,LAST BUT ONE END POST AND CORNER POSTS SHALL BE STRUTTED ON BOTH SIDES AND END POSTS ON ONE SIDE ONLY.

END & INTERMEDIATE POST WITH STRUTS

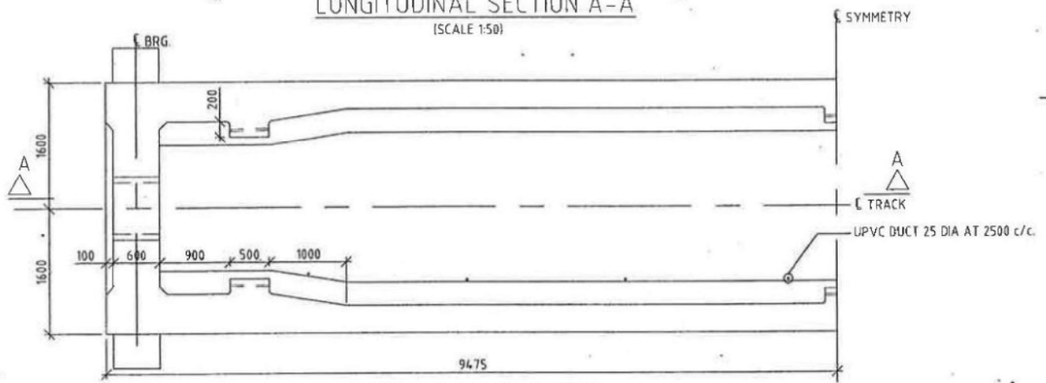
REFERENCE :
CPWD SPECIFICATIONS (VOL.2)2009

NOTE:-
1. SUITABLE SLOPE SHOULD BE CONSIDERED
2. STATION BUILDING LAYOUT SHOULD BE PLANED IN CONSIDERATION OF THE SLOPE LENGTH

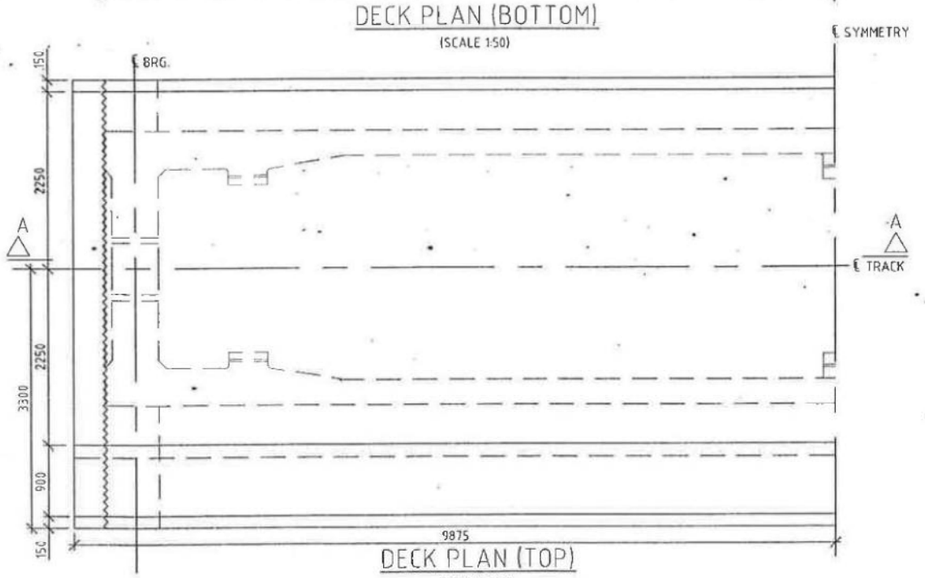
Title : Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Client : Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	Drawing Title : FENCING AND BENCH MARK	Drawing Number : NKC-CTS-STN-AL-00001 Scale : NOT TO SCALE Reference :	Consultant : NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA
			Drawn By : JATIN 04 / 08 / 2011	Checked By : B.M.KHERA 04 / 08 / 2011
			Approved By : T.NAKANO 04 / 08 / 2011	



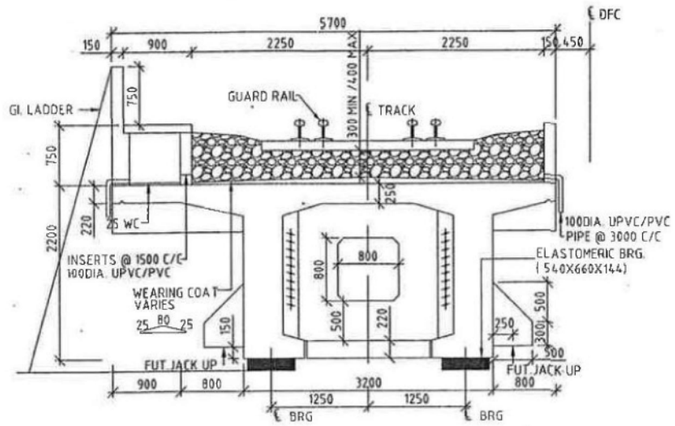
LONGITUDINAL SECTION A-A
(SCALE 1:50)



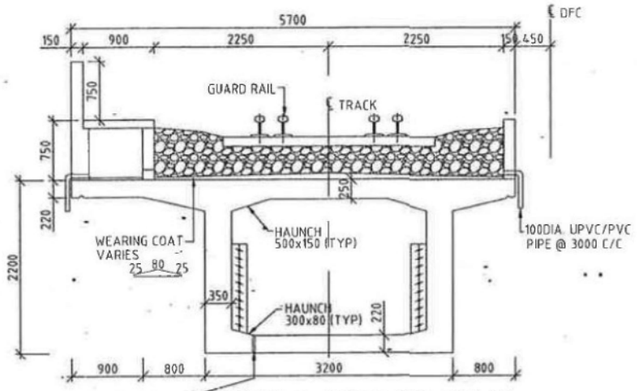
DECK PLAN (BOTTOM)
(SCALE 1:50)



DECK PLAN (TOP)
(SCALE 1:50)



SECTION B-B (AT SUPPORT)
(SCALE 1:50)



SECTION C-C (AT MID SPAN)
(SCALE 1:50)

NOTES :-

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED.
2. THIS DESIGN IS SUITABLE FOR DFC LOADING.
3. THE DESIGN IS SUITABLE FOR DERAILMENT LOAD 2.14.2(APPENDIX -XIV) OF IRS BRIDGE RULES WITH THE PROVISION OF GUARD RAILS. GUARD RAIL SHALL BE PROVIDED FOR THE ENTIRE LENGTH OF BRIDGE.
4. THIS DESIGN IS SUITABLE FOR PQRS LOADING.
5. THIS DESIGN IS SUITABLE FOR 1 DEG. CURVE. A MISALIGNMENT OF TRACK UPTO 100 mm HAS BEEN CONSIDERED IN DESIGN.
6. FOR DECKS IN CURVE THE SUPERSTRUCTURE DIMENSIONS AND BEARING LAYOUT SHALL BE SUITABLY MODIFIED AS APPROVED BY DFCCIL.
7. THIS DESIGN IS SUITABLE FOR MILD, MODERATE AND SEVERE ENVERIUNMENT EXPOSURE CONDITION DEFINED IN CLAUSE 5.4.1 OF IRS CBC.
8. THIS DESIGN IS DONE FOR SEISMIC ZONE I TO IV AND IS NOT SUITABLE FOR SEISMIC ZONE -V.
9. SUITABLE STOPPERS ARE TO BE PROVIDED AT PIERCAP / ABUTMENT FOR PRECAUTION AGAINST TRANSVERSE DISLODGEMENT OF SPAN.
10. JACKING LOAD IS 1050kN.

NOMINAL TOTAL LOADING PER BOX

ITEM	V(KN)	MT(KNM)
DL	1975	304
SDL	1445MAX/ 1277MIN	769
LL 8M	2545	0
LL SHEAR	2827	0
FPLL	63	170

NOTES:

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENSION BOX GIRDER) DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD-BB - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 206	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 205	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 203	18.3m SPAN: POST TENSION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN: POST TENSION BOX GIRDER DIMENSION DRAWING

REFERENCE DRAWINGS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D	091009	2	REVISED AS PER STUP COMMENTS	ADR	ASP	ADR		ASV	
C	090330	2	REVISED AS PER STUP COMMENTS	ADR	GVS	ADR	Sd-	ASV	Sd-
B	080915	2	GENERALLY REVISED	ADR	TNG	ADR	Sd-	ASV	Sd-
A	080829	2	GENERALLY REVISED	ADR	ASP	ADR	Sd-	ASV	Sd-
0	080526	1	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

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PATH

DRWG SIZE A2

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C107350

TITLE: 18.3m SPAN(POST TENSIONED BOX GIRDER) : GENERAL ARRANGEMENT DRAWING

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

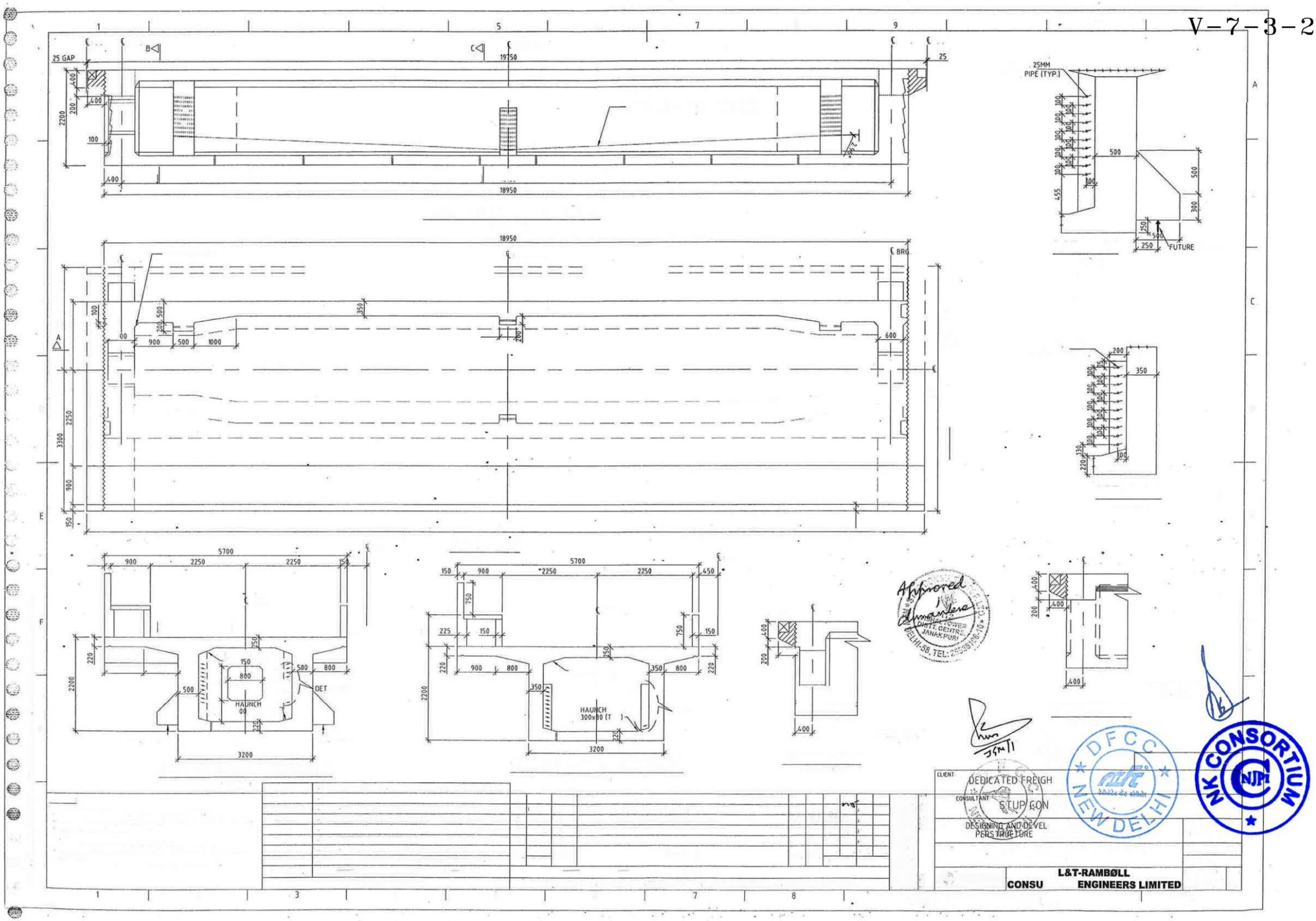
DRAWING NO: DD-201 REV: D

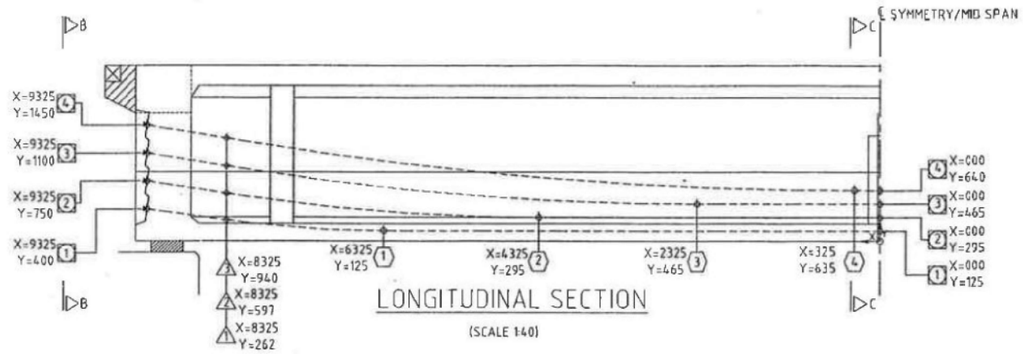
FOR APPROVAL

NKJV CONSORTIUM

plot scale 50mm

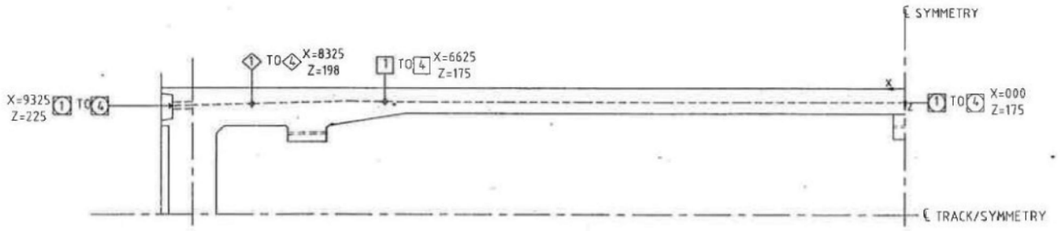
AUTO PATH: J:\JOINTRA\CTUPLE EXCHANGE\DFCCIL\GR\LIMITED DRAWING\C107351-RC-A1-P-18.3M SPAN\POST TENSION BOX GIRDER GENERAL ARRANGEMENT DRAWING.DWG


25 GAP
19750
18950
25MM PIPE (TYP.)
FUTURE
BRG
HAUNCH 00
HAUNCH 300x80 (T)
DET
5700
3200
Approved
DEDICATED FREIGH
STUP CON
DESIGNING AND DEVEL PERS TRUCTURE
L&T-RAMBØLL
CONSU ENGINEERS LIMITED
DFCC NEW DELHI
NK CONSORTIUM



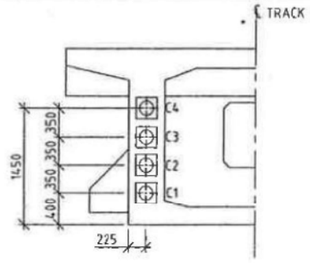
LONGITUDINAL SECTION

(SCALE 1:40)



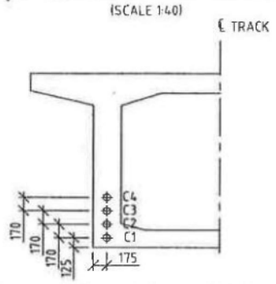
PLAN

(SCALE 1:40)



SECTION B-B(AT SUPPORT)

(SCALE 1:40)



SECTION C-C(AT MIDSPAN)

(SCALE 1:40)

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES, EXCEPT OTHERWISE STATED.
2. CABLES MADE WITH 12Nos. OF 15.2 DIA LRSR STRANDS CONFORMING TO IS: 14268-1995(CLASS II) SHALL BE USED. BREAKING FORCE OF EACH STRANDS SHALL BE 260.41 KN.
3. SHEATHING USED SHALL CONFORM TO CL 7.2.6.4.2 IRS CONCRETE BRIDGE CODE. GUIDANCE MAY ALSO BE TAKEN FROM CL. 3.6 & APPENDIX 1A/1B OF IRC 18-2000. NOMINAL DUCT FOR CABLE IS OF 85MM DIA.
4. CABLE 1 TO 4 SHALL BE USED AS PERMANENT CABLES.
5. INTIAL PRESTRESSING FORCE FOR THESE CABLES SHALL BE AS PER TABLE-2 GIVEN
6. REINFORCEMENT OTHER THAN PRESTRESSING STEEL SHALL CONFORM TO IS: 1786-1985 OF GRADE Fe:500
7. PRESTRESSING SHALL BE FOR (CABLE 1 TO 4) DONE AFTER 10 DAYS OF CONCRETING OR WHEN CONCRETE ATTAINS 35mPa STRENGTH WHICHEVER IS LATER .
8. PRESTRESSING OF THE LIKE CABLES e.g. CABLES 1 TO 4 SHALL BE DONE SIMULTANEOUSLY FROM BOTH ENDS BY MULTISTRAND JACKS.
9. DUCTS SHALL BE GROUTED BY CEMENT SLURRY AS PER SPECIFICATION (IN APPENDIX 'D' OF IRS CONCRETE BRIDGE CODE).
10. AVERAGE SLIP IN DESIGN HAS BEEN TAKEN AS 6 MM FOR EACH CABLE.
11. FOR FRICTION LOSSES μ AND K HAVE BEEN TAKEN AS .25 AND .0033 PER METRE RESPECTIVELY
12. ALL ORDINATES OF THE CABLES ARE GIVEN FROM SOFFIT OF BEAM TO THE CENTRE OF DUCT.
13. SUITABLE SPACERS AT ALL IMPORTANT POINTS AND AT A SPACING OF 1.0 M C/C SHALL BE PROVIDED TO MAINTAIN THE CABLE PROFILE AS STIPULATED. CABLES ARE GIVEN SMOOTH PROFILE AND REINFORCEMENT IS SUITABLY BENT/MODIFIED TO SUIT CABLE PROFILE.
14. THE END BLOCK REINFORCEMENT ARE TO BE PROVIDED AS PER REQUIREMENT OF PRESTRESSING SYSTEM MANUFACTURER AS APPROVED BY DFCCIL.
15. CABLE 4 SHALL BE USED AS DUMMY CABLES AND STRESSED AT LAST STAGE OF STRESSING OPERATION.
16. THE ELONGATION GIVEN IN TABLE #2# SHALL BE MODIFIED AT SITE IN CASE ACTUAL VALUE OF AREA 'A' AND MODULUS OF ELASTICITY 'E' VARIES FROM THOSE ASSUMED IN DESIGN. REVISED EXTENSION SHALL BE CALCULATED AS PER BELOW.
    REV. ELONGATION=140X1.95X105 MPa X EXTENSION IN TABLE #2#
    (NEW 'A'X NEW 'E')
17. THE MAXIMUM ELONGATION SHALL NOT BE MORE THAN 1.05 TIMES THE CALCULATED ELONGATION. THE MAXIMUM JACKPRESSURE SHALL ALSO NOT BE MORE THAN 1.05 TIMES THE GAUGE PRESSURE CALCULATED ON THE BASIS OF RAM AREA OF JACK AND CABLE FORCE.
18. HDPE SEATHING SHALL USED FOR MAKING DUCTS OF FUTURE STRANDS.

TABLE-1 CO-ORDINATE (IN METERS)

	CABLE-1		CABLE-2		CABLE-3		CABLE-4	
X	Y	Z	Y	Z	Y	Z	Y	Z
0.075	0.125	0.175	0.295	0.175	0.465	0.175	0.635	0.175
1.075	0.125	0.175	0.295	0.175	0.465	0.175	0.641	0.175
2.075	0.125	0.175	0.295	0.175	0.465	0.175	0.666	0.175
3.075	0.125	0.175	0.295	0.175	0.472	0.175	0.712	0.175
4.075	0.125	0.175	0.295	0.175	0.505	0.175	0.778	0.175
5.075	0.125	0.175	0.306	0.175	0.565	0.175	0.864	0.175
6.075	0.125	0.175	0.353	0.175	0.651	0.175	0.971	0.175
7.075	0.244	0.164	0.438	0.164	0.763	0.164	1.098	0.164
8.075	0.230	0.191	0.561	0.191	0.901	0.191	1.246	0.191
8.325	0.262	0.198	0.597	0.198	0.940	0.198	1.286	0.198
9.075	0.365	0.218	0.711	0.218	1.059	0.218	1.408	0.218
9.325	0.400	0.225	0.750	0.225	1.100	0.225	1.450	0.225

TABLE-2

	INITIAL PRESTRESS FORCE (KN)		CABLE LENGTH *	ELONGATION *
C1	12T15	2346	21044	72.2
C2	12T15	2346	21072	71.7
C3	12T15	2346	21096	72.2
C4	8K15	1546	21119	73.0

* INCLUDES 1180mm GRIP LENGTH

LEGEND:

- CABLE
- (N) START OR END C/L SYMMETRY CABLE
- (N) START OF CURVE IN ELEVATION
- (N) END OF CURVE IN ELEVATION
- (N) START OF CURVE IN PLAN
- [N] END OF CURVE IN PLAN
- ▶ STRESSING END

NOTES:

REFERENCE DRAWINGS

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENSION BOX GIRDER): DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD-BB - 204	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 206	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 205	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 204	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 202	18.3m SPAN POST TENSION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN POST TENSION BOX GIRDER GENERAL ARRANGEMENT DRAWING

REVISIONS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES	DRN.	INIT.	SIGN	INIT.	SIGN
						CHECKED		APPROVED	
D									
C	091009	2	REVISED AS PER STUP COMMENTS	ADR	ASP	ADR		ASV	
B	090331	2	REVISED AS PER STUP COMMENTS	ADR	GVS	ADR	Sd-	ASV	Sd-
A	080915	2	GENERALLY REVISED	ADR	TNG	ADR	Sd-	ASV	Sd-
0	080724	2	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

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ORIG SIZE A2

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RCC SPANS

PROJECT NO. C1073504

TITLE: 18.3m SPAN: POST-TENSIONED BOX GIRDER DETAILS OF CABLE PROFILE

COP: IRS

SCALE: AS SHOWN

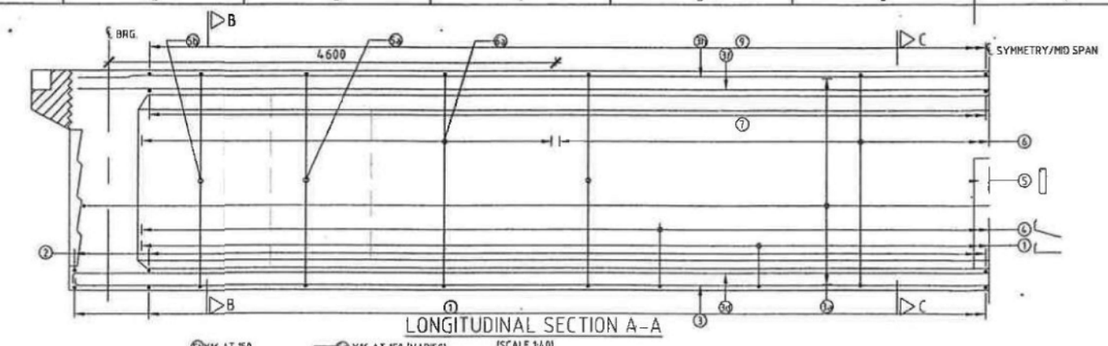
L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO. DD-203

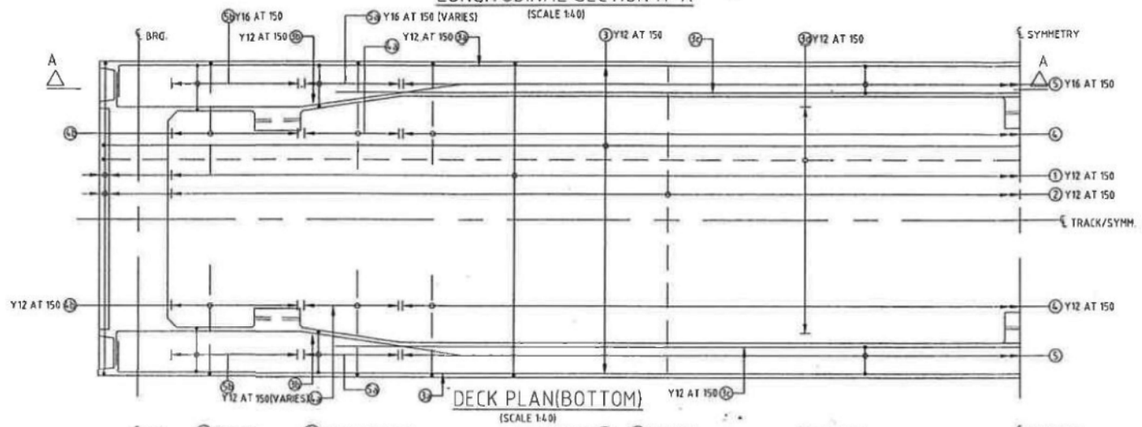
REV. C

plot scale 50mm

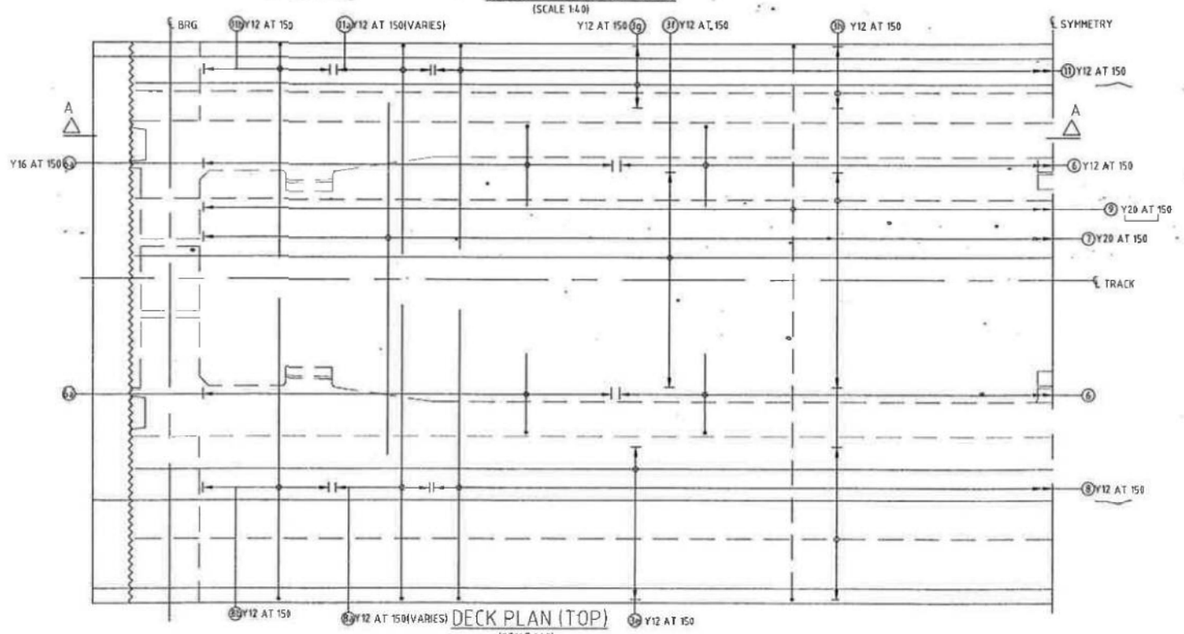
A:\TO PATH 1\INTRANET\FILE EXCHANGE\OFFICE\SUPPORTED DRAWINGS\2281-RC-ASP-18.3m SPAN (POST TENSION BOX GIRDER) DETAILS OF CABLE PROFILE.DWG



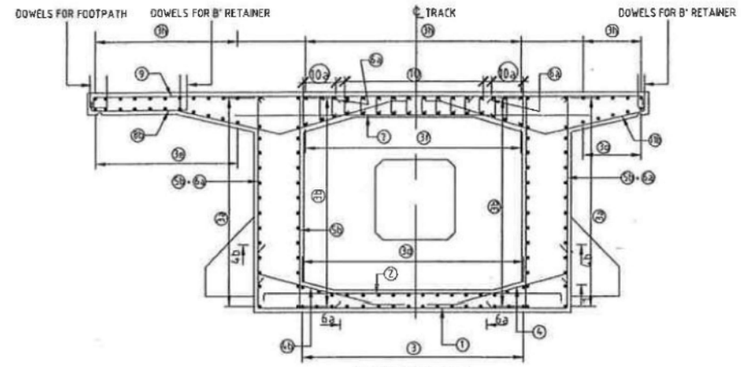
LONGITUDINAL SECTION A-A
(SCALE 1:40)



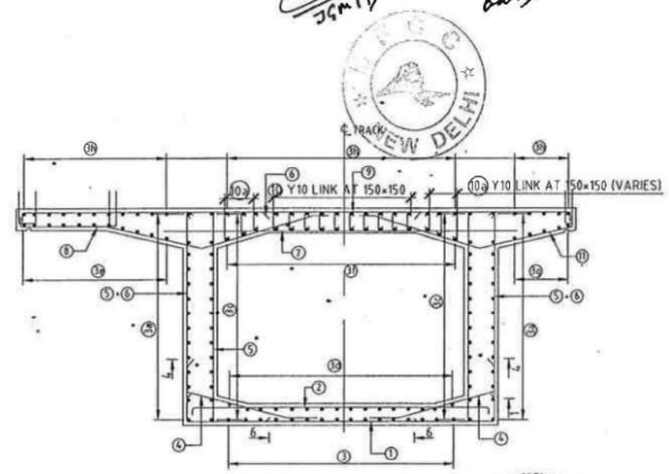
DECK PLAN(BOTTOM)
(SCALE 1:40)



DECK PLAN (TOP)
(SCALE 1:40)



SECTION B-B
(SCALE 1:40)



SECTION C-C
(SCALE 1:40)

LEGEND :

— — REINFORCEMENT AT TOP

——— REINFORCEMENT AT BOTTOM

NOTES:
× BAR NO. 10 , 10a ARE NOT SHOWN IN PLAN EXPECT AT SECTIONS FOR CLEARITY

NOTES:

1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE STATED
2. ALL CORNERS SHALL HAVE CHAMFER OF 25 mm UNLESS SHOWN OTHERWISE
3. CONCRETE GRADE SHALL BE FOLLOWING
   a) M45 FOR PSC BOX GIRDER
   b) M30 FOR FOOTPATH AND BALLAST RETAINER
4. REINFORCEMENTS SHALL BE OF Fe 500 GRADE CONFORMING TO IS 1786-1985
5. CLEAR COVER TO ANY REINFORCEMENT SHALL NOT BE LESS THAN 40mm EXCEPT FOR BALLAST RETAINER WHERE 25 mm COVER IS PROVIDED.
6. LAPS AND ANCHORAGE SHALL BE PROVIDED AS PER CLAUSE 15.8.4 OF IRS CBC. LAPS SHALL BE STAGGERED AND NOT MORE THAN 50% OF BARS SHALL BE LAPPED AT ANY SECTION.
7. THE BALLAST RETAINER AND WILL WALLS FOR SUPPORTING FOOTPATH SLAB SHALL BE CAST IN PANELS LENGTH NOT MORE THAN 5000 mm OR L/2 WHICHEVER IS LOWER, WITH 5mm GAP IN BETWEEN THE PANELS.

REFERENCE DRAWINGS

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENTION BOX GIRDER)- DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN- POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD-BB - 204	18.3m SPAN- POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 206	18.3m SPAN- POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 205	18.3m SPAN- POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 203	18.3m SPAN- POST TENTION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN- POST TENTION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN- POST TENTION BOX GIRDER GENERAL ARRANGEMENT DRAWING.

REVISIONS

REV	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN
D									
C	091108	2	GENERALLY REVISED	ADR	AVK	ADR		ASV	
B	090331	2	REVISED AS PER STUP COMMENTS	ADR	GVS	ADR	Sd-	ASV	Sd-
A	080915	2	GENERALLY REVISED	ADR	ASP	ADR	Sd-	ASV	Sd-
0	080724	2	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

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PATH:

LINKS: SIZE: A2

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD ROBS SPANS.

PROJECT NO: C1073504

TITLE: 18.3m SPAN: POST-TENSIONED BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)

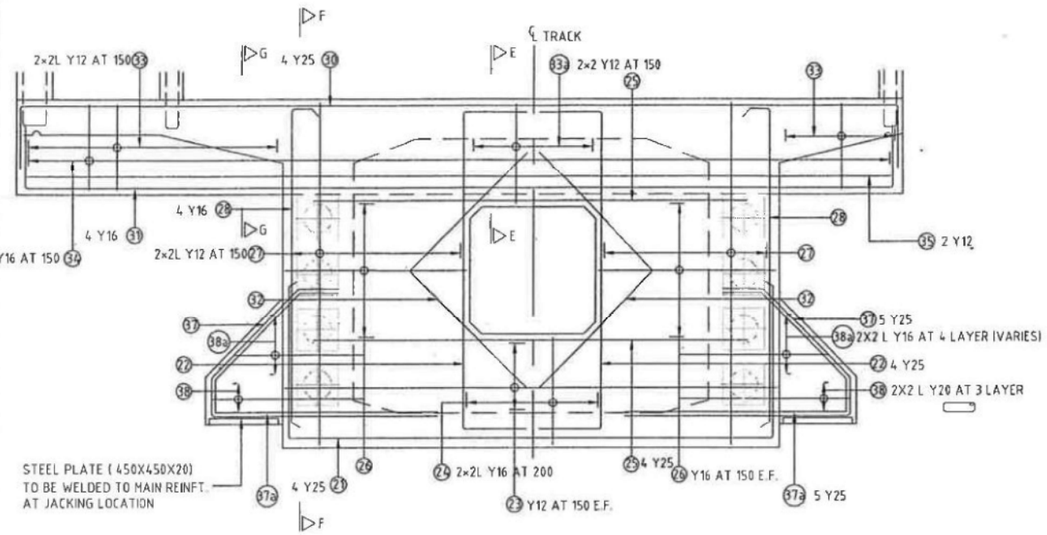
COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

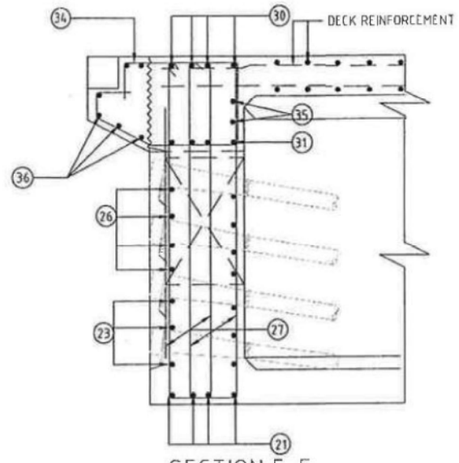
DRAWING NO: DD-204 REV: C

plot scale 50mm



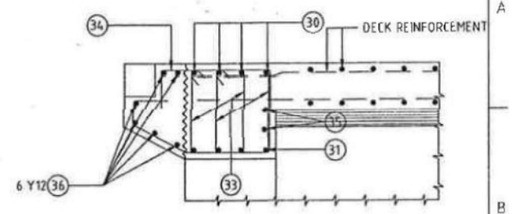
DIAPHRAGM REINFORCEMENT

(SCALE 1:25)



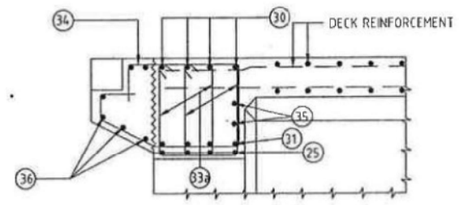
SECTION F-F

(SCALE 1:25)



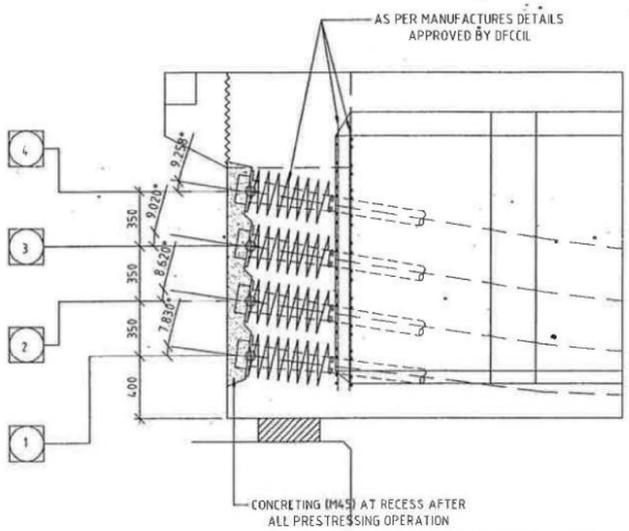
SECTION G-G

(SCALE 1:25)



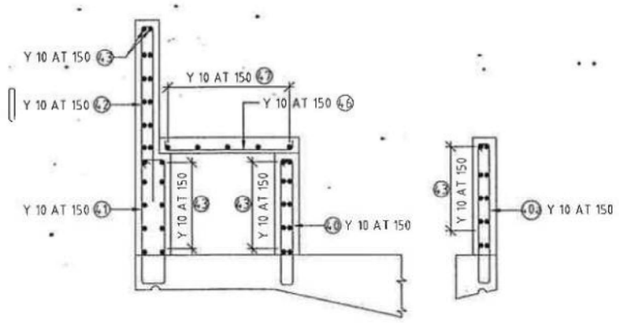
SECTION E-E

(SCALE 1:25)



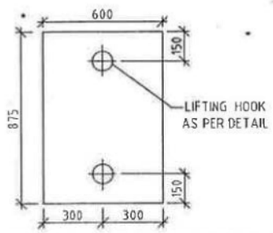
END BLOCK REINFT. DETAILS

(SCALE 1:25)



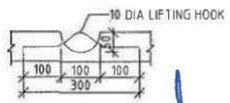
DETAIL OF FOOT PATH AND BALLAST RETAINER

(SCALE 1:25)



PLAN - FOOTPATH SLAB

(SCALE 1:20)



TYPICAL DETAILS OF LIFTING HOOK

(SCALE 1:10)

Approved

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENSION BOX GIRDER) DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD-BB - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 206	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 203	18.3m SPAN: POST TENSION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN: POST TENSION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN: POST TENSION BOX GIRDER GENERAL ARRANGEMENT DRAWING.

REFERENCE DRAWINGS

REV	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D	091108	2	GENERALLY REVISED	ADR	ASP	ADR	Sd-	ASV	Sd-
C	090608	2	BAR 37a ADDED	ADR	ASP	ADR	Sd-	ASV	Sd-
B	090331	2	REVISED AS PER STUP COMMENTS	ADR	GKS	ADR	Sd-	ASV	Sd-
A	080916	2	GENERALLY REVISED	ADR	ASP	ADR	Sd-	ASV	Sd-
0	080829	1	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

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DRG. SIZE: A2

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: 18.3m SPAN: POST-TENSIONED BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)

COP: IRS

SCALE: AS SHOWN

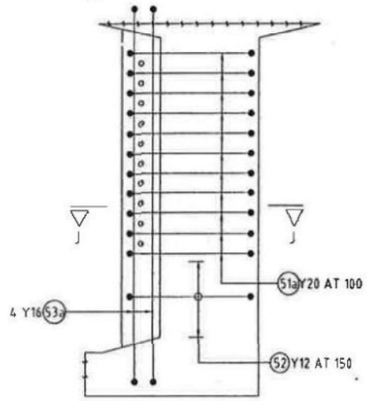
L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-205 REV: D

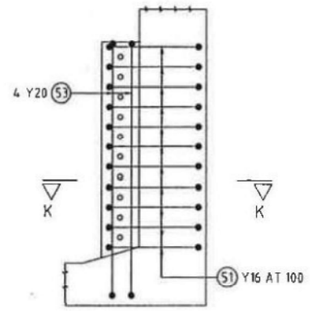
FOR APPROVAL

NJPL CONSORTIUM

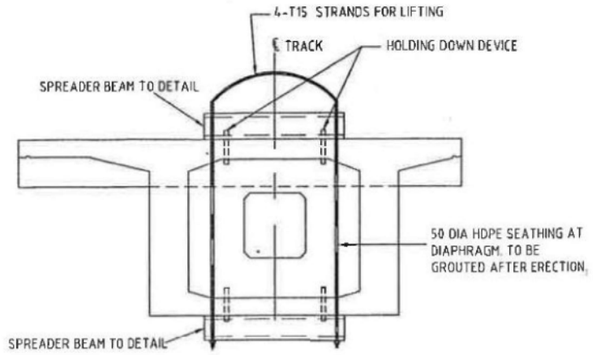
plot scale 50mm



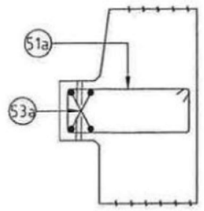
R.C. DETAIL OF END BLOCK FOR FUTURE PRESTRESSING
(SCALE 1:20)



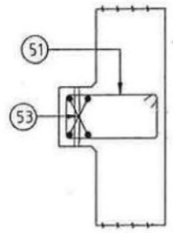
R.C. DETAIL OF INT. BLOCK FOR FUTURE PRESTRESSING
(SCALE 1:20)



TYP. LIFTING ARRANGEMENT AT DIAPHRAGM END FOR PRECAST BOX OPTION
(TO BE MODIFIED AS PER LAUNCHING & ERECTION SCHEME AS APPROVED BY DFCCIL)
(SCALE 1:50)



SECTION J-J
(SCALE 1:20)



SECTION K-K
(SCALE 1:20)

Bar Mark	Shape of Bar	Dia. of Bar	Spacing	Nos.	a	b	Cut Length	Wt in Kg/m	Weight (kg)
51	a b	Y16	100 c/c	22	320	490	1812	1.578	62.92
51a	a b	Y20	100 c/c	88	420	620	2320	2.466	251.74
52	a b	Y12	150 c/c	12	420	620	2224	1.578	42.12
53	a b	Y20		8	100	1270	1390	1.578	17.55
53a	a b	Y16		16	100	1880	2020	0.888	28.69
								TOTAL	403.03

NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENTION BOX GIRDER): DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN: POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD-BB - 204	18.3m SPAN: POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 205	18.3m SPAN: POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 204	18.3m SPAN: POST TENTION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 203	18.3m SPAN: POST TENTION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN: POST TENTION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN: POST TENTION BOX GIRDER GENERAL ARRANGEMENT DRAWING

REFERENCE DRAWINGS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D									
C									
B	091108	2	REVISED AS PER STUP COMMENTS	ADR	ASP	ADR		ASV	
A	090331	2	REVISED AS PER STUP COMMENTS	ADR	GVS	ADR	Sd-	ASV	Sd-
0	080829	1	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

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DRG SIZE A2

PATH:

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS

PROJECT NO: C1073504

TITLE: 18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)

COP: IRS

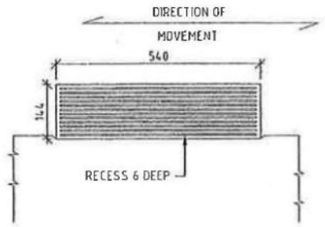
SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-206 REV: B

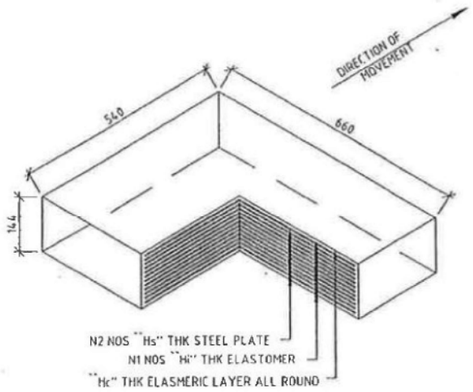
plot scale 50mm

AUTO PATH: J:\ARTWORK\FILE EXCHANGE\DFCCIL\JOINTED DRAWINGS\33200-RB-ASP-18.3M SPAN (POST TENSION BOX GIRDER) REINFORCEMENT DETAILS SHEET



SECTION

(SHOWING TYPICAL SEATING OF BEARING)
SCALE 1:10



ISOMETRIC VIEW OF ELASTOMERIC BEARING (TYP)

SCALE 1:10

NOTES

1. RAW MATERIAL : CHLOROPRENE (CR) SHALL ONLY BE USED IN MANUFACTURE OF BEARINGS
2. GRADES OF RAW ELASTOMER OF PROVEN USE IN ELASTOMERIC BEARINGS, WITH LOW CRYSTALLISATION RATES AND ADEQUATE SHELF LIFE (E.G. NEOPRENE WRT, BAYPRENE 110 OR EQUIVALENT) SHALL BE USED.NO RECLAIMED RUBBER OR VULCANISED WASTES SHALL BE USED RAW ELASTOMER CONTENT OF THE COMPOUND SHALL NOT BE LOWER THAN 60 PERCENT. THE ASH CONTENT SHALL NOT EXCEED 5 PERCENT (AS PER TESTS CONDUCTED IN ACCORDANCE WITH ASTM D-297) EPDM AND OTHER SIMILAR CANDIDATEELASTOMERS FOR BRIDGE BEARING USE SHALL NOT BE PERMITTED.
3. SHORE HARDNESS IS 60
4. MIN CONC. STRENGTH BELOW BEARING IS M30

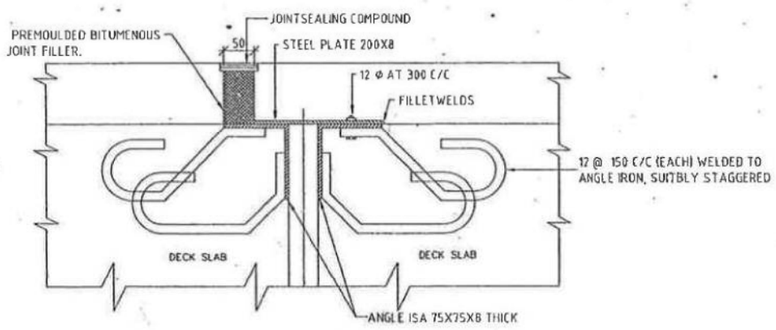
INSTALLATION INSTRUCTIONS

1. THE CONCRETE SURFACE SHALL BE FREE FROM ANY LOOSE MATERIAL AND CLEANED OF ANY GREASE, OIL,PAINT ETC., AND IT SHALL BE DRY AT THE TIME OF FIXING OF BEARING. THE SURFACE SHALL BE SAND BLASTED, CLEAN OF ALL LAITANCE AND LEVELLED TRUE.
2. BEARINGS MUST BE PLACED BETWEEN TRUE HORIZONTAL SURFACES (MAXIMUM TOLERANCE 0.2 PERCENT PERPENDICULAR TO LOAD) AND AT TRUE PLAN POSITION OF THEIR CONTROL LIN MARKED ON RECEIVING SURFACES (MAXIMUM TOLERANCE ± 3MM). CONCRETE SURFACES SHALL BE FREE FROM LOCAL IRREGULARITIES (MAXIMUM TOLERANCE ± 1 MM IN HIGHT).
3. ALL TESTING & INSTALLATION SHALL BE DONE AS PER SPECIFICATION.

DETAILS OF ELASTOMERIC BEARINGS

SCHEDULE OF ELASTOMERIC BEARINGS

SERIAL NO.	OVERALL LENGTH "LO"	OVERALL BREADTH "Bo"	THICKNESS OF EACH INTERMEDIATE ELASTOMER LAYERS "Hi"	NO OF LAYERS "N1"	SIDE ELASTOMER COVER "Hc"	ELASTOMER COVER AT TOP & BOTTOM "Hc"	THICKNESS OF STEEL PLATES "Hs"	NO OF STEEL PLATES "N2"	OVERALL THICKNESS "Ho"
1	540	660	12	8	5	6	4	9	144



EXPANSION JOINT : ANGLE IRON TYPE

Approved
dimantera

NOTES:

REV.	DATE (YYMMDD)	STATUS	DESCRIPTION	DES.	DRN.	INIT.	SIGN.	INIT.	SIGN.
D									
C									
B	090331	2	REVISED AS PER STUP COMMENTS	ADR	GVS	ADR		ASV	
A	080915	2	GENERALLY REVISED	ADR	TNG	ADR	Sd-	ASV	Sd-
0	080724	2	FIRST SUBMISSION	ADR	ASP	ADR	Sd-	ASV	Sd-

CHECKED APPROVED

REVISIONS

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

DRAWING NO. | TITLE

REFERENCE DRAWINGS

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: 18.3m SPAN (POST-TENSION BOX GIRDER): DETAILS OF BEARING & EXPANSION JOINT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-207 REV: B

plot scale 50mm

DFCC NEW DELHI

NJPI CONSORTIUM

Bar Mark	Shape of Bar	Dia. of Bar	Spacing	Nos.	a	b	c	d	e	Cut Length	Wt.in Kg/m	Wt.in Kg	REMARKS
1	a b	Y12	150 c/c	120	300	3120				3660	0.888	390.13	
2	a b	Y12	150 c/c	120	125	3000				3190	0.888	339.86	
3	a	Y12	150 c/c	16	18750					18965	0.888	269.40	
3a	a b	Y12	150 c/c	28	400	18570				18940	0.888	470.83	
3b	a b c d	Y12	150 c/c	56	400	1910	1600	240		3898	0.888	193.79	
3c	a	Y12	150 c/c	28	13950					13950	0.888	346.78	
3d	a b	Y12	150 c/c	16	125	18870				18965	0.888	269.40	to be bent suitably at haunch
3e	a	Y12	150 c/c	11	18750					18750	0.888	183.11	
3f	a	Y12	150 c/c	16	18750					18750	0.888	266.34	to be bent suitably at haunch
3g	a	Y12	150 c/c	5	18750					18750	0.888	83.23	
3h	a	Y12	150 c/c	32	18750					18750	0.888	532.69	to be bent suitably at end
4	a b c	Y12	150 c/c	168	300	1030	300			1630	0.888	243.12	
4a	a b c	Y12	150 c/c	28	300	1110 (varies)	300			1710	0.888	42.51	
4b	a b c	Y12	150 c/c	40	300	1190	300			1790	0.888	63.57	
5	b a	Y16	150 c/c	168	270	2120				4972	1.578	1318.38	
5a	b a	Y16	150 c/c	28	395 (varies)	2120				5222	1.578	230.78	
5b	b a	Y16	150 c/c	40	520	2120				5472	1.578	345.47	
6	a b a	Y12	150 c/c	124	800	2120				3660	0.888	402.93	
6a	a b a	Y16	150 c/c	112	800	2120				3640	1.578	643.46	
7	a	Y16	150 c/c	118	3500					3500	1.578	651.85	
8	a b c d e	Y12	150 c/c	84	100	860	1020	1140	150	3240	0.888	241.63	
8a	a b c d e	Y12	150 c/c	14	100	860	1053 (varies)	1140 (varies)	150	3273	0.888	40.68	
8b	a b c d e	Y12	150 c/c	20	100	860	1080	1140	150	3305	0.888	58.68	
9	a b	Y16	150 c/c	118	100	5620				5740	1.578	1069.04	
10	a	Y10	LINK @150x150	1180	170					410	0.617	298.28	
10a	a	Y10	LINK @150x150	708	230 (varies)					450	0.617	196.43	
11	a b c d	Y12	150 c/c	87	100	1140	1020	150		2100	0.888	177.49	
11a	a b c d	Y12	150 c/c	12	100	1140	1053 (varies)	150		2413	0.888	29.99	
11b	a b c d	Y12	150 c/c	20	100	1140	1085	150		2445	0.888	43.41	
											TOTAL	9443.23	

Concrete quantity
Total for girder 73.37m^3
Ballast retainer ,f'path etc 10.69m^3

NOTES:

DRAWING NO.	TITLE
DD - 207	18.3m SPAN POST TENSION BOX GIRDER - DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 205	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)
DD - 206	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 205	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 204	18.3m SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 203	18.3m SPAN POST TENSION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN POST TENSION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN POST TENSION BOX GIRDER GENERAL ARRANGEMENT DRAWING.

REFERENCE DRAWINGS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D									
C									
B									
A	091109	2	GENERALLY REVISED	ADR	GVS	ADR		ASV	
0	090401	2	FIRST SUBMISSION	ADR	GVS	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

DRG. SIZE A2

DATE

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CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C107350/

TITLE: 18.3m SPAN POST-TENSIONED BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-BB-204 REV: A

FOR APPROVAL

NKJV CONSORTIUM

DFCC NEW DELHI

Approved.

plot scale 50mm

DIAPHRAGM (2 Nos.)

Bar Mark	Shape of Bar	Dia. of Bar	Spacing	Nos.	a	b	c	d	e	Cut Length	Wt.in Kg/m	Weight(kg)
21	a b	Y25		4	1200	3120				5370	3.855	82.81
22	a b	Y25		8	400	2040				2690	3.853	82.92
23	a	Y12	150 c/c	6	3120					3120	0.888	16.62
24	b a	Y16	150 c/c	12	260	640				1992	1.578	37.73
25	a	Y25		8	3000					3000	3.853	92.48
26	a b	Y16	150 c/c	24	300	1160				1680	1.578	63.64
27	a b	Y12	150 c/c	36	260	2120				4904	0.888	156.74
28	b a	Y16		8	200	2000				2160	1.578	27.27
30	b a	Y25		4	400	5620				6270	3.853	96.64
31	a b	Y16		4	400	5540				6260	1.578	39.52
32	a b	Y16		12	1200	1200				2360	1.578	44.70
33	b a	Y12	150 c/c	36	260	520				1704	0.888	54.46
33a	b a	Y16	150 c/c	12	260	600				1912	1.578	36.21
34	a f e b d c	Y16	150 c/c		810	520	560	410	175			
				38	l	=	350			2785	0.888	93.96
35	a	Y12		2	5600					5600	0.888	9.94
36	a	Y12		6	5600					5600	0.888	29.83
37	c d a	Y25		10	1500	250	780	500		3030	3.853	116.76
37a	c d a	Y25		10	1500	180	750	500		3030	3.853	112.90
38	a b	Y16		12	260	1100				2912	1.578	55.15
38a	a b	Y16		16	260	880 (varies)				2472	1.578	62.43
										Steel quantity per diaphragm		1312.46
										Total steel in diaphragm (2 Nos.)		2624.92

BALLAST RETAINER & FOOTPATH SLAB

40	b a	Y10	150 c/c	131	100	890				2100	0.617	169.70
40a	b a	Y10	150 c/c	131	100	990				2300	0.617	185.86
41	b a	Y10	150 c/c	131	175	890				2250	0.617	181.72
42	a b	Y10	150 c/c	131	1350	100				2750	0.617	222.11
43	a	Y10	150 c/c	32	19700					19700	0.617	510.12
											Total	1269.51

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
2. MINIMUM CLEAR COVER TO REINFORCEMENT = 40 MM.
3. ALL REBAR USED ARE TMT GRADE Fe 500 CONFORMING TO IS. 1786
4. FOR LIFTING ARRANGEMENT, REFER SEPARATE DRAWING.

REFERENCE DRAWINGS

DRAWING NO.	TITLE
DD - 207	18.3m SPAN (POST TENSION BOX GIRDER) DETAILS OF BEARING & EXPANSION JOINT
DD-BB - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 4 OF 5)
DD - 206	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 3 OF 5)
DD - 205	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 2 OF 5)
DD - 204	18.3m SPAN: POST TENSION BOX GIRDER REINFORCEMENT DETAILS (SHEET 1 OF 5)
DD - 203	18.3m SPAN: POST TENSION BOX GIRDER DETAILS OF CABLE PROFILE
DD - 202	18.3m SPAN: POST TENSION BOX GIRDER DIMENSION DRAWING
DD - 201	18.3m SPAN: POST TENSION BOX GIRDER GENERAL ARRANGEMENT DRAWING

REVISIONS

REV.	DATE (YYMMDD)	STATUS	DESCRIPTION	DFS.	ORN.	INIT.	SIGN	INIT.	SIGN
						CHECKED		APPROVED	
D									
C									
B									
A	091109	2	REVISED AS PER COMMENTS	ADR	ASP	ADR		ASV	
0	090331	1	FIRST SUBMISSION	ADR	ASP	ADR	-sd-	ASV	-sd-

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

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ORIG. SIZE: A2

PATH:

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORRORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: 18.3m SPAN: POST-TENSIONED BOX GIRDER REINFORCEMENT DETAILS (SHEET 5 OF 5)

COP: IRS

SCALE: AS SHOWN

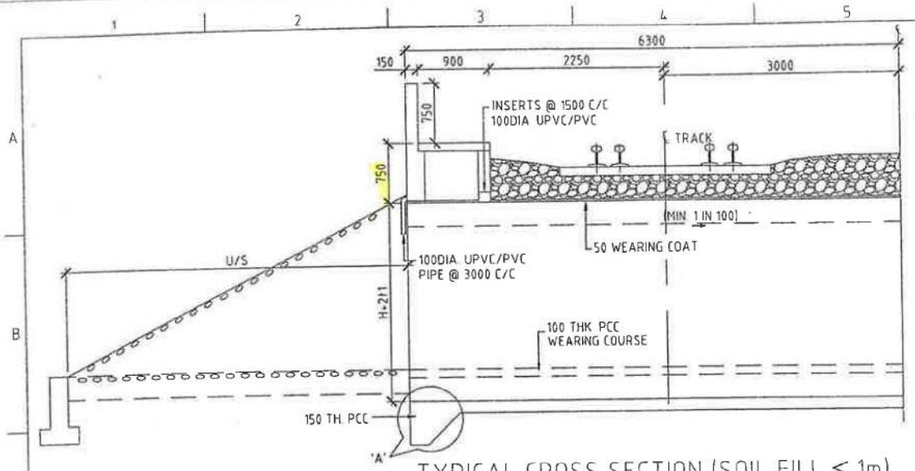
L&T-RAMBØLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-BB-205

REV: A

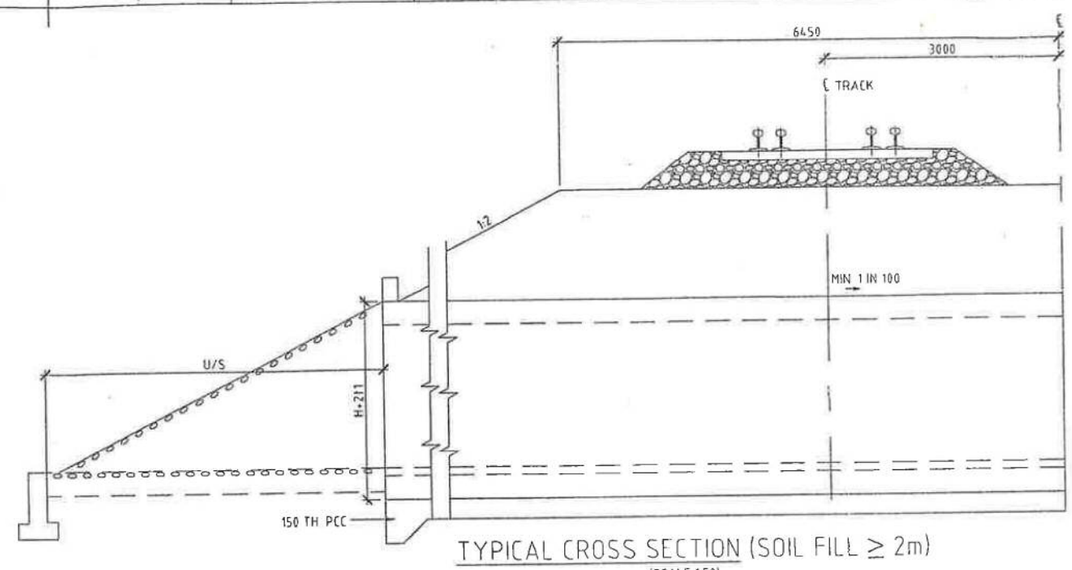
plot scale 50mm

AUTOPATH: J:\NITRANS\TVILE EXCHANGE\SPECS\NIB\RITTED DRAWINGS\DD205-R0-452F-18.3M SPAN POST TENSION BOX GIRDER REINFORCEMENT DETAILS SHEET



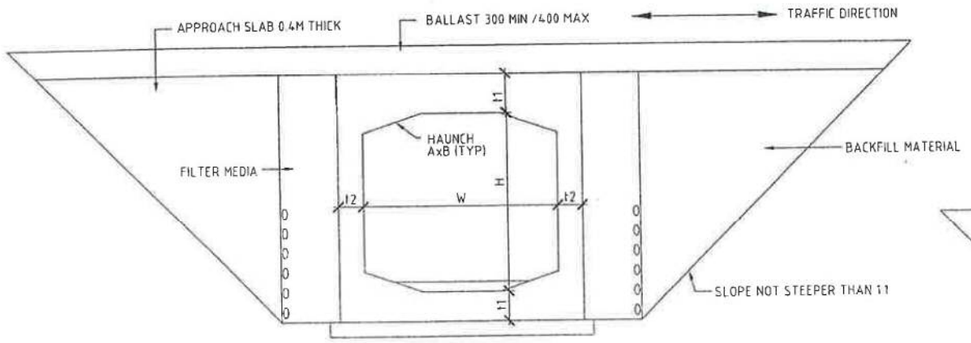
TYPICAL CROSS SECTION (SOIL FILL ≤ 1m)

(SCALE 1:50)



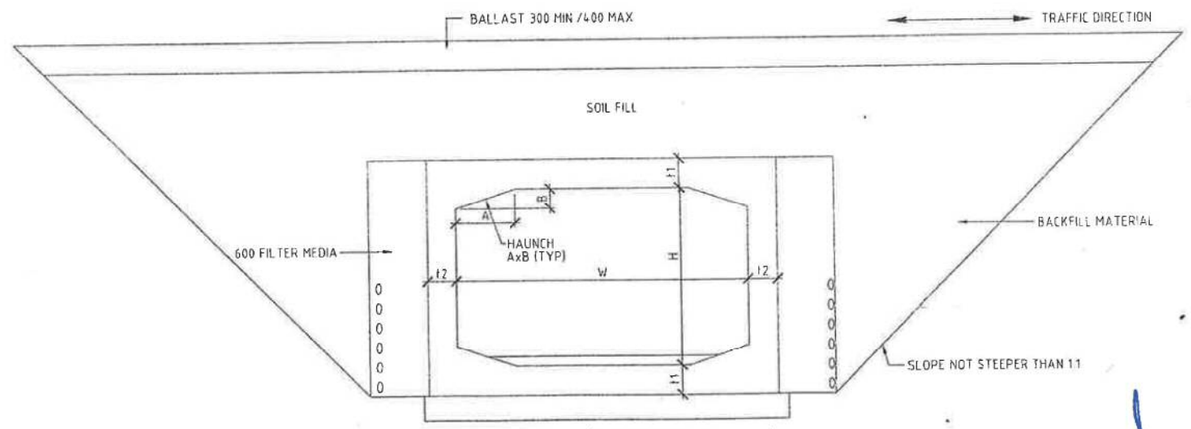
TYPICAL CROSS SECTION (SOIL FILL ≥ 2m)

(SCALE 1:50)



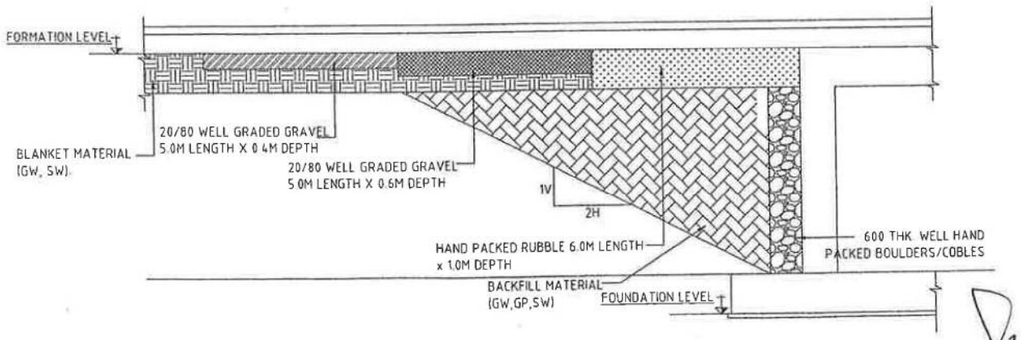
CROSS SECTION BOX CULVERT (SOIL FILL ≤ 1m)

(SCALE 1:40)



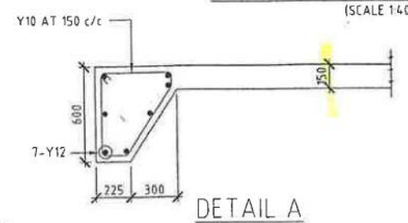
CROSS SECTION BOX CULVERT (SOIL FILL ≥ 2m)

(SCALE 1:40)



DETAILS OF TRANSITION SYSTEM

(SCALE 1 : 100)



DETAIL A

(SCALE 1:25)

NOTES

REV	YYMMDD DATE	STATUS	DESCRIPTION	DES	DRN	INIT.	SIGN.	INIT.	SIGN.
D	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
C	090807	2	REVISED AS PER STUP COMMENTS	BDN	AVK	ADR	-sd-	ASV	-sd-
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	080910	2		BDN	TNG	ADR	-sd-	ASV	-sd-
0	080526	4	FIRST SUBMISSION	ADR	ASP	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 PRELIMINARY 2 FOR APPROVAL 3 GOOD FOR CONSTRUCTION 4 FOR TENDER PURPOSE ONLY

DRAWING NO.	TITLE
DD 312	CAST-IN-SITU SINGLE CELL BOX CULVERT REINF. DETAILS
DDR 312	CAST-IN-SITU SINGLE CELL BOX CULVERT BAR BENDING SCHEDULE

REFERENCE DRAWINGS

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DRWG. SIZE A2

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD

PROOF CONSULTANT: STUP CONSULTANTS P LTD

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: CAST -IN-SITU SINGLE CELL BOX CULVERT : GAD

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-312 REV: D

FOR APPROVAL

NJPC CONSORTIUM

STUP CONSULTANTS P. LTD. NEW DELHI-58, TEL: 25530

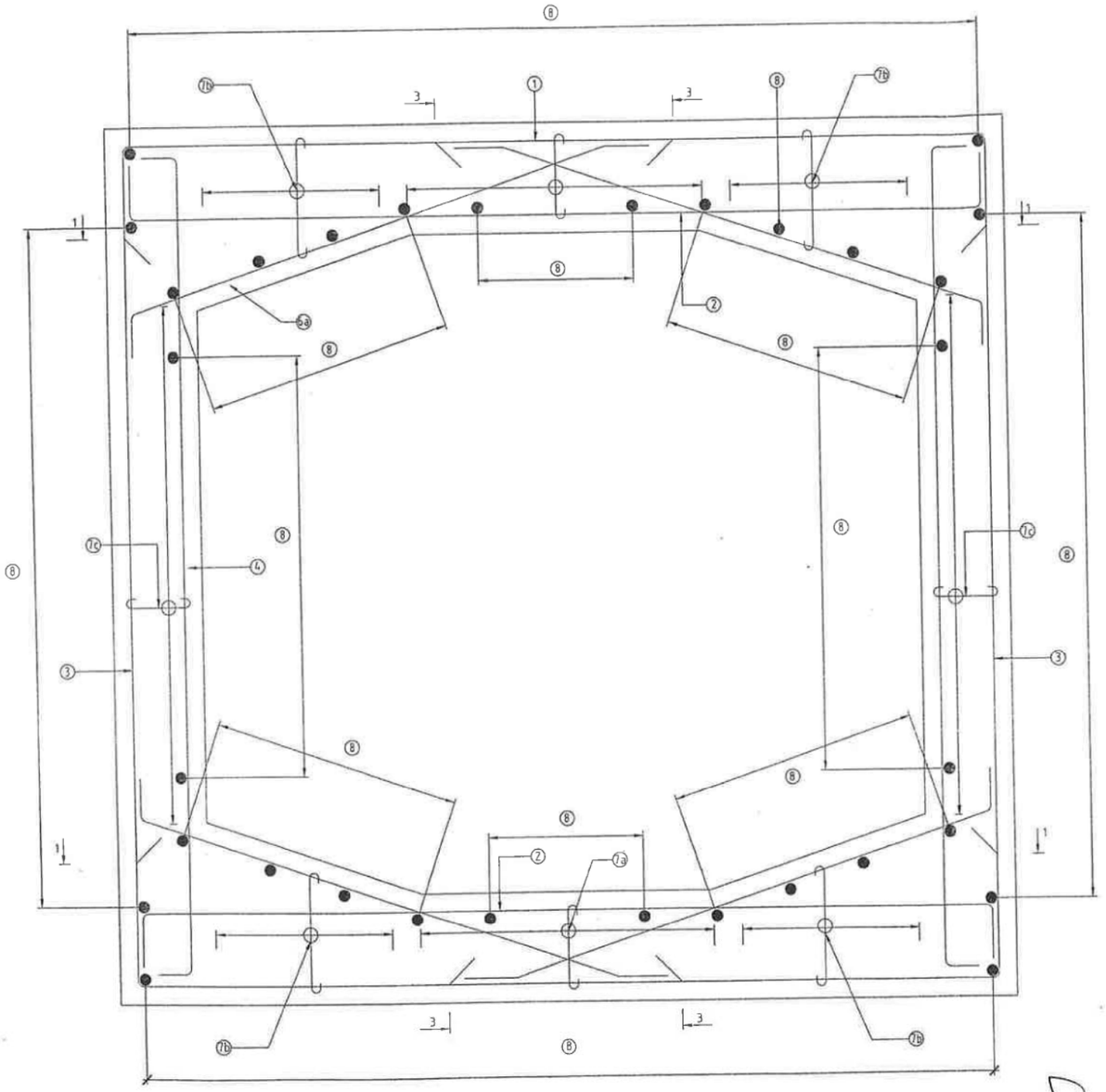
Approved

DFCC NEW DELHI

AUTO PATH: J:\INTRANET\FILE EXCHANGE\ARK\DFCC\DDR 311-RD-ARK-SINGLE CELL BOX CULVERT CAST -IN-SITU GAD.DWG

plot scale 50mm

V-7-4-2



REINFORCEMENT DETAILS

(SCALE 1:10)

NOTES-

1. All dimensions are in mm unless otherwise mentioned
2. All dimensions should be verified and reconciled before execution
3. Barrel length of the Culvert shall be decided based on the fill height
4. Depth and size of foundation, return walls, levels of upstream and downstream shall be decided based on site conditions
5. Bed slope should be kept a minimum of 1 in 100
6. This design is suitable for double track DFC Loading (32.5 tonne axle load)
7. For intermediate span or depth of soil fill, immediately higher values can be adopted
8. Ballast cushion shall be minimum of 300mm and maximum of 400mm
9. Design is applicable for Type 1 PSC sleepers
10. Preparation of bed below the Culvert shall be based on actual site conditions to achieve the necessary Safe Bearing Capacity
11. M30 grade of concrete shall be used for severe exposure conditions. For very severe exposure higher grades of concrete may be used.
12. M-20 grade of concrete shall be used for plain-cement concrete (PCC)
13. Fe 500 grade steel conforming to IS 1786: 1985 shall be used as reinforcement. Use of protective coatings for steel shall be decided based on site condition
14. Backfill material should be as per cl. 7.5 of the IRS Bridge Sub-structure and Foundation Code
15. All RCC surfaces should be painted with Bitumen or Coal Tar of approved quality @ 1.464 kg/m2
16. Minimum clear cover to reinforcement shall be 40 mm for severe environment and 50 mm for very severe environment
17. Length of lap provided shall be as per Cl.15.9.6.5 and 15.9.6.6 of IRS Concrete Bridge Code
18. If anticorrosive treatment is provided, lap length shall be 50 % more than as calculated
19. Tolerances shall be followed as per the IRS Concrete Bridge Code
20. Design criteria
    i. IRS Bridge Rules incorporating CS No. 33
    ii. IRS Concrete Bridge Code incorporating CS No. 7
    iii. IRS Bridge Sub-structure and Foundation Code incorporating CS No. 22

Approved

NOTES

REFERENCE DRAWINGS	
DRAWING NO.	TITLE
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT GAD
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE

REV.	DATE YYMMDD	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
C	090806	2	CONCRETE GRADE CHANGED	BDN	AVK	ADR	-sd-	ASV	-sd-
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	080910	2		BDN	TNG	ADR	-sd-	ASV	-sd-
0	080527	2	FIRST SUBMISSION	ADR	ASP	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 PRELIMINARY 2 FOR APPROVAL 3 GOOD FOR CONSTRUCTION 4 FOR TENDER PURPOSE ONLY

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DRAWING SIZE A2

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO. C1073504

TITLE: CAST -IN-SITU SINGLE CELL BOX CULVERT REINFORCEMENT DETAILS

COP: IRS

SCALE: AS SHOWN

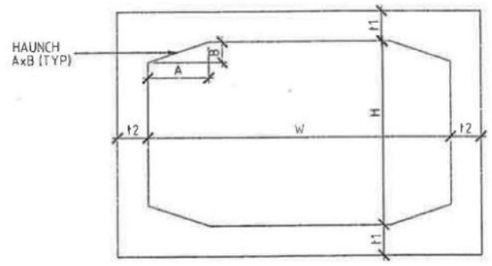
L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO. DD-312 REV. D

plot scale 50mm

AUTO PATH: J:\INTRANET\FILE EXCHANGE\ARKU\DFCCL\DDR-312-RDS-AVK-SINGLE CELL BOX CULVERT (EAST -IN-SITU REINFORCEMENT DETAILS).DWG

Bar No.	Shape	Total Bar Length	M 1	M 2
1.	M 1 M 2	Greater of the following:- 1) $W + 2t_1 - 2 \times 80mm$ 2) $W - 2A + 2L_a$	$M1 = \frac{\text{Total bar length} - M2}{2}$	M2= Lesser of the following:- 1) Total bar length 2) $W + 2t_2 - 2x80mm$
2.	M 1 M 2	Greater of the following:- 1) $W + t_2$ 2) $W - 2A + 2L_a$	$M1 = \frac{\text{Total bar length} - M2}{2}$	M2= Lesser of the following:- 1) Total bar length 2) $W + 2t_2 - 2x80mm$
3.	M 1 M 2	$L = 2M1 + M2$	$M1 = t_2 + A + L_a$	M2= $H + 2t_1 - 2x50mm$
4.	M 1 M 2	Greater of the following:- 1) M_1 2) $H - 2B + 2L_a$	$M1 = \frac{\text{Total bar length} - M2}{2}$	M2= $H + 2t_1 - 2x50mm$
5.	NOT USED			
6a.	M 2 M 1	L = Inclined haunch length + 2LD		
6b.	NOT USED			
7a.	M 1 M 2	$L = 2M1 + M2$	$M1 = 18 \times$ Bar diameter	$M2 = t_1 - 2$ (40mm + 4xBAR DIAMETER)
7b.		Variable length in haunch region		
7c.	M 1 M 2	$L = 2M1 + M2$	$M1 = 18 \times$ Bar diameter	$M2 = t_2 - 2$ (40mm + 4xBAR DIAMETER)
7d.	NOT USED			
8.	M 2	$L = M2$	$M1 = 0$	M2= Barrel length of the culvert.



Jam/17

Checked

Approved

FOR APPROVAL

NOTES:

1. All dimension are to the center line of reinforcement bars.

REV	DATE (YYMMDD)	STATUS	DESCRIPTION	DES.	DRN	INIT.	SIGN.	INIT.	SIGN.
D									
C									
B									
A									
0	091020	2	FIRST SUBMISSION	BDN	ARK	ADR		ASV	

CHECKED — APPROVED

REVISIONS

STATUS CODES: 1 - PRELIMINARY 2 - FOR APPROVAL 3 - GOOD FOR CONSTRUCTION 4 - FOR TENDER PURPOSE ONLY

DRAWING NO.	TITLE
DD-312	CAST IN-SITU SINGLE CELL BOX CULVERT : REINFORCEMENT DETAILS
DD-311	CAST IN-SITU SINGLE CELL BOX CULVERT : GAD

REFERENCE DRAWINGS

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DRG. SIZE: A2

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD ROSO SPANS

PROJECT NO: C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE

COP: IRS

SCALE: AS SHOWN

L&T-RAMBØLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DDR-312 REV 0

plot scale 50mm

AUTO PATH: JCINTRANET OFFICE (INDIA)WEGUARING\DFCC\DDR-312-DR-ARK-CAST IN SITU SINGLE CELL BOX CULVERT BAR BENDING SCHEDULE.DWG

V-7-4-4

33

Single Cell Box 1.2m X 1.2m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
1.2	1.2	0.3	0.3	NA	0.15	0.15

Bar No.	Bar Dia.	Spacing
	mm	mm
1	12	110 mm c/c
2	12	110 mm c/c
3	12	110 mm c/c
4	10	110 mm c/c
5	Not used	
6a	10	110 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 110 mm along barrel
7d	Not used	
8	10	150 mm c/c
SBC reqd	295	kN/m^2

34

Single Cell Box 2m X 2.5m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
2	2.5	0.4	0.35	NA	0.15	0.15

Bar No	Bar Dia.	Spacing
	mm	mm
1	12	100 mm c/c
2	16	100 mm c/c
3	16	100 mm c/c
4	10	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	10	150 mm c/c
SBC reqd.	245	kN/m^2

35

Single Cell Box 2m X 4m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
2	4	0.45	0.45	NA	0.15	0.15

Bar No.	Bar Dia	Spacing
	mm	mm
1	20	110 mm c/c
2	20	110 mm c/c
3	20	110 mm c/c
4	16	110 mm c/c
5	Not used	
6a	10	110 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 110 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd	260	kN/m^2

36

Single Cell Box 3 m X 2.5 m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
3	2.5	0.4	0.4	NA	0.6	0.2

Bar No.	Bar Dia	Spacing
	mm	mm
1	12	125 mm c/c
2	20	125 mm c/c
3	20	125 mm c/c
4	12	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
8	10	150 mm c/c
SBC reqd	230	kN/m^2

37

Single Cell Box 3 m X 4 m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
3	4	0.4	0.5	NA	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	20	150 mm c/c
2	25	150 mm c/c
3	25	150 mm c/c
4	16	150 mm c/c
5	Not used	
6a	10	150 mm c/c
6b	Not used	
7a, 7b, 7c	10	110 mm along length and 150 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd.	240	kN/m^2

38

Single Cell Box 3 m X 6 m size - 0 and 1m fill						
W	H	t1	t2	t3	A	B
3	6	0.6	0.75	NA	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	25	125 mm c/c
2	25	125 mm c/c
3	25	125 mm c/c
4	16	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
7d	Not used	
8	12	125 mm c/c
SBC reqd.	265	kN/m^2

STUP CONSULTANTS P. LTD. 1112 VISHAL TOWER DISTT. CENTRE JANAK PURI NEW DELHI-58, TEL: 25635106

Approved

NOTES:

REFERENCE DRAWINGS	
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : REINF. DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT : GAD
DRAWING NO.	TITLE

REV.	DATE (YYMMDD)	STATUS	DESCRIPTION	DES.	DRN.	INIT.	SIGN.	INIT.	SIGN.
D									
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	081120	2	REVISED DFC LOADING	BDN	AVK	ASV	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION	BDN	TNG	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 PRELIMINARY 2 FOR APPROVAL 3 GOOD FOR CONSTRUCTION 4 FOR TENDER PURPOSE ONLY

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ORIG. SIZE A2

PATH

FOR APPROVAL

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RUSO SPANS

PROJECT NO. C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX CULVERT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO. DD-320 REV. C

plot scale 50mm

DFCC NEW DELHI

NJPC CONSORTIUM

AUTO PATH: JOINTNAME:C:\FILE EXCHANGE\LARKOR\CELL\DDD-320-RC-GVS-ADR CULVERT CAST -IN-SITU OPTION.DWG

TBA

V-7-4-5

39

Single Cell Cast-in-situ Box 4m X 2.5m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
4	2.5	0.5	0.5	N A	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	12	110 c/c
2	20	110 c/c
3	20	110 c/c
4	12	110 c/c
5	Not Used	
6a	10	110 c/c
6b	Not Used	
7a, 7b ,7c	10	150 mm along length, 110 mm along barrel
7d	Not Used	
8	10	125 c/c
SBC reqd	210	kN/m2

40

Single Cell Cast-in-situ Box 4m X 4m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
4	4	0.5	0.5	N A	0.6	0.2

Bar No	Bar Dia.	Spacing
	mm	mm
1	20	125 c/c
2	25	125 c/c
3	25	125 c/c
4	16	125 c/c
5	Not Used	
6a	10	125 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 125 mm along barrel
7d	Not Used	
8	10	125 c/c
SBC reqd	215	kN/m2

42

Single Cell Cast-in-situ Box 5m X 2.5m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
5	2.5	0.65	0.5	N A	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	16	150 c/c
2	25	150 c/c
3	25	150 c/c
4	16	150 c/c
5	Not Used	
6a	10	150 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 150 mm along barrel
7d	Not Used	
8	10	100 c/c
SBC reqd	205	kN/m2

43

Single Cell Cast-in-situ Box 5m X 4m size, Fill Depth = 0m and 1m						
W	H	t1	t2	t3	A	B
5	4	0.55	0.55	N A	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	20	110 c/c
2	25	110 c/c
3	25	110 c/c
4	12	110 c/c
5	Not Used	
6a	10	110 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 110 mm along barrel
7d	Not Used	
8	10	110 c/c
SBC reqd	210	kN/m2

44

Single Cell Cast-in-situ Box 4m X 6m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
4	6	0.55	0.75	N A	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	25	110 c/c
2	25	110 c/c
3	25	110 c/c
4	16	110 c/c
5	Not Used	
6a	10	110 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 110 mm along barrel
7d	Not Used	
8	12	125 c/c
SBC reqd.	240	kN/m2

Single Cell Cast-in-situ Box 5m X 6m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
5	6	0.85	0.8	N A	0.6	0.2

Bar No	Bar Dia	Spacing
	mm	mm
1	20	100 c/c
2	20	100 c/c
3	25	100 c/c
4	16	100 c/c
5	Not Used	
6a	10	100 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 100 mm along barrel
7d	Not Used	
8	12	100 c/c
SBC reqd.	240	kN/m2

STUP CONSULTANTS PVT. LTD. NEW DELHI-58, TEL. 25...
Approved
VISHAL TOWER DISTT. GONDA JANAKPURI

FOR APPROVAL

NOTES:

REFERENCE DRAWINGS	
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT REINF. DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT GAD
DRAWING NO.	TITLE

REV	DATE (YYMMDD)	STATUS	DESCRIPTION	DES	DRN	INIT	SIGN (CHECKED)	INIT	SIGN (APPROVED)
D				BDN	ARK	ADR		ASV	
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	AVK	ASV	-sd-	ASV	-sd-
A	081120	2	REVISED DFC LOADING	BDN	ASP	ADR	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION						

REVISIONS

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

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DRG. SIZE: A2

PATH:

CLIENT	DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.
PROOF CONSULTANT	STUP CONSULTANTS P. LTD
PROJECT	DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS
TITLE	CAST IN-SITU SINGLE CELL BOX CULVERT
PROJECT NO	C1073504
COP	IRS
SCALE	AS SHOWN
DRAWING NO	DD-321
REV	C

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

NK CONSORTIUM NJPC

plot scale 50mm

AUTO PATH: I:\CONTRACT\LE EKSHMEC\ANN\DFC\LOD-311-NC-GVS-BOX CULVERT CAST -IN-SITU OPTION.DWG

TBA

45

Single Cell Cast-in-situ Box 6m X 4m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
6	4	0.7	0.7	N A	0.9	0.3

Bar No.	Bar Dia.	Spacing
	mm	mm
1	16	110 c/c
2	25	110 c/c
3	25	110 c/c
4	16	110 c/c
5	Not Used	
6a	10	110 c/c
6b	Not Used	
7a, 7b, 7c	10	150 mm along length, 110 mm along barrel
7d	Not Used	
8	12	125 c/c
SBC reqd.	210	kN/m2

46

Single Cell Cast-in-situ Box 6m X 6m size, Fill Depth = 0 m and 1m						
W	H	t1	t2	t3	A	B
6	6	0.85	0.85	N A	0.9	0.3

Bar No.	Bar Dia.	Spacing
	mm	mm
1	20	100 c/c
2	25	100 c/c
3	25	100 c/c
4	16	100 c/c
5	Not Used	
6a	10	100 c/c
6b	Not Used	
7a, 7b,7c	10	150 mm along length, 100 mm along barrel
7d	Not Used	
8	12	100 c/c
SBC reqd.	230	kN/m2

Approved

FOR APPROVAL

NOTES

DRAWING NO.	TITLE
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT REINF DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT GAD

REFERENCE DRAWINGS

REV	DATE (YYMMDD)	STATUS	DESCRIPTION	DES.	DRN	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D				BDN	ARK	ADR		ASV	
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	AVK	ASV	-sd-	ASV	-sd-
A	081120	2	REVISED DFC LOADING	BDN	TNG	ADR	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION						

REVISIONS

STATUS CODES 1: PRELIMINARY 2: FOR APPROVAL 3: GOOD FOR CONSTRUCTION 4: FOR TENDER PURPOSE ONLY

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ORIG. SIZE A2

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX CULVERT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBØLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-322 REV: C

plot scale 50mm

AUTO PATH: J:\INTRANET\FLE EXCHANGE\ARK\DFC\CELL\DD-322-RC-GVS-BOX CULVERT CAST -IN-SITU OPTION.DWG

18A

Single Cell Box 1.2 m X 1.2 m size - 5m fill						
W	H	t1	t2	t3	A	B
1.2	1.2	0.3	0.3	NA	0.15	0.15

Bar No.	Bar Dia.	Spacing
	mm	mm
1	12	125 mm c/c
2	12	125 mm c/c
3	12	125 mm c/c
4	10	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
7d	Not used	
8	10	150 mm c/c
SBC reqd.	245	kN/m^2

Single Cell Box 3 m X 2.5 m size - 5m fill						
W	H	t1	t2	t3	A	B
3	2.5	0.45	0.45	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	16	150 mm c/c
2	20	150 mm c/c
3	20	150 mm c/c
4	16	150 mm c/c
5	Not used	
6a	10	150 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 150 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd.	235	kN/m^2

Single Cell Box 2 m X 2.5 m size - 5m fill						
W	H	t1	t2	t3	A	B
2	2.5	0.35	0.35	NA	0.15	0.15

Bar No.	Bar Dia.	Spacing
	mm	mm
1	12	110 mm c/c
2	16	110 mm c/c
3	16	110 mm c/c
4	10	110 mm c/c
5	Not used	
6a	10	110 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 110 mm along barrel
7d	Not used	
8	10	110 mm c/c
SBC reqd.	235	kN/m^2

Single Cell Box 3 m X 4 m size - 5m fill						
W	H	t1	t2	t3	A	B
3	4	0.5	0.5	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	12	100 mm c/c
2	20	100 mm c/c
3	20	100 mm c/c
4	12	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd.	250	kN/m^2

Single Cell Box 2 m X 4 m size - 5m fill						
W	H	t1	t2	t3	A	B
2	4	0.4	0.45	NA	0.15	0.15

Bar No.	Bar Dia.	Spacing
	mm	mm
1	20	100 mm c/c
2	16	100 mm c/c
3	20	100 mm c/c
4	12	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd.	250	kN/m^2

Approved

Single Cell Box 3 m X 6 m size - 5m fill						
W	H	t1	t2	t3	A	B
3	6	0.7	0.8	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	20	125 mm c/c
2	20	125 mm c/c
3	25	125 mm c/c
4	16	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
7d	Not used	
8	12	110 mm c/c
SBC reqd.	285	kN/m^2

JGM 1/D

FOR APPROVAL

NOTES:

DRAWING NO.	TITLE
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : REINF. DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT : GAD

REFERENCE DRAWINGS

REV	DATE (YYMMDD)	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN	APPROVED INIT.	APPROVED SIGN
D									
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	081120	2	REVISED DFC LOADING	BDN	AVK	ASV	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION	BDN	TNG	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

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DRWG. SIZE: A2

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX-CULVERT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO: DD-329

REV: C

plot scale 50mm

AUTO PATH: J:\OUTRAMETRO\RLE\EXTWAND\JARK\DFCCLCBD\329\DC-GVS-BOX CULVERT CAST -IN-SITU\DFTWG.DWG

V-7-4-8

Single Cell Box 4 m X 2.5 m size - 5m fill						
W	H	t1	t2	t3	A	B
4	2.5	0.5	0.5	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	12	100 mm c/c
2	20	100 mm c/c
3	20	100 mm c/c
4	12	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	10	125 mm c/c
SBC reqd.	230	kN/m^2

Single Cell Box 5 m X 2.5 m size - 5m fill						
W	H	t1	t2	t3	A	B
5	2.5	0.75	0.6	NA	0.6	0.2

Bar No.	Bar Dia	Spacing
	mm	mm
1	16	125 mm c/c
2	25	125 mm c/c
3	25	125 mm c/c
4	16	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
7d	Not used	
8	12	125 mm c/c
SBC reqd.	240	kN/m^2

Single Cell Box 4 m X 4 m size - 5m fill						
W	H	t1	t2	t3	A	B
4	4	0.6	0.6	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	20	150 mm c/c
2	25	150 mm c/c
3	25	150 mm c/c
4	20	150 mm c/c
5	Not used	
6a	10	150 mm c/c
6b	Not used	
7a, 7b, 7c	10	125 mm along length and 150 mm along barrel
7d	Not used	
8	12	150 mm c/c
SBC reqd.	245	kN/m^2

Single Cell Box 5 m X 4 m size - 5m fill						
W	H	t1	t2	t3	A	B
5	4	0.7	0.7	NA	0.6	0.2

Bar No.	Bar Dia.	Spacing
	mm	mm
1	16	125 mm c/c
2	25	125 mm c/c
3	25	125 mm c/c
4	16	125 mm c/c
5	Not used	
6a	10	125 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 125 mm along barrel
7d	Not used	
8	12	125 mm c/c
SBC reqd.	250	kN/m^2

Single Cell Box 4 m X 6 m size - 5m fill						
W	H	t1	t2	t3	A	B
4	6	0.65	0.75	NA	0.6	0.2

Bar No.	Bar Dia	Spacing
	mm	mm
1	20	100 mm c/c
2	20	100 mm c/c
3	25	100 mm c/c
4	16	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	12	125 mm c/c
SBC reqd.	265	kN/m^2

Approved

Single Cell Box 5 m X 6 m size - 5m fill						
W	H	t1	t2	t3	A	B
5	6	0.8	0.85	NA	0.6	0.2

Bar No.	Bar Dia	Spacing
	mm	mm
1	20	100 mm c/c
2	25	100 mm c/c
3	25	100 mm c/c
4	16	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 100 mm along barrel
7d	Not used	
8	12	100 mm c/c
SBC reqd.	270	kN/m^2

JGM/17

FOR APPROVAL

NOTES:

DRAWING NO.	TITLE
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : REINF. DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT : GAD

REFERENCE DRAWINGS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN
D									
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	081170	2	REVISED DFC LOADING	BDN	ARK	ASV	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION	BDN	TNG	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1 : PRELIMINARY 2 : FOR APPROVAL 3 : GOOD FOR CONSTRUCTION 4 : FOR TENDER PURPOSE ONLY

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DRWG SIZE A2

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX CULVERT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

DRAWING NO. DD-330 REV. C

plot scale

V-7-4-9

Single Cell Box 6 m X 4 m size - 5m fill						
W	H	t1	t2	t3	A	B
6	4	0.75	0.75	NA	0.9	0.3

Bar No.	Bar Dia	Spacing
	mm	mm
1	16	100 mm c/c
2	25	100 mm c/c
3	25	100 mm c/c
4	16	100 mm c/c
5	Not used	
6a	10	100 mm c/c
6b	Not used	
7a, 7b, 7c	10	150mm along length and 100 mm along barrel
7d	Not used	
8	12	125 mm c/c
SBC reqd.	250	kN/m^2

Single Cell Box 6 m X 6 m size - 5m fill						
W	H	t1	t2	t3	A	B
6	6	1	1.15	NA	0.9	0.3

Bar No.	Bar Dia.	Spacing
	mm	mm
1	20	110 mm c/c
2	25	110 mm c/c
3	25	110 mm c/c
4	20	110 mm c/c
5	Not used	
6a	10	110 mm c/c
6b	Not used	
7a, 7b, 7c	10	150 mm along length and 110 mm along barrel
7d	Not used	
8	16	150 mm c/c
SBC reqd.	280	kN/m^2

Approved

FOR APPROVAL

NOTES:

DRAWING NO.	TITLE
DDR-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : BAR BENDING SCHEDULE
DD-312	CAST -IN-SITU SINGLE CELL BOX CULVERT : REINF. DETAILS
DD-311	CAST -IN-SITU SINGLE CELL BOX CULVERT : GAD

REFERENCE DRAWINGS

REV.	YYMMDD DATE	STATUS	DESCRIPTION	DES.	DRN.	CHECKED INIT.	CHECKED SIGN.	APPROVED INIT.	APPROVED SIGN.
D									
C	091020	2	REVISED AS PER STUP COMMENTS	BDN	ARK	ADR		ASV	
B	090326	2	REVISED AS PER STUP COMMENTS	BDN	GVS	ADR	-sd-	ASV	-sd-
A	081120	2	REVISED DFC LOADING	BDN	AVK	ASV	-sd-	ASV	-sd-
0	080903	2	FIRST SUBMISSION	BDN	TNG	ADR	-sd-	ASV	-sd-

REVISIONS

STATUS CODES 1. PRELIMINARY 2. FOR APPROVAL 3. GOOD FOR CONSTRUCTION 4. FOR TENDER PURPOSE ONLY

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ORIG DES. AZ

PATH:

CLIENT: DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LTD.

PROOF CONSULTANT: STUP CONSULTANTS P. LTD.

PROJECT: DESIGNING AND DEVELOPING DETAILED DRAWINGS FOR SUPERSTRUCTURE OF STANDARD RDSO SPANS.

PROJECT NO: C1073504

TITLE: CAST IN-SITU SINGLE CELL BOX CULVERT

COP: IRS

SCALE: AS SHOWN

L&T-RAMBOLL CONSULTING ENGINEERS LIMITED

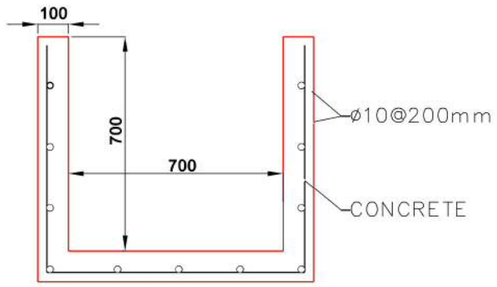
DRAWING NO. DD-331 REV. C

plot scale 50mm

AUTO PATH: J:\DFCC\EXCHANGE\ARKK\DFCC\CELL\DD-331-RC-CVS-BOX CULVERT CAST -IN-SITU OF FOR.DWG

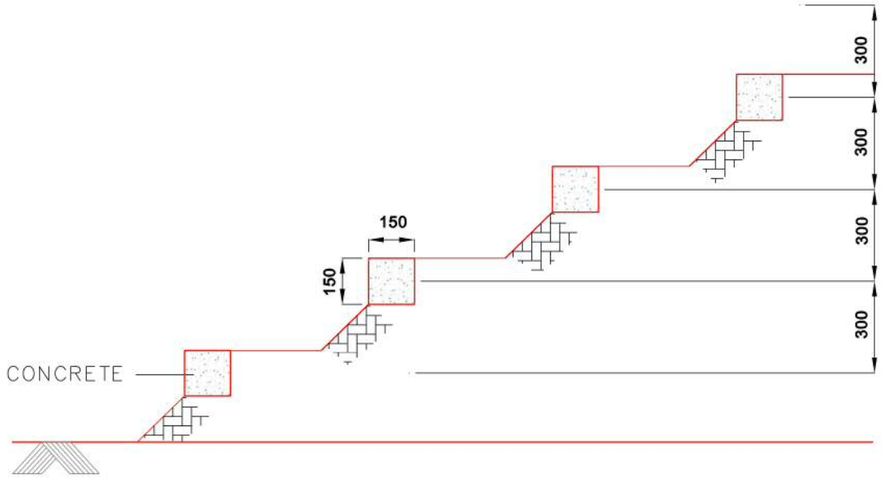
TYPICAL DRAIN CROSS SECTION

(SCALE 1:10)

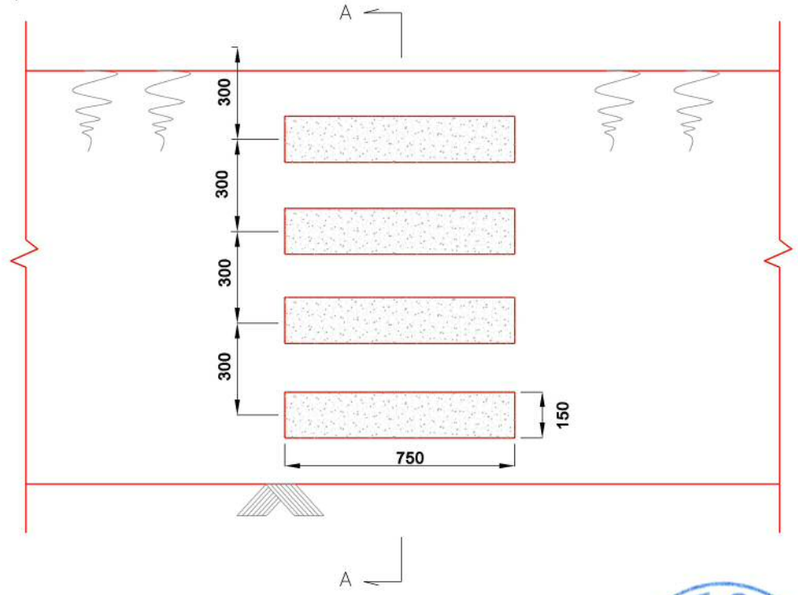


TYPICAL STEP ARRANGEMENT NEAR BRIDGE

(SCALE 1:10)



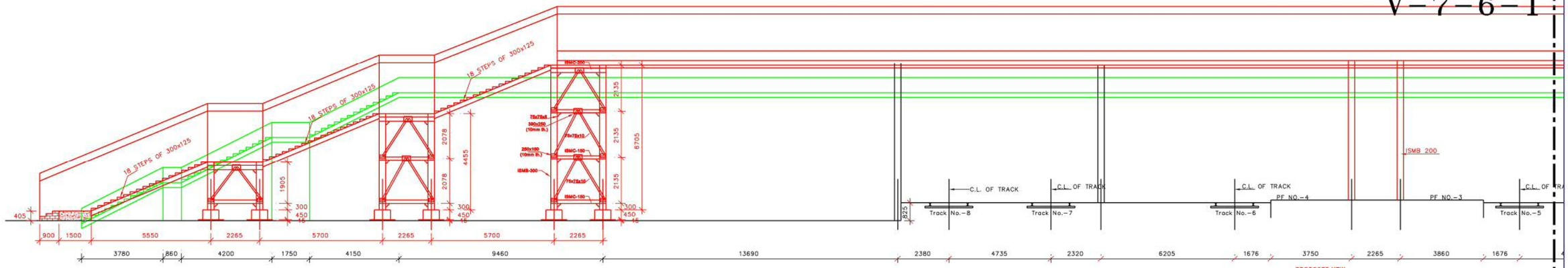
A–A SECTION



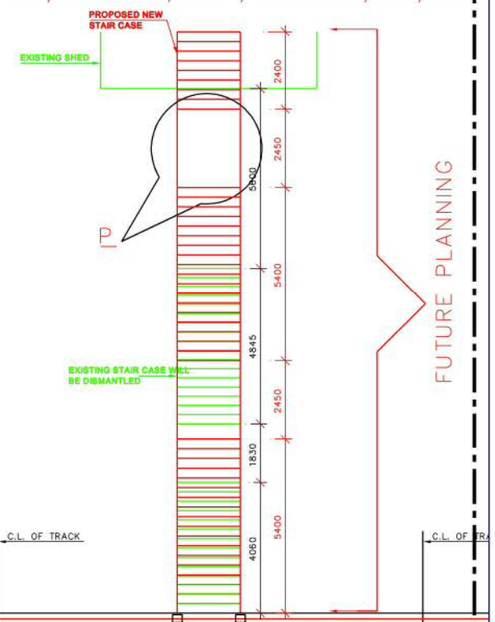
NOTE: STEPS SHOULD BE PROVIDED NEARBY EVERY BRIDGE(RUB) WHERE THE DIFFERENT HEIGHT BETWEEN F.L. AND G.L. IS MORE THAN 1.0M.

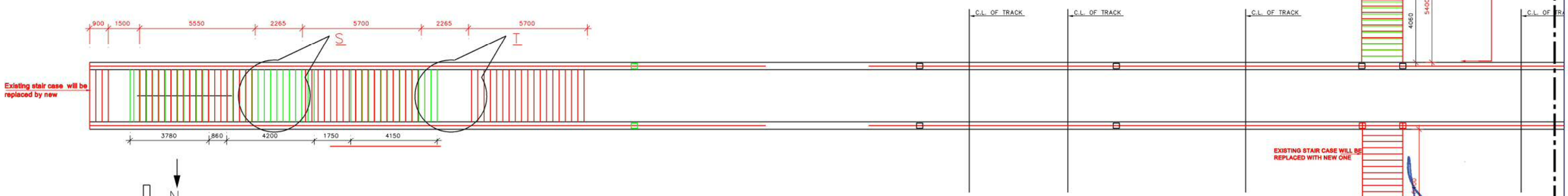
Project Title :	Client :	Drawing Title :	Drawing Number : NKC-CTS-EWS-AL-00005	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	STEP AND SIDE DRAIN CROSS SECTION	Scale : 1:10 Reference : Drawn By : JATIN 04 / 08 / 2011 Checked By : B.M.KHERA 04 / 08 / 2011 Approved By : T.NAKANO 04 / 08 / 2011	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA

V-7-6-1

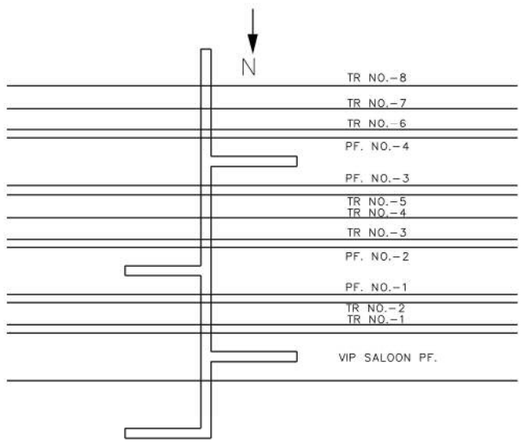


ELEVATION





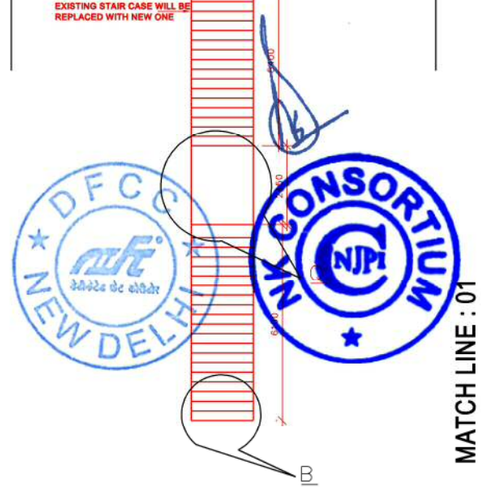
PLAN



KEY PLAN

INDICATIVE DRAWING FOR FOB

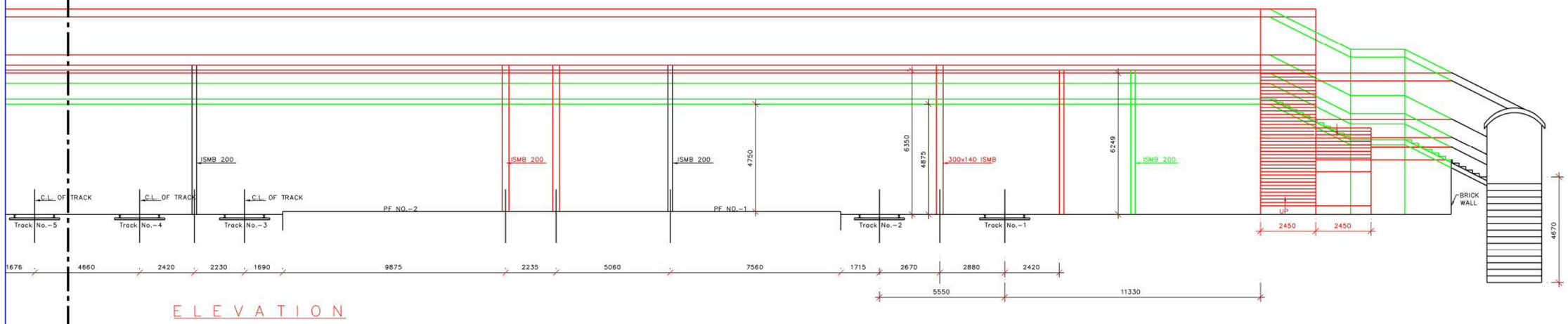
SHEET 1 OF 3



B

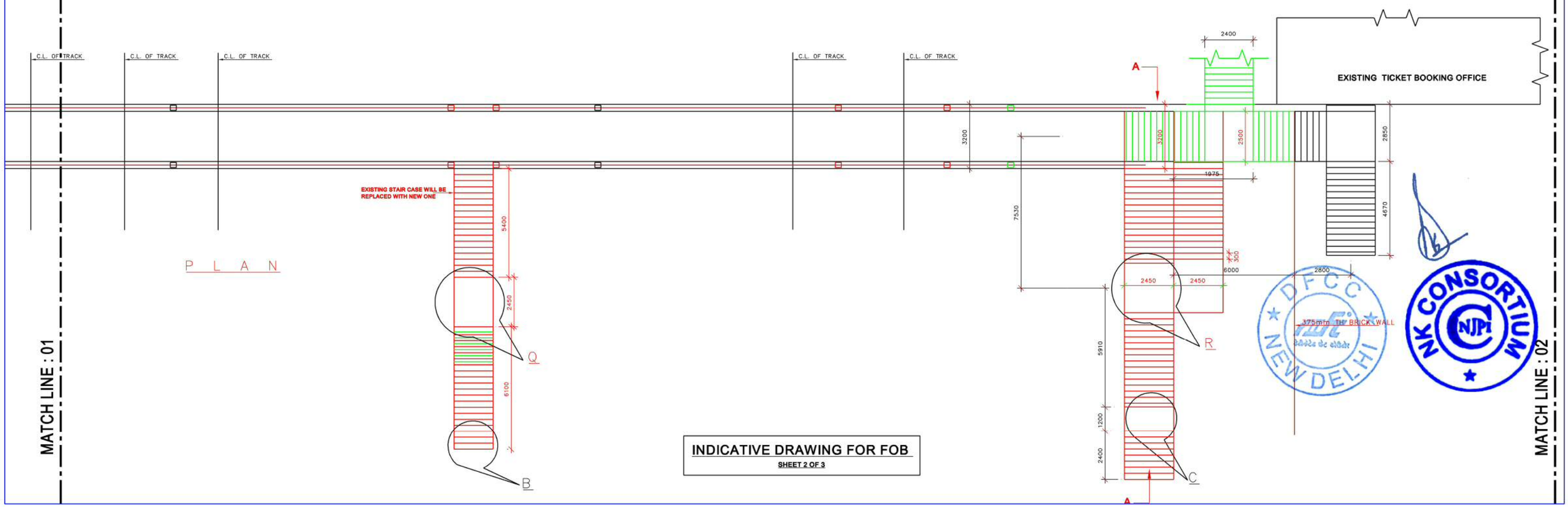
MATCH LINE : 01

V-7-6-2



ELEVATION

FUTURE PLANNING



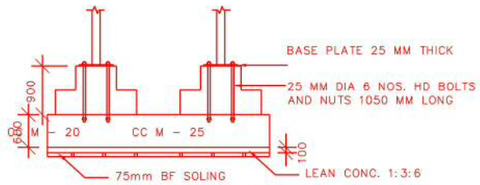
PLAN

INDICATIVE DRAWING FOR FOB

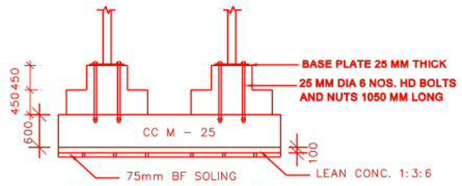
SHEET 2 OF 3

DFCC NEW DELHI

NK CONSORTIUM NJPL



CROSS SECTION OF Y - Y
(SCALE 1:50)



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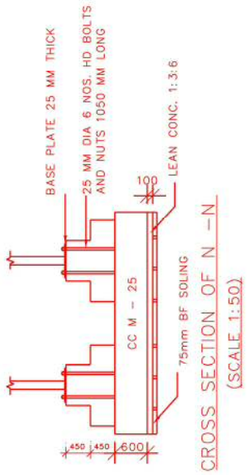
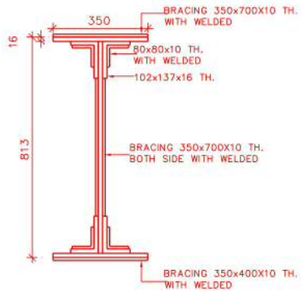
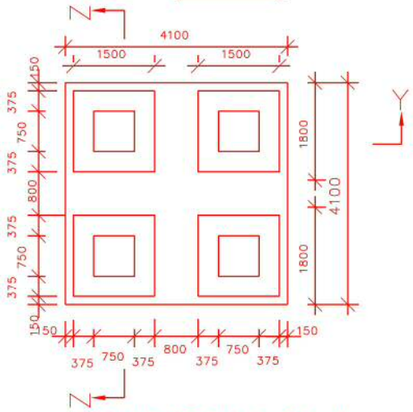


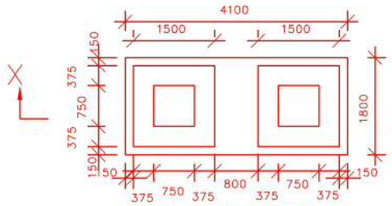
CROSS SECTION OF N - N
(SCALE 1:50)



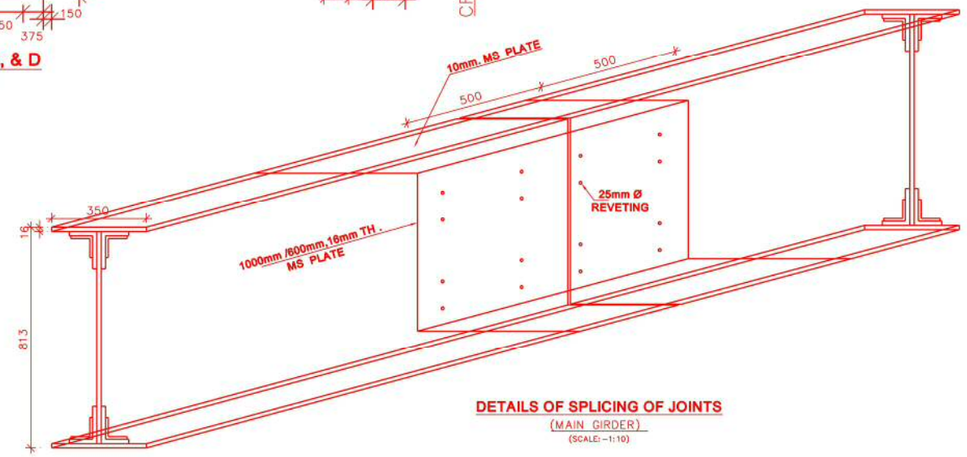
SECTION OF BUILT UP GIRDER
(SCALE:-1:10)



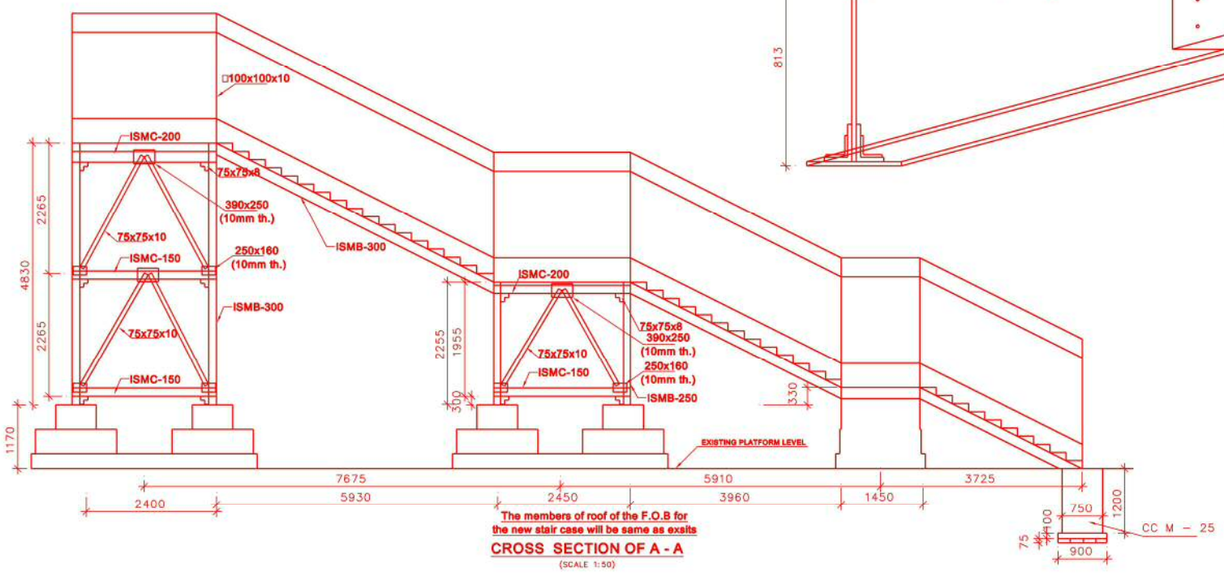
DETAILS OF P,Q,R, S & T
(SCALE 1:50)



DETAILS OF A,B,C, & D
(SCALE 1:50



DETAILS OF SPLICING OF JOINTS
(MAIN GIRDER)
(SCALE:-1:10)



The members of roof of the F.O.B for the new stair case will be same as exsits

CROSS SECTION OF A - A
(SCALE 1:50)

INDICATIVE DRAWING FOR FOB
SHEET 3 OF 3

LEGEND:-

1. EISISTING WORK SHOWN IN BLACK.
2. PROPOSED WORK SHOWN IN RED.
3. DISMANTLED WORK SHOWN IN GREEN.

NOTE :-

1. ALL DIMENSIONS ARE IN MILLIMMETRS.
2. THE DRAWING IS BASED ON DATA SENT BY PROJECT.
3. THE CONCRETE WORK SHALL BE DONE AS PER IS 456-2000 WITH LATEST REVISION.
4. ALL STEEL WORK SHALL BE AS PER IS 800-1984.
5. STRUTURAL STEEL SHALL BE AS PER IS 2062-1992.
6. ALL WELDING SHALL BE DONE TO IS 816-1969 FOR ELECTRIC ARC WELDING.
7. EXACT LENGTH OF MEMBERS AND SIZE OF GUSSET PLATES SHALL BE DETERMINED AS PER TEMPLATE IN SHOP SITE OF WORK.
8. JIG & FIXTURE ARE TO BE USED FOR WELDING VARIOUS MEMBERS.
9. PROPER DOWELLING SHOULD BE DONE TO GET FULL BOND BETWEEN OLD AND NEW WORKS.
10. ALL WELDS ARE 10mm TH. FILLET.
11. ALL UP RIGHT COLUMS WILL BE REPLACED WITH NEW SECTION OF 300 x 140 ISMB
12. ONE WAY PF SHELTER SHOULD BE DISMANTLED TO SUIT THE EXTENSION OF STAIR CASE, AS PER SITE REQUIRMENT, FOR FUTURE PLANNING.
13. ON PF NO. 1 & 2 , DUE TO WEEK AND RUSTED MEMBERS COMPLETE LANDINGS WILL BE REPLACED BY NEW .
14. THE MEMBERS OF ROOF OF THE FOB FOR THE NEW STAIR CASE WILL BE SAME AS EXISTS.
15. ALL JOINERY PLATES IN SUPPORTS FOR LANDINGS WILL BE 10mm. TH..
16. ALL DIOGONAL BRACINGS BETWEEN BELOW ISMB's 300, FOR STAIR CASE SLAB SUPPORTS, WILL BE 100x100x10 mm MS ANGLE .
17. SPLICING JOINTS WILL BE AS PER APPROVED DRG.
18. ALL GALVANISED HOLDING DOWN BOLTS WILL BE GROUTED WITH CEMENT CONCRETE M-25 .

MODULUS OPERANDI:-

1. PROCURED ALL MATERIALS TOOLS & PLANTS WELL IN ADVANCE AT SITE INCLUDING FABRICATED ITEMS.
2. PROVIDE NECESSARY ENGINEERING BANNER AND BOARD TO BLOCK THE FOB FOR PASSENGER IN CONSULTATION WITH OPEN LINE.
3. LIFTING OF FOB WILL BE DONE IN MINIMUM THREE PHASE AS SHOWN IN DRAWING LENGTH SHOULD BE DE SIDED AS SUITABLE TO SITE CONDITION.
4. PREPARE ALL BASES FOR PLACING OF TEMPORARY ARRANGEMENT AS SHOWN IN DRAWING.
5. ARRANGEMENT SHALL BE MADE WELL IN ADVANCE FOR TRAFFIC BLOCK IN CONSULTATIN WITH OPEN LINE.
6. ALL EXITING MEMBERS SHALL BE STRENGTHENT IF REQUIRED.
7. PROVIDE AND FIX ALL TEMPORARY ARRANGEMENT IN POSITION AS SHOWN IN DRAWING AS PER DRAWING NO. RE/ALD/C/145-67.
8. REMOVE ROOFING AND DECKING SLAB OF FOB AND H.D.BOLTS FROM COLUMNS.
9. PLACE THE JACKS OF 15t CAPACITY IN POSITION AS SHOWN IN DRAWING.
10. RAISE THE FOB WITH THE HELLP OF JACKS SIMULTANEOUSL AT ALL POINTS AND PROVIDE SUPPORT AT EVERY LIFTING OF 25mm.
11. SUPPORT THE FOB AFTER COMPLETE LIFTING ON JACKS AND SUPPORT ON CRIBS.
12. INSERT THE STEEL STOOLS AND STEEL SPLICIING MEMBER IN POSITION AS SHOWN IN DRAWING AND FIX THE STOOL/SPLICING MEMBER WITH EXTING BASE PLATE / EXISTING COLUMNS.
13. PROVIDE NECESSARY BRACING IN COLUMNS IF REQUIRED .
14. REMOVE ALL JACKS AND TEMPORARY ARRANGEMENT PLACE THE DECK SLAB AND ROOFING IN POSITION.
15. CONSTRUCT MASONARY STEPS AS SHOWN WITH BED PLATE AND HOLDING DOWN BOLTS FOR FIXED THE FLIGHTS AHANNAL.
16. OTHERS DETAILS SEE DRAWING NO RE/CIVIL 2008 SHEET NO-2 OF 2.
17. ALL NEW UP RIGHTS MEMBER WILL BE ISMB 300/140.
18. FOR STAIR CASE ISMB 400x140 WILL BE USED.
19. FOR BRACINGS & MINIMUM SIZE OF ANGLE WILL BE 100 x100 X 8 MM.
20. All ISMC OF SIZE 300 x 90 OR 250 x 82 WILL USED .
21. THE MINIMUM GRADE OF CONCRETE WILL BE M-20 FOR CC AND M-25 FOR RCC

CPM/RE/HJP		DRM E.C.RLY/SEE.	
DY.CE/RE/HJP		SR.DEN/C E.C.RLY/SEE	
DY.CEE/RE/HJP		DEN/SPL. E.C.RLY/SEE	
DY.CSTE/RE/HJP			

EAST CENTRAL RAILWAY
(RAILWAY ELECRIFICATION)
SONPUR DIVISION

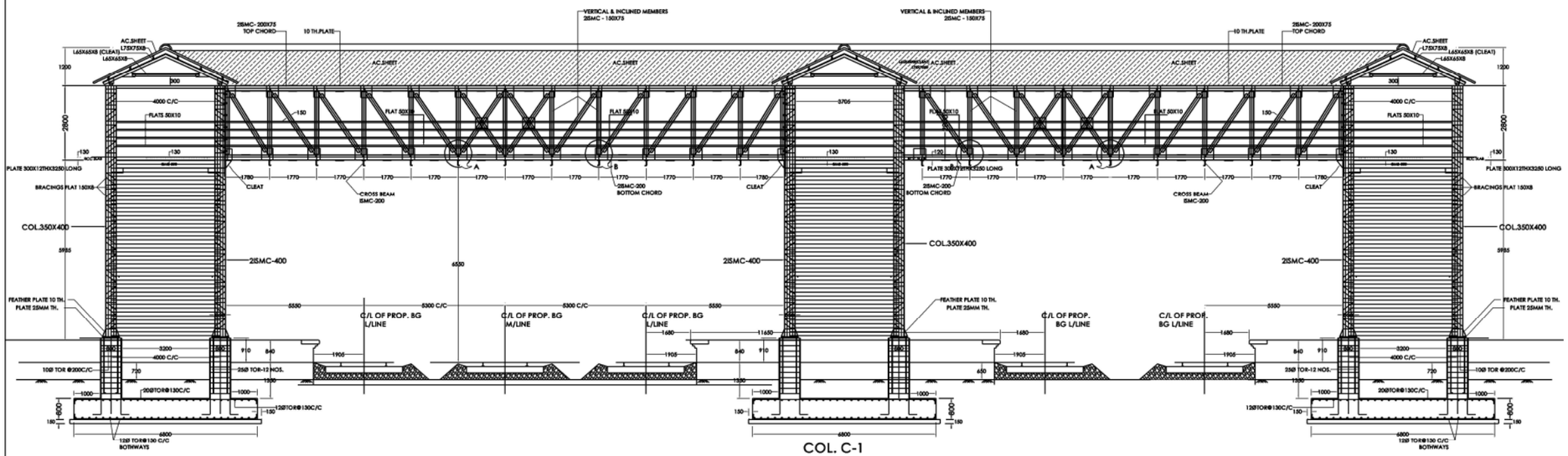
PLAN SHOWING ALTERATION IN RAISING/MODIFICATION OF FOOT OVER BRIDGE AT SONPUR
FOR CMD CLEARAINCE
(THIS DRG. IS PREPARED ON BASES OF JOINT INSPECTION OF F.O.B. WITH DIVISIONAL OTHORITY AND SITECONDITION)

BASE DRAWING NO.-C.E DRG. NO- A-11-2008
DY.CE/RE/HJP DRG. NO. RE/ENGG/HJP/140-1 (ALT)
SCALE:-1:100

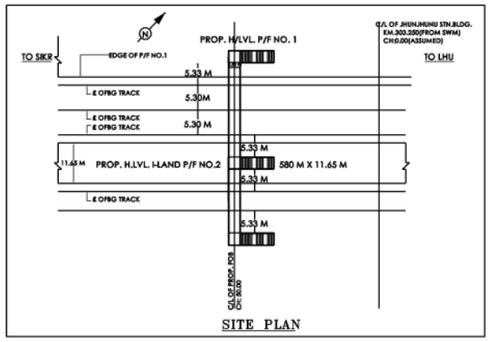
NK CONSORTIUM NJPL

Skylark Designer & Engineers Pvt.Ltd. Chatti Baddipura,Khagaul,Patna-801105 Ph:- +91 8113 853090

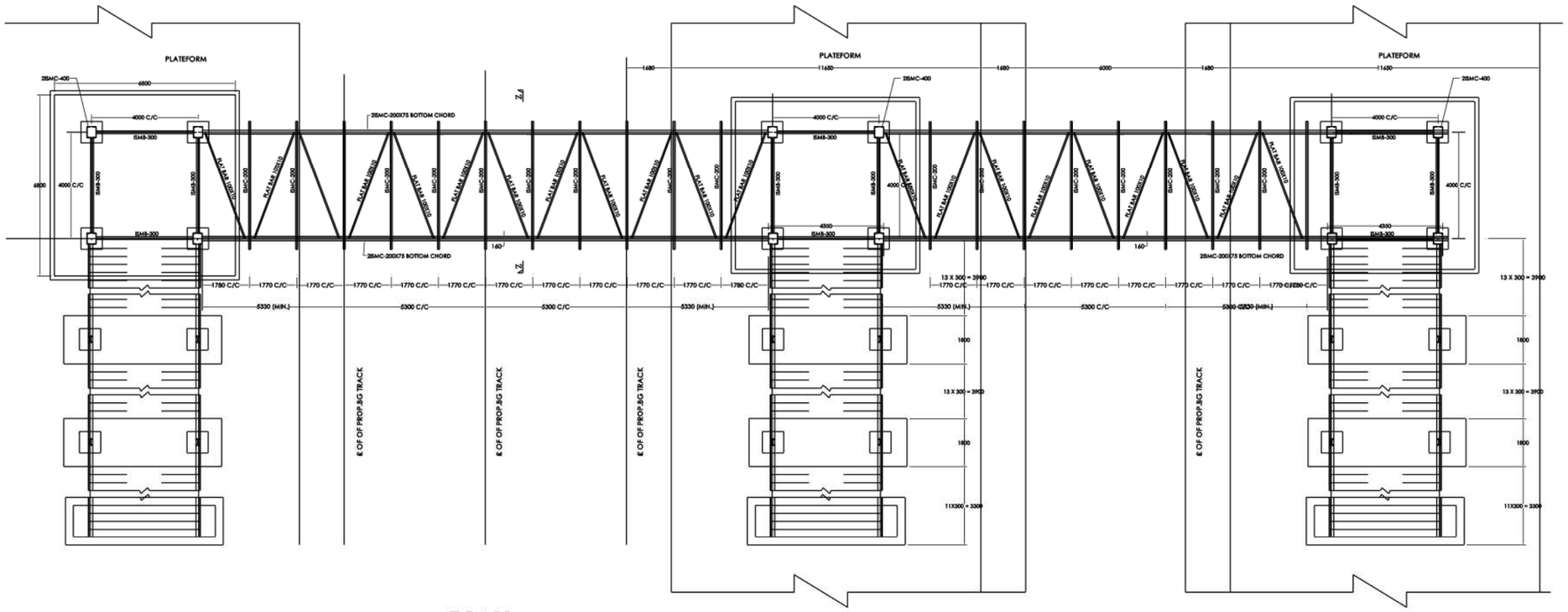
MATCH LINE : 02



ELEVATION



SITE PLAN



PLAN

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. DEPTH AND WIDTH OF FOUNDATION IS TENTATIVE & WILL BE DECIDED BY ENGINEER IN CHARGE AT SITE ACCORDING TO NATURE OF SOIL MET WITH.
3. ALL STRUCTURAL STEEL CONFORMING IS.2062.
4. RCC MIX SHALL BE M-25 FOR SLAB AND FOUNDATION.
5. ALL TOR STEEL REINFORCEMENT SHALL BE CONFORMING TO IS.1786.
6. ALL BOLTS 20MM DIA. FOR ERRECTION UNLESS OTHERWISE STATED.
7. CLEAR COVER IN RCC SLAB SHALL BE 20 MM AND 50 MM FOR RCC FOUNDATION.
8. MAXIMUM FOUNDATION PRESSURE IS 25 T/SQ.M.
9. ALL HOLES ARE 21.5MM DIA. FOR 20MM DIA. BOLTS UNLESS OTHERWISE MENTIONED.
10. ALL WELDS ARE 8MM THICK FILLET CONTINIOUS UNLESS OTHERWISE SPECIFIED..
11. DESIGN CEITERIA (I) IRS.STEEL BRIDGE CODE-1962.
    (II) IRS.BRIDGE RULES.
    (III) IRS. WELDING CODE.
12. WELDING SHALL BE CONFORMING TO IRS/ IS. CODE OF PRACTICE.
13. ALL GUSSET PLATES ARE 12 MM THICK UNLESS OTHERWISE MENTIONED.
14. FOR JOINT DETAILS DETAILS OF TRUSS, COLUMNS ,RCC SLAB AND FOUNDATION DETAILS REFER SEPERATE DRAWING.
15. CRS SANCTION MAY BE OBTAINED AT THE TIME OF EXECUTION OF WORK.

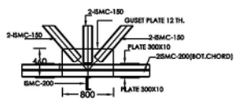
NORTH WESTERN RAILWAY	
SECTION:-SIKAR - LOHARU	DIVISION:- JAIPUR
PROJECT:- JP-SIKR-LHU & SIKR-CUR GC PROJECT	
JHUNJHUNU STN.	
PLAN SHOWING PROPOSED 4.00 M WIDE FOOT OVER BRIDGE (FOB) AT (GENERAL ARRANGEMENT DRAWING) SCALE:1:50	
XEN(C)D----------JP	DY.CE(C)P&D----------JP
DY.CE(C)GC----------JP	CE(C)I----------JP
DY.CE(C)GC-JP/ /D-JJN	SHEET NO. 1 OF 2
DRG.NO. CAO(C)JP/ /D-JJN	

VARIFIED BY ME AT SITE

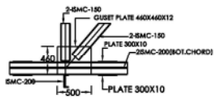
JE(C)W----------JJN | XEN(C)----------JJN

INDICATIVE DRAWING FOR FOB - 2

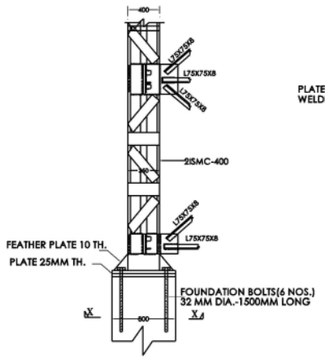
SHEET 1 OF 2



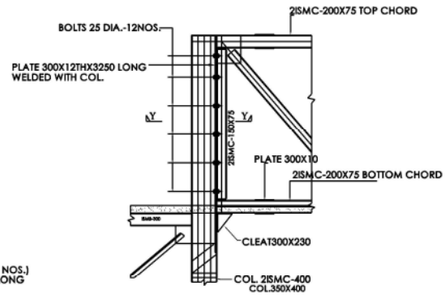
DETAILS AT 'A'



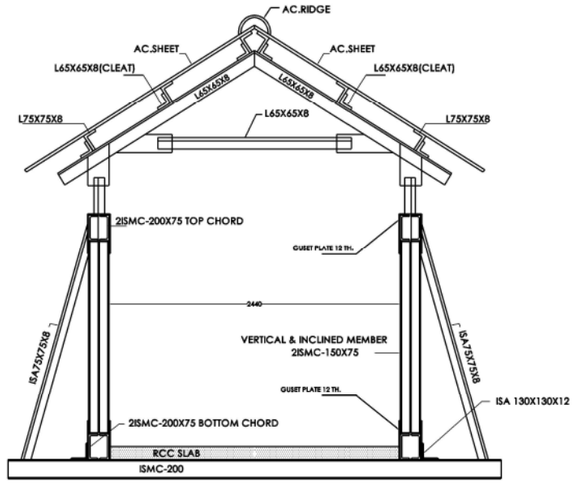
DETAILS AT 'B'



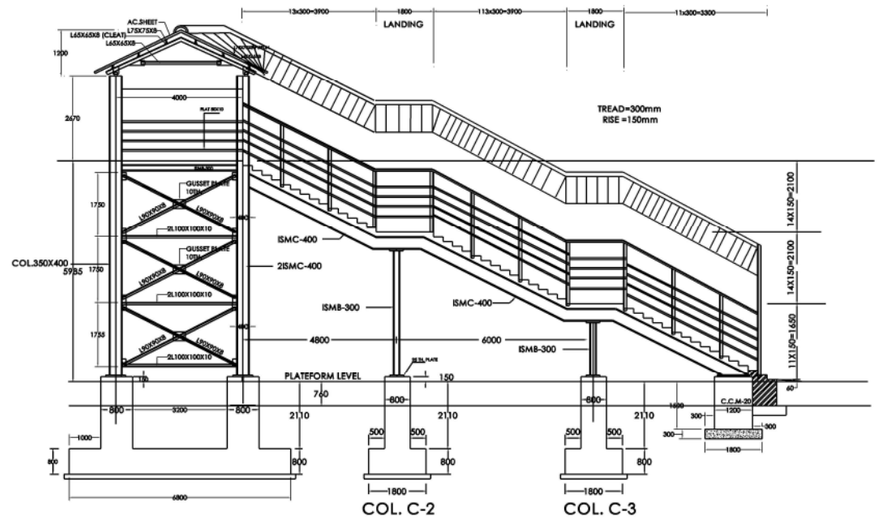
DETAILS OF COLUMN



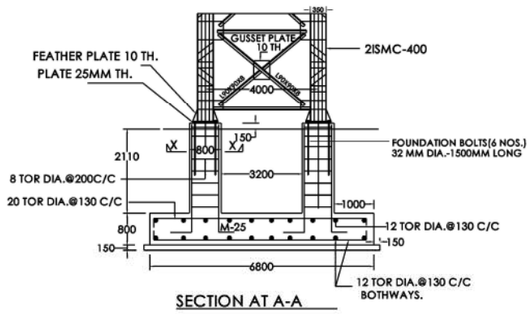
DETAILS OF COLUMN



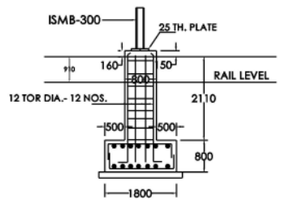
SECTION AT Z-Z



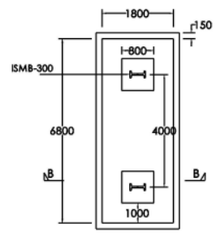
DETAILS OF STAIRCASE



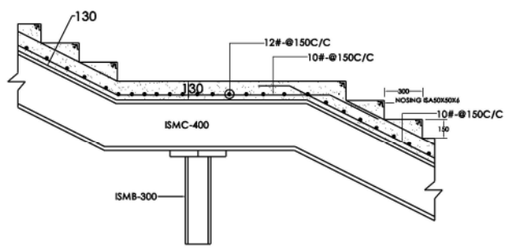
SECTION AT A-A



SECTION AT B-B



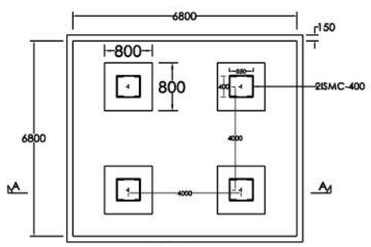
PLAN
COL. C-2



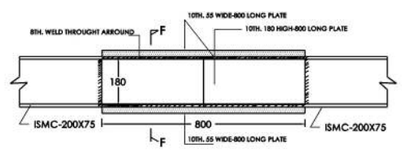
RCC DETAILS OF STAIRECASE

NOTES:-

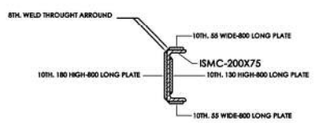
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL STRUCTURAL STEEL CONFORMING IS.2062.
3. RCC MIX SHALL BE M-25 FOR SLAB AND FOUNDATION.
4. ALL TOR STEEL REINFORCEMENT SHALL BE CONFORMING TO IS.1786.
5. ALL BOLTS 20MM DIA. FOR ERRECTION UNLESS OTHERWISE STATED.
6. CLEAR COVER IN RCC SLAB SHALL BE 20 MM AND 50 MM FOR RCC FOUNDATION.
7. WHEREVER NECESSARY SPLICING IN TOP AND BOTTOM CHORD CAN BE DONE .HOW EVER $\frac{1}{3}$ RD CENTRAL SPAN SHALL BE AVOIDED.
8. ALL HOLES ARE 21.5MM DIA. FOR 20MM DIA. BOLTS UNLESS OTHERWISE MENTIONED.
9. ALL WELDS ARE 8MM THICK FILLET CONTINIOUS.
10. DESIGN CEITERIA (I) IRS.STEEL BRIDGE CODE-1962.
    (II) IRS.BRIDGE RULES.
    (III) IRS. WELDING CODE.
11. WELDING SHALL BE CONFORMING TO IRS/ IS. CODE OF PRACTICE.
12. ALL GUSSET PLATES ARE 12 MM THICK UNLESS OTHERWISE MENTIONED.
13. FOR GENERAL ARRANGEMENT DRAWING REFER SHEET NO.1.



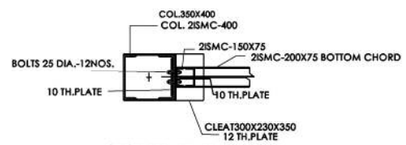
PLAN
COL. C-1



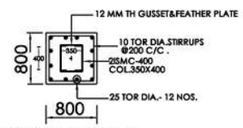
– ELEVATION



SECTION F-F
SPLICE JOINT OF TOP & BOTTOM CHORD



SECTION AT Y-Y

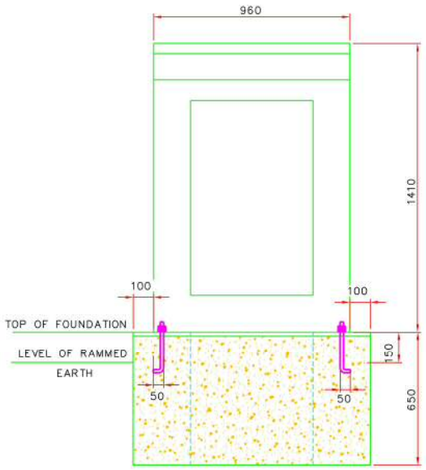


SECTION AT X-X

INDICATIVE DRAWING FOR FOB - 2

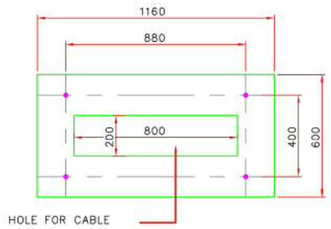
SHEET 2 OF 2

NORTH WESTERN RAILWAY	
SECTION:-SIKAR - LOHARU	DIVISION:- JAIPUR
PROJECT:-JP-SIKR-LHU & SIKR-CUR GC PROJECT	
JHUNJHUNU STN PLAN SHOWING THE JOINTS DETAILS OF SLAB, OF STAIRS,COLUMNS DETAILS FOUNDATION DETAILS OF PROPOSED 4.00M WIDE FOOT OVER BRIDGE (FOB)	
XEN(C)D----------JP	DY.CE(C)P&D----------JP
DY.CE(C)GC----------JP	CE(C)----------JP
DY.CE(C)GC-JP/ /D-JJN	SHEET NO. 2 OF 2
DRG.NO. CAO(C)JP/ /D-JJN	

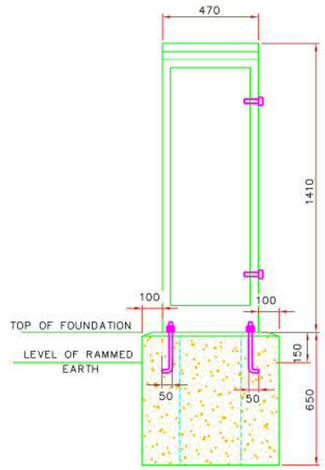


NOTES:-

1. ALL DIMENSION IN MM.
2. ON ALL SIDE EARTH SHOULD BE RAMMED UPTO THE LEVEL SHOWN IN THE SKETCH.

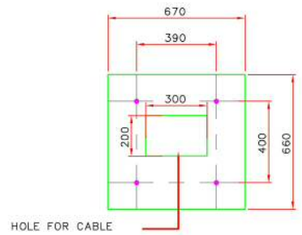


FOUNDATION FOR APPARATUS CASE SINGLE



NOTES:-

1. ALL DIMENSION IN MM.
2. ON ALL SIDE EARTH SHOULD BE RAMMED UPTO THE LEVEL SHOWN IN THE SKETCH.



FOUNDATION FOR APPARATUS CASE HALF

Project Title :	Client :	Drawing Title :	Drawing Number : NKC-CTS-EWS-AL-00006	Consultant :
Dedicated Freight Corridor Project (Western Corridor Phase-1: Rewari - Vadodara Section)	Dedicated Freight Corridor Corporation of India (A GOVERNMENT OF INDIA UNDERTAKING) 5th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA	EARTH WORK AROUND FOUNDATION FOR APPARATUS CASE SINGLE & HALF	Scale : 1:15 Reference : Northern Railway Drawing No. NO: NR / S&T / CON / 2-8 / 97, NO: NR / S&T / CON / 2-7 / 97 Drawn By : SANGEETA 1ST OCT. 2012 Checked By : G.D.BHATIA 1ST OCT. 2012 Approved By : T. NAKANO 1ST OCT. 2012	NK Consortium 4th Floor, Pragati Maidan Metro Station Building, New Delhi-110001, INDIA