



HFL	FREE BOARD (mm)	RED LEVEL-1	RED LEVEL-2
904.488	3297	902.444	902.388

WATERWAY PARTICULARS	
CATCHMENT AREA	0.224 SQKM
LATITUDE	12°17'30.80"N
LONGITUDE	75°53'30.80"E
TOPOGRAPHIC NO	D43 R-12
250 DISCHARGE	5.96 CUM/SEC
VELOCITY	2.02 M/SEC
DEPTH OF FLOW	1.48 M
Q/HFL (DESIGN HFL)	904.488 M
WATERWAY AREA, Sqm	
REQUIRED	2.98
PROVIDED	8.7
FREE BOARD, m	
REQUIRED	1
PROVIDED	3.297
VERTICAL CLEARANCE, m	
REQUIRED	0
PROVIDED	2.388
SCOUR ESTIM.	
Form G/HFL, m	1.3
Form S/L, m	0
Form S/L, m	1.4
EXISTING WATERWAY PARTICULARS	
WATERWAY AREA, Sqm	7.2
FREE BOARD, m	2.42
VERTICAL CLEARANCE, m	1.955

TRACK DETAILS (PRO. BRIDGE)	
LOADING	25 TONNE LOAD
ALIGNMENT	2008 STD
GRADE	1 IN 40
RAIL LEVEL	908.755 m
FORMATION LEVEL	907.900 m
LOADING STANDARD	
A) PRO. BRIDGE 20 TONNE LOAD 2008 STD	
B) EXG. BRIDGE MIBG OF 1987	

TRACK DETAILS (EXG. BRIDGE)	
LOADING	MIB-1987
ALIGNMENT	STRAIGHT
GRADE	FALL 1 IN 40
RAIL LEVEL	908.921 m
FORMATION LEVEL	907.900 m
BASE PRESSURE AT FOUNDATION LEVEL	
STRUCTURE	MAX. MIN.
RCC BOX (KN/M²)	158.88 -
RETURN WALL (KN/M²)	165.98 -

LEGENDS:	
COLOUR CODE BLACK	EXISTING WORKS
COLOUR CODE RED	PROPOSED RLY WORKS
COLOUR CODE YELLOW	TO BE DISMANTLED

DEPTH IN M	LEGEND (N-VALUE)	SBC (DN.50mm)
0.00	N=13 (45/5)	361.56
1.00	N=13 (45/5)	400(WR)
2.00	N=14 (7/65)	
3.00	N=14 (7/65)	
4.00	N=14 (7/65)	
5.00	N=14 (7/65)	
6.00	N=13 (38/7)	
7.00	N=13 (38/7)	
8.00	N=13 (38/7)	
9.00	N=13 (38/7)	
10.00	N=13 (38/7)	
11.00	N=13 (38/7)	
12.00	N=13 (38/7)	
13.00	N=13 (38/7)	
14.00	N=13 (38/7)	
15.00	N=13 (38/7)	
16.00	N=13 (38/7)	
17.00	N=13 (38/7)	
18.00	N=13 (38/7)	
19.00	N=13 (38/7)	
20.00	N=13 (38/7)	
21.00	N=13 (38/7)	
22.00	N=13 (38/7)	
23.00	N=13 (38/7)	
24.00	N=13 (38/7)	
25.00	N=13 (38/7)	

- SPECIFICATION:**
- ALL WORKS ARE TO BE CARRIED OUT AS PER THE FOLLOWING:
 - INDIAN RAILWAY UNIFIED STANDARDS SPECIFICATIONS FOR WORKS AND MATERIALS 2019.
 - IRS CONCRETE BRIDGE CODE (C-48/RRP/NT) & RELEVANT I.S. SPECIFICATIONS.
 - IRS BRIDGE SUB-STRUCTURE CODE (2019) (REVISED).
 - IRS BRIDGE RULES 2014 (PRINT).
 - WIND WALL RETAINING WALL - REINFORCED CEMENT CONCRETE OF GRADE M35 WITH DESIGN MIX CEMENTS AS PER PARA 7.02 OF INDIAN RAILWAY BRIDGE MANUAL, ANNEXURE 3.10.
 - RCC BOX - REINFORCED CEMENT CONCRETE M35 GRADE USING 20MM MAXIMUM SIZE GRADED SAND AGGREGATE OF APPROVED QUALITY.
 - LEVELLING COURSE - 150 MM THICK M20 DESIGN MIX.
 - WEIR HOLES - WEIR HOLES TO BE PROVIDED AS PER PARA 7.02 OF SUB STRUCTURE CODE & WEIR HOLES SHALL BE OF 100 MM DIA AC PIPES STAGGERED AT 1000 C/C ABOVE LOW WATER LEVEL IN BOTH WING. WALLS RETAINING WALL & EARTH RETAINER OF BOX.
 - LOADING STANDARD - 25 T - 2008 AILE LOAD.
 - TOE WALL - GRADE M35 WITH DESIGN MIX.
 - GRADE OF STEEL FOR RCC IS TMT 400 CONFORMING TO IS 1786:2008.
 - MASS CONCRETE TO BE OF M35 WITH 20MM GRADED STONE AGGREGATE FOR WEARING COURSE.
 - MAINTENANCE SHALL MECHANICALLY MIXED VIBRATED & THOROUGHLY CURED.
 - FLOORING SHALL BE 150 MM THICK M20 DESIGN MIX.
 - FLOORING - ROUGH STONE FLOORING 200MM THICK GROUTED WITH CM 13.
 - DROP WALL - CURTAIN WALL - GRADE M35 WITH DESIGN MIX.
 - WEIR HOLES SHALL BE 100 MM DIA AC PIPES STAGGERED AT 1000 C/C ABOVE LOW WATER LEVEL IN BOTH WING. WALLS RETAINING WALL & EARTH RETAINER OF BOX.
 - TWO LAYERS OF 150MM SAND & BOULDER FILLING OF 50MM THICKNESS EACH TO BE LAD & COMPACTED BEFORE LEVELLING COURSE FOR RCC BOX, RETURN WALL FOUNDATION & APRON.
 - COPING - C20 M20 GRAD 20MM MAX SIZE GRADED SAND AGGREGATE 100 MM QUALITY.
 - GROUND IMPROVED SOIL SHALL BE OF SOIL QUALITY CLASS S20 AND S25 AS PER RDSO GUIDELINES.
 - FOR RETAINING STRUCTURE, SEPARATE DRAWING WILL BE SUBMITTED.
 - THE DIMENSIONS OF RETURN WALL SHOWN IN GAD ARE ONLY INDICATIVE AND TO FOLLOW AS PER APPROVED DESIGN & DRAWINGS.
 - TYPICAL COLLAR SHALL BE PROVIDED BETWEEN THE EXISTING AND PROPOSED STRUCTURE AS PER LETTER BEARING NO SWNH/70/PD/CY/2022 DATED ON 08.08.2022 ISSUED BY SWH.
- REFERENCE:**
- RCC BOX (CAST-IN-SITU) DRG NO. RDSO-BR-10155 & 10152
 - RETURN WALL, DWG NO. 02077-BSPR-CR2-C-NB-20-104
 - WEIR HOLES AS PER PARA 7.02 OF SUB-STRUCTURE CODE
 - CURTAIN WALL AND TOE WALL AS PER DESIGN
 - BACKFILL MATERIALS BEHIND RCC BOX TO PROVIDE AS PER PARA 5 OF IRS BRIDGE SUBSTRUCTURE FOUNDATION CODE
 - SHORING ARRANGEMENTS AS PER DESIGN
 - DESIGN OF TYPICAL EARTH RETAINER / PARAPET WALL (UP TO 2M HEIGHT) DOC NO. DOC-BSPR-CR2-AG-20-2000
 - USE DOCUMENT NO. 02077-BSPR-CR2-AG-20-2000
 - FOR RETURN WALL - DOC-BSPR-CR2-AG-20-2000
 - FOR RETURN WALL - DOC-BSPR-CR2-AG-20-2000
- MODUS OPERANDI:**
- IMPOSE 200KMPH SPEED RESTRICTIONS DURING EXCAVATION WORKS, IF REQUIRED AS PER SITE CONDITION.
 - DIVERT OR RESTRICT THE WATER FLOW BY PROVIDING BUND/TEMPORARY PIPES ON UPSTREAM SIDE OF THE BRIDGE.
 - PORTION OF RETURN WALL/TOE WALL, PITCHING TO BE DISMANTLED TO ACCOMMODATE RCC BOX WITH SUITABLE SHORING CONDITION AS PER SITE CONDITION.
 - EARTH WORK EXCAVATION TO BE DONE FOR PROPOSED BARREL LENGTH WITH 350MM BASE COURSE FILL BENEATH THE BOTTOM RAFT.
 - RETURNS & BRIDGE PROTECTION WORKS TO BE DONE IN R/SIDE.

LEGENDS:

Total Barrel length of MIB 538 = 14.819m.
Completed Barrel length = 0.0m(BSRP Side).
Remaining Barrel length 14.819m is yet to be Constructed.

GENERAL CONSULTANTS:
AECOM
EGIS-AECOM-WSP

EMPLOYER:
RAIL INFRASTRUCTURE DEVELOPMENT COMPANY (KARNATAKA) LIMITED

GENERAL ARRANGEMENT DRAWING

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

KRIDE.DRG.NO:
H.Q.DRG.NO:
SCALE:
DRAWING NO:
02077-BSPR-CR2-C-NB-20-1016
REVISION
2
C
SHEET SIZE: A1