# PROPOSED CONSTRUCTION OF RUB 1X9.5X5.75 (CLEAR HEIGHT-5.8m) RCC BOX AT 4# 213/314.657, BWP CH:7+659.813 BETWEEN KANAKA NAGAR AND NAGAWARA STATIONS

GENERAL NOTES:

1. ALL DIMENSIONS SHOWN IN THIS GAD ARE IN MM AND REDUCED LEVELS ON R.T. MSL) ARE IN M UNLESS OTHERWISE SPECIFIED.
2. DO NOT SCALE THE DRAWING ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. EARTHQUAKE CONDITION IS MODERATE.
4. SEISMIC ZONE IS ZONE II.
5. STANDARD OF RAILWAY LOADING: 25T AXLE LOADING - 2008 STANDARD.
6. FOUNDATION IS ON SAND ONLY.
7. ALL DIMENSIONS IN RED COLOR IN THE KEY PLAN.
8. EXISTING BRIDGE DETAILS ARE BASED ON DATA COLLECTED FROM SITE BY RVD EXECUTIVES.
9. THE ENTIRE WORK SHALL BE CARRIED OUT AS PER THE INSTRUCTIONS AND TO THE SATISFACTION OF THE ENGINEER IN CHARGE.
10. RAIL LEVEL, FORMATION LEVEL, ETC., SHOULD BE CROSS VERIFIED BY THE ENGINEER IN CHARGE BEFORE AND DURING EXECUTION OF WORK AT SITE AS PER LATEST APPROVED WORKING SECTION PLANS AND OTHER CONNECTED DRAWINGS IF ANY.
11. THIS GAD IS SUBJECT TO MAINTAINING SAME LEVEL ALIGNMENT, GRADE & TRACK CENTRE DISTANCE AS THAT OF APPROACH SECTION/ WORKING PLAN AND YARD PLANS IF ANY.
12. ALL RCC SURFACES COMING IN CONTACT WITH SOIL MUST BE PAINTED WITH APPROVED PROTECTIVE PAINT. NO OTHER PAINTING IS REQUIRED. PAINTING SHALL BE DONE AS PER SPECIFICATION AND IN ADDITION TWO COATS OF BITUMEN SHALL BE GIVEN TO ALL CONCRETE SURFACES IN CONTACT WITH SOIL (AS LETTER NO. NIL).
13. NO CONSTRUCTION JOINT SHALL BE NORMALLY ALLOWED IN CONCRETE WITHOUT SPECIAL PRECAUTIONS AS PER SPECIFICATIONS.
14. CONTROLLED CONCRETE WITH MEDIUM BATCHING SHALL BE USED FOR CONCRETE.
15. CURING OF ALL CONCRETE WORK AS PER RELEVANT CODES OF PRACTICE SHALL BE ENSURED.
16. CONTRACTOR SHALL ENSURE THAT ALL NECESSARY PRECAUTIONS FOR CONSTRUCTION OF WORK STARTS,S&T CIRCUITS SHALL BE PROTECTED AT SITE BY A RIDE. ALL RELEVANT COMMUNICATIONS AS PER GUIDELINES ACCORDING TO TELECOMMUNICATION CIRCULAR NO. 1/2/2013, ISSUED BY RAILWAY BOARD VIDE LETTER NO 2005/TELE/VOL-I PT, DC. DATED 04.06.2013.
17. THE TYPE AND DEPTH OF THE FOUNDATION SHOWN IN GAD ARE BASED ON THE SOIL REPORT SUBMITTED AT THE TIME OF SANCTION OF THE WORK. THE SAME SHALL BE CHECKED AT THE TIME OF EXECUTION OF WORK AND ANY DEVIATION IN CHARGE AS PER THE ACTUAL SOIL STRATA ENCOUNTERED AT SITE DURING EXECUTION.
18. ALL STRUCTURES DIMENSION OF SUBWAY IS AS PER DESIGN AND OTHER STRUCTURES SHOWN IN THIS GAD ARE INDICATIVE ONLY. THE DETAILED DESIGN SHALL BE PREPARED BY CONTRACTOR AND SUBMIT FOR APPROVAL BEFORE DESIGN. THE DETAILED DESIGN SHALL BE PROCESSED DEPARTMENTALLY WITH THE APPROVAL OF GAD.
19. MAXIMUM CALCULATED PRESSURE AT BOTTOM OF FOUNDATION FOR DIFFERENT ELEMENTS OF THIS SUBWAY IS AS UNDER:

| SECTION | Pmax (KN/SQM) |
|---|---|
| RCC BOX | 185.51 |
| RETAINING WALL | 185.51 |

20. SAFE BEARING CAPACITY OF SOIL BOX OF BOTTOM OF FOUNDATION IS 344.46 KN/M² AS PER SOIL REPORT.
21. OPEN FOUNDATION:
    a. THE CONTRACTOR/AGENCY SHALL ENSURE MAXIMUM CALCULATED FOUNDATION PRESSURE AT FOUNDATION LEVEL SHALL NOT EXCEED SAFE BEARING CAPACITY OF SOIL AT THAT LOCATION.
    b. THE MINIMUM HORIZONTAL & VERTICAL DISTANCES HAS BEEN PROVIDED AS PER LATEST SOD FOR RAILWAYS/BWP.
    c. THE DRAINAGE SYSTEM SHALL BE PROVIDED AS PER RELEVANT CODE RUB TO LOW LYING AREAS/ OTHER RELEVANT PLACES/ADJOINING PIPELYING FROM WITH PROPER DRAINAGE FACILITIES AS PER GOOD RAIN WATER HARVESTING TECHNOLOGIES AS PER CPCB/RAILWAYS LETTER NO. SHW/W-10/PROJ/ENV/ AL DATED
    d. RAILWAY BOARD GUIDELINES SHALL BE PROVIDED ON TRACK AT RUB LOCATIONS BY A RIDE.
    e. THE STRUCTURE DESIGN SHALL BE PROVIDED ON STRICT BASIS OF RDSO DRAWING NO. BWP-2020-(GS)-01 DATED 09-05-2018 SHALL BE FOLLOWED.
    f. ALL THE PROVISIONS OF GUIDELINES SHALL BE FOLLOWED.
    g. ADEQUATE SAFETY MEASURES FOR RUNNING TRAINS SHALL BE ADOPTED WHILE DOING THE EARTH WORK BELOW THE TRACK.
    h. THE CONSTRUCTION OF THE BRIDGE THE EXISTING TRACK SHALL BE PROTECTED SUITABLY BY IMPOSING NECESSARY SPEED RESTRICTIONS BY PROVIDING TEMPORARY ENGINEERING INDICATORS.
    i. DURING THE CONSTRUCTION OF THE PROPOSED BRIDGE PROPER SAFETY PRECAUTIONS TO BE TAKEN WHILE EXCAVATING FOUNDATIONS CLOSE TO THE EXISTING BRIDGE FOUNDATION INCLUDING IMPOSING SPEED RESTRICTIONS IF REQUIRED.
    j. THE GRADUAL RELEASE OF SPEED RESTRICTION SHALL BE AS PER PARA NO.338 (2)(iii) OF IRPWM.
    k. TEMPORARY WARNING ARRANGEMENTS TO BE MADE TO PROTECT EXISTING BRIDGE STRUCTURE WHEREVER NECESSARY.
    l. JOINT PROCEDURE ORDER ON SAFETY RELATED ISSUES PERTAINING TO WORK SITE IN CONSTRUCTION PROJECTS (IPO NO. W.239/SAFETY PRECAUTION, DT.18.02.2010) ISSUED VIDE CTS LTR NO. SW/W/CON/SAFETY/ PT WORK SPOT DT.20.06.2017 HAS TO BE STRICTLY FOLLOWED.
    m. THE CONTRACTOR SHALL ARRANGE ALL EQUIPMENT SUCH AS RELEASED MATERIAL ETC., SHOULD NOT OBSTRUCT THE RUNNING OF TRAINS. ALL SAFETY MEASURES TO BE TAKEN BY ENGINEER IN CHARGE DURING EXECUTION.
    n. SUITABLE SAFETY BARRICADING HAS TO PROVIDED WHEREVER WORK IS BEING EXECUTED PARALLEL TO THE RUNNING LINES.
22. THE GAD HAS BEEN PREPARED BASED ON THE JOINT INSPECTION REPORT DATED _____ BETWEEN RAILWAY AND GOA AUTHORITIES.
23. THE CONTRACTOR SHALL TAKE DATA ON PROPOSED RUB PORTIONS IS PROPOSED FOR FLEXIBLE VEHICULAR MOVEMENTS WITH A BARREL LENGTH OF 25.750 M IN MTS AS SHOWN IN THE GAD.
24. PROPER VENTILATION & LIGHTING ARRANGEMENTS WILL BE PROVIDED FOR THE SUBWAY.
25. ADEQUATE DRAINAGE ARRANGEMENT TO BE PROVIDED AS PER REQUIREMENT, SUITABLE DRAINAGE ARRANGEMENT TO BE PROVIDED AS PER RDSO DRAWING APPROVE THE SAME (DESIGN AND DRAWINGS).
26. BRIDGE INSPECTION STEPS TO BE PROVIDED WITH UNIONSS AT APPROPRIATE LOCATIONS AND SPREAD AND RISE TO BE AS PER RELEVANT CODE OF PRACTICE.
27. WHEREVER SBC IS LESS THAN THE REQUIREMENT AS PER RDSO DRAWING IMPROVE THE SAME BY PROVIDING ADDITIONAL ROW OF PILES, TWO LAYERS OF 150MM SAND & BOULDER FILLING OF 300MM THICKNESS EACH TO BE LAID & COMPACTED AND PROVIDING LEVELING COURSE FROM RCC BOX BOTTOM, RETURN WALL FOUNDATION & APRON FLOORING.

## LEGENDS:

Total Barrel length of Addl RUB 3 = 25.950m.
Completed Barrel length = 0m(BSRP Side).
Remaining Barrel length 25.950m is yet to be constructed

## KEY PLAN NOTE:

1. PROPOSED ARE SHOWN IN RED.
2. RAILWAY BOUNDARY DISTANCE ARE WITH RESPECT TO CENTRE LINE OF EXS TRACK.
3. TRACK IS IN STRAIGHT ON BRIDGE LOCATION.

## REFERENCE

1. RDSO BRIDGE DESIGN DOCUMENT NO. DOC-BWRP-CRO-AG-DOM-BR-35-1606
2. A RIDE SUBSTRUCTURE DRAWING NO. CDRT-BWRP-CRO-C-UB-01-1296
3. RETURN WALL – CDZRT-BWRP-CRO-C-UB-01-1296
4. IRS CONCRETE BRIDGES CODE 2013 AND IRS SUBSTRUCTURE CODE
5. EARTH RETAINER AS PER DESIGN WORKS STRUCTURE WITH BOX
6. CURTAIN WALL AND TOE WALL AS PER DESIGN.
7. IRS BRIDGE RULES 2014 AND IRS SUBSTRUCTURE CODE AS PER PARA 5
8. BACKFILL: GEO-COMPOSITE DRAIN AS PER RAILWAY BOARD LETTER NO.2017/CE-I/CB/BRIDGE DATED 18.02.2019, BEHIND THE GEO COMPOSITE DRAIN, BACKFILL MATERIALS SHALL CONSIST OF GRANULAR MATERIALS OF GW, GP, SW, GRCUPS AS PER IS:1498-1970 USLTMSTS.
9. EARTH RETAINER AS PER DESIGN WORKS STRUCTURE WITH BOX, BEHIND THE WALL FILLING, BACKFILL MATERIAL SHALL CONSIST OF LESS THAN 600MM WITH SMALLER SIZE TOWARDS THE BACK. BEHIND THE BOULDER FILLING, BACKFILL MATERIAL SHALL CONSIST OF GRANULAR MATERIALS OF GW,GP, SW GROUPS AS PER IS 1498-1970/RDSO BWD.
10. BAR BENDING SHALL BE CONFORMED TO IS 2502. CODE OF PRACTICE FOR BENDING AND FIXING OF BARS FOR CONCRETE REINFORCEMENT TO IS 456-2000 AND IRS CONCRETE BRIDGES CODE AS PER PARA 5
11. GAP BEHIND SHALL BE CONFORMED TO IS:2502.
12. BEHIND THE BOULDER FILLING, BACKFILL MATERIAL SHALL CONSIST OF GRANULAR MATERIALS OF GW,GP, SW GROUPS AS PER IS 1498-1970/RDSO BWD.
13. LOADING STANDARD: 25T – 2008 AXLE LOAD.
14. CONCRETE SHALL BE MECHANICALLY MIXED, VIBRATED & THOROUGHLY CURED.

## KEY PLAN

(NOT TO SCALE)

## SPECIFICATION

ALL CIVIL WORKS HAVE TO BE CARRIED OUT AS PER THE FOLLOWING:

1.1 INDIAN RAILWAY UNIFIED STANDARD SPECIFICATIONS FOR WORKS AND MATERIALS 2010.
1.2 IRS CONCRETE BRIDGE CODE 2004 & RELEVANT I.S SPECIFICATIONS.
1.3 IRS SUBSTRUCTURE CODE 2013 AND FOUNDATION CODE 2013.
1.4 IRS BRIDGE RULES 2014.
1.5 IRS SCHEDULE OF DIMENSIONS 2004 CORRECTED UP TO LATEST CORRECTION SLIPS.
1.6 IRS CODE OF PRACTICE FOR PLAIN AND REINFORCED CONCRETE 1999 AMENDED UP TO DATE.

## RESPONSIBILITY NOTES:

1. THE RUB WORK WILL BE EXECUTED BY A RIDE FOR BOTH RAILWAY AND APPROACH PORTION OF RUB EVEN BEYOND RAILWAY BOUNDARY ALONG WITH DRAINAGE ARRANGEMENTS.
2. THE RESPONSIBILITY FOR THE MAINTENANCE OF ROAD PASSING THROUGH THE RUB, LIGHTING ARRANGE SYSTEM, DIVERSION ROAD DURING CONSTRUCTION, ETC. WILL BE OF CONCERNED AS PER EXTANT RULES AND STATE GOVERNMENT HAS TO ACQUIRE SUCH LAND.
3. NO CASE OF ANY LAND ACQUISITION INVOLVED FOR EXECUTING THE RUB WORK, A RIDE AUTHORITY SHALL ACQUIRE SUCH LAND CHARGEABLE TO THE CONCERNED AS PER EXTANT RULES AND STATE GOVERNMENT HAS TO ACQUIRE SUCH LAND

## SPECIAL NOTES FOR ELECTRIC TRACTION SYSTEM

1. NECESSARY PROTECTIVE ARRANGEMENT SHALL BE MADE BY CONSTRUCTION ORGANIZATION IN CONSULTATION WITH ELECTRICAL TRD/BRANCH TO AVOID ANY ELECTRICAL INDUCTION DURING LAUNCHING OF GIRDER/ERECTION OF WORK.
2. WHILE LAUNCHING OF GIRDER ABOVE, THE CHE AHO ALSO DURING ANY WORK INVOLVING LESS THAN 2M WORKING CLEARANCE FROM CHE, THE CONTRACTOR SHALL CONTACT ONLY DURING POWER BLOCK PERIOD AND TAKEN PERMISSION TO WORK FORM AUTHORIZED TRD BRANCH OF OFFICIALS.
3. ALL STEEL STRUCTURE & GIRDERS INVOLVING THE ABOVE WORKS SHALL BE BUTHALY EARTHEN TO TRACTION RAIL, SEPARATE EARTH PIPE FOR EACH GIRDER SHALL BE PROVIDED.
4. GREEN LAUNCHING / EXECUTION OF WORK TO BE DONE WITHIN MAXIMUM CONTACT WIRE HEIGHT WITH NORMAL ELECTRICAL CLEARANCE AFTER DUE CONSULTATION WITH TRD.
5. ALL LINE PROFILING WORKS, GIRDERS ERECTION ETC. SHALL BE CARRIED OUT UNDER THE SUPERVISION OF ISSUE/TRD UNDER POWER BLOCK CONDITIONS.
6. JOINT PROCEDURE ORDER FOR PROVISION PROTOTYPE SCREEN OVER PROTOTYPE SCREEN OVER 25KV AC ELECTRIFIED SECTION CIRCULATED VIDE LETTER NO. SW/W/W SIGNS/DESIGN DESIGN AND DRAWINGS/VOL II/ DT _____ TO BE STRICTLY FOLLOWED.

## SPECIAL NOTES FOR CONSTRUCTION RUB

1. MINIMUM VERTICAL CLEARANCE REQUIRED FOR RUB IS 3.50M.
2. THE RUB SHALL BE CONSTRUCTED IN SUCH A WAY THAT THERE SHALL BE STEEPER THAN 1 IN 20.
3. BEFORE AND DURING EXECUTION OF WORK, CONCERNED STATE GOVERNMENT OFFICIALS SHOULD BE CONTACTED IN CONNECTION WITH CLOSURE OF LC.
4. IT SHALL BE ENSURED THAT THE REDUCED LEVELS OF ROAD TOP IN APPROACHES AND RAILWAY PORTIONS SHOULD BE SMOOTH WITHOUT ANY HUMPS AND DEPRESSIONS.
5. THE PRECAST RCC BOX SEGMENTS SHALL BE SEALED AS ADVISED IN THE DETAILED SCHEME ISSUED BY DBE/BWRI/RUB/VIDE _____ DATED _____ AND STRICTLY FOLLOWED.
6. LC SHALL BE CLOSED AFTER COMMISSIONING OF RUB AFTER RECEIVING CONSENT FOR CLOSURE OF LEVEL CROSSING IS OBTAINED FROM THE CONCERNED AUTHORITIES.
7. ROAD LEVELS FOR THE RUB SHOULD BE FIXED AFTER CONSULTING WITH ROAD / STATE AUTHORITIES TO AVOID ANY FUTURE LEVEL DIFFERENCES AT THE RAILWAY JUNCTION AND ROAD LEVEL APPROACHES.
8. PROPER DRAINAGE ARRANGEMENT FOR THE PROPOSED RUB IN LIEU OF CH:7+659.813 AT KM 213/314.657 TO BE OBTAINED FROM GC/ EMPLOYER.
9. PROPER DRAINAGE ARRANGEMENTS HAVE TO BE PROVIDED AS PER PCR CIRCULAR NO. 05/2021 DATED _____&CBE/BWR LETTER NO. _____ DIVISION DESIGN & DRAWING/VOL-III DATED _____.

## JUSTIFICATION FOR TRACK CENTRE DISTANCE

TRACK CENTRE DECIDED BASED ON THE APPROVED ALIGNMENT PLAN OF IR BRIDGE _____.

## JUSTIFICATION FOR SELECTION THE SPAN

SPAN SELECTED BASED ON THE JOINT INSPECTION REPORT DATED_____ BETWEEN RAILWAY OFFICIALS AND BBMP OFFICIALS. FOR THIS PURPOSE SBC DIVISION DEMANDED FOR A SM ROAD N THE FORMATION. HENCE A BARREL LENGTH OF 25.95m HAS BEEN PROPOSED IN THIS GAD.

## LOADING STANDARD

ADDL RUB 3 (DESIGNED AT 25T AXLE LOADING STD)
IN EXG BRIDGE MBG OF 1MP

## BRIDGE STRENGTH CERTIFICATE

CERTIFIED THAT THE PRC RCC BOX BRIDGE NO. AT CH:7+659.813 OF SPAN OF 5.0x5.75m AS PROPOSED IN LIEU OF EXISTING LC NO.143 AT 4# AM 213/314.657, BWP CH:7+659.813 BETWEEN KANAKA NAGAR AND NAGAWARA STATIONS ON EXG. BG RAILWAY TO CARRY THE DESIGN LOAD OF THE STRUCTURE ITSELF (INCLUDING P WAY) COMPLETED AND IN ADDITION TO THE EQUIVALENT OF 25T – 2008 LOADING PRESCRIBED IN THE RAILWAY BOARD'S LETTER NO. 2005/CE-I/CB/BRIDGE DATED 18.02.2019 AND ALSO CERTIFIED THAT THE HEAVIEST LOCO WHICH THE BRIDGE WILL HAVE TO CARRY WILL NOT BE EXCEEDING THE LOAD FOR WHICH THE BRIDGE IS DESIGNED AND THAT THE BRIDGE WILL HAVE PERMISSION TO WORK FORM AUTHORIZED TRD BRANCH OF OFFICIALS.

1 of 1
ADARA RIDE

1 of 1
ADARA RIDE

GAMA RIDE

## GENERAL CONSULTANTS:

EGIS-AECOM-WSP

EMPLOYER :

RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARAIKAL) LIMITED

## GENERAL ARRANGEMENT DRAWING

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

DRAWING TITLE:

PROPOSED CONSTRUCTION OF RUB 1X9.5X5.75 (CLEAR HEIGHT-5.8m) RCC BOX AT 4# 213/314.657, BWP CH:7+659.813 BETWEEN KANAKA NAGAR AND NAGAWARA STATIONS

| GC/K-RIDE | K-RIDE |
|---|---|
| | |
| K-RIDE.DRG.NO: | |
| HQ.DRG.NO: | |
| FOR GC | FOR K-RIDE |

SCALE (UNLESS SPECIFIED OTHERWISE): NTS

DRAWING NO: D2/2077-BSRP-CRO-C-UB-0-30-1296

REVISION: C

DWG STATUS: IFC

DATE (WHICHEVER SHALL BE APPLICABLE FOR THE CONSTRUCTION AND ALL AS BUILT DRG) (E), WORK (W)): 04.10.2021

SHEET SIZE: A1