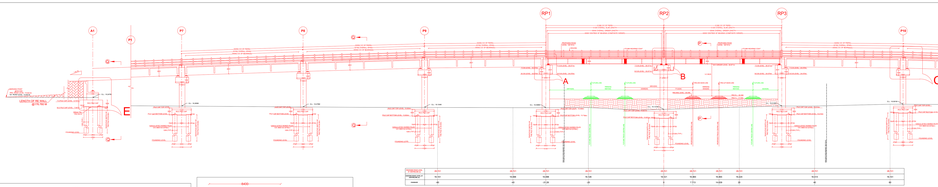
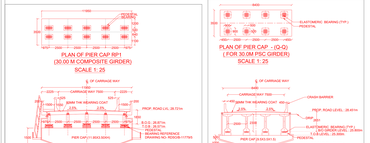
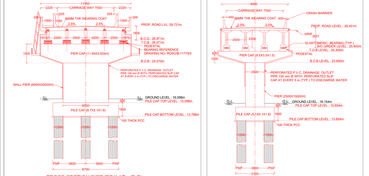


SECTIONAL ELEVATION AT CENTER LINE OF PROPOSED ROB
(SCALE 1 : 100)



PLAN OF PIER CAP RP1
(30.00 M COMPOSITE GIRDER)
SCALE: 1: 25



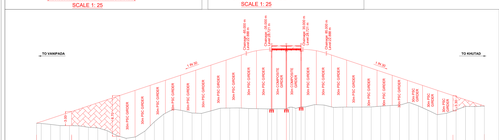
CROSS SECTION PIER 'RP1' AT : (P-P)
(FOR 30.0 M COMPOSITE GIRDER)
SCALE 1: 25

FOUNDATION LAYOUT PLAN FOR RAILWAY PIER P1
(FOR 30.0 M COMPOSITE GIRDER)
SCALE 1: 25

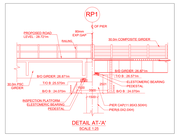
PLAN OF PIER CAP : (Q-Q)
(FOR 30.0M PSC GIRDER)
SCALE 1: 25

CROSS SECTION PIER AT : (Q-Q)
(FOR 30.0M PSC GIRDER)
SCALE 1: 25

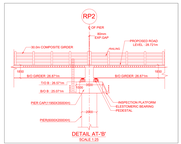
FOUNDATION LAYOUT
(FOR 30.0M PSC GIRDER)
SCALE 1: 25



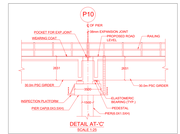
LONGITUDINAL PROFILE
SCALE : (H-1:400) (V:1:40)



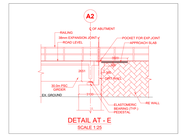
DETAIL AT-'A'
SCALE:1:25



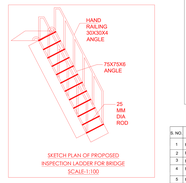
DETAIL AT-'B'
SCALE:1:25



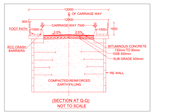
DETAIL AT-'C'
SCALE:1:25



DETAIL AT - E
SCALE:1:25



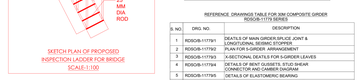
SKETCH PLAN OF PROPOSED
INSPECTION LADDER FOR BRIDGE
SCALE:1:100



(SECTION AT G-G)
NOT TO SCALE

REFERENCE DRAWINGS TABLE FOR 30M COMPOSITE GIRDER
RDSO/B-11779 SERIES

S. NO.	DRG. NO.	DESCRIPTION
1	RDSO/B-11778/1	DEATILS OF MAIN GIRDER,SPLICE JOINT & LONGITUDINAL SEISMIC STOPPER
2	RDSO/B-11779/2	PLAN FOR 5 GIRDER ARRANGEMENT
3	RDSO/B-11779/3	X-SECTIONAL DEATILS FOR 5-GIRDER LEAVES
4	RDSO/B-11779/4	DETAILS OF BENT GUSSETS, STUD SHEAR CONNECTOR AND CHAMBER OPENING
5	RDSO/B-11779/5	DETAILS OF ELASTOMERIC BEARING
6	RDSO/B-11779/6	DETAILS OF METALLIC GUIDED BEARING
7	RDSO/B-11779/7	GENERAL LAYOUT PLAN OF BEARINGS AND PEDESTAL FOR 5 GIRDERS
8	RDSO/B-11779/8	DETAILS OF RCC DECK SLAB
9	RDSO/B-11779/9	DETAILS OF RCC SEISMIC RESTRAINER
10	RDSO/B-11779/10	DETAILS OF STAGING FOR DECK SLAB AND WELDING SEQUENCE
11	RDSO/B-11779/11	ASSEMBLY DRAWING
12	RDSO/B-11779/12	PART AND SHIPPING LIST
13	RDSO/B-11779/13	GENERAL NOTES
14	RDSO/B-11780/R1	NOTES FOR USE OF HSFG BOLTS IN BRIDGES
15	CBS-0044	INSPECTION ARRANGEMENT



KEY PLAN
SCALE-1:400

DEPTH OF CONSTRUCTION FOR 30M PSC GIRDER	1500(TAS)
1. THICKNESS OF WEARING COAT	56mm
2. DECK SLAB	250mm
3. DEPTH OF GIRDER	2300mm
TOTAL	2606mm

DEPTH OF CONSTRUCTION FOR 30 M C.G.	
1. THICKNESS OF WEARING COAT	80 mm
2. DECK SLAB	250 mm
3. DEPTH OF GIRDER	1327 mm
4. MISCELLANEOUS	150 mm
TOTAL	1800 mm

LEGEND	
PROPOSED WORK	
EXISTING WORK	
EXISTING RAILWAY LINE	
FUTURE RAILWAY LINE	
RAILWAY LAND BOUNDARY	

GENERAL NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS IN METER UNLESS WRITTEN OTHERWISE.
2. NO DIMENSIONS SHALL BE SCALED FROM THIS DRAWINGS. ONLY WRITTEN DIMENSIONS SHALL BE FOLLOWED.
3. PROPOSED WORK SHOWN IN **RED** AND FUTURE WORK/TRACKS SHOWN IN **GREEN**.
4. ACTUAL LOCATION OF ROB SHALL BE DECIDED BY RAILWAY ENGINEER-IN-CHARGE IN CONSULTATION WITH ROAD AUTHORITY AT SITE.
5. ACTUAL DEPTH OF FOUNDATION SHALL BE DECIDED BY ENGINEER-IN-CHARGE TO SUIT THE SOIL STRATA MET WITH AT THE SITE.
6. VERTICAL CLEARANCE FROM THE HIGHEST RAIL LEVEL TO BOT. OF GIRDER SHALL NOT BE LESS THAN 6.55M FOR BG TRACKS AND 4.65M FOR MG TRACKS OF OHE FREE/ACCESSIBLE STACK CONTAINER ROAD.
7. DURING CONSTRUCTION OF ROB ALL THE EXISTING STRUCTURE/TRACK SHOULD BE PROTECTED BY GUARD RAIL AS PER STANDARD DRAWING.
8. SHAPES AND DIMENSIONS OF ELASTOMERIC BEARING, BEARING PEDESTALS SHOWN IN DRAWING ARE TENTATIVE AND ARE SUBJECTED TO CHANGES IN FINAL DESIGN AND DRAWING.
9. SHAPES AND DIMENSIONS OF PIERS, PIER CAP, PIER SHAFT AND FOOTING ARE TENTATIVE AND ARE SUBJECTED TO CHANGES IN FINAL DESIGN AND DRAWING.
10. ANTI CRASH BARRIER SHALL BE PROVIDED AS PER NORTH STD.
11. ONLY CONTROLLED CEMENT CONCRETE MIX IS, TO BE PROVIDED. GRADE OF CONCRETE FOR MASS CONCRETE WORKS SHALL BE M-30 AND FOR R.C.C. WORKS SHALL BE M-40 AS PER IRS CODE.
12. A SEPARATE LAUNCHING SCHEME OF SUPER STRUCTURE HAS TO BE SUBMITTED WHICH WILL BE APPROVED BY CBE BEFORE COMMENCEMENT OF LAUNCHING.
13. EXCAVATION FOR PILE CAP SHALL BE DONE ONLY IN PRESENCE OF AUTHORIZED RAILWAY REPRESENTATIVE TO ENSURE THE SAFETY OF RUNNING TRAINS. PROPER PRECAUTIONS SHALL BE TAKEN DURING EXCAVATION OF PILE FOUNDATION NEAR THE EXISTING RAILWAY TRACK IN CASE THE EXCAVATION TO BE DONE NEAR THE RAILWAY TRACK, THE SAME SHALL BE DONE UNDER BLOCK OF TRAFFIC.
14. ADDITIONAL LOAD TRANSFERRED FROM FUTURE TRACKS SHALL BE CONSIDERED WHILE DESIGNING OPEN FOUNDATION ON EITHER SIDE.
15. DURABILITY OF RCC WORKS: CONCRETE RESISTANCE AGAINST CORROSION: THE REINFORCEMENT BARS SHALL BE PROVIDED WITH SUITABLE PROTECTIVE COATING DEPENDING UPON THE ENVIRONMENTAL CONDITION AS PER PARA 7.15 OF CONCRETE BRIDGE CODE CORRECTION SL NO 2 DT. 28.04.2000
16. ROB SHALL BE PROVIDED WITH ADEQUATE DRAINAGE SYSTEM AS PER LOCATION DECIDED BY THE RAILWAY SHALL BE PROVIDED BY SPONSORING ROAD AUTHORITY AND MAINTAINED DURING THE PERIOD OF CONSTRUCTION OF THE PROJECT.
17. THE DESIGN DESIGN OF ROB SHALL BE PROOF CHECKED ITSHIT ONLY.
18. LONG DURABILITY AND CORROSIVE PROTECTION SHOULD BE APPLIED TO THE STEEL STRUCTURE.
19. INSPECTION LADDER AND PLATFORM FOR INSPECTION OF BEARING SHOULD BE PROVIDED AT EVERY PIER.
20. ALL DRAWINGS AND DESIGNS SHALL BE SUBMITTED IN TRIPLICATE (TWO HARD COPY AND ONE SOFT COPY DULY APPROVED BY AUTHORITIES SHALL BE HANDED OVER TO RAILWAY ENGINEER IN CHARGE.
21. BEFORE OPENING OF ROB (WITHIN RAILWAY PORTION) FOR ROAD TRAFFIC, APPROVAL OF RAILWAY ENGINEER IN CHARGE SHALL BE OBTAINED BY ROAD AUTHORITY.
22. GRADE OF CONCRETE (MINIMUM)
    - 22.1. RCC PIER : M-35
    - 22.2. RCC PIER CAP : M-40
    - 22.3. RCC ANTI CRASH BARRIER : M-40
    - 22.4. RCC DECK SLAB : M-40
    - 22.5. RCC WALL : M-40
    - 22.6. BEARING PEDESTAL : M-40
23. PCE SANCTION SHALL BE OBTAINED BEFORE LAUNCHING OF GIRDER.
24. DESIGN LIFE OF ROB SHALL BE 100 YEARS.
25. THE BRIDGE SHALL BE DESIGNED FOR 70R UNREELED AND ACLASS LWE LOADS AS PER IRC A-2017, AND FOR SPECIAL 360T VEHICLE GIVEN IN IRC 6:2017.
26. ROB SHALL BE DESIGNED AS PER RDSO/B-11779/1-5-775 -774, DATED 12-10-2011. TRACK LEVEL SHOULD BE FROZEN.
27. NO WORK SHOULD BE TAKEN UP IN HAND TILL PROOF CHECKED DESIGN DRAWING WITHIN RAILWAY PORTION AREA APPROVED BY RAILWAY.
28. STRUCTURAL STEEL OF COMPOSITE GIRDERS CONFORM TO IS: 2062-2011 E350 BR.OTHERWISE SPECIFIED IN DRAWING.
29. ROAD TRAFFIC SHALL BE DIVERTED AT SUITABLE LOCATION IN CONSULTATION WITH ROAD AUTHORITY.
30. DURING EXECUTION OF WORK ANY SAT CABLE FOUND THEN SHIFTING OF CABLE WORK TO BE DONE ON PRIORITY.
31. IN CASE OF SAT CABLE DAMAGE/ANY PENALTY SHOULD BE IMPOSED AS PER RAILWAY BOARD'S LETTER NO. 2017/SIG/SAT/1 DATED 26.06.2017.
32. FOR SUPERSTRUCTURE REFER FOLLOWING DRAWING
    - 32.1. 30.0m SPAN COMPOSITE GIRDER - REFER RDSO DRG. NO. B-RDSO/B-11779 SERIES
33. THE CONTRACTOR SHALL ENSURE THAT BEFORE LAYING ANY NEW WEARING COAT IN FUTURE THE FINAL DECISION FOR TYPE OF FOUNDATION REST WITH THEM AND IS TO BE DECIDED BY THEM.
34. BEFORE EXECUTION OF WORK CONCERNED SD/ESI AND ADSTE ,TO BE INFORMED WELL IN ADVANCE.
35. THE CONTRACTOR SHALL ENSURE THAT BEFORE LAYING ANY NEW WEARING COAT IN FUTURE EXISTING ALIGNMENT OF VARIOUS LEVELS INCLUDING RAIL LEVEL,FORMATION LEVEL, FOUNDATION LEVEL, BORE LOG DATA, TYPE OF SOIL, BEARING CAPACITY ETC. CLEAR DIRECTION IN CASE THERE IS APPREHENSION OF DAMAGE TO NEARBY STRUCTURE ETC.
36. CLEAR DIRECTION TO EXECUTIVE DEPARTMENT TO CONSULT/ CONTACT/MATE TO OTHER CONCERNED DEPARTMENTS. CLEAR RESPONSIBILITY OF OTHER EXECUTIVE DEPARTMENTS TO BE DEFINED FOR CONSULTATION/MITIGATION TO BE CARRIED OUT.
37. CHAINAGE AND CURVE DETAILS OF ALIGNMENT HAS BEEN TAKEN ALONG THE CENTER LINE OF THE BRIDGE.
38. PROVISION OF CLAMPS IN THE SUPERSTRUCTURE FOR A.C. TRACTION WIRE TO BE MADE IN CONSULTATION WITH RAILWAY ENGINEER IN CHARGE.
39. REPRESENTATIVE OF TELECOM AND SIGNALLING DEPT. SHALL BE MADE AVAILABLE BEFORE COMMENCEMENT OF PROPOSED WORK IN THE VICINITY OF SIGNAL AND TELECOM CABLE.
40. ALL TEMPORARY WORKS SHALL BE DESIGNED BY CONTRACTOR IN CHARGE DURING THE EXECUTION WORK. TEMP ENGINEERING INDICATIONS WILL BE PROVIDED AS PER CLR 15.06.04 & CP 15.06.23
41. PROTECTIVE SCREENS TO BE PROVIDED FOR EACH TRACK DURING EXECUTION OF SUPERSTRUCTURE.
42. ADEQUATE NO. OF DRAINAGE IF REQUIRED SHOULD BE PROVIDED BELOW FOOTPATH SLAB WITH THE APPROVAL OF ENGINEER-IN-CHARGE.
43. ENGINEER-IN-CHARGE WILL ENSURE SAFETY OF EXISTING ROAD, WHEN WORKING CLOSE TO IT, BY PROVIDING ADEQUATE SAFETY MEASURE SUCH AS SHEET PILES, BARRICADES, ROAD SIGN ETC IN CONSULTATION WITH TRAFFIC DEPARTMENT.
44. ROAD AUTHORITY SHOULD ENSURE THAT BEFORE LAYING ANY NEW WEARING COAT IN FUTURE EXISTING WEARING COAT SHOULD BE REMOVED FULLY.
45. FABRICATION SHALL BE DONE BY RDSO APPROVED FIRM & INSPECTION SHALL BE DONE IN ACCORDANCE TO RAILWAY BOARD LETTER NO. 2017/SIG/2-ISSBRGIRDER DATED 26.08.2017.
46. THE DESIGN AND DRAWING OF ALL THE SUPERSTRUCTURE AND SUB STRUCTURE SHALL BE ENSURED DURING THE DESIGN AND EXECUTION STAGES AS PER CENTRAL LETTER No M-941-BR, PCE,CH DATED 10.10.2018
47. ALL TECHNICAL RECORD I.e. CUBE STRENGTH DETAILS ETC, SHALL BE HANDED OVER THE RAILWAY ENGINEER IN CHARGE.
48. THE GAD WILL NEED TO BE REVALIDATED FOR MATCH PREVAILING GROUND CONDITIONS. IF THE WORK IS NOT COMMENCED WITHIN 2 YEARS OF COMMENCEMENT.
49. ROB SHALL BE PROVIDED WITH 1.5M WIDE FOOTPATH 1.5M BEYOND RAILWAY LAND BOUNDARY SHALL BE PROVIDED ON BOTH APPROACHES OF ROB AS PER IRC:103:2012.
50. ROB DRAWINGS AS PER TYPE PLAN NO. TP-BR-SD/HQ-2022.
51. ROB DESIGN AND DRAWINGS FOR APPROVAL OF RAILWAY SHALL BE SUBMITTED FOR APPROVAL AT CBE OFFICE.
52. PROTECTION SCREEN AS PER RDSO DRG NO. RT/CIVIL/
53. FABRICATION INSPECTION OF GIRDERS SHALL BE AS PER BS-130, JUNE 2021.
54. ROB SHALL BE DESIGNED FOR SEISMIC ZONE-III AS PER IRS-CODE (LATEST APPLICABLE STRATA).
55. INTEGRITY TEST OF PILE FOR FOUNDATION OF RAILWAY SPAN SHALL BE CONDUCTED AS PER LATEST SPECIFICATIONS.
56. PROOF/ULTIMATE LOAD TEST OF PILE SHALL BE CONDUCTED AS PER LATEST IS SPECIFICATIONS.
57. PROVISION OF HEIGHT GAUGE AT ROB HAVING TOP TIE MEMBERS/RUB AS PER RAILWAY BOARD LETTER NO-2017/CE-II/LWMSC-DAM(LC) DATED: 02.01.2020.
58. THE TRAFFIC AND POWER BLOCKS ARE TO BE PROVIDED AS PER REQUIREMENT.

REFERENCES:

1. FOR DETAILS OF 30.0M COMPOSITE GIRDER REFER RDSO DRG.NO B-RDSO/B-11779 SERIES.
2. SUBSTRUCTURE (INDEX AND ABUTMENTS) AS PER DESIGN.
3. BEARINGS FOR RAILWAY SPANS AS PER RDSO DRG. NO. CBS-0015 OR CBS-0044.
4. BEARINGS FOR APPROACH SPANS AS PER IRC/MORTH SPECIFICATIONS.
5. MAINTENANCE OF DRAINAGE WILL BE DONE BY ROAD AUTHORITIES AFTER THE COMPLETION OF WORK.

TECHNICAL DETAILS

LATITUDE/LONGITUDE	:	19°48'58.37"N, 72°48'12.96"E
TRACK ON SINGLE / DOUBLE LINE	:	IR DOUBLE
GRADE OF ROAD AT APPROACHES	:	1:30(VAIPADAL), 1:30(KHATAD)
RAIL LEVEL	:	18.348m
FORMATION LEVEL ON APPROACHES	:	17.604m
GROUND LEVEL	:	16.121m(RP2)
VERTICAL CLEARANCE	:	6.325m
STANDARD OF LOADING	:	2 LANE OF CLASS A OR 1 LANE OF 70(R) WITH 1 LANE OF CLASS A OR IRC SV LOADING
TYPE OF SUPER-STRUCTURE	:	COMPOSITE GIRDER
TYPE OF BEARING	:	ELASTOMERIC BEARING (AS PER RDSO DRG.)
TYPE OF SUB-STRUCTURE	:	RCC WALL TYPE PIER
TYPE OF FOUNDATION	:	PILE FOUNDATION
SEISMIC ZONE	:	ZONE-III
WIND ZONE	:	WIND SPEED 44 M/S
EXPOSURE CONDITION	:	MODERATE
TRACK ON STRAIGHT ON CURVE	:	STRAIGHT
CLEAR COVER TO REINF.	:	75mm (PILE FOUNDATION)

CODES AND SPECIFICATION - REFERENCE OF IRS CODES, IS CODES, RIC CODES WITH THEIR PREFERENTIAL ORDER AND SPECIFICATION TO BE FOLLOWED AND SHOULD BE CLEARLY MENTIONED.
LATEST CODAL PROVISIONS SHALL BE FOLLOWED.

LIST OF IRS CODES:-

1. IRS-M13 BRIDGE CODE
2. IRS-B1-2000 FOR STEEL FABRICATION
3. IRS-110 R - INSPECTION OF STEEL BRIDGE GIRDERS
4. IRS-B2-2000 GUIDELINES FOR AVOIDING SKEW BRIDGES
5. IRS-113 GUIDELINES FOR PROVIDING INSPECTION FACILITIES
6. IRS SCHEDULE OF DIMENSIONS
7. IRS SEISMIC CODE
8. REPORT NO.BS-111- GUIDLINES FOR USE OF HSFG BOLT

IRC CODES:

1. IRC:6-LOAD & LOAD COMBINATION FOR ROAD BRIDGES
2. IRC:22 COMPOSITE CONSTRUCTION FOR ROAD BRIDGES (LIMIT STATE DESIGN)
3. IRC:24 STEEL ROAD BRIDGES (LIMIT STATE METHOD)
4. IRC:78 FOUNDATION & SUBSTRUCTURE FOR ROAD BRIDGES
5. IRC:112 CODE OF PRACTICE FOR CONCRETE ROAD BRIDGES.

SIGNATURE BLOCK

CE-C-I-CCG	
DYCE-C-CCG	
ANEN-C-CCG	Mahendra Kumar — Digitally signed by Mahendra Kumar — Date: 2024.05.23 17:52:54 +05'30'
SSE-C-W-BV1	PRAMOD KUMAR RANA — Digitally signed by PRAMOD KUMAR RANA — Date: 2024.05.23 17:54:04 +05'30'

PINK BOOK ITEM NO: **31 OF PB 2024-25/NR**

DRG. NO.: DY.CE/C/CCG/ /D-VADHAVAN PORT

TITLE: **GENERAL ARRANGEMENT DRAWING**

CONNECTING RAILWAY: **WESTERN RAILWAY**

DIVISION: MUMBAI — SECTION: VR - ST SECTION

PROJECT: NEW DOUBLE LINE BETWEEN VADHAVAN PORT AND NEW PALGHAR STATION (22.23 KM)

PROPOSAL FOR CONSTRUCTION OF 2 LANE ROAD OVER BRIDGE (ROB) NO:66 AT CH:5229.02 AS 2 X 30.0 m COMPOSITE GIRDER IN BETWEEN VPPL ISOLDING YARD AND VAHOR STATION.

RAIL LOADING STANDARD : 25 T AXLE LOADING IRS (2008)

CONSULTANT :

SATRA Services and Solutions Private Limited
#401, Capital Park,Hiranger Garden Line,Hi-Tech City, Madhapur, Hyderabad, Telangana, India-500081
Ph(O):+91 4023764992, e-mail:info@satraghyd.in

SHEET NO.: **SHEET 1** — SHEET SIZE: **A2 (1300 X 420)**

SCALE : **1:1000 (UNLESS OTHERWISE SPECIFIED)** — ISSUE DATE : **16.05.2024**

Signature Not Verified
Digitally signed by SATRA
Date: 23.05.2024 17:55:05 IST
Reason: SIGNED