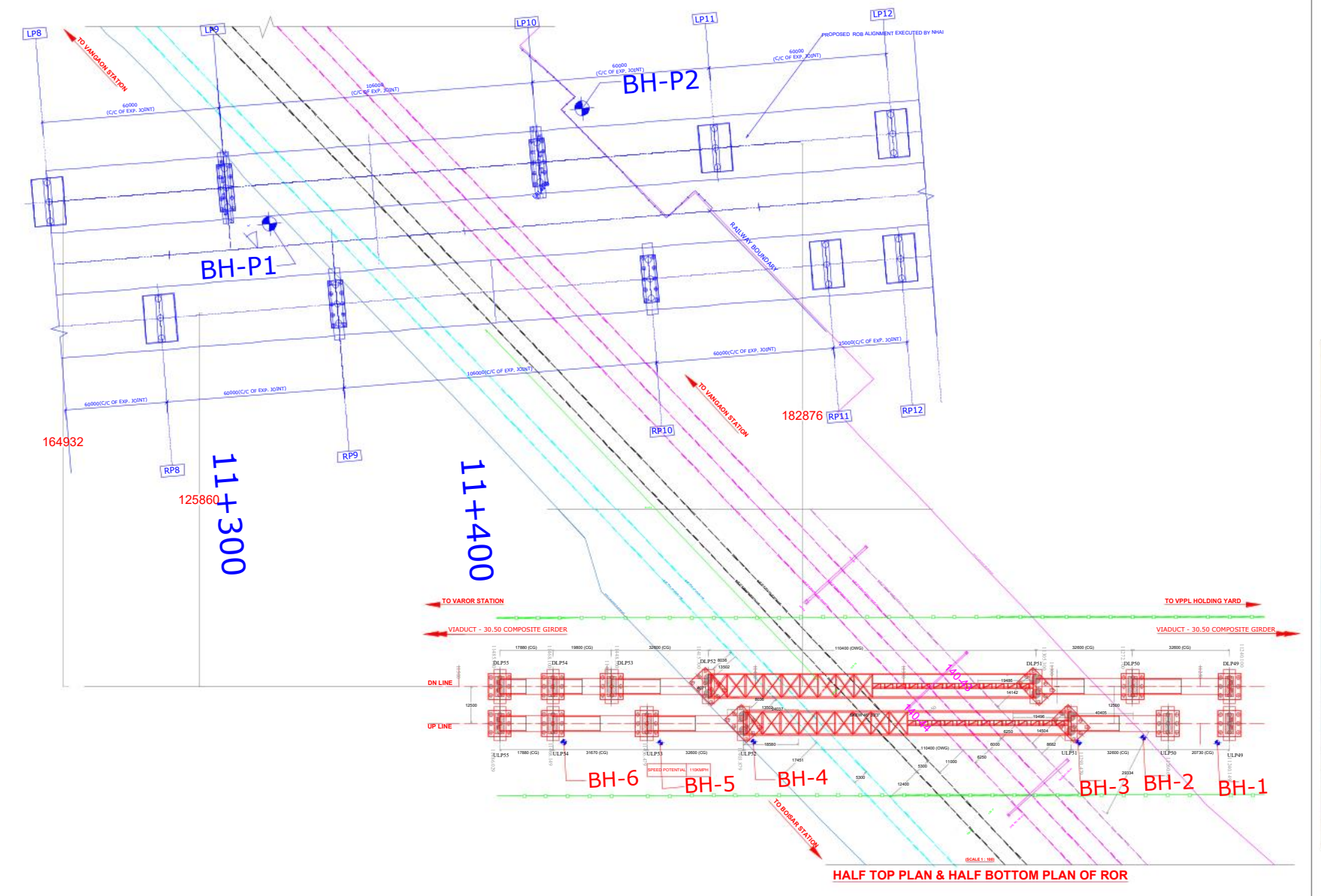
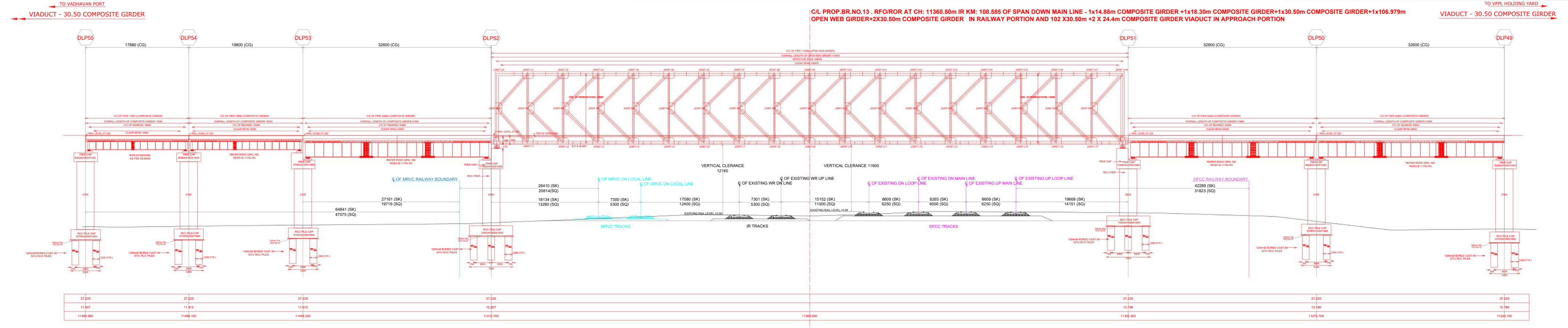
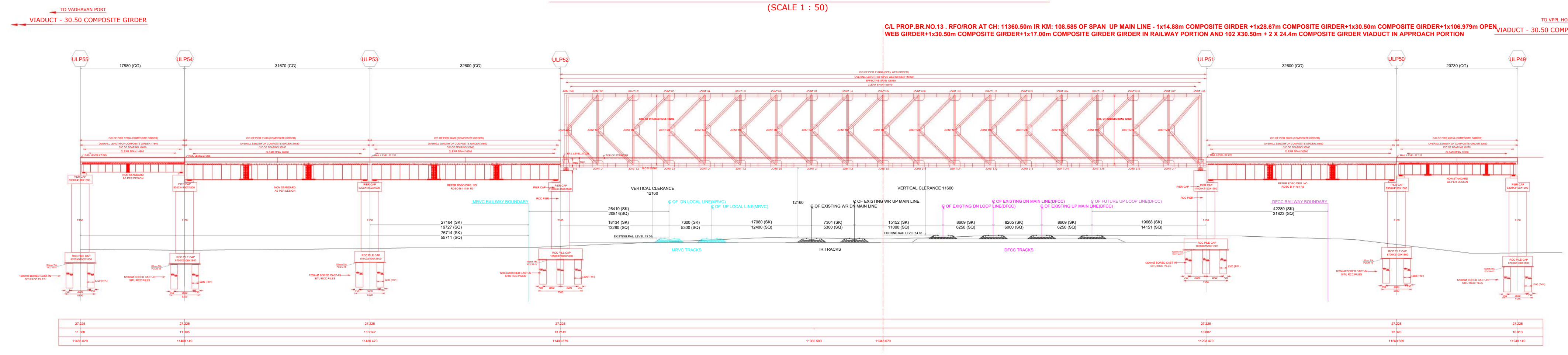


TO PROPOSED VADHAVAN PORT
TO NH48
Via-Duct Start at Ch:9.64km
ULP41
ULP40
ULP39
ULP38
ULP37
DN LINE
UP LINE
11 KM

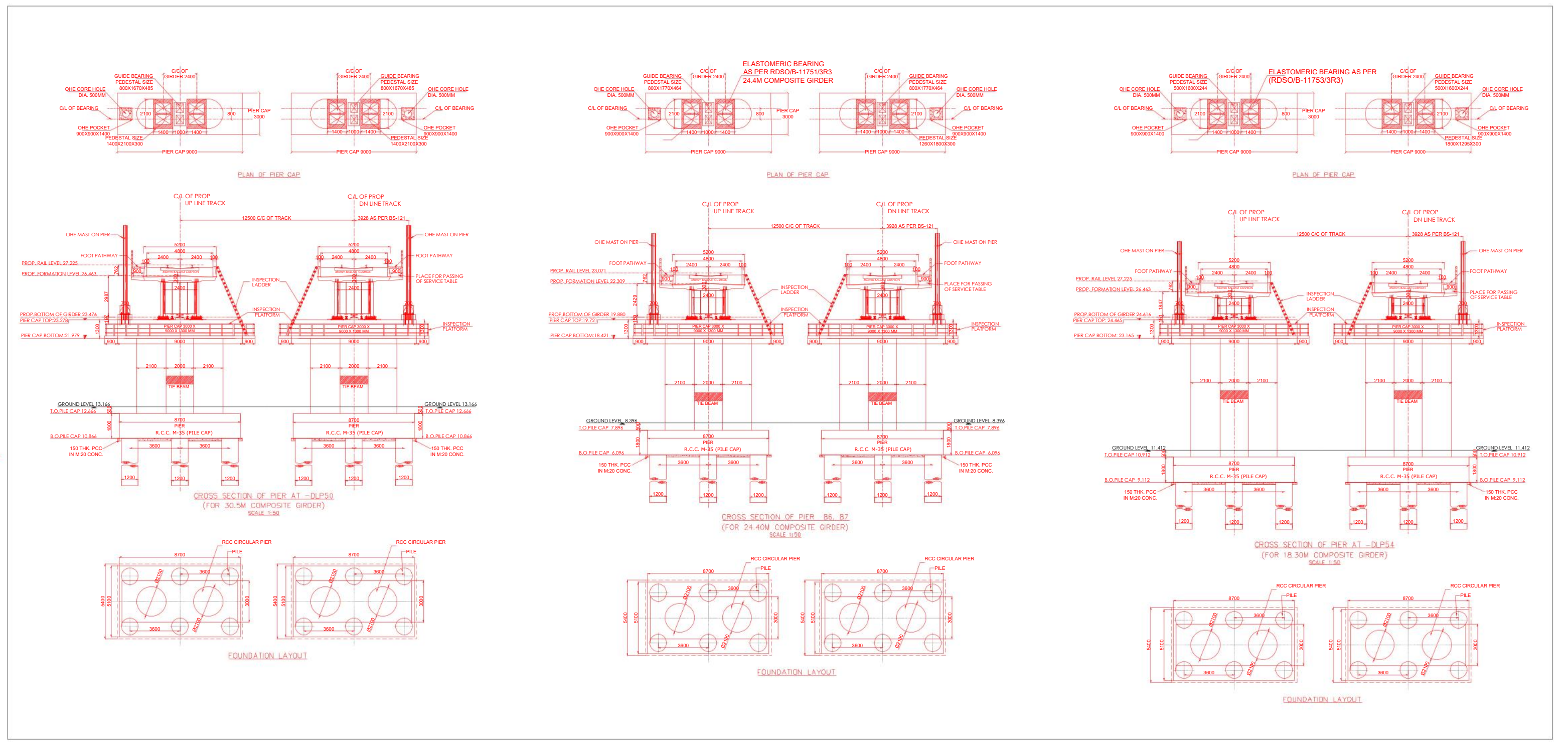
KEY PLAN
SCALE-1:300



SECTIONAL ELEVATION AT CENTER LINE OF PROPOSED ROR - DOWNLINE
(SCALE 1 : 50)

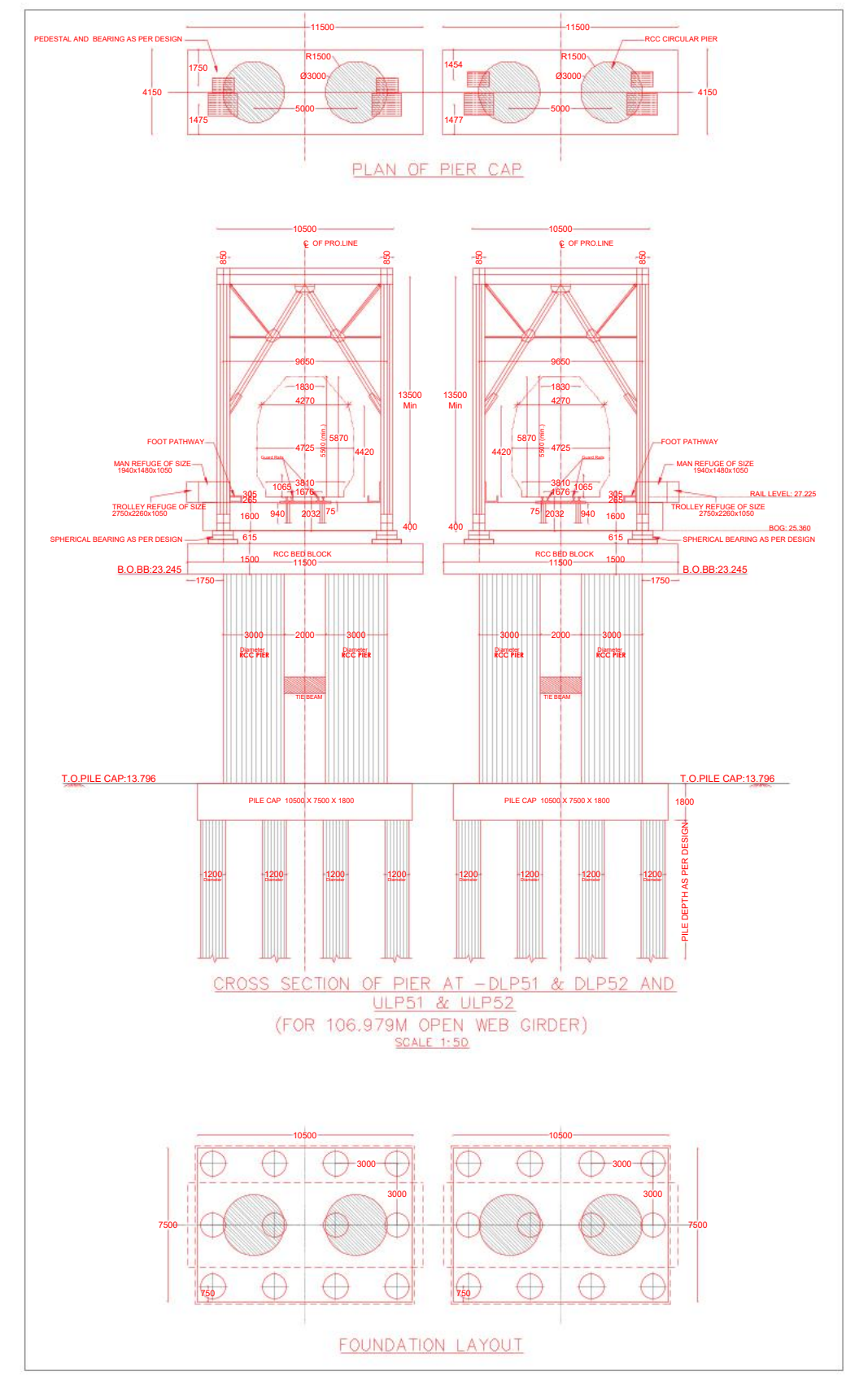

C/L PROP.BR.NO.13 . RFO/ROR AT CH: 11360.50m IR KM: 108.585 OF SPAN UP MAIN LINE - 1x14.88m COMPOSITE GIRDER +1x28.
WEB GIRDER+1x30.50m COMPOSITE GIRDER+1x17.00m COMPOSITE GIRDER GIRDER IN RAILWAY PORTION AND 102 X30.50m +
ULP53
ULP52
ULP51
32600 (CG)
C/C OF PIER 110400 (OPEN WEB GIRDER)
OVERALL LENGTH OF OPEN WEB GIRDER 110400
EFFECTIVE SPAN 108480
CLEAR SPAN 106979

SECTIONAL ELEVATION AT CENTER LINE OF PROPOSED ROR - UPLINE
(SCALE 1 : 50)



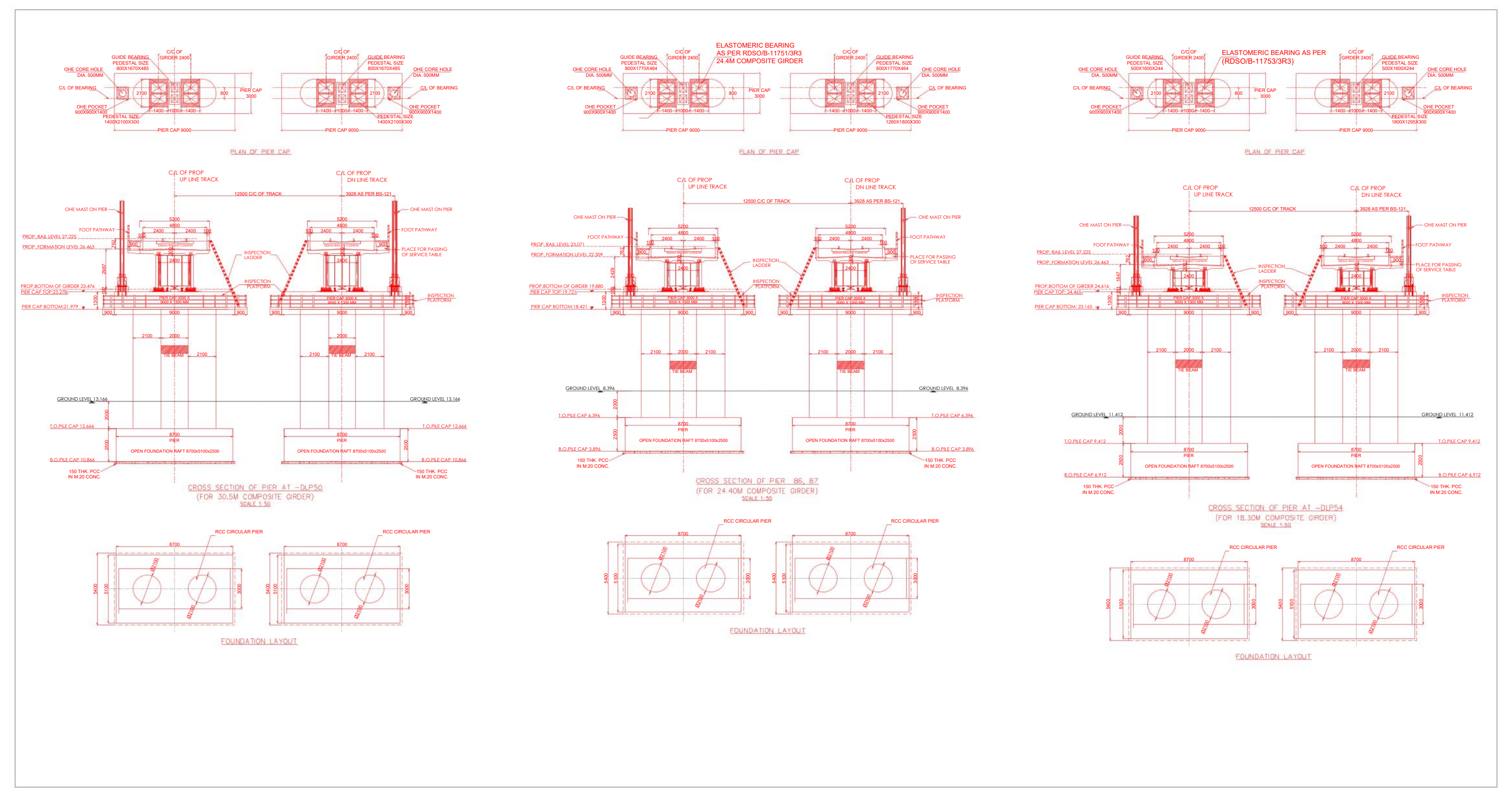
TENTATIVE

OPTION-01



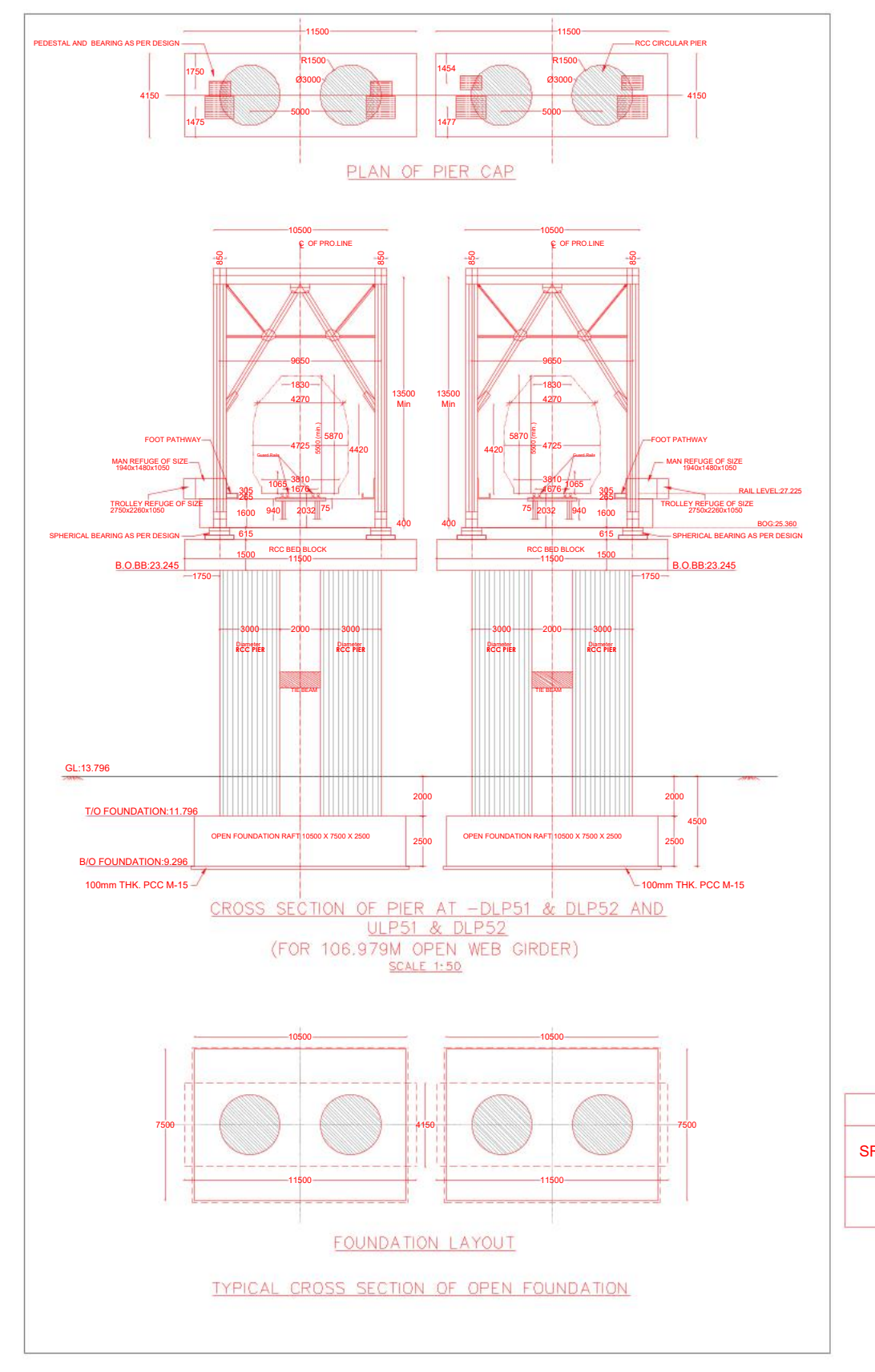
TENTATIVE

OPTION-01



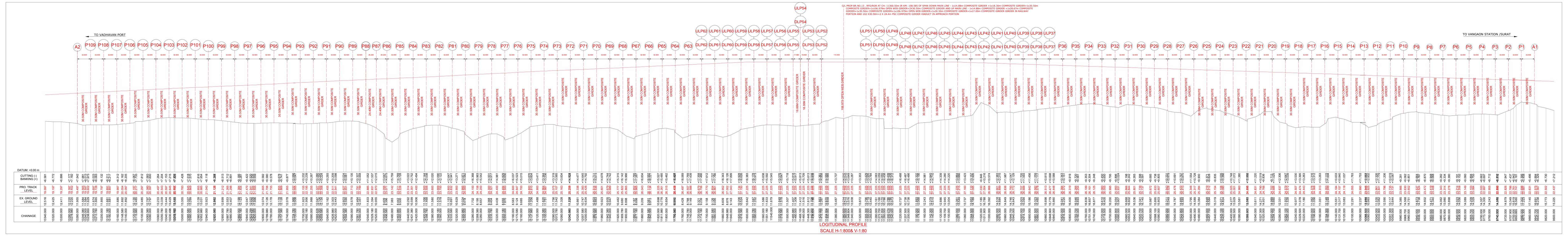
TENTATIVE

OPTION-02



TENTATIVE

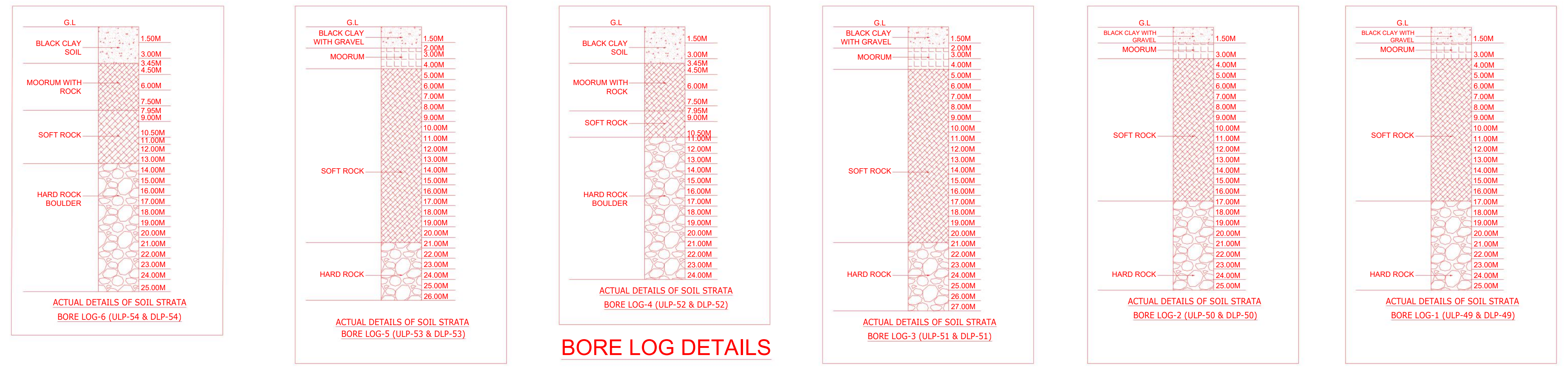
OPTION-02



LONGITUDINAL PROFILE

LEGEND		
1.	A	ABUTMENT
2.	P	PIER
3.	ULP	UP LINE PIER
4.	DLP	DN LINE PIER

SR. NO	PROPOSED TRACK STRUCTURE	
1.	RAILS	60 KG.
2.	WIDER SLEEPER TYRE	PRC
3.	SLEEPER DENSITY	1660/KM
4.	FASTENING	ELASTIC
5.	BALLAST CUSHION	350MM



BORE LOG DETAILS

LEGENDS

EXISTING WORK	⬛
PROPOSED WORK	🟥
PROP. VPPL LINE	🟥
PROPOSED UP L/DN L LINE(MRVC)	🟦
EXG. IR LINE	⬛
EXG. DFCC LINE	🟪
PROP.DFCC FUTURE LINE	🟪
PROP.DFCC LOOP LINE	🟦
MRVC BOUNDARY LINE	🟦
EXG. DFCC BOUNDARY LINE	🟪
PROPOSED VPPL BOUNDARY	🟩
PROPOSED ROB EXECUTED BY NHAI	🟦

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. TYPE OF FOUNDATION SHALL BE DECIDED BY ENGINEER-IN-CHARGE TO SUIT THE SOIL STRATA MET WITH AT THE SITE.
4. VERTICAL CLEARANCE FROM THE HIGHEST RAIL LEVEL TO BOT. OF GIRDER SHALL NOT BE LESS THAN 8.525M IN CASE OF DFC/FEEDER/DOUBLE STACK CONTAINER ROUTE.
5. DURING CONSTRUCTION OF ROR ALL THE EXISTING STRUCTURE/TRACK SHOULD BE PROTECTED BY GUARD RAIL AS PER STANDARD DRAWING.
6. SHAPES & SIZE OF GIRDERS, ELASTOMERIC BEARING, BEARING PEDESTALS, SHOWN IN DRAWING ARE TENTATIVE AND ARE SUBJECTED TO CHANGES IN FINAL DESIGN AND DRAWING.
7. SHAPES AND DIMENSIONS OF PIERS, PIER CAP, PIER SHAFT AND FOOTING ARE TENTATIVE AND ARE SUBJECTED TO CHANGES IN FINAL DESIGN AND DRAWING.
8. ONLY CONTROLLED CEMENT CONCRETE MIX IS, TO BE PROVIDED. GRADE OF CONCRETE FOR MASS CONCRETE AND FOR R.C.C WORK SHALL NOT BE LEANER THAN M-20 AND M-25 RESPECTIVELY.
9. A SEPARATE LAUNCHING SCHEME OF SUPER STRUCTURE HAS TO BE SUBMITTED WHICH WILL BE APPROVED BY CBE BEFORE COMMENCEMENT OF LAUNCHING.
10. EXCAVATION OF ROR WORK 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 TRACK,PROPER SHORING SHALL BE DONE TO PROTECT SLOPE FAILURE OF SOIL.
11. ADDITIONAL LOAD TRANSFERRED FROM FUTURE TRACKS SHALL BE CONSIDERED WHILE DESIGNING OF FOUNDATION ON EITHER SIDE.
12. INSPECTION LADDER AND PLATFORM FOR INSPECTION OF BEARING SHOULD BE PROVIDED FOR EVERY PIER.
13. REFERENCE CODE:

13.1. IRS BRIDGE RULES
13.2. IRS CONCRETE BRIDGE CODE
13.3. IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE

14. GRADE OF CONCRETE (MINIMUM)

14.1.	RCC PIER	M:35
14.2.	RCC PIER CAP	M:35
14.3.	RCC ANTI CRASH BARRIER	M:40
14.4.	RCC DECK SLAB	M:45
14.5.	PILE, PILE CAP	M:35
14.6.	BEARING PEDESTAL	M:40

15. SEISMIC ZONE - III (MODERATE)
16. PCE SANCTION SHALL BE OBTAINED BEFORE LAUNCHING OF GIRDER.
17. AS PER RAILWAY BOARD LETTER NO. 2007/RE/161/5-FTS -774, DATED 12-10-2011. TRACK LEVEL SHOULD BE FROZEN.
18. NO WORK SHOULD BE TAKEN UP IN HAND TILL PROOF CHECKED DESIGN DRAWING WITHIN RAILWAY PORTION AREA APPROVED BY RAILWAY.
19. THE QAP BEARING AS PER RDSO FORMAT (CIRCULATED BY RDSO VIDE LETTER NO.CBS/PBEJ/reg. DATED 16.05.2014) SHALL BE ENSURED BY INSPECTING ENGINEER.
20. DURING EXECUTION OF WORK ANY S&T CABLE FOUND THEN SHIFTING OF CABLE WORK TO BE DONE ON PRIORITY.
21. IN CASE OF S&T CABLE CUTTING/DAMAGE,PENALTY SHOULD BE IMPOSED AS PER RAILWAY BOARD'S LETTER NO. 2003/TELE/RCIL/1 PT.IX DATED 24-06-2013.
22. FOR SUPERSTRUCTURE REFER FOLLOWING DRAWING

22.1. 106.7m SPAN - OPEN WEB GIRDER - NON-STANDARD - REFER RDSO DRG. NO. RDSO/B-17185/R & SERIES. (IT IS ONLY FOR REFERENCE IN ADOPTING THE STRUCTURAL LAYOUT, WHILE THE STRUCTURAL MEMBERS SHALL BE AS PER THE FINAL DESIGN AND DRAWINGS PROOF CHECKED BY IIT/NIT & APPROVED BY THE CONSTRUCTION DEPARTMENT)
22.2. 30.5m SPAN - COMPOSITE GIRDER - REFER RDSO DRG. NO. RDSO B-11754 R3 & SERIES.
22.3. 24.40m SPAN - COMPOSITE GIRDER - REFER RDSO DRG. NO. RDSO B-11751 R3 & SERIES.
22.4. 18.30m SPAN - COMPOSITE GIRDER - REFER RDSO DRG. NO. RDSO B-11753 R3 & SERIES.
22.5. 28.67m SPAN - COMPOSITE GIRDER - AS PER DESIGN.
22.6. 17.00m SPAN - COMPOSITE GIRDER - AS PER DESIGN.
22.7. 14.88m SPAN - COMPOSITE GIRDER - AS PER DESIGN.

23. BEFORE EXECUTION OF WORK CONCERNED SSE/SIG AND ADSTE TO BE INFORMED WELL IN ADVANCE.
24. DIRECTION TO FIELD ENGINEERS, BEFORE EXECUTION SHOULD BE MENTIONED CLEARLY. I.E VERIFICATION 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.
25. CLEAR DIRECTION TO EXECUTIVE DEPARTMENT TO CONSULTANT/INTIMATE TO OTHER CONCERNED DEPARTMENTS. CLEAR RESPONSIBILITY OF OTHER EXECUTIVE DEPARTMENTS TO BE DEFINED FOR CONSULTATION/INTIMATION TO OTHER DEPARTMENT.
26. CHAINAGE AND CURVE DETAILS OF ALIGNMENT HAS BEEN TAKEN ALONG THE CENTER LINE OF THE BRIDGE.
27. PROVISION OF CLAMPS IN THE SUPERSTRUCTURE FOR A.C. TRACTION WIRE TO BE MADE IN CONSULTATION WITH THE CONCERNED AUTHORITIES.
28. REPRESENTATIVE OF TELECOM AND SIGNALING DEPT. SHALL BE MADE AVAILABLE BEFORE COMMENCEMENT OF PROPOSED WORK IN THE VICINITY OF SIGNAL AND TELECOM CABLE.
29. SUITABLE SPEED RESTRICTION SHALL BE IMPOSED BY ENGINEER IN CHARGE DURING THE EXECUTION WORK. TEMP ENGINEERING INDICATORS WILL BE PROVIDED AS PER G.R 15.09(2)b+ S.P 15.09 (2).
30. PROTECTIVE SCREENS TO BE PROVIDED FOR EACH TRACK DURING EXECUTION OF SUPERSTRUCTURE.
31. FABRICATION SHALL BE DONE BY RDSO APPROVED FIRM & INSPECTION SHALL BE DONE IN ACCORDANCE TO RAILWAY BOARD LETTER NO: 2017/16/CE-III/BR/GIRDER DATED 26.05.2017.
32. SAFETY, RELIABILITY AND LONG-TERM DURABILITY OF THE OVERHEAD STRUCTURE SHALL BE ENSURED DURING THE DESIGN AND EXECUTION STAGES AS PER CENTRAL LETTER No.W.641.BR. POLICY DATED 10.10.2018
33. ALL TECHNICAL RECORD i.e. CUBE STRENGTH DETAILS ETC. SHALL BE HANDED OVER THE RAILWAY ENGINEER IN CHARGE.
34. THE STEEL GIRDER SHALL BE FABRICATED AND INSPECTED BY INSPECTION CELL OF RAILWAY OR THIRD PARTY INSPECTION AGENCY LIKE RITES, WRI, CEIL & KRCL AS ADVISED BY RAILWAY BOARD'S LETTER.

34.3. NO. 2017/16/CE-III/BR. GIRDER INSPECTION DATE 24/07/2019
34.4. NO. 2016/54/CE-III/BR./ RDSO MISC. DATED 15/7/2019

35. THE GAD WILL NEED TO BE REVALIDATED FOR MATCH PREVAILING GROUND CONDITIONS. IF THE WORK IS NOT COMMENCED WITHIN 2 YEARS OF COMMENCEMENT.
36. QAP OF BEARING AND EXPANSION JOINT OF ROR SHALL BE SUBMITTED FOR APPROVAL AT CBE OFFICE.
37. PROTECTION SCREEN AS PER RDSO DRG NO. ETI/C/0068.
38. FABRICATION INSPECTION OF GIRDERS SHALL BE AS PER BS-130, JUNE 2021.
39. M.S. LINERS IN PILE SHALL BE PROVIDED UP TO SUITABLE DEPTH (I.E. NON-COLLAPSIBLE STRATA).
40. LOAD TEST OF PILE FOR FOUNDATION OF RAILWAY SPAN AND APPROACH SPANS SHALL BE CONDUCTED AS PER LATEST SPECIFICATIONS AND SHALL BE AS PER IS-2911, (PART-IV)-1985.
41. INITIAL AND ROUTINE LOAD TEST OF PILE SHALL BE CONDUCTED AS PER LATEST IS SPECIFICATIONS.
42. THE TRAFFIC AND POWER BLOCKS ARE TO BE PROVIDED AS PER REQUIREMENT
43. SUBSTRUCTURE TO BE DESIGNED & CONSTRUCTED FOR 25 MT AXLE LOAD OF 2008.
44. OWG SHALL CONFIRM TO RELEVANT RDSO STANDARD DRAWING MODIFIED FOR SUITABLE CLEARANCE 2X25 KV HIGHRISE OHE PORTION SUITS FOR DOUBLE STACK CONTAINER.
45. STAINLESS STEEL BARS HAVING GRADE SS 500/550 AS PER DESIGNER APPROVAL SHOULD BE USED CONFORMING IS 16651 - 2017 WITH LATEST AMENDMENT.
46. PAINTING OF NEW STEEL OF ROB SAND BLASTING OF STEEL GIRDER/MEMBER METALIZING AND PAINTING OF STEEL COMPONENTS COMPLETE WITH APPROVED ALUMINUM / ZINC-METAL FOLLOWED BY PROTECTIVE COATING PAINTING AS IRBM 1998 OF PARA-218.
47. GRADE OF STRUCTURAL STEEL OF COMPOSITE GIRDERS SHALL CONFIRM TO CORRESPONDING STANDARD DRAWING OF RDSO WITH IS : 2062-2006 OTHERWISE SPECIFIED IN DESIGN .
48. ALL NON-STANDARD SUPER STRUCTURE & SUBSTRUCTURE SHALL BE PROOF CHECKED BY IIT/NIT AND APPROVED BY CONSTRUCTION ORGANIZATION.
49. FOR ADOPTING NON STANDARD OWG, RAILWAY BOARD APPROVAL IS TO BE OBTAINED AS PER RAILWAY BOARD LETTER NO-2022/19/CE-III/BR/GIRDER INSPECTION, DT-18.10.2024 BEFORE EXECUTION OF WORK.

NOTES FOR ELECTRICAL:

1. ELECT(P) CABLES AND LT PANELS TO BE PROTECTED/RELOCATED BY EXECUTING AGENCY BY ITSELF DURING EXECUTION OF THE WORK.
2. CONCERNED SSE/P TO BE INFORMED DURING EXECUTION OF WORK.

OPR NOTES :

a) TRAFFIC BLOCK WILL BE GRANTED AS PER MARGIN & CONDITION PERMITS.

a) TWO WILL HAVE TO BE PLANNED FOR THIS WORK IF THE BLOCK PERIOD IS BEYOND MARGIN.

TRD NOTE :

1. UTILITY SHIFTING AND MODIFICATION OF TRD ASSETS SHALL BE DONE BY DY.CEE/C/CCG

S&T NOTES :

1. ADSTE/BL,SSE/SIG/DRD, SSE/TELE/M/BL,& RCIL AUTHORITY TO BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
2. S&T AND OFC CABLES IF IN INFRINGEMENT AT PROPOSED SITE OF WORK. SHIFTING/PROTECTION OF CABLE TO BE DONE BY EXECUTING AGENCY BEFORE START OF WORK.
3. MANUAL DIGGING TO BE DONE FOR CABLE IDENTIFICATION FOR OPEN FOUDATION BEFORE EXCAVATION.
4. AS PER RAILWAY BOARD LETTER NO. 2021/TELE/5(2)/3-PART (1) 93425647), DATED 12/06/2023, IF ANY S&T AND OFC CABLE IS DAMAGED DURING EXECUTION OF WORK, A FLAT PENALTY WILL BE IMPOSED ON CONTRACTOR.
5. S&T & RCIL sub estimates to be called after approval of plan to include in main estimate.

SR. NO	IMPORTANT INFORMATION	
1.	MAX DESIGN SPEED	110 KMPH
2.	SECTIONAL SPEED OF THE SECTION	110 KMPH
3.	RULING GRADIENT OF THE SECTION	1 in 200

PROPOSED INFRINGEMENT TABLE

SR.NO.	TYPE OF INFRINGEMENT	CHAPTER &ITEM	FROM CHAINAGE	TO CHAINAGE	TOTAL LENGTH	REMARKS
1	NIL					

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)

PROPOSED CONSTRUCTION OF BRIDGE RFO/RORBR.NO.13
AT CH:11360.50,IR KM:108/18-22 WITH SPAN CONFIGURATION OVER RAILWAY BOUNDARY
ON DN MAIN LINE :- 1X14.88(CG)+1X18.30(CG)+1X30.50(CG)+1X106.979(OWG) +2X30.50(CG)

AND UP MAIN LINE :-
1X14.88(CG)+1X28.67(CG)+1X30.50(CG)+1X106.979(OWG)+1X30.50(CG)+1X17.00(CG)

WITH 102 X 30.50M +2 X 24.4m COMPOSITE GIRDER APPROACH VIADUCT SPANS IN BETWEEN
BOISAR STATION AND VANGAON STATION .

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

RAIL LOADING STANDARD : 25 T LOADING-2008.

CONSULTANT :

SATRA Services and Solutions Private Limited
#401, Capital Park,Image Garden Lane,Hi-Tech City, Madhapur,
Hyderabad, Telangana - 500081, India.
Ph(O):+91 4027840040, e-mail:info@satragroup.in.

SHEET NO : **SHEET 1 OF 3**
SHEET SIZE : **A1 (950 X 594)**
SCALE : **1:1000 (UNLESS OTHERWISE SPECIFIED)**
ISSUE DATE : **24.01.2026**

SIGNATURE BLOCK

CBE-CCG	
DYCE-DESIGN-CCG	TANUJ GUPTA Digitally signed by TANUJ GUPTA Date: 2026.04.06 15:12:06 +05'30'
XEN-DESIGN-CCG	ADARSH SAPRE Digitally signed by ADARSH SAPRE Date: 2026.04.22 15:16:11 +05'30'
CE-C-I-CCG	MUKESH KUMAR Digitally signed by MUKESH KUMAR Date: 2026.03.06 08:21:00 +05'30'
DRM-MMCT	PANKAJ KUMAR SINGH Digitally signed by PANKAJ KUMAR SINGH Date: 2026.01.27 19:03:12 +05'30'
ADRM-I-MMCT	Madhusudan Singh
SRDEN-CO-MMCT	HIMANSHU SHARMA
SRDSTE-NORTH-MMCT	ANKIT LODHA Digitally signed by ANKIT LODHA Date: 2026.01.13 16:10:16 +05'30'
SRDEE-POWER-MMCT	Amitesh Kumar Srivastav Digitally signed by Amitesh Kumar Srivastav Date: 2026.01.13 15:39:21 +05'30'
SRDEE-TRD-NS-MMCT	CHANDRA SHEKHAR YADAV Digitally signed by CHANDRA SHEKHAR YADAV Date: 2026.01.16 12:08:23 +05'30'
SRDOM-MMCT	ARUN KUMAR MEENA Digitally signed by ARUN KUMAR MEENA Date: 2026.01.13 14:48:32 +05'30'
SRDEN-NORTH-MMCT	VIJENDRA KUMAR MEENA
ADEN/DRD	DINESH KUMAR Digitally signed by DINESH KUMAR
DYCE-C-DESIGN-COG	ANURAG SHARMA Digitally signed by ANURAG SHARMA Date: 2026.03.03 11:40:51 +05'30'
AXEN-C-DESIGN-CCG	ANIL KAMSEN BHASARKAR Digitally signed by ANIL KAMSEN BHASARKAR Date: 2026.03.03 11:55:36 +05'30'
SSE-C-DESIGN-I-CCG	YOGESH VASUDEV BAVISKAR Digitally signed by YOGESH VASUDEV BAVISKAR Date: 2026.03.03 16:48:29 +05'30'
SSE-C-DRG-I-CCG	MAHENDRA RAGHUNANDAN RATHORE Digitally signed by MAHENDRA RAGHUNANDAN RATHORE Date: 2026.03.03 14:20:05 +05'30'
DYCEE-C-CCG	Pushpendra Kumar Yadav Digitally signed by Pushpendra Kumar Yadav Date: 2026.01.13 10:53:59 +05'30'
DYCSTE-C-F-CCG	MEETHA LAL MEENA Digitally signed by MEETHA LAL MEENA Date: 2026.01.12 18:11:03 +05'30'
DYCE-C-CCG	HARISH MEENA Digitally signed by HARISH MEENA Date: 2026.01.30 15:14:42 +05'30'
AXEN-C-II-CCG	MAHENDRA KUMAR Digitally signed by MAHENDRA KUMAR Date: 2025.09.02 13:04:00 +05'30'
SSE-C-W-KLW	PRAMOD KUMAR RANA Digitally signed by PRAMOD KUMAR RANA Date: 2026.01.07 17:26:48 +05'30'
SSE-C-DRG-FI-CCG	SUDEEP KUMAR KOOVAPUZHA Digitally signed by SUDEEP KUMAR KOOVAPUZHA Date: 2026.02.17 12:58:16 +05'30'
JE-DRG-I-CCG	RANA SAGAR DIPAKKUMAR Digitally signed by RANA SAGAR DIPAKKUMAR Date: 2026.04.06 13:12:28 +05'30'

DRG. NO.: PCE-e-33328-DRM/1-D
DRG. NO.: CAO/C/CCG/ 39616 /VR-ST/ROR
DRG. NO.: DRM(B) No. 28457/15-F.

Signature Not Verified
Digitally signed by RAVINDER MARKANDEYA VEMULA
Date: 2026.06.05 11:42:26 IST
Reason: IREPS-CRIS
Location: New Delhi