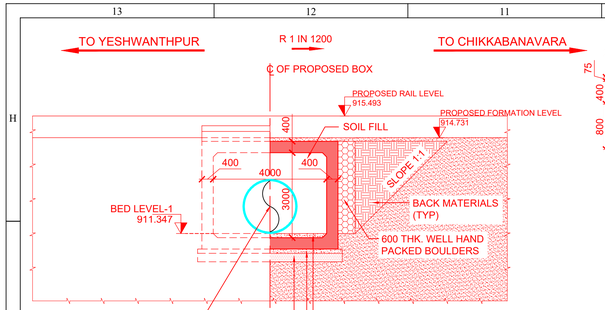
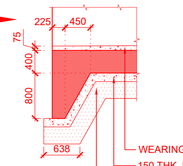


HALF ELEVATION & SECTION



DETAIL - 1

SCALE 1:50

DETAIL - 2

SCALE 1:50

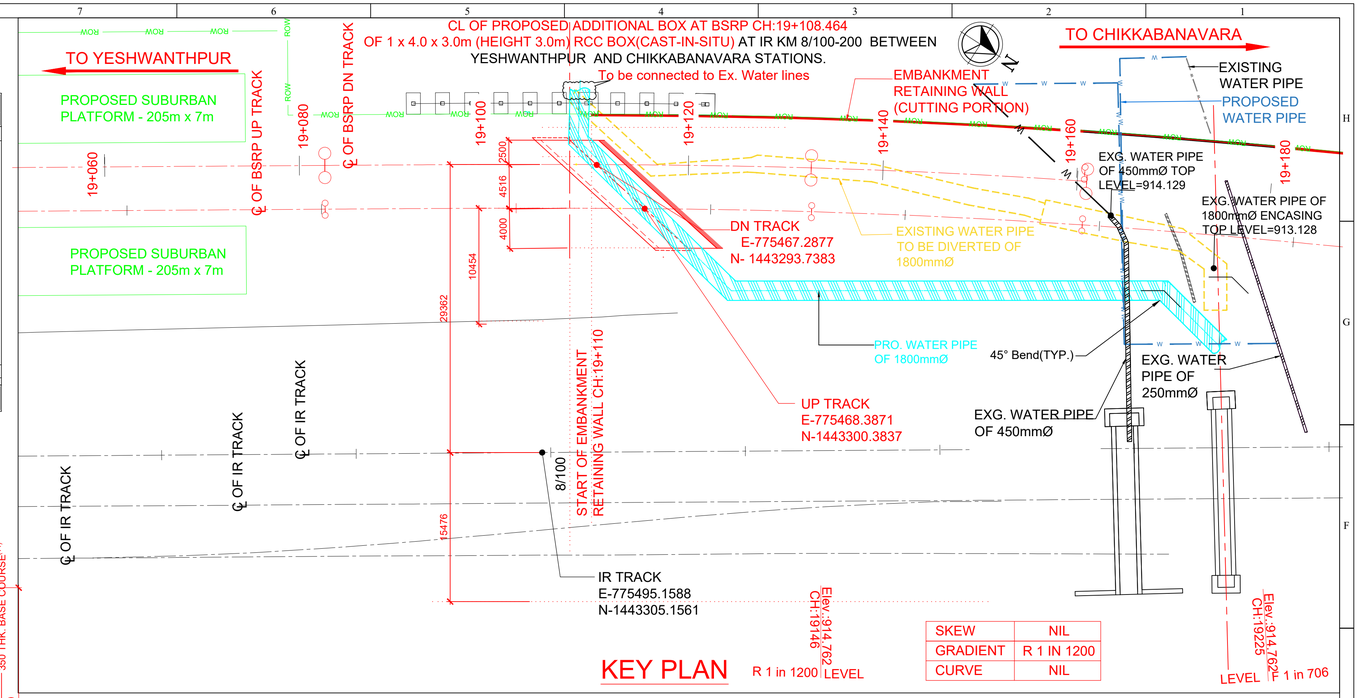
BORE TOP LEVEL / GROUND LEVEL 915.986

BED LEVEL (911.347)

PROPOSED BOX FOUNDATION LEVEL (910.797)

STRATA DESCRIPTION	DEPTH IN METERS	REMARKS (N-VALUE)	REMARKS (SBC (KN/SQM))
MEDIUM TO VERY STIFF CLAY OF MEDIUM PLASTICITY	0.00 – 7.00	N=4 (2/2/2); N=21 (10/10/11); N=28 (10/13/15); N=20 (9/9/11); N=21 (9/9/12)	182.24 (BOX)
908.64 END OF BOREHOLE AT 7.00m			

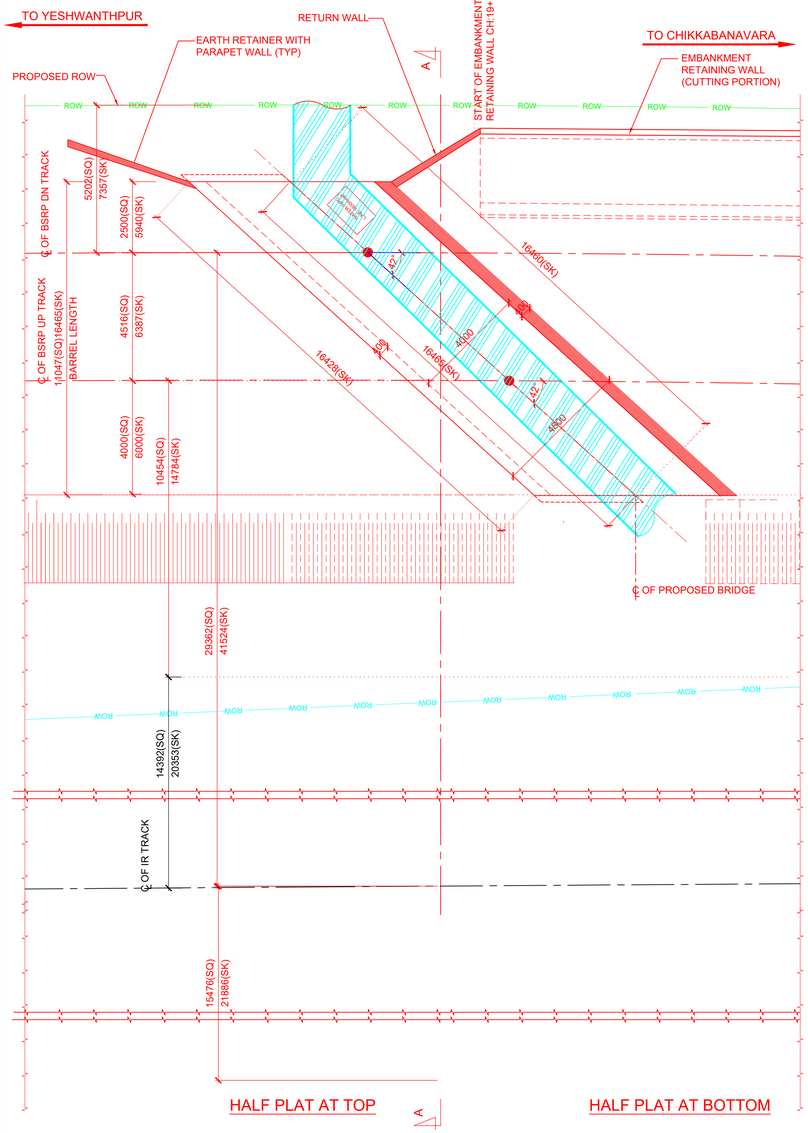
BOREHOLOG-226



KEY PLAN

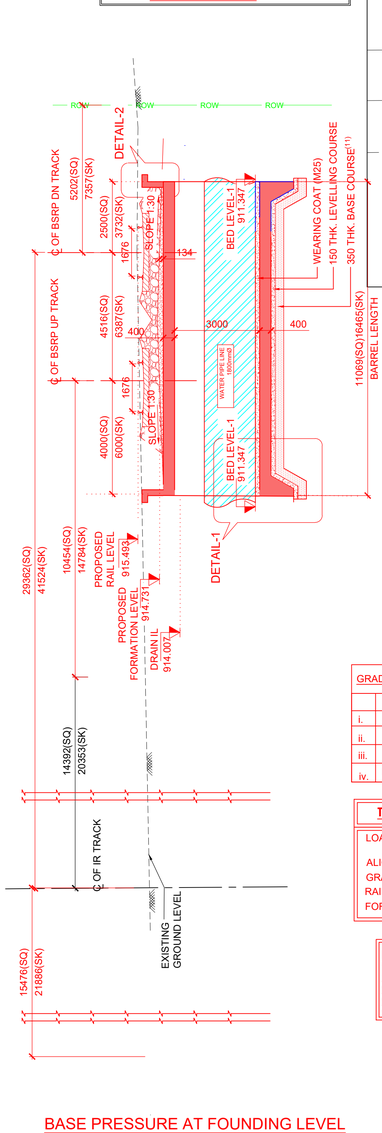
R 1 in 1200 LEVEL

SKEW	NIL
GRADIENT	R 1 IN 1200
CURVE	NIL



HALF PLAT AT TOP

HALF PLAT AT BOTTOM



SPECIFICATION:

1. ALL WORKS ARE TO BE CARRIED OUT AS PER THE FOLLOWING.
   a. INDIAN RAILWAY UNIFIED STANDARD SPECIFICATIONS FOR WORKS AND MATERIALS 2019.
   b. IRS CONCRETE BRIDGE CODE 2014(REPRINT) & RELEVANT I.S SPECIFICATIONS.
   c. IRS BRIDGE SUB - STRUCTURE CODE,2013(ii REVISED).
   d. IRS BRIDGE RULES 2014(REPRINT).
2. RCC BOX:- REINFORCED CEMENT CONCRETE M35 GRADE USING 20MM MAXIMUM SIZE GRADED HARD STONE AGGREGATE OF APPROVED QUALITY.
3. LEVELING COURSE :- 150 mm THICK M20 DESIGN MIX.
4. WEEP HOLES :- WEEP HOLES TO BE PROVIDED AS PARA 7.6 OF SUB STRUCTURE CODE & WEEP HOLES SHALL BE OF 100 DIA AC PIPES STAGGERED AT 1000 C/C ABOVE LOW WATER LEVEL IN BOTH WING WALL/RETAINING WALL & EARTH RETAINER OF BOX.
5. LOADING STANDARD :- 25 T - 2008 AXLE LOAD.
6. GRADE OF STEEL FOR RCC IS TMT-500D CONFORMING TO IS 1786-2008.
7. MASS CONCRETE TO BE OF M25 WITH 20mm GRADED STONE AGGREGATE FOR WEARING COURSE.
8. CONCRETE SHALL BE MECHANICALLY MIXED,VIBRATED & THOROUGHLY CURED.
9. BAR BENDING SHALL CONFORM TO IS 2502.
11. BASE COURSE SHALL BE 350mm OF PROPERLY COMPACTED CRUSHED STONE LAYER OF 80MM SIZE AND DOWNGRADED SHALL BE PROVIDED BELOW PCC LEVELING COURSE. AS A COMMON CONSTRUCTION PRACTICE, THIS LAYER SHOULD FULFILL THE CRITERIA OF BINDING THE BOX CULVERT AND THE UNDERNEATH SOIL.
12. COPING:- CC M25 GRAD USING 20MM MAX.SIZE GRADED HARD STONE AGGREGATE OD APP.QUALITY.
15. FOR RETAINING STRUCTURE, SEPARATE DRAWING WILL BE SUBMITTED.

NOTES:

1. ALL LEVELS ARE W.R.T TO MSL.
2. ALL DIMENSIONS ARE IN MILLIMETERS, REDUCED LEVELS ARE IN METRES AND CHAINAGE ARE IN KILOMETERS, UNLESS STATED OTHERWISE.
3. DO NOT SCALE THE DRAWING,FOLLOW FIGURED DIMENSIONS ONLY.
4. THE TYPE,DESIGN & DEPTH OF FOUNDATION SHOWN IN GAD ARE INDICATIVE ONLY. THE ACTUAL TYPE & DEPTH OF FOUNDATION WILL BE DECIDED BY THE ENGINEER-IN-CHARGE AS PER ACTUAL SOIL ENCOUNTERED AT SITE DURING EXECUTION.
5. SAFE BEARING CAPACITY OF SOIL IS 187.4 KN/SQM
6. PRO.BRIDGE WITH UP & DN LINE IS TO PROVIDE ACCESS FOR PASSING THROUGH THE BWSSB PIPE LINE.
7. A) ON THE TOP SURFACE OF CONCRETE AT THE END OF EACH DAYS WORK DEPRESSION IN ZIG-ZAG PATTERN TO BE FORMED BY EMBEDDING WOODEN SCANTLINGS OR SLEEPERS TO FORM KEY FOR ADEQUATE BOND FOR THE NEXT DAYS CONCRETING.
   B) ON THE NEXT WORKING DAY ALL THE LAITANCE SHALL BE REMOVED BY SCRUBBING THE SURFACE WITH WIRE BRUSH WITHOUT DISLODGING THE PARTICLES OF AGGREGATE,THE SURFACE SHALL BE THOROUGHLY WETTED & CAN BE COATED WITH NEAT CEMENT GROUT BEFORE FIRST LAYER OF CONCRETE IS LAID.
8. THE BOULDER FILLING SHALL CONSISTS OF WELL HAND PACKED BOULDERS & COBBLES TO THICKNESS NOT LESS THAN 600 mm BEHIND THE BOULDER FILLING. BACKFILLING MATERIALS SHALL CONSIST OF GRANULAR MATERIALS OF GW, GP, SW CORRECT AS PER IS 1498 - 1970.
9. EXPOSURE CONDITION IS MODERATE.
10. CONTROLLED CONCRETE AS PER DESIGN MIX TO BE USED AND MIXED BY WEIGH BATCHING.
11. SUITABLE PROTECTIVE MEASURES SHOULD BE PUT IN PLACE WHILE CARRYING OUT THE WORK IN CONSULTATION WITH KRIDE & GENERAL CONSULTANT.THIS SHALL INCLUDE NECESSARY SHORING ARRANGEMENTS TO BE PROVIDED FOR THE PROTECTION OF BOUNDARY WALL.
12. INSTRUCTIONS CONVEYED VIDE PCE'S CIRCULAR NO.01.2015, DATED: 09.03.2015 REGARDING" WORK DISIPLINE AT SITE" AND AS PER PCE CIRCULAR NO.01/2021 DATED: 22.06.2021 REGARDING "ENSURING QUALITY OF WORK AND MAINTAINING SITE RECORDS IN WORKS CONTRACTS" TO BE STRICTLY FOLLOWED.
13. IT IS TO ENSURED BY KRIDE/BSRP-COR2 GM/CIVIL/PROJECTS BEFORE EXECUTION, THAT THE MAXIMUM BASE PRESSURE AT THE FOUNDATION LEVEL FOR EACH ELEMENT OF BRIDGE IS LESS THAN THE SAFE BEARING CAPACITY OF THE SOIL AT THAT LOCATION.
14. FEASIBILITY OF THIS BOX STRUCTURE AT SITE SHOULD BE ENSURED BY GM/KRIDE/BSRP-CORRIDOR2.

REFERENCE:

1. K-RIDE BOX DESIGN DOCUMENT NO.DOC-BSRP-CR2-AG-DGN-BR-20-1683
2. SUBSTRUCTURE BOX K-RIDE - O22077-BSRP-CR2-C-NB-0-20-1348
3. RETURN WALL - O22077-BSRP-CR2-C-NB-0-20-1350
4. WEEP HOLES AS PER PARA 7.6 OF SUB-STRUCTURE CODE
5. BALLAST RETAINER AS PER DESIGN,MONOLOTHIC WITH BOX
6. CURTAIN WALL AND TOE WALL AS PER DESIGN
7. BACKFILL MATERIALS BEHIND RCC BOX TO PROVIDE AS PER PARA 7.5 OF IRS BRIDGE SUBSTRUCTURE &FOUNDATION CODE
8. SHORING ARRANGEMENTS AS PER DESIGN.
9. GIR DOCUMENT NO. DOC-BSRP-CR2-AG-DGN-GB-20-1157

ABBREVIATIONS :

℄	-	CENTER LINE
TYP	-	TYPICAL
THK.	-	THICKNESS
DN	-	DOWN
BR	-	BRIDGE
FRL	-	FORMATION LEVEL

LOADING STANDARD

A) PRO.BRIDGE:25T-AXLE LOAD 2008 STD
B) EXG.BRIDGE:MBG OF 1987

GRADE OF CONCRETE

	GRADE	
i.	RCC BOX	M35
ii.	WEARING COURSE	M25
iii.	LEVELLING COURSE (PCC)	M20
iv.	RETAINING/RETURN WALL	M35

TRACK DETAILS (PRO.BOX)

LOADING	:	25 T-AXLE LOAD 2008-STD
ALIGNMENT	:	STRAIGHT
GRADE	:	R 1 IN 1200
RAIL LEVEL	:	915.493 m
FORMATION LEVEL	:	914.731 m

LENGTH OF THE PRO.WATER LINE TO BE DIVERTED(TENTATIVE)

WATER LINE OF Ø250mm : 53m.
WATER LINE OF Ø450mm : 42m .
WATER LINE OF Ø1800mm : 85m.

DEPTH OF CONSTRUCTION FOR 1 x 4.0 x 3.0 m RCC BOX

RAIL 60 kg	:	172 mm
GR PAD	:	10 mm
PSC SLEEPER	:	230 mm
BALLAST CUSHION	:	350 mm
EARTH CUSHION	:	134 mm
TOP SLAB	:	400 mm
TOTAL		= 1296 mm

BRIDGE DETAILS

DESCRIPTION	PROPOSED BSRP BRIDGE : 19+108.464
CHAINAGE AT CENTER OF BRIDGE (km)	19.108.464
RAIL LEVEL AT CENTER OF BRIDGE (m)	915.493
FORMATION LEVEL AT CENTRE OF BRIDGE (m)	914.731
DIMENSIONS (Nos x SPAN(m) x HEIGHT(m))	1x4.0x3.0
STRUCTURE CONFIGURATION	RCC BOX

BASE PRESSURE AT FOUNDING LEVEL

STRUCTURE	MAX	MIN
RCC BOX (kN/m^2)	127.89	-

GENERAL CONSULTANTS:

egis AECOM WSP EGIS-AECOM-WSP

EMPLOYER :

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED

GENERAL ARRANGEMENT DRAWING

BENGALURU SUBURBAN RAILWAY PROJECT(BSRP)
BETWEEN STATIONS BENNIGANAHALLI AND CHIKKABANAVARA

PROPOSED ADDITIONAL BOX AT BSRP CH:19+108.464
OF 1 x 4.0 x 3.0m (CLEAR HEIGHT 2.85m) RCC BOX(CAST-IN-SITU) AT IR KM 8/100-200 BETWEEN YESHWANTHPUR AND CHIKKABANAVARA STATIONS.

KRIDE.DRG.NO:

HQ.DRG.NO:

SCALE - 1 : 100 (UNLESS SPECIFIED OTHERWISE)

O22077-BSRP-CR2-C-NB-0-30-1340-0