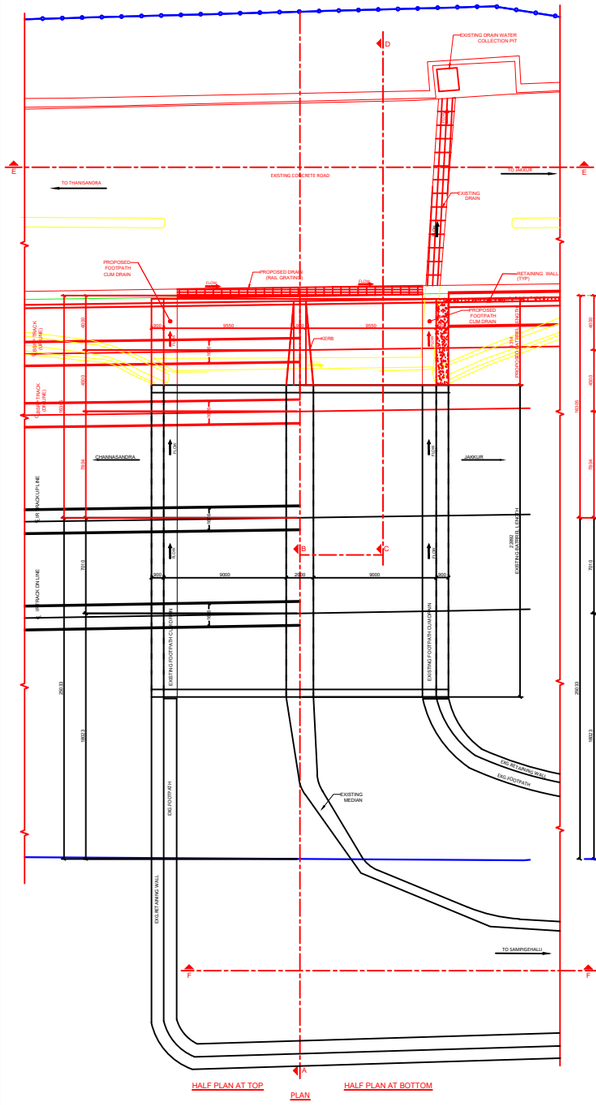
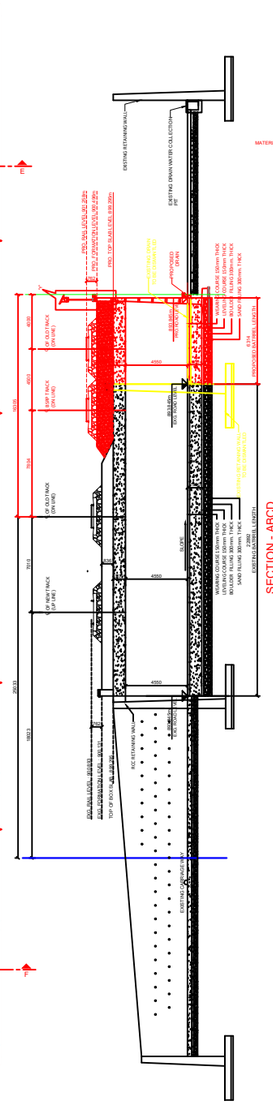
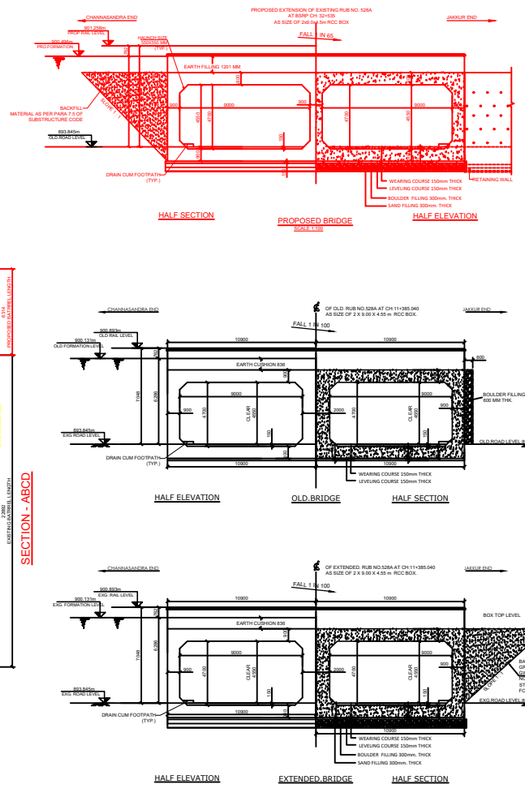
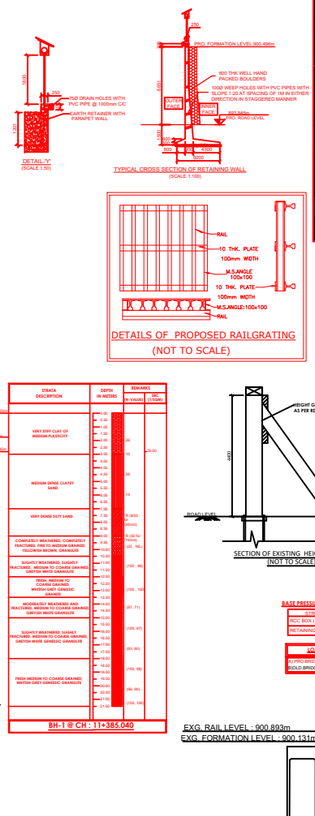
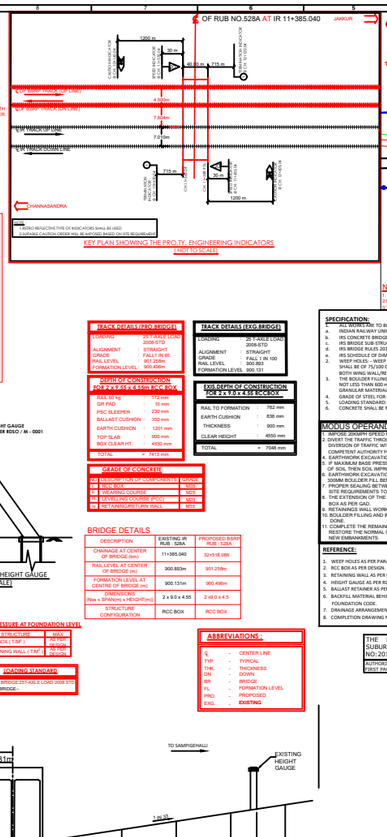
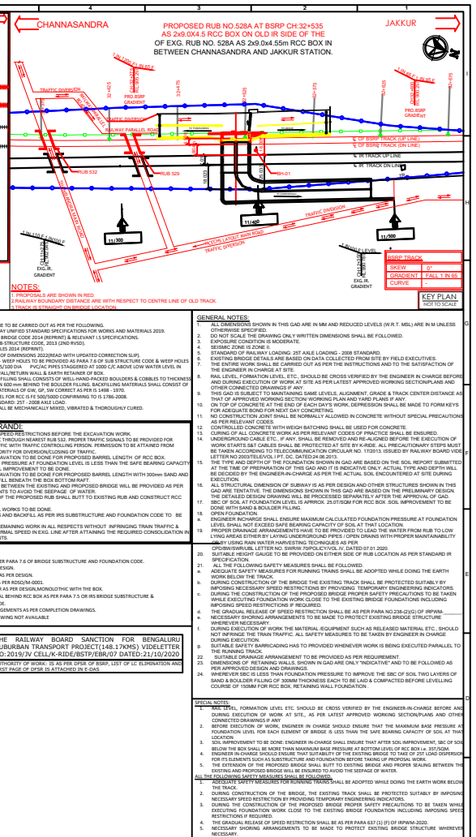












NOTES:
1. PROFILES ARE SHOWN IN RED.
2.RAILWAY BOUNDARY DISTANCE ARE WITH RESPECT TO CENTRE LINE OF OLD TRACK.
3.TRACK IS STRAIGHT ON BRIDGE LOCATION.

TRACK DETAILS (EXG BRIDGE)	
LOADING	25 T-AXLE LOAD 2008-RTD
ALIGNMENT	STRAIGHT
GRADE	FALL 1 IN 60
RAIL LEVEL	900.496m
FORMATION LEVEL	900.131

PROPOSED MODIFICATIONS (AS PER LATEST GAD)	
RAIL-60 kg	172 mm
GIP PAD	10 mm
RSC SLEEPER	230 mm
BALLAST CUSHION	350 mm
EARTH CUSHION	1201 mm
TOP SLAB	900 mm
BOX CLEAR HT.	4050 mm
TOTAL	= 7413 mm

GRADE OF CONCRETE		
1	FOUNDATION OF RAMP,ABUTMENT	M30
2	BOX SLAB,WALL	M 30
3	WEARING COURSE	M25
4	LEVELING COURSE (PCC)	M25
5	RETAINING WALL(UPTO WALL)	M25

TRACK DETAILS (EXG BRIDGE)	
LOADING	25 T-AXLE LOAD 2008-RTD
ALIGNMENT	STRAIGHT
GRADE	FALL 1 IN 100
RAIL LEVEL	900.893
FORMATION LEVEL	900.131

EXG.DEPTH OF CONSTRUCTION (AS PER 2 X 9.0 X 4.55 BOX)CC	
RAIL TO FORMATION	: 762 mm
EARTH CUSHION	: 838 mm
THICKNESS	: 900 mm
CLEAR HEIGHT	: 4550 mm
TOTAL	= 7048 mm

BRIDGE DETAILS

DESCRIPTION	EXISTING IR RUB : 528A	PROPOSED BSRP RUB : 528A
CHAINAGE AT CENTER OF BRIDGE (km)	900.893m	901.259m
RAIL LEVEL AT CENTER OF BRIDGE (m)	900.133m	900.496m
FORMATION LEVEL AT CENTRE OF BRIDGE (m)	900.131m	900.496m
DIMENSIONS (Nos x SPANm) x HEIGHT(m)	2 x 9.0 x 4.55	2 x9.0 x 4.5
STRUCTURE CONFIGURATION	RCC BOX	RCC BOX

BASE PRESSURE AT FOUNDATION LEVEL

STRUCTURE	STCC
RCC BOX (T/M²)	20 STCC
RETAINING WALL (T/M²)	25 STCC

LOADING STANDARD
ULTRA BRIDGE 237.435,E LOAD 2008 STD
SHOLD BRIDGE :-

ABBREVIATIONS :

℄	-	CENTER LINE
TYP	-	TYPICAL
THK	-	THICKNESS
DN	-	DOWN
BR	-	BRIDGE
FL	-	FORMATION LEVEL
PRO.	-	PROPOSED
EXG.	-	EXISTING

SPECIFICATION:
1. ALL WORKS SHALL 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 (UNDRAWD).
d. IRS BRIDGE RULES 2014 (REPRINT).
e. IRS SCHEDULE OF DIMENSIONS (BROAD GAUGE WITH UPDATED CORRECTION SLIP).
2. SHALL HOLES :- HOLES OF 150 MM DIA PROVIDED AS PARA 7.6 OF SUB STRUCTURE CODE & WEEP HOLES OF SIZE 150 MM DIA PVC PIPES STAGGERED AT 1000 C/C ABOVE LOW WATER LEVEL IN BOTH WING WALL/RETAINING WALL & EARTH RETAINER OF BOX.
3. 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 I.S 1498 - 1970.
4. LOADING TYPES :- AS PER IRS BRIDGE RULES CONFIRMING TO I.S 1786-2008.
5. GRADING CURVE :- AS PER I.S 383 FOR AGGREGATE.
6. CONCRETE SHALE BE MECHANICALLY MIXED, VIBRATED & THOROUGHLY CURED.

MODUS OPERANDI:
1. IMPOSE 20KMPH SPEED RESTRICTIONS BEFORE THE EXCAVATION WORK.
2. DIVERT THE TRAFFIC THROUGH NEAREST RUB 532. PROPER TRAFFIC SIGNALS TO BE PROVIDED FOR DIVERSION OF TRAFFIC WITH TRAFFIC CONTROLLING PERSON. PERMISSION TO BE ATTAINED FROM CONCERNED AUTHORITIES BEFORE DIVERTING THE TRAFFIC.
LETTER NO.2020/TE/EXG.IT/T.DC, DATED:04.06.2015.
3. IF MAXIMUM BASE PRESSURE AT FOUNDATION LEVEL IS LESS THAN THE SAFE BEARING CAPACITY OF SOIL THEN SOIL IMPROVEMENT TO BE DONE.
4. EARTHWORK,EXCAVATION TO BE DONE FOR PROPOSED BARREL LENGTH WITH 300mm SAND AND BOULDER FILLING AS PER THE ACTUAL SOIL ENCOUNTERED AT SITE DURING EXCAVATION.
5. PROPER SEALING BETWEEN THE EXISTING AND PROPOSED BRIDGE WILL BE PROVIDED AS PER SITE REQUIREMENTS TO AVOID THE SEEPAGE OF WATER.
6. THE EXTENSION OF THE PROPOSED RUB SHALL BUTT TO EXISTING RUB AND CONSTRUCT RCC-SBC OF SOIL AT FOUNDATION LEVEL IS APPROX. 25.0TSQM FOR RCC BOX SOIL IMPROVEMENT TO BE DONE FOR BOULDER FILLING.
7. RETAINING WALL WORKS TO BE DONE.
8. BOULDER FILLING AND BACKFILL AS PER IRS SUBSTRUCTURE AND FOUNDATION CODE TO BE OPEN FOUNDATION.
9. COMPLETE THE REMAINING WORK IN ALL RESPECTS WITHOUT INFRINGING TRAIN TRAFFIC & RESTORE THE NORMAL SPEED IN EXG. LINE AFTER ATTAINING THE REQUIRED CONSOLIDATION IN NEW EMBANKMENTS.

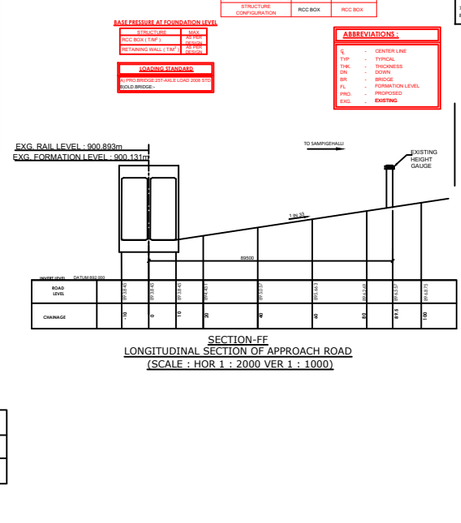
REFERENCE:
1. WEEP HOLES AS PER PARA 7.6 OF BRIDGE SUBSTRUCTURE AND FOUNDATION CODE.
2. RCC BOX AS PER DESIGN.
3. RETAINING WALL AS PER DESIGN.
4. HEIGHT GAUGE AS PER RDSO/M-0001.
5. BALLAST RETAINER AS PER DESIGN,MONOLITHIC WITH THE BOX.
6. BACKFILL MATERIAL BEHIND RCC BOX AS PER PARA 7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE.
7. DRAINAGE ARRANGEMENTS AS PER COMPLETION DRAWINGS.
8. COMPLETION DRAWING NOT AVAILABLE

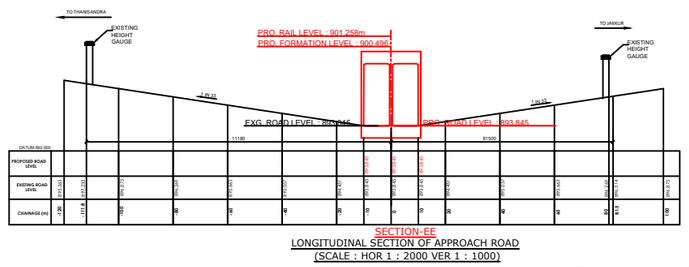
GENERAL NOTES:
1. ALL DIMENSIONS SHOWN IN THIS GAD ARE IN MM AND REDUCED LEVELS (W.R.T. MSL) ARE IN M UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EXPOSURE CONDITION IS MODERATE.
4. SEISMIC ZONE IN ZONE-II.
5. STANDARD LOADING :-LOADING: 25T AXLE LOADING - 2008 STANDARD.
6. EXISTING BRIDGE DETAILS ARE BASED ON DATA COLLECTED FROM SITE BY FIELD EXECUTIVES.
7. THE ENTIRE WORK SHALL BE CARRIED OUT AS PER THE INSTRUCTIONS AND TO THE SATISFACTION OF THE ENGINEER IN CHARGE AT SITE.
8. RAIL LEVEL, FORMATION LEVEL, ETC., SHOULD BE CROSS VERIFIED BY THE ENGINEER IN CHARGE BEFORE ANY CONSTRUCTION. THE PROPOSED DETAILS SHOWN IN THE GAD AS PER LATEST APPROVED WORKING SECTION,PLANS AND OTHER CONNECTED DRAWINGS IF ANY.
9. THIS GAD IS SUBJECT TO MAINTAINING SAME LEVELS, ALIGNMENT, GRADE & TRACK CENTER DISTANCE AS THAT OF APPROVED WORKING SECTION WORKING PLAN AND YARD PLANS IF ANY.
10. ON TOP OF CONCRETE AT THE END OF EACH DAY'S WORK, DEPRESSION SHALL BE MADE TO FORM KEYS FOR JOINTING WITH SUBSEQUENT CONCRETE.
11. NO CONSTRUCTION JOINT SHALL BE NORMALLY ALLOWED IN CONCRETE WITHOUT SPECIAL PRECAUTIONS AS PER RELEVANT CODES.
12. CONTROLLED CONCRETE WITH WEIGH BATCHING SHALL BE USED FOR CONCRETE.
13. CURING OF ALL CONCRETE WORK AS PER RELEVANT CODES OF PRACTICE SHALL BE ENSURED.
14. UNDERGROUND CABLE ETC., IF ANY SHALL BE REMOVED AND RE-ALIGNED BEFORE THE EXECUTION OF WORK STARTS.I&T CABLES SHALL BE PROTECTED AT SITE BY K-RIDE. ALL PRECAUTIONARY STEPS MUST BE TAKEN BY CONTRACTOR AS PER SAFETY INSTRUCTIONS VIDE LETTER NO.2020/TE/EXG.IT/T.DC, DATED:04.06.2015.
15. THE TYPE AND DEPTH OF THE FOUNDATION SHOWN IN GAD ARE BASED ON THE SOIL REPORT SUBMITTED AT THE TIME OF PREPARATION OF THIS GAD AND IT IS INDICATIVE ONLY. ACTUAL TYPE AND DEPTH WILL BE DECIDED BY THE ENGINEER-IN-CHARGE AS PER THE ACTUAL SOIL ENCOUNTERED AT SITE DURING EXCAVATION.
16. ALL STRUCTURAL DIMENSION OF SUBWAY IS AS PER DESIGN AND OTHER STRUCTURES SHOWN IN THIS GAD ARE TENTATIVE. THE DIMENSIONS SHOWN IN THIS GAD ARE BASED ON THE PRELIMINARY DESIGN. THE DETAILED DESIGN DRAWING WILL BE PROCESSED SEPARATELY AFTER THE APPROVAL OF GAD.
17. SBC OF SOIL AT FOUNDATION LEVEL IS APPROX. 25.0TSQM FOR RCC BOX SOIL IMPROVEMENT TO BE DONE FOR BOULDER FILLING.
18. OPEN FOUNDATION.
19. ENGINEER INCHARGE SHALL ENSURE MAXIMUM CALCULATED FOUNDATION PRESSURE AT FOUNDATION LEVEL SHALL NOT EXCEED SAFE BEARING CAPACITY OF SOIL AT THAT LOCATION.
20. PROPER DRAINAGE ARRANGEMENT TO BE PROVIDED TO LEAD THE WATER FROM RUB TO LOW LYING AREAS/NALLAH. ENSURE THAT NO WATER IS STAGNATED NEAR THE DRAIN WITH PROPER MAINTAINABILITY.
21. RAIN WATER HARVESTING TECHNIQUES AS PER CPD/WW/SWR/SBL LETTER NO. SWR/W.7SP/CIVIL/Y/OL.IV, DATED:07.01.2020.
22. SUITABLE HEIGHT GAUGE TO BE PROVIDED ON EITHER SIDE OF RUB LOCATION AS PER STANDARD IR SPECIFICATION.
23. ALL THE FOLLOWING SAFETY MEASURES SHALL BE FOLLOWED.
a. ADEQUATE SAFETY MEASURES FOR RUNNING TRAINS SHALL BE ADOPTED WHILE DOING THE EARTH WORK BELOW THE TRACK.
b. DURING CONSTRUCTION OF THE BRIDGE, THE EXISTING TRACK SHALL BE PROTECTED SUITABLY BY IMPOSING NECESSARY SPEED RESTRICTIONS BY PROVIDING TEMPORARY ENGINEERING INDICATORS.
c. DURING THE CONSTRUCTION OF THE PROPOSED BRIDGE PROPER SAFETY PRECAUTIONS TO BE TAKEN WHILE EXECUTING FOUNDATION WORK CLOSE TO THE EXISTING BRIDGE FOUNDATION INCLUDING IMPOSING SPEED RESTRICTIONS IF REQUIRED.
d. THE GRADUAL RELEASE OF SPEED RESTRICTION SHALL BE AS PER PARA 637 (1) (F) OF IRPWM-2020.
e. NECESSARY SHORING ARRANGEMENTS TO BE MADE TO PROTECT EXISTING BRIDGE STRUCTURE WHEREVER NECESSARY.
f. JOINT PROCEDURE ORDER ON SAFETY RELATED ISSUES PERTAINING TO WORK SITE IN CONSTRUCTION PROJECTS (JPO NO. W.33/5/SAFETY PRECAUTION, DT: 18.02.2011) ISSUED VIDE CTE LR.NO.SWR/W.247/SAFETY AT WORK SPOT DT: 20.06.2017 HAS TO BE STRICTLY FOLLOWED.
g. DURING EXCUTION OF WORK, THE MATERIAL/EQUIPMENT SUCH AS RELEASED MATERIAL ETC., SHOULD NOT INFRINGE THE TRAIN TRAFFIC. ALL SAFETY MEASURES TO BE TAKEN BY ENGINEER IN CHARGE DURING EXECUTION.
h. SUITABLE SAFETY BARRICADING HAS TO BE PROVIDED WHENEVER WORK IS BEING EXECUTED PARALLEL TO THE RUNNING TRACK.
i. NECESSARY PROTECTIVE ARRANGEMENTS SHALL BE MADE BY KRIDE IN CONSULTATION WITH SBC DIVISION ELECTRICAL TRD/BRANCH TO AVOID ANY ELECTRICAL INDUCTION DURING EXECUTION OF PROPOSED WORK.

SPECIAL NOTES:
1. RAIL LEVEL, FORMATION LEVEL ETC. SHOULD BE CROSS VERIFIED BY THE ENGINEER-IN-CHARGE BEFORE ANY CONSTRUCTION. THE PROPOSED DETAILS SHOWN IN THE GAD AS PER LATEST APPROVED WORKING SECTION,PLANS AND OTHER CONNECTED DRAWINGS IF ANY
2. BEFORE EXECUTION OF WORK, ENGINEER IN CHARGE SHOULD ENSURE THAT THE MAXIMUM BASE PRESURE AT FOUNDATION LEVEL FOR EACH ELEMENT OF BRIDGE IS LESS THAN THE SAFE BEARING CAPACITY OF SOIL AT THAT LOCATION.
3. SOIL IMPROVEMENT TO BE DONE ENGINEER-IN-CHARGE SHALL ENSURE THAT AFTER SOIL IMPROVEMENT, SBC OF SOIL BELOW THE BOX SHALL BE MORE THAN MAXIMUM BASE PRESSURE AT BOTTOM LEVEL OF RCC BOX i.e. 33T/SQM.
4. ENGINEER-IN-CHARGE SHOULD ENSURE THAT SUITABILITY OF THE EXISTING BRIDGE TO TAKE OF 25T LOAD DISPERSION FOR PTS ELEMENTS SUCH AS SUBSTRUCTURE AND FOUNDATION BEFORE TAKING UP PROPOSAL WORK.
5. THE EXTENSION OF THE PROPOSED RUB SHALL BUTT TO EXISTING BRIDGE AND PROPER SEALING BETWEEN THE EXISTING AND PROPOSED BRIDGE WILL BE PROVIDED TO AVOID THE SEEPAGE OF WATER.

ALL THE FOLLOWING SAFETY MEASURES SHALL BE FOLLOWED.
1. ADEQUATE SAFETY MEASURES FOR RUNNING TRAINS SHALL BE ADOPTED WHILE DOING THE EARTH WORK BELOW THE TRACK.
2. DURING CONSTRUCTION OF THE BRIDGE, THE EXISTING TRACK SHALL BE PROTECTED SUITABLY BY IMPOSING NECESSARY SPEED RESTRICTION BY PROVIDING TEMPORARY ENGINEERING INDICATORS.
3. DURING THE CONSTRUCTION OF THE PROPOSED BRIDGE PROPER SAFETY PRECAUTIONS TO BE TAKEN WHILE EXECUTING FOUNDATION WORK CLOSE TO THE EXISTING BRIDGE FOUNDATION INCLUDING IMPOSING SPEED RESTRICTIONS IF REQUIRED.
4. THE GRADUAL RELEASE OF SPEED RESTRICTION SHALL BE AS PER PARA 637 (1) (F) OF IRPWM-2020.
5. NECESSARY SHORING ARRANGEMENTS TO BE MADE TO PROTECT EXISTING BRIDGE STRUCTURE WHEREVER NECESSARY.
6. JOINT PROCEDURE ORDER ON SAFETY RELATED ISSUES PERTAINING TO WORK SITE IN CONSTRUCTION
7. PROJECTS (JPO NO. W.33/5/SAFETY PRECAUTION, DT: 18.02.2011) ISSUED VIDE CTE LR.NO.SWR/W.247/SAFETY AT WORK SPOT DT: 20.06.2017 HAS TO BE STRICTLY FOLLOWED.
8. DURING EXCUTION OF WORK, THE MATERIAL/EQUIPMENT SUCH AS RELEASED MATERIAL ETC., SHOULD NOT INFRINGE THE TRAIN TRAFFIC. ALL SAFETY MEASURES TO BE TAKEN BY ENGINEER IN CHARGE DURING EXECUTION.
9. SUITABLE SAFETY BARRICADING HAS TO BE PROVIDED WHENEVER WORK IS BEING EXECUTED PARALLEL TO THE RUNNING TRACK.
10. NECESSARY PROTECTIVE ARRANGEMENTS SHALL BE MADE BY KRIDE IN CONSULTATION WITH SBC DIVISION ELECTRICAL TRD/BRANCH TO AVOID ANY ELECTRICAL INDUCTION DURING EXECUTION OF PROPOSED WORK.

THE RAILWAY BOARD SANCTION FOR BENGALURU SUBURBAN TRANSPORT PROJECT(148.17KMS) VIDELETTER NO.2015/V CELL/K-RIDE/BSTP/EBK/07 DATED:21/10/2020
AUTHORITY OF WORK: IS AS PER DFSR OF BSRP, LIST OF LC ELIMINATION AND FIRST PAGE OF DFSR IS ATTACHED (R E GAS





LEGEND:
Total Barrel length of RUB 528A = 10m.
Completed Barrel length = 0 m(BSRP Side).
Remaining Barrel length yet to be Constructed.

CONCEPTUAL / TENDER DRAWING

GC/K-RIDE	K-RIDE
FOR GC	FOR K-RIDE

GENERAL CONSULTANTS:
EGIS-AECOM-WSP

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED
BENGALURU DIVISION
BAIYAPPANAHALLI - RAJANUKUNTE SECTION OF BSRP C-4
AUTHORITY OF WORK: AS PER BSRP DFSR

PROPOSED RUB NO.528A AT BSRP CH:32+535
AS 2x9.0x4.5m RCC BOX ON OLD IR SIDE OF THE
OF EXG. RUB NO. 528A AS 2x9.0x4.55m RCC BOX IN
BETWEEN CHANNASANDRA AND JAKKUR STATION.

K RIDE DRG.NO:	KRIDE/BSRP/C-4/PKG2/RUB-528A	
HQ.DRG.NO:		SCALE - 1 : 100