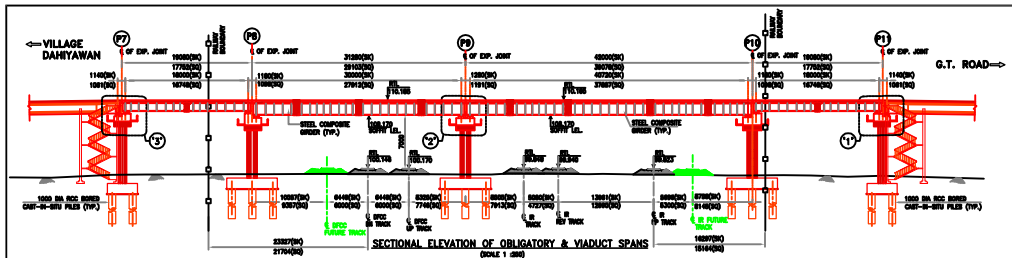

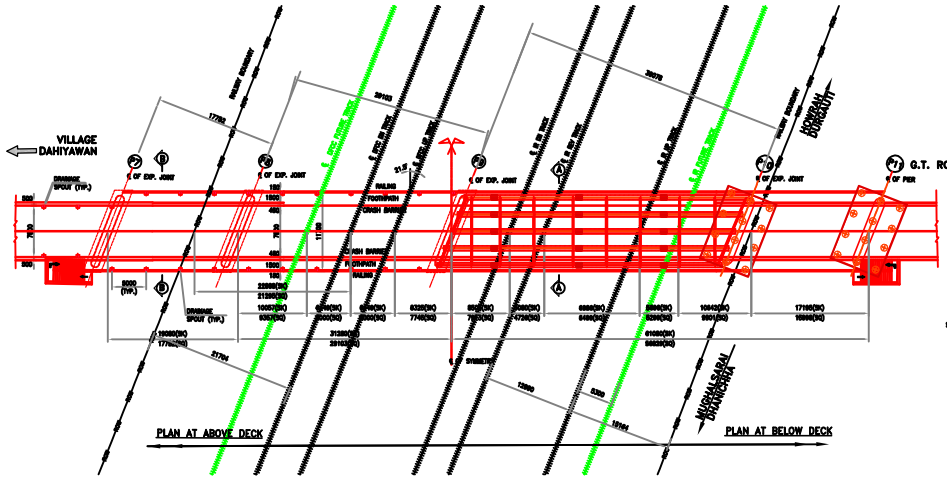

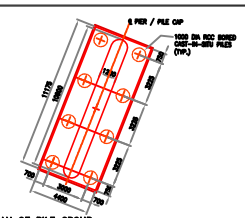

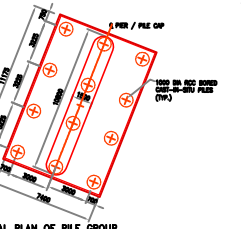

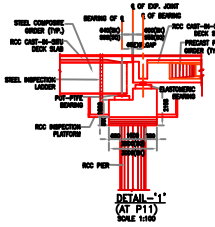

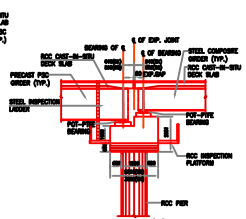

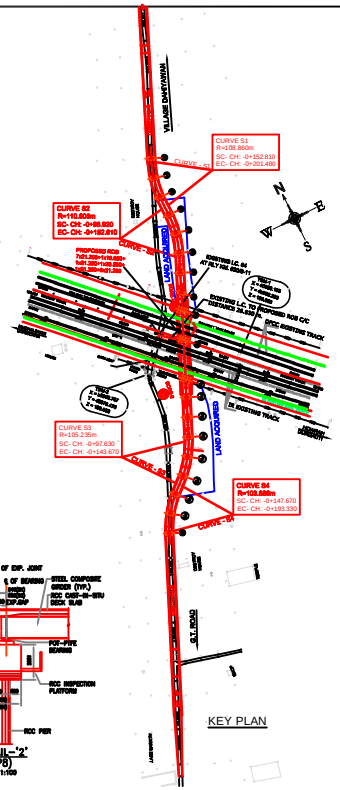

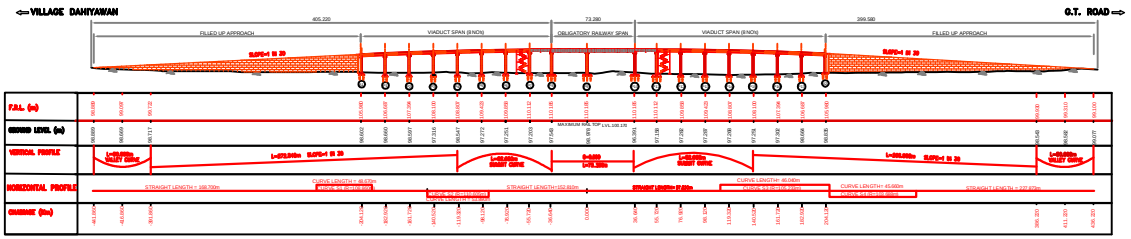

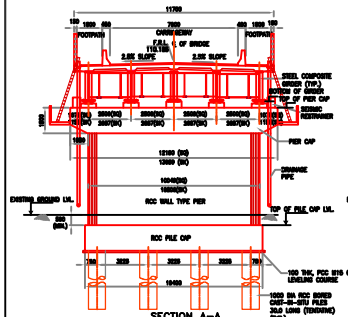

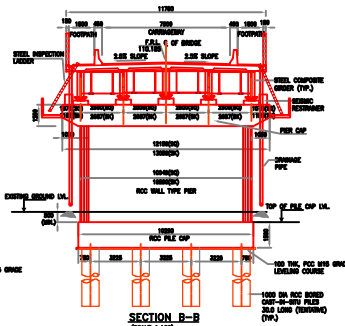

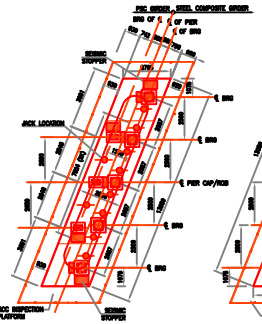

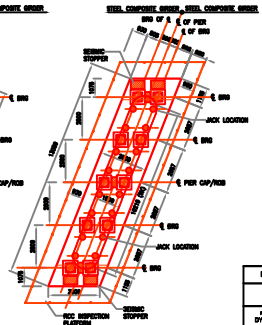

Bore Hole Details of Soil Exploration at LC - 64

Recorded N' Value		
Depth (m)	For BH-1	For BH-2
1.50	7	6
3.00	9	10
4.50	10	11
6.00	12	13
7.50	9	15
9.00	11	13
10.50	11	12
12.00	13	13
13.50	11	9
15.00	15	12
16.50	23	26
18.00	32	28
19.50	36	37
21.00	26	25
22.50	33	31
24.00	39	42
25.50	21	34
27.00	30	39

Cohesion 'C' & Friction Angle 'F'					
Depth (m)	For BH-1		For BH-2		
	'C' in t/m²	'F' in Degree	'C' in t/m²	'F' in Degree	
1.50	4.40	11.00	3.35	8.00	
4.00	-	-	-	-	
7.00	0.66	20.00	0.45	20.00	
10.00	-	-	0.00	0.00	
13.00	-	-	-	-	
16.00	0.70	20.00	0.74	20.00	
19.00	0.00	32.00	-	-	
22.00	-	-	0.00	30.00	
25.00	-	-	-	-	
28.00	15.50	0.00	34.65	0.00	
31.00	-	-	-	-	
34.00	22.50	0.00	20.00	0.00	
37.00	-	-	0.00	32.00	

LAYERS	DESCRIPTION	LEGEND	SOIL CLASS
LAYER-1	SILTY CLAY OF MEDIUM PLASTICITY OF GRAVEL		CI
LAYER-2	FINE SAND		SP
LAYER-3	SILTY SAND		SM
LAYER-4	SANDY SILT WITH GRAVEL		ML-CL

SANCTION OF CRS TO BE TAKEN PRIOR TO EXECUTION OF WORK

NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETER AND LEVELS ARE IN METERS UNLESS SPECIFIED OTHERWISE.
2. THE DRAWING ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. ALL THE DIMENSIONS SHOWN SHOULD BE VERIFIED AT SITE BEFORE TAKING UP DESIGN WORK IN HAND. ANY DISCREPANCY FOUND SHOULD BE CLEARED BY THE DESIGNER AND NOTED ACCORDINGLY.
4. GROUND SAFE BEARING CAPACITY AT THE FOUNDING LEVEL TO BE ACCORDANCE AS PER GEOTECHNICAL REPORT. IF IT IS LESS THAN THE SAFE PRESSURE, THE FOUNDATION HAS TO BE REDESIGNED.
5. SUFFICIENT DEPTH SHALL BE PROVIDED AS PER I.R.S.T.M. SPECIFICATION. PIER DESIGN CONSULTANT SHOULD SUBMIT SEPARATE SHEET OF DRAINAGE SPOUTS AS PER LATEST M.G.M.T.A. SPECIFICATION.
6. CONCRETE, CONTENT OF THE BRIDGE AND ITS COMPONENTS SHOULD BE MADE AS PER IRC 21-2000/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.G.S.T.
12. DFCCIL/PRIVATE AUTHORITIES SHOULD ENSURE THAT DURING EXECUTION OF WORK SAFETY OF RUNNING RAIL TRAFFIC SHOULD NOT BE AFFECTED.
13. SUITABLE OIL, IF REQUIRED SHOULD BE APPLIED BEFORE TAKING UP THE EXECUTION OF WORK WITH THE APPROVAL OF ENGINEER IN CHARGE.
14. TEMPORARY SIGNALING ARRANGEMENT BILL BE DONE AS PER G.R.15.04 (I) G&S.R 15.09 (2) OR OR 15.09 (2) G&S.R 15.09 (2) WHICHEVER IS ADOPTABLE IF REQUIRED.
15. LOADING SHOULD BE AS PER IRC CODES.
16. FULL FLEDGED LOAD TEST OF SUPER STRUCTURE SHOULD BE DONE AS PER RC-SP-6 TO ENSURE QUALITY WORK.
17. CONCRETE DESIGN MIX.
    RCC NECK SLAB M40 PRESTRESS CAP/PILE/PILE CAP M35
    GIRDER & BOXES M40 PEDESTAL M40
    LEVELLING COURSE M15
18. LEVELLING COURSE NO-54 EXIST AT THIS LOCATION.
19. LC SHALL BE CLOSED SIMULTANEOUSLY WITH COMMENCEMENT OF ROB AND NOC IN THIS REGARD HAS BEEN ISSUED BY STATE GOVT. VIDE LETTER NO.111 A.P.-05-52/14/BRA DATED 25.07.14.
20. TAU OF L.C. IS 37000 OF YEAR SEP-2013.
21. PROVISION OF CLAMPS IN THE SUBSTRUCTURE FOR THE SUPPORTING THE AC TRACTION WIRE TO BE MADE WARRANTY IN CONSULTATION WITH CONCERNED AUTHORITIES BASED ON TYPICAL DRAWING.
22. ALL R.C.C./M.C.C./P.C.C. WORKS SHOULD CONFORM TO RELEVANT IS/IRC CODES & MORT SPECIFICATION.
23. FOR FABRICATION, WORKMANSHIP, INCEPTION & TESTING, PROTECTION AGAINST CORROSION ETC. RELEVANT PROVISIONS OF RC-24-2001 SHALL BE FOLLOWED.
24. THE DEPTH OF FOUNDATION SHOWN IN THIS DRAWINGS IS TENTATIVE & SHOULD BE DECIDED BY DFCCIL AS PER ACTUAL SOIL PROPERTIES AND SUBSOIL 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 ON METHODOLOGY FOR LAUNCHING OF GIRDERS OVER RAILWAY TRACK SHOULD BE GOT APPROVED FROM RAILWAY AUTHORITY BEFORE START OF THE WORK.
27. PRECAUTIONARY MEASURES FOR CONSTRUCTION OF ROB ON DEPOSIT WORK/CONT DRAWING WORK WITH CONC GOVT. AND PRIVATE AGENCY BY REFERENCE CIRCULAR, EXAMINER RAILWAY BOARD LETTER NO. 97/CE-1/SBG/182/POLICY/PT-5, DATED 16.07.2009, 27.10.2009, 18.02.2011 & 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 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 BENTONITE SHALL BE USED.
30. BRAND BIN 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 LIVE.
31. INSPECTION LADDER/STEPS SHOULD BE PROVIDED TO ENSURE PROPER INSPECTION / ACCESSIBILITY OF ROB.
32. STRUCTURAL STEEL SHALL CONFORM TO IS:2062 (GRADE-B)
33. SEAL TYPE EXPANSION JOINTS SHALL BE PROVIDED AS PER LATEST MORT REQUIREMENT. CONTRACTOR SHOULD FURNISH DESIGN / DRAWING OF EXPANSION JOINTS FROM FIRMS APPROVED BY MORT AND WHICH BELONGS RELEVANT RESPONSE TO SUIT SITE CONDITIONS WITH THE APPROVAL OF ENGINEER IN CHIEF.
34. TO PROTECT THE CONCRETE FROM DAMAGE DUE TO SMOKE OF LOCOMOTIVES, ALONG WIDE STRIP WITH POLYSILIPACE PAINT PREFERABLE IN BLACK COLOUR SHALL BE PROVIDED IN THE SOFFIT OF THE DECK FROM BALLASTED TRACKS.
35. STANDARD MAINTENANCE AGREEMENT SHOULD BE EXECUTED WITH RAILWAY AND STATE GOVT. AUTHORITIES FOR GRANT OF PERMISSION FOR CONSTRUCTION OF ROB IN RAILWAY PORTION.
36. ALL STEEL STRUCTURES SHOULD HAVE ANTI-CORROSIVE PROTECTION FOR LONG SURVIVITY.
37. FOR DETAILS OF SUPER STRUCTURE AND RAILWAY SPAN OF BOW STRING GIRDER REFER RDSO DRG NO.B2001/A/11782/120, AND 180 RAILWAY SPAN OF BOW STRING GIRDER REFER RDSO DRG NO.B2001/A-11786/A TO B2001/A/11789/120.
38. ANY CHANGE IN THE GAD FOR RAILWAY PORTION SHOULD BE DONE WITH PRIOR APPROVAL OF RAILWAY.
39. CLEAR COVER TO OVER MOST STEEL SHALL BE AS UNDER
    A. FOR SUPER STRUCTURE-40MM
    B. FOR FOUNDATION-70MM
    C. FOR ABUTMENT, DIRT WALL AND RETURN WALL-50MM
40. FOR JACKING UP THE GIRDER FOR ANY UNFORESEEN REQUIREMENTS IN FUTURE SUCH AS FOR REPLACEMENT OF BEARING OR ANY WORK REQUIRED, SUITABLE FIXTURES SHOULD BE PROVIDED TO ENABLE JACKING.
41. THE DRAWING AND GAD LEVELS IN THE GAD ARE SUBJECT TO CHANGES AS PER SITE REQUIREMENT AND WILL BE DONE WITH PRIOR APPROVAL OF RAILWAY.
42. THE GIRDER IS DESIGNED FOR SEISMIC ZONE -II.
43. GIRDER SHALL BE BEVELLED AS PER IRS 01-2001.
44. VERTICAL CURVE WILL BE PROVIDED WHEREVER THERE IS CHANGE IN GRADIENT IN APPROACHES AS PER IRC SP-33.
45. CBE'S APPROVAL IN ONLY FOR PORTION BEST OVER P7 & P11. BESIDE LAND ACQUISITION, MAINTENANCE & OTHER CHARGES & OTHER SUITABILITY ASPECT SHOULD BE ENSURED BY DFCCIL.
46. MAINTENANCE AGREEMENT TO BE EXECUTED BEFORE EXECUTION OF WORK.
47. NO BORE WHERE R.L.Y. EXAMINER TO BE ZONE WITHOUT PRESENCE OF RAILWAY REPRESENTATIVE.
48. GIRDER OVER ROB PROPER TO BE FABRICATED PRESERVELY BY RDSO APPROVED FIRMS.
49. VERTICAL CLEARANCE SHALL BE 6.55 M FOR B.G. & 5.50 M FOR M.G.
50. VERTICAL CLEARANCE HAS BEEN KEPT AS PER SSOD OF DFC IN LIGHT OF R.L.Y. SD LETTER NO.3017/W/4/B DATED 28-05-2014.
51. DFCCIL WILL BE RESPONSIBLE FOR LONGITUDINAL PROFILE & PLAN SHOWN.
52. PRELIMINARY APPROVAL OF CPM/DFCCIL SHOULD BE TAKEN BEFORE EXECUTION OF WORKS FOR ADOPTION OF PILE FOUNDATION IN PLACE OF OPEN FOUNDATION.
53. SEMI CONC SHALL PROVIDED OUTSIDE R.L.Y. BOUNDARY AND CONNECTIVITY TO EITHER SIDE OF STAIRS THROUGH FOOTPATH ALONG THE ROAD DECK.
54. EXECUTION OF WORK SHOULD START AFTER APPROVAL OF DETAILED DESIGN BY COMPETENT AUTHORITY.
55. DECK SLAB WIDTH, SUPER-ELEVATION AND ARRANGEMENT OF GIRDERS WITHIN CURVE ALIGNMENT IS PROVISIONAL AND WILL BE DECIDED AFTER FINALIZATION OF DESIGN OF SUPER-STRUCTURE AND SUB-STRUCTURE.
56. PCE/DCFC APPROVAL FOR USING NON-STANDARD GIRDER WITH IN R.L.Y. BOUNDARY i.e. P-7 TO P-11 WAS BEEN CONSIDED IN TERMS OF R.L.Y. SD. L.R. 2013/CE-111/SB/RDSO/MISC. DT. 11.08.2014. DRAWING DESIGN SHOULD BE GOT BY CON PARTNER AUTHORITY DULY PROOF CHECKED BY SI/AE/XEN OR ANY REPUTED CONSULTANT AND COPY OF APPROVAL DRAWING & DESIGN SHOULD BE SUBMITTED TO PCE'S OFFICE FOR DRAWINGS SUBMISSION TO RDSO AS INSTRUCTION LAID DOWN IN THE SND LETTER.

LEGEND

- PROPOSED WORK
- EXISTING WORK
- FUTURE WORK

CPG DRG NO:-
DRAWINGS/PLAN NO:-
SPCCIL DRG NO:-

DATE :-	REV. NO.	REVISION

EAST CENTRAL RAILWAY | MGS DIVISION

DEDICATED FREIGHT CORRIDOR CORPORATION OF INDIA LIMITED
(A GOVERNMENT OF INDIA ENTERPRISE)

PROJECT : PROPOSED 2-LANE ROB BETWEEN PAHALEJA - KARWANDIA STATION AT Km. 630/9-11 AND ROAD Km. 80.168 VILLAGE DAHIYAWAN AND G.T. ROAD ON MUGHALSARAI - HOWRAH SECTION IN-LIEU OF LC 64

TITLE : GENERAL ARRANGEMENT DRAWING OF ROB AT LC NO. 64

DESIGNED BY: A.K.GUPTA	DATE : 07.07.2016	DRG. NO. PPC/DFCC/ROB/LC64 GAD/01 (Sheet 1 Of 2)	REV. R0
DRAWN BY: A.S.RAWAT	SCALE:-AS SHOWN		

CONSULTANTS : PARK PROJECTS CONSULTANCY PVT.LTD. NEW DELHI

DESIGNATION					
A.K. SINGH, CPM/DFCCIL		CE RWD PATNA		PANKAJ SAXENA CRM	CBE MUKESH KUMAR DY. CE/RWD
RESIDENT ENGINEER BY CPM/RWD/DFCCIL		EXECUTIVE ENGINEER (RWD-1 WORK DIVISION SASARAM)		ATUL KUMAR Sr. DEN/CO-ORDINATOR	RUPESH KUMAR Sr. DOM/MGS
APM/RWD/DFCCIL		SUPERINTENDING ENGINEER (RWD-1 WORK DIVISION SASARAM)		ALOK KUMAR Sr. DEN-WORK	M.A.SHAMAN AHMAD
				RAJ YADAV Sr. DOT/MGS	
				OM SHANKAR PRASAD Sr. DSTM/MGS	
SIEM/WDDS	SR.ADEN/DDS	DFCCIL/MGS	STATE GOVT. BIHAR	MGS DIVISION	HQ ECR HJP