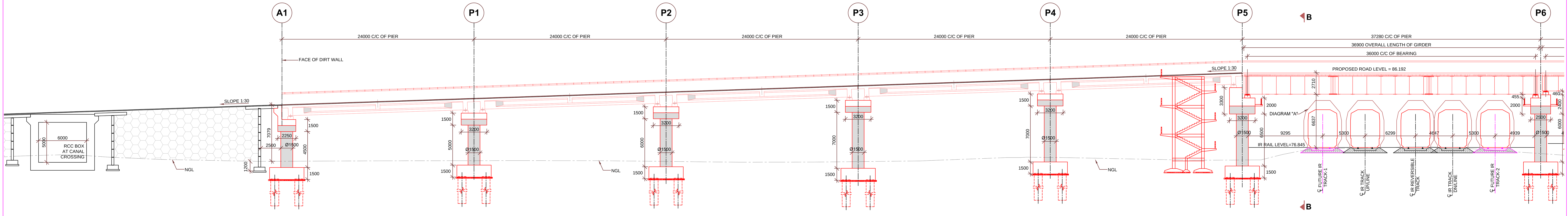
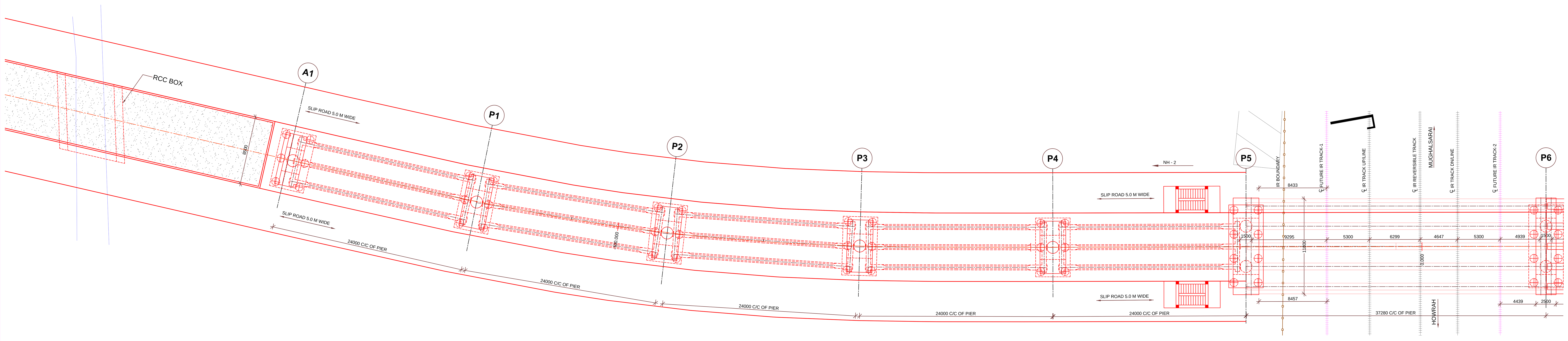
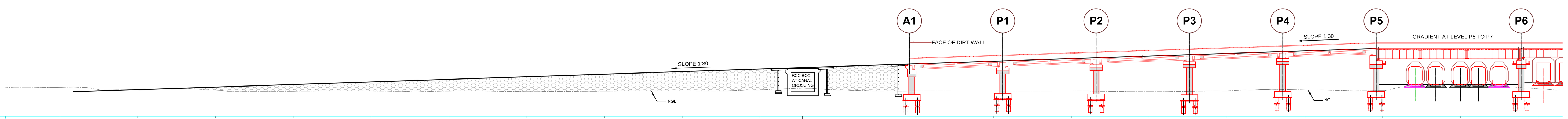


SECTIONAL ELEVATION
(SECTION AT AS ℄ OF ROAD ALIGNMENT)
(SCALE 1:200)



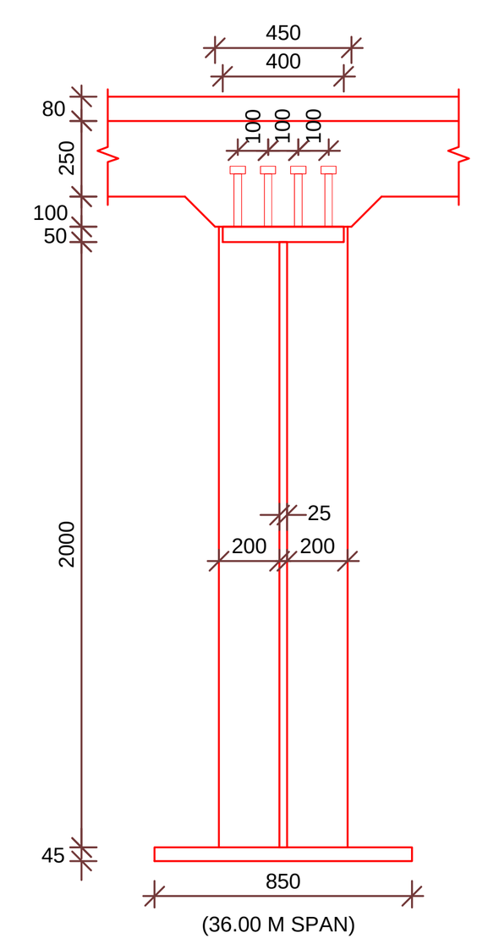
HALF BOTTOM & HALF TOP PLAN
(SCALE 1:200)



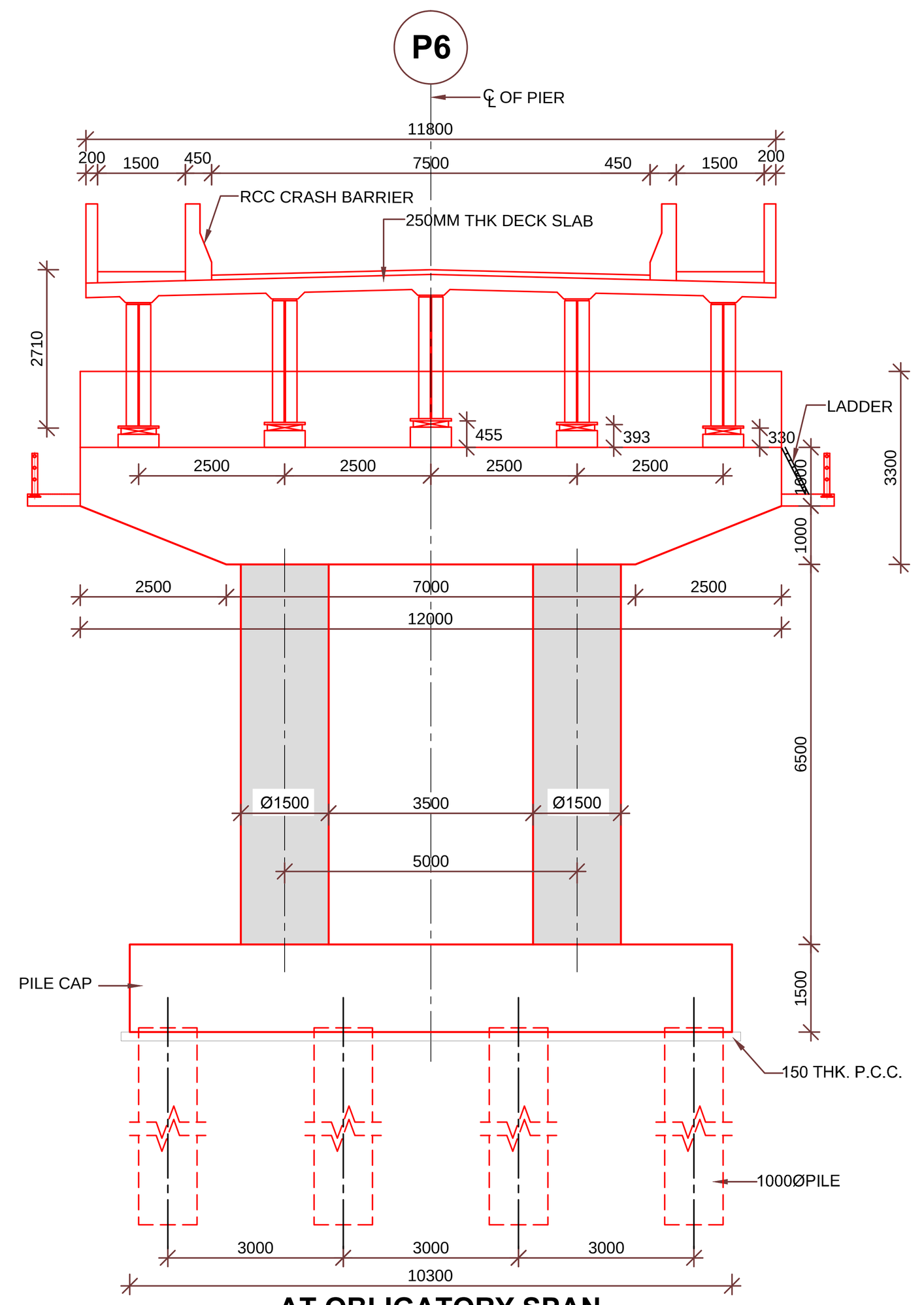
EXISTING LEVEL	76.168	76.143	75.628	75.383	75.086	75.122	75.110	75.000	75.100	75.179	75.507	75.933	75.486	75.124	75.190	75.167	75.005	75.232	75.500	75.283	76.922	75.785
PROPOSED LEVEL	77.000	77.000	77.000	86.192	86.192	78.259	78.925	79.592	80.259	80.925	81.592	81.957	82.259	82.925	83.592	84.259	84.925	86.192	86.192	86.192	86.192	86.192
CHAINAGE	-374.000	-360.000	-340.000	-320.000	-300.000	-280.000	-260.000	-240.000	-220.000	-200.000	-180.000	-169.062	-160.000	-140.000	-120.000	-100.000	-80.000	-60.000	-40.000	-20.000	0.000	20.000

HORIZONTAL	
Straight	L=14.384
Left Transition	RL = 6000.000 L = 30.000
Left Arc	R=-200.000 L=2.739
Left Transition	RL = 6000.000 L = 30.000
Straight	Length = 43.874
Right Transition	RL = 6000.000 L = 30.000
Right Arc	R=200.000 L=19.148
Right Transition	RL = 6000.000 L = 30.000
Straight	Length = 37.495
Left Transition	RL = 7500.000 L = 30.000
Left Arc	R=-250.000 L=26.806
Left Transition	RL = 7500.000 L = 30.000
Straight	Length = 79.488

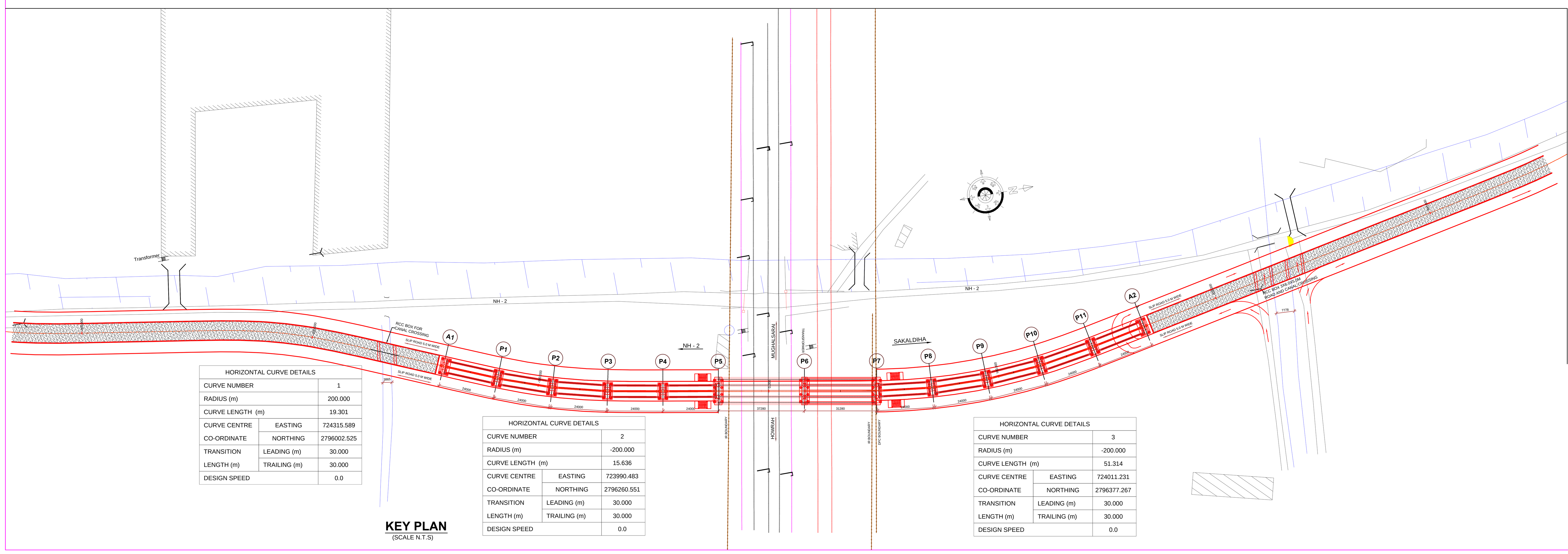
VERTICAL	
Straight	Gradient = 0.000% Length = 36.240
Sag Curve	K = 12.000 Length = 40.000
Straight	Gradient = 3.333% Length = 235.760
Hog Curve	K = -12.000 Length = 40.000
Straight	Gradient = 0.000% Length = 72.000



SECTION OF COMPOSITE GIRDER
(SCALE 1:25)



AT OBLIGATORY SPAN
(SECTION AT B-B)
(SCALE 1:100)



HORIZONTAL CURVE DETAILS		
CURVE NUMBER		1
RADIUS (m)		200.000
CURVE LENGTH (m)		19.301
CURVE CENTRE	EASTING	724315.589
CO-ORDINATE	NORTHING	2796002.525
TRANSITION	LEADING (m)	30.000
LENGTH (m)	TRAILING (m)	30.000
DESIGN SPEED		0.0

HORIZONTAL CURVE DETAILS		
CURVE NUMBER		2
RADIUS (m)		-200.000
CURVE LENGTH (m)		15.636
CURVE CENTRE	EASTING	723990.483
CO-ORDINATE	NORTHING	2796260.551
TRANSITION	LEADING (m)	30.000
LENGTH (m)	TRAILING (m)	30.000
DESIGN SPEED		0.0

HORIZONTAL CURVE DETAILS		
CURVE NUMBER		3
RADIUS (m)		-200.000
CURVE LENGTH (m)		51.314
CURVE CENTRE	EASTING	724011.231
CO-ORDINATE	NORTHING	2796377.267
TRANSITION	LEADING (m)	30.000
LENGTH (m)	TRAILING (m)	30.000
DESIGN SPEED		0.0

KEY PLAN
(SCALE N.T.S)

EXISTING RAILWAY LINE
PROPOSED DFCC LINE
PROPOSED IR LINE
EXISTING RAILWAY BOUNDARY
EXISTING CANAL
EXISTING FIELD CHANAL
EXISTING ROAD
RAILWAY POLE
ELECTRIC POLE
SIGNAL
MILESTONE ROCK
BUILT UP
TRANSFORMER
TEMPLE

SANCTION OF CRS TO BE TAKEN PRIOR TO EXECUTION OF WORK

SPECIAL NOTES:

1. LAUNCHING SCHEME OF THE RAILWAY SPAN GIRDER WILL BE SUMITTED SEPARATLY.
2. MAINTENANCE AGREEMENT TO BE EXECUTED BEFORE EXECUTION OF WORK.
3. NO WORK WITHIN RAILWAY BOUNDARY TO BE DONE WITHOUT PRESENCE OF RAILWAY REPRESENTATIVE.
4. GIRDERS OVER ROB PROPER TO BE FABRICATED PREFERABLY BY RDSO APPROVED FIRMS.

NOTES:-

1. ALL DIMENSION ARE IN MM. AND LEVELS ARE IN METERS UNLESS SPECIFIED OTHERWISE.
2. DIMENSION ARE NOT TO BE SCALED ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
3. ALL THE DIMENSIONS SHOWN SHOULD BE VERIFIED AT SITE BEFORE TAKING UP DESIGN WORK IN HAND. ANY DISCREPANCY NOTED SHOULD BE FORWARDED THROUGH ALTERATIONS DULY SIGNED.
4. MAXIMUM SAFE BEARING CAPACITY AT THE FOUNDING LEVEL CONSIDERED AS PER GEOTECHNICAL REPORT. IF IT IS LESS THAN THE BASE PRESSURE, THE FOUNDATION HAS TO BE REDESIGNED.
5. DRAINAGE SPOUT SHALL BE PROVIDED AS PER MORTH SPECIFICATION. DESIGN CONSULTANT SHOULD SUBMIT SEPARATE SHEET OF DRAINAGE SPOUT AS PER LATEST MORTH STANDARDS.
6. EXPOSURE CONDITION OF THE BRIDGE AND ITS COMPONENTS SHOULD BE DECLARED AS PER IRC 21-2000/IRC 112/IS:456. ALL SPECIFICATION LAID DOWN IN IRC CODE/IS:456 CODE FOR RELEVANT EXPOSURE CONDITION SHALL BE FOLLOWED.
7. FOR DETAILS OF SUBSTRUCTURE AND FOUNDATION REFER SEPARATE DRAWING DULY APPROVED BY RAILWAY/DFCCIL.
8. WORK SHOULD BE CARRIED OUT UNDER THE SUPERVISION OF RAILWAY ENGINEERS WITHIN RAILWAY LAND LIMIT.
9. TYPE OF BEARING :- POT-PTFE
10. SUITABLE UTILITY DUCTS IF REQUIRED SHOULD BE PROVIDED BELOW FOOTPATH SLAB WITH THE APPROVAL OF ENGINEER IN CHARGE.
11. DESIGN SHALL BE AS PER LATEST RELEVANT CODE OF IRC INCLUDING SP-33 AND OTHER CODES AS APPROVED BY M.O.S.T.
12. DFCCIL./PRIVATE AUTHORITIES SHOULD BE ENSURE DURING EXECUTION OF WORK SAFETY OF RUNNING RAIL TRAFFIC SHOULD NOT BE AFFECTED.
13. SUITABLE SR, IF REQUIRED SHOULD BE IMPOSED BEFORE TAKING UP THE EXECUTION OF WORK WITH THE APPROVAL OF ENGINEER IN CHARGE.
14. TEMPORARY SIGNALLING ARRANGEMENT WILL BE DONE AS PER G.R.15.09 (I)D &S.R 15.09 (2) OR GR15.09(2)B &S.R 15.09(2) WHICHEVER IS ADOPTABLE IF REQUIRED.
15. LOADING STANDARD OF ROB AS PER IRC-6:2000.
16. FULL FLEDGED LOAD TEST OF SUPER STRUCTURE SHOULD BE DONE AS PER IRC-SP-5 TO ENSURE QUALITY WORK.
17. CONCRETE DESIGN MIX.
    RCC DECK SLAB : M40 — PIER,PIER CAP,PILE,PILE CAP : M35
    CRASH BARRIER : M40 — PEDESTAL : M40
    LEVELING COURSE : M15
18. MANNED LEVEL CROSSING NO 78-C EXIST AT THIS LOCATION.
19. L.C. SHALL BE CLOSED SIMULTANEOUSLY WITH COMMISSIONING OF ROB AND NOC IN THIS REGARD HAS BEEN ISSUED BY STATE GOVT. VIDE LETTER NO.587(I)/23-11-2015-1/2(304)/2015 DATED 07.06.2016
20. TVU OF L.C. IS 96744 OF DATED 08/2015.
21. PROVISION OF CLAMPS IN THE SUPERSTRUCTURE FOR THE SUPPORTING THE AC TRACTION WIRE TO BE MADE INVARIABLY IN CONSULTATION WITH CONCERN AUTHORITIES BASED ON TYPICAL DRAWING.
22. ALL R.C.C./P.C.C. WORK SHOULD CONFORM TO RELEVANT IS/IRC CODES & MOST SPECIFICATION.
23. FOR FABRICATION, WORKMANSHIP, INCEPTION & TESTING, PROTECTION AGAINST CORROSION ETC. RELEVANT PROVISION OF IRC-24-2001 SHALL BE FOLLOWED.
24. THE DEPTH OF FOUNDATION SHOWN IN THIS DRAWING IS TENTATIVE & SHOULD BE DECIDED BY COMPETENT AUTHORITIES AS PER ACTUAL SOIL PROPERTIES AND DESIGN CALCULATION.
25. REPRESENTATIVE OF TELECOM & SIGNAL DEPARTMENTS SHOULD BE MADE AVAILABLE BEFORE COMMENCEMENT OF PROPOSED WORK , IN THE VICINITY OF SIGNAL & TELECOM CABLE.
26. TEMPORARY ARRANGEMENT DRAWING OR METHODOLOGY TO LAUNCHING OF GIRDERS OVER RAILWAY TRACK SHOULD BE GOT APPROVED FROM RAILWAY AUTHORITY BEFORE START THE WORK.
27. PRECAUTIONARY MEASURES FOR CONSTRUCTION OF ROB ON DEPOSIT WORK/COST SHARING WORK WITH STATE GOVT. AND PRIVATE AGENCY ISSUED BY ADVISOR CIVIL ENGINEERING RAILWAY BOARD LETTER NO. 97/CE-1/BRO/158(POLICY)PT.-II, DATED -16.07.2009, 27.10.2009, 15.02.2011 & 09.07.2012 SHOULD BE STRICTLY FOLLOWED.
28. NO CONSTRUCTION JOINT SHALL BE NORMALLY ALLOWED IN CONCRETE WORKS WITHOUT SPECIAL PRECAUTIONS AS PER THE RELEVANT BRIDGE CODES AND SUITABLE PROTECTION PAINTING OF APPROVED MAKE SHOULD BE USED TO PAINT THE UNDERSIDE OF CONCRETE ROB GIRDERS ALSO TO ENSURE LONG LIFE.
29. CONTROLLED CONCRETE WITH WEIGH BATCHING SHALL BE USED.
30. GUARD RAIL SHOULD BE PROVIDED IN THE TRACK NEAR THE ISOLATED PILLAR OF ROB. NO CONSTRUCTION JOINT SHALL BE ALLOWED IN PSC OR RCC SLAB OR GIRDER AND CURING OF ALL CONCRETE AND MASONRY WORKS AS PER THE RELEVANT CODES OF PRACTICE SHALL BE ENSURED BEFORE USE.
31. INSPECTION LADDER/STEPS SHOULD BE PROVIDED TO ENSURE PROPER INSPECTION/ACCESSIBILITY OF ROB.
32. STRUCTURAL STEEL SHALL CONFIRM TO IS:2062 (GRADE - B).
33. STRIP SEAL TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER LATEST MOST REQUIREMENT, CONTRACTOR SHOULD FURNISH DESIGN/DRAWING OF EXPANSION JOINTS FROM FIRMS APPROVED BY MOST AT VARIOUS RELEVANT AMBIENT TEMPERATURE TO SUIT SITE CONDITIONS WITH THE APPROVAL OF ENGINEER IN CHIEF.
34. TO PROTECT THE CONCRETE FROM DAMAGE DUE TO SMOKE OF LOCOMOTIVES, 4.00M WIDE STRIP WITH POLYSULPHIDE PAINT PREFERABLE IN BLACK COLOUR SHALL BE PROVIDED IN THE SOFFIT OF THE DECK OVER RUNNING TRACKS.
35. STANDARD MAINTENANCE AGREEMENT SHOULD BE EXECUTED WITH RAILWAY AND STATE GOVT. AUTHORITIES FOR GRANT OF PERMISSION FOR CONSTRUCTION OF ROB/RUB IN RAILWAY PORTION.
36. NO WORK SHOULD BE TAKEN UP IN HAND TILL PROOF CHECKED DESIGN AND DRAWING WITHIN RAILWAY PORTION AREA APPROVED BY RAILWAY.
37. ALL STEEL STRUCTURES SHOULD HAVE ANTI - CORROSIVE PROTECTION OF LONG DURABILITY.
38. FOR DETAILS OF SUPER STRUCTURE OF RAILWAY SPAN OF 30.00M SPAN REFER RDSO'S DRG. NO. RDSO/B-11755/R, AND FOR 36M GIRDER REFER RDSO'S DRG. NO.RDSO/B-11758/R.
39. ANY CHANGE IN THE GAD FOR RAILWAY PORTION SHOULD BE DONE WITH PRIOR APPROVAL OF RAILWAY.
40. CLEAR COVER TO OUTER MOST STEEL SHALL BE AS UNDER
    A. FOR SUPER STRUCTURE - 50MM.
    B. FOR FOUNDATION - 75MM.
    C. FOR ABUTMENT, DIRT WALL AND RETURN WALL - 50MM.
41. FOR JACKING UP THE GIRDER FOR ANY HANDLING REQUIREMENTS IN FUTURE SUCH AS FOR REPLACEMENT OF BEARING OR ANY OTHER WORK REQUIRED. SUITABLE FEATURES SHOULD BE PROVIDED TO ENABLE JACKING.
42. THE DIMENSIONS & LEVELS SHOWN IN THE GAD ARE SUBJECT TO CHANGES AS PER SITE REQUIREMENT/DETAIL DESIGN, AND WILL BE DONE WITH PRIOR APPROVAL OF RAILWAY.
43. THE BRIDGE IS DESIGNED FOR SEISMIC ZONE III.
44. DIMENSIONS MAY GET CHANGED AFTER ITS DETAILED DESIGN.
45. AS PER DATA GIVEN BY DFC OFFICIAL THE DISTANCE BETWEEN PROPOSED DFC TRACK FROM DN LINE AND ITS PROPOSED LEVEL HAVE BEEN SHOWN IN THE DRAWING.
46. PROVISION OF EXPANSION JOINT SHOULD BE BEYOND THE GIRDER.
47. VERTICAL CURVE WILL BE PROVIDED WHEREVER THERE IS CHANGE IN GRADIENT IN APPROACHES AS PER IRC SP-23.
48. RESTRAINER ON BOTH SIDE OF OUTERMOST GIRDER ON PIER CAP & ABUTMENT CAP WILL BE PROVIDED IN SEISMIC ZONE IV & V.
49. APPROACH SPAN CONFIGURATION ARE INDICATIVE ONLY. FINAL SPAN OF APPROACH SPAN DECIDED BY UPSBCL END.

OPERATION SCHEDULE FOR RAILWAY SPAN:

1. TRACK SHALL BE PROTECTED SUITABLY DURING THE CONSTRUCTION OF BRIDGE/ROB FOR SAFETY OF RUNNING TRAIN.
2. ADEQUATE MEASURES SHALL BE TAKEN AT SITE TO ENSURE SAFETY FOR WORKING MEMBERS, MATERIALS, EQUIPMENTS, TRAFFIC ETC.
3. FOR SHIFTING OF THE MASTS AND SIGNALING EQUIPMENTS, DIVISION MAY BE CONSULTED AS PER EXTANT RULES.
4. DETAILED STRUCTURAL DRAWINGS OF THE ROB SHALL BE APPROVED BY COMPETENT AUTHORITY.
5. LAUNCHING SCHEME SHALL BE APPROVED BY CBE/E.C.Rly/HJP BEFORE EXECUTION OF WORK.
6. FOR LAUNCHING OF GIRDERS OVER RAILWAY TRACK, SUITABLE BLOCK WILL BE TAKEN WITH ADVANCE INTIMATION.
7. DRAWING APPROVAL SHALL BE SUBJECTED TO APPROVAL OF ALIGNMENT AND LEVELS BY STATE GOVT.
8. CONSTRUCTION SEQUENCE:-
   (i) CONSTRUCTION OF SUITABLE FOUNDATION FOR PIERS, ABUTMENT.
   (ii) CONSTRUCTION OF PIERS, ABUTMENT, PIER CAP AND ABUTMENT CAP.
   (iii) CONSTRUCTION OF RCC PEDESTALS.
   (iv) FABRICATION OF STEEL GIRDERS, CROSS GIRDERS AND DIAPHRAGMS ETC.
   (v) SPEED RESTRICTION OF 20 KMPH WILL BE IMPOSED BEFORE ERECTION OF TEMPORARY STAGING WORK
   (vi) POSITIONING OF CRANES FOR LIFTING AND PLACEMENT OF GIRDERS WITH RAILWAY TRAFFIC BLOCK IMPOSED AND LAUNCHING OF GIRDERS.
   (vii) CASTING OF RCC DECK SLAB WITH SHUTTERING SUPPORTED ON GIRDERS UNDER 20 KMPH SR..
   (viii) REMOVAL OF STAGING AND SHUTTERING OF DECK SLAB UNDER TRAFFIC BLOCK.
   (ix) COMPLETION OF ANCILLIARY WORKS LIKE CRASH BARRIER, RAILING, WEARING COURSE, EXPANSION JOINT ETC.
9. ALL SAFETY RULES SHALL BE FOLLOWED DURING EXECUTION OF WORK
10. RAILWAY AUTHORITIES SHALL BE INFORMED BEFORE STARTING ANY WORK. INSTRUCTIONS GIVEN BY RAILWAY AUTHORITIES TIME TO TIME DURING EXECUTION SHALL BE FOLLOWED.

EAST CENTRAL RAILWAY (E.C.RLY)

PROPOSED TWO LANE ROB SPAN 2x30.00 FOR OBLIGATORY SPAN IN LIEU OF L-XING NO 78, (SKEW ANGLE 0°) (TVU-96744, DT.08/2015) ON MUGHALSARAI - GAYA SECTION OF EAST CENTRAL RAILWAY MUGHALSARAI GENERAL ARRANGEMENT DRAWING

डेडीकेटेड फ्रेट कोरीडोर

DRG. NO.	RITES/RI/RCED/DFC/ROB. 78C/GA.
SH. NO.	1 OF 2
DATE	SEPTEMBER, 2017
REV.	R0

RITES THE INFRASTRUCTURE PEOPLE

SCALE 100 200 | 0 0 | 100 200 | 200 400 | 300cm 600cm

(SUNEEL KUMAR) DRAWN BY	(ATIF AHMED) AM/D	(MD. NONAM) MANAGER/D	(D.S. NEGI) JGM/D	(A.K. MATHUR) GGM/D

RITES LTD.

CBE	DY CE/BR/HJP	XEN/BR/HJP

HQ ECR HJP

DFCCIL DRG NO. MGS/EN/2-LANE ROB/78C/282/2017 (SHEET 01 of 02)

REFERENCE RDSO DRAWING NO : RDSO/B -

ALL THE DIMENSIONS SHOWN ARE TENTATIVE AND MAY UNDERGO CHANGES DURING FINAL DESIGN.

DESIGNATION	SIGNATURE	DESIGNATION	SIGNATURE	DESIGNATION	SIGNATURE	
						Sr. DEN/Co-ORD/MGS
						Sr. DOM/MGS
						Sr. DEN-I/MGS
(A K MISHRA) CPM/DFCCIL/MGS		CPM/UPBCL				Sr. DSTE/MGS
(RAMESHWAR SINGH) DY CPM/ENGG/DFCCIL		DY CPM/ PM/ UPBCL		EXECUTIVE ENGINEER		Sr. DEE/TRD/MGS
(A K PANDEY) DPM/ENGG/DFCCIL						Sr. DEE/G/MGS
DFCCIL/MGS		**UPBCL**		**STATE GOVT. U.P**		**MGS DIVISION**