

NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS OTHERWISE MENTIONED.
- DO NOT SCALE, FOLLOW WRITTEN DIMENSION ONLY.
- ALL RCC WORK IS TO BE DONE IN ACCORDANCE WITH LATEST NORTHERN RAILWAY SPECIFICATIONS & IRS CONC. BRIDGE CODE CORRECTED UPTO DATE.
- PARTICULAR CARE MUST BE TAKEN TO ENSURE THAT:
 - NO SAG OCCURS IN REINFORCEMENT DURING EXECUTION OF WORK.
 - MINIMUM 50mm CLEAR COVER TO REINFORCEMENT TO BE MAINTAINED IN FOUNDATION & PEDESTAL.
 - LAP LENGTH WHERE BARS OBTAINED ARE OF SHORTER LENGTH MUST NOT BE LESS 52 TIMES DIA OF BAR.
- ALL CEMENT CONC. IS TO BE MECHANICALLY MIXED AND VIBRATED.
- ALL BINDERS/STIRRUPS/LINKS SHALL BE EFFECTIVELY TIED WITH MAIN REINFORCEMENT BARS.
- VIBRATED CONTROLLED CONCRETE OF MINIMUM COMPRESSIVE STRENGTH OF 350 KG/Cm² (M-35) TO BE USED FOR ALL FOUNDATIONS.
- LAP LENGTH WHERE BARS OBTAINED ARE OF SHORTER LENGTH MUST NOT BE LESS THAN 52xDIA OF LARGER BAR.
- A SATISFACTORY LOAD TEST SHALL BE CARRIED OUT AS PER IS-1888-1982 TO ESTABLISH SAFE BEARING PRESSURE AT THE TIME OF EXECUTION. IN CASE SAFE BEARING PRESSURE OF SOIL IS FOUND LOWER THAN CALCULATED BASE PRESSURE, IT SHALL REFER TO DESIGN CONSULTANT.
- HSD/TMT BARS OF GRADE Fe-500D CONFORMING TO IS:1786-2000 SHALL BE USED.
- DURING CONCRETING OF FOUNDATION HOLDING DOWN BOLTS SHOULD BE PLACED PROPERLY AT DESIRED LOCATION.
- DEPTH OF FOUNDATION BELOW GROUND LEVEL SHOWN IN DRAWING FOR DIFFERENT FOUNDATIONS IS THE MINIMUM GRIP LENGTH OF POTTING IN THE GROUND. IF ANY LOCATION THE GROUND IS FOUND LOWER THAN THE GROUND LEVEL SHOWN IN THE DRAWING, THEN BOTTOM OF FOUNDATION SHOULD BE ACCORDINGLY LOWERED TO HAVE MINIMUM GRIP LENGTH.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWING OF FOUNDATION.
- FOR LOCATION OF H.D. BOLTS REFER THE DRAWING OF TRESTLE/COLUMN.

FOUNDATION LAYOUT PLAN
(SCALE 1:200)

PLAN
DETAIL OF TF-1
(SCALE 1:100)

PLAN
DETAIL OF TF-2
(SCALE 1:100)

SECTION A-A
(SCALE 1:100)

SECTION B-B
(SCALE 1:100)

SECTION C-C
(SCALE 1:100)

SECTION D-D
(SCALE 1:100)

TYPE OF FOUNDATION	FOUNDATION SIZE IN METER		BASE PRESSURE T/M ²	SAFE BEARING CAPACITY T/M ²
	LENGTH (L)	BREADTH (B)		
1.	17	9	14	15-21
2.	17	7	18	21-25
3.	18	6	21	MORE THAN >25

TYPE OF FOUNDATION 1, 2 & 3 SHALL BE BASED ON THE AVAILABLE SAFE BEARING CAPACITY AT SITE OF FOB. THERE SHALL BE NO CHANGE IN SIZE OF FOUNDATION AND REINFORCEMENT DETAILS W.R.T VARIATION IN S/C DISTANCE BETWEEN TRESTLE COLUMN FROM 2.5m TO 4.0m.

REFERENCE OF DRAWING:-

S.No.	DESCRIPTION	DRAWING NO.	SHEET NO.
1.	GENERAL ARRANGEMENT OF FOB	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	1 OF 9
2.	DETAILS OF MAIN GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	2 OF 9
3.	DETAILS OF MAIN GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	3 OF 9
4.	DETAILS OF SPLICE JOINT/CAMBER DIAGRAM	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	4 OF 9
5.	DETAILS OF CROSS GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	5 OF 9
6.	DETAILS OF MAIN COLUMN AND TRESSLE	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	6 OF 9
7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	7 OF 9
8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	8 OF 9
9.	DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	9 OF 9

STATUS OF DRAWING:

FOR APPROVAL

REVISIONS:

REVISION	DATE	DESCRIPTION	SIGNATURE
----------	------	-------------	-----------

B.B.S. TOMAR
(C.B.E.)

S.K. GARG
(DYCE/BD)

PUSHKAL RAI
(SSE/BR/DESIGN)

INDERJIT SINGH
(SSE/BR/DRG)

HQ. OFFICE

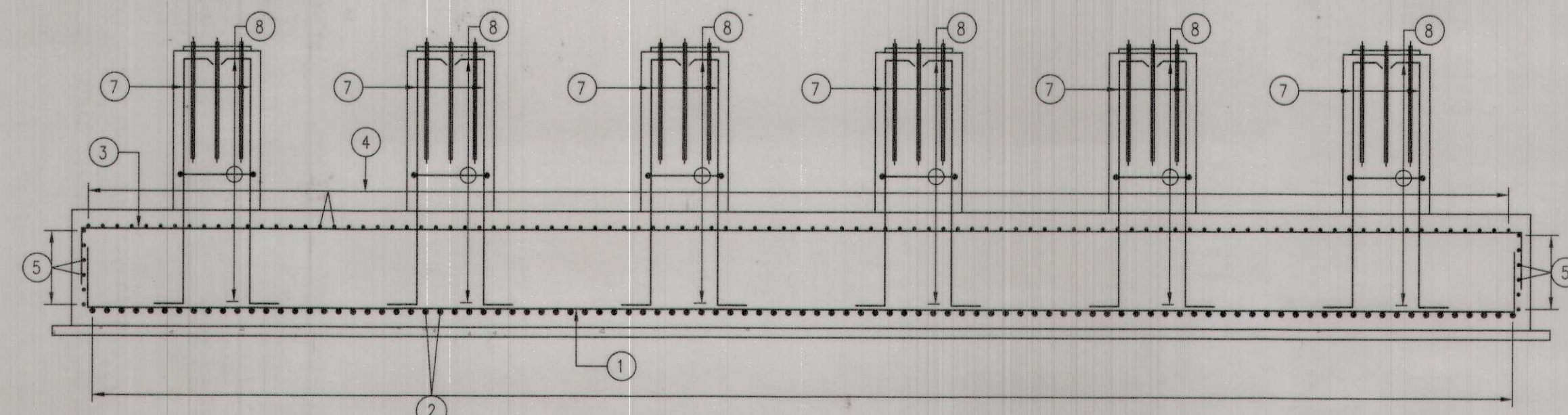
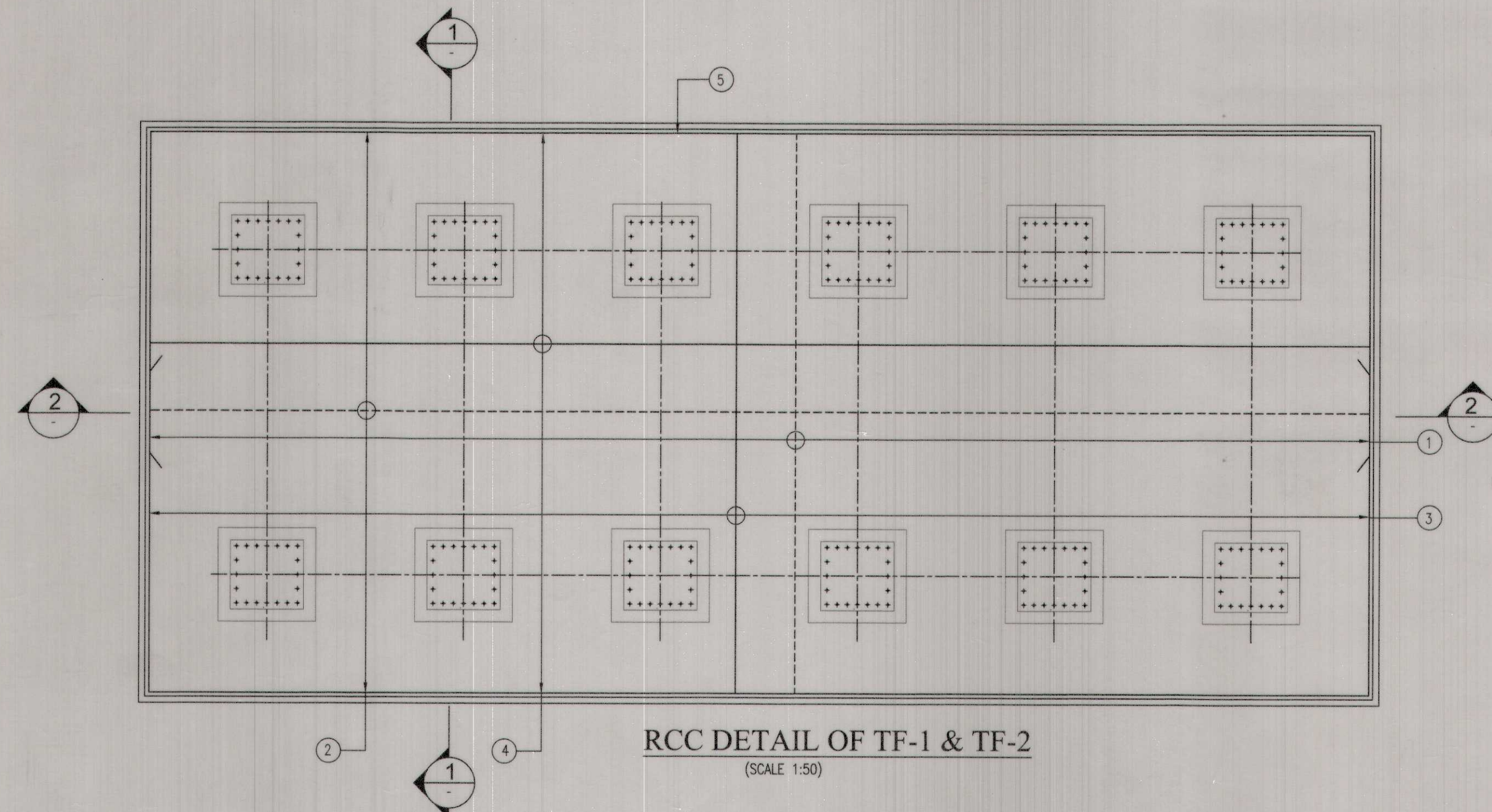
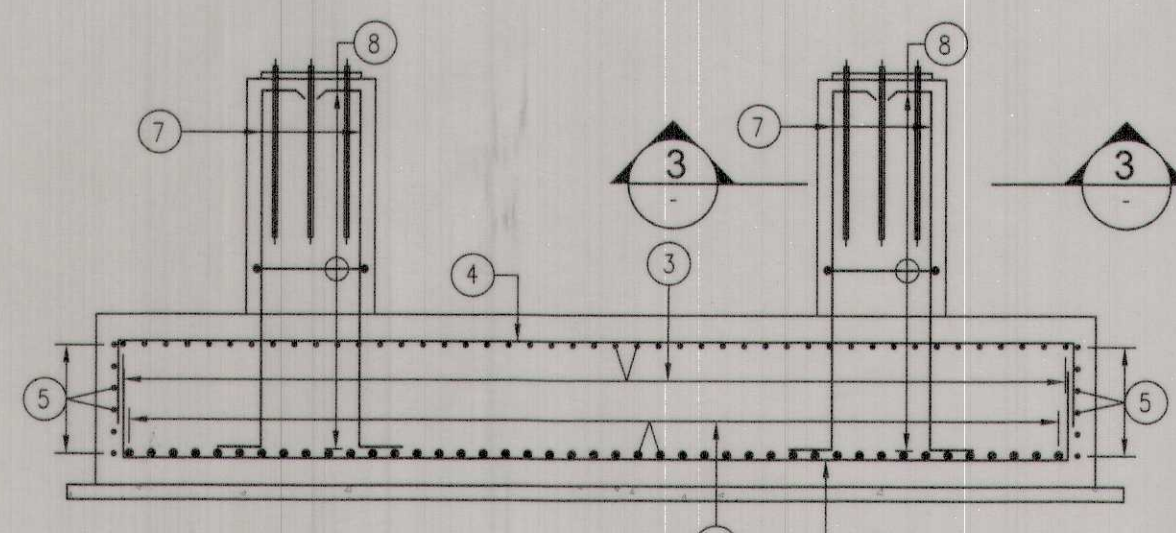
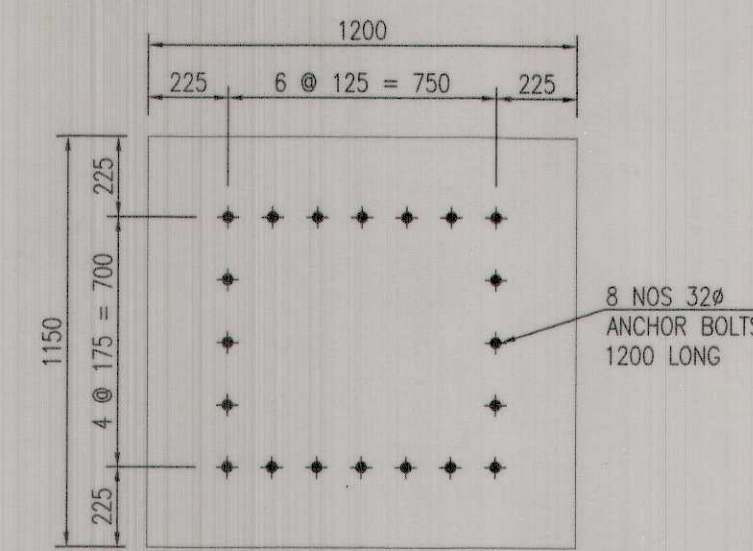
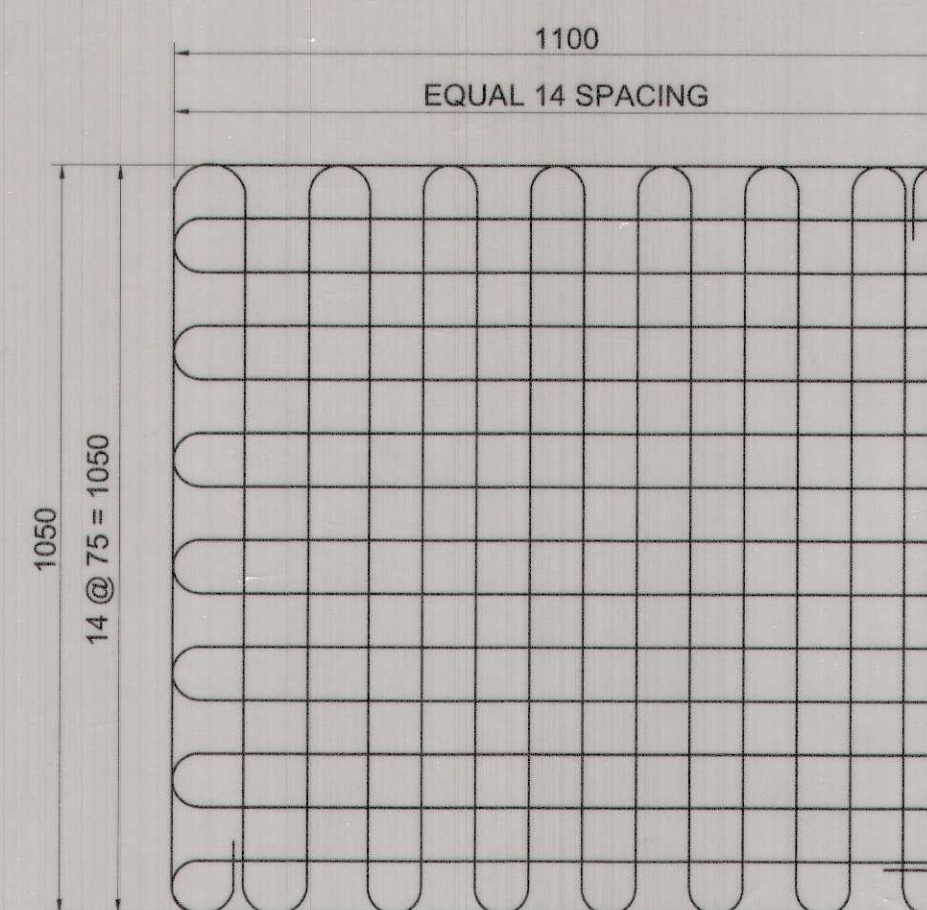
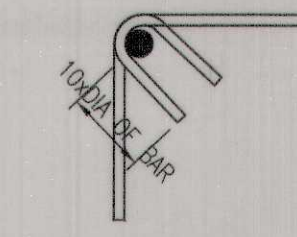
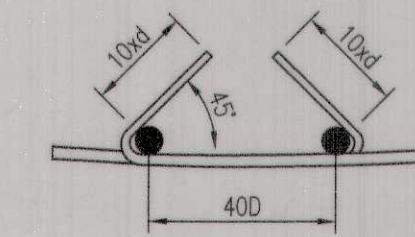
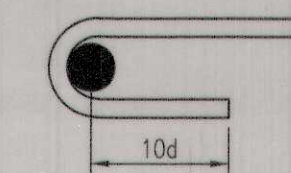
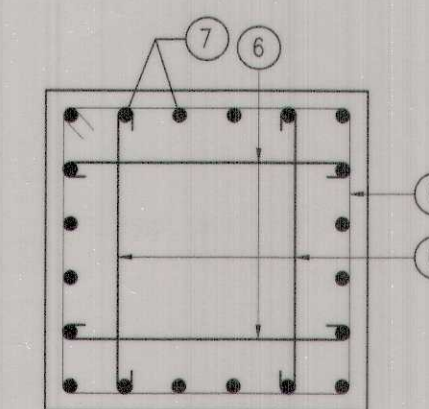
CLIENT:- NORTHERN RAILWAY

FOOT OVER BRIDGE
12.00 M WIDE
FOR SPAN 35 M TO 41.5 M
WITH COMPOSITE I-GIRDER AND
TUBULAR SECTIONS
FOUNDATION LAYOUT PLAN AND DIMENSIONAL
DETAIL OF MAIN TRESTLE FOUNDATION

SCALE

50	100	200	400
0	0	0	0
100	100	100	100
200	200	200	200
400	400	400	400

DRAWING NO:-

SECTION 2-2
(SCALE 1:50)RCC DETAIL OF TF-1 & TF-2
(SCALE 1:50)SECTION 1-1
(SCALE 1:50)PEDESTAL SHOWING
LOCATION OF H.D. BOLTS
(SCALE 1:20)MESH DETAIL
(SCALE 1:10)TYP. DETAILS OF HOOK
FOR STIRRUPS
(d IS THE DIA OF BAR)TYP. DETAILS OF HOOK
(d IS THE DIA OF BAR)TYP. DETAILS OF HOOK
FOR SINGLE TIE
(d IS THE DIA OF BAR)SECTION 3-3
(SCALE 1:20)

NOTES

- ALL DIMENSIONS ARE IN MILLIMETRES AND LEVELS IN METRES UNLESS OTHERWISE MENTIONED.
- DO NOT SCALE, FOLLOW WRITTEN DIMENSION ONLY.
- ALL RCC WORK IS TO BE DONE IN ACCORDANCE WITH LATEST NORTHERN RAILWAY SPECIFICATIONS & IRS CONC. BRIDGE CODE CORRECTED UPTO DATE.
- PARTICULAR CARE MUST BE TAKEN TO ENSURE THAT:
 - NO SAG OCCURS IN REINFORCEMENT DURING EXECUTION OF WORK.
 - MINIMUM 50mm CLEAR COVER TO REINFORCEMENT TO BE MAINTAINED IN FOUNDATION & PEDESTAL.
 - LAP LENGTH WHERE BARS OBTAINED ARE OF SHORTER LENGTH MUST NOT BE LESS 52 TIMES DIA OF BAR.
- ALL CEMENT CONC. IS TO BE MECHANICALLY MIXED AND VIBRATED.
- ALL BINDERS/STIRRUPS/LINKS SHALL BE EFFECTIVELY TIED WITH MAIN REINFORCEMENT BARS.
- VIBRATED CONTROLLED CONCRETE OF MINIMUM COMPRESSIVE STRENGTH OF 350 KG/Cm² (M-35) TO BE USED FOR ALL FOUNDATIONS.
- LAP LENGTH WHERE BARS OBTAINED ARE OF SHORTER LENGTH MUST NOT BE LESS THAN 52xDIA OF LARGER BAR.
- A SATISFACTORY LOAD TEST SHALL BE CARRIED OUT AS PER IS-1898-1982 TO ESTABLISH SAFE BEARING PRESSURE AT THE TIME OF EXECUTION. IN CASE SAFE BEARING PRESSURE OF SOIL IS LESS THAN CALCULATED BASE PRESSURE, IT SHALL REFER TO DESIGN CONSULTANT.
- HSD/TMT BARS OF GRADE Fe-500D CONFORMING TO IS-1786-2000 SHALL BE USED.
- DURING CONCRETING OF FOUNDATION HOLDING DOWN BOLTS SHOULD BE PLACED PROPERLY AT DESIRED LOCATION.
- DEPTH OF FOUNDATION BELOW GROUND LEVEL SHOWN IN DRAWING FOR DIFFERENT FOUNDATIONS IS THE MINIMUM GRIP LENGTH OF FOTTING IN THE GROUND. IF ANY LOCATION THE GROUND IS FOUND LOWER THAN THE GROUND LEVEL SHOWN IN THE DRAWING, THEN BOTTOM OF FOUNDATION SHOULD BE ACCORDINGLY LOWERED TO HAVE MINIMUM GRIP LENGTH.
- THIS DRAWING SHOULD BE READ IN CONJUNCTION WITH OTHER RELEVANT DRAWING OF FOUNDATION.
- FOR LOCATION OF H.D. BOLTS REFER THE DRAWING OF TRETTLE/COLUMN.

LEGEND:

TOP BAR
BOTTOM BAR

REINFORCEMENT DETAIL

BAR MARK	SHAPE OF BAR	DIA OF BAR AND SPACING (mm)/NOS
1		25 @ 150 c/c
2		32 @ 150 c/c
3		16 @ 150 c/c
4		16 @ 150 c/c
5		16 @ 150 c/c SURFACE REINFORCEMENT CLOSED BAR
6		12 @ 240 c/c
7		20 @ 120 c/c
8		12 @ 150 c/c

B.B.S. TOMAR
(C.B.E.)S.K. GARG
(DYCE/BD)PUSHKAL RAI
(SSE/BR/DESIGN)INDERJIT SINGH
(SSE/BR/DRG)

HQ. OFFICE

CLIENT:- NORTHERN RAILWAY

FOOT OVER BRIDGE
12.00 M WIDE
FOR SPAN 35 M TO 41.5 M
WITH COMPOSITE I-GIRDER AND
TUBULAR SECTIONS
DETAIL OF REINFORCEMENT FOR MAIN TRETTLE
FOUNDATION

SCALE
0 50 100 200 300 400 mm
DATE
REV

DRAWING NO:-

REFERENCE OF DRAWING:-
RELATED DRAWINGS

S.NO.	DESCRIPTION	DRAWING NO.	SHEET NO.
1.	GENERAL ARRANGEMENT OF FOB	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	1 OF 9
2.	DETAILS OF MAIN GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	2 OF 9
3.	DETAILS OF MAIN GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	3 OF 9
4.	DETAILS OF SPLICE JOINT/CAMBER DIAGRAM	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	4 OF 9
5.	DETAILS OF CROSS GIRDER	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	5 OF 9
6.	DETAILS OF MAIN COLUMN AND TRETTLE	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	6 OF 9
7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	7 OF 9
8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRETTLE FOUNDATION	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	8 OF 9
9.	DETAIL OF REINFORCEMENT FOR MAIN TRETTLE FOUNDATION	RTES/RCED/FOB/SUPERSTRUCTURE /41.5M	9 OF 9

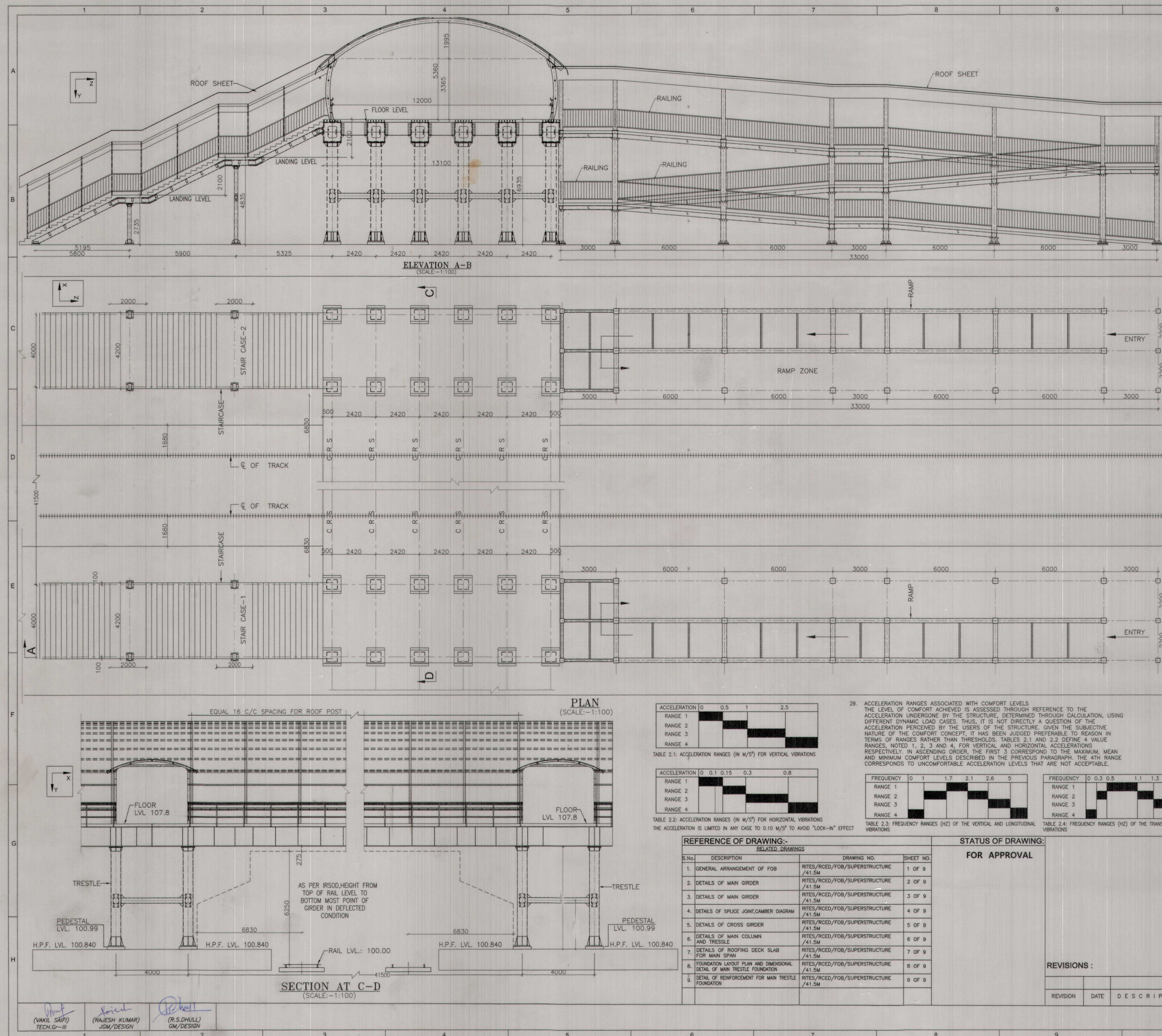
STATUS OF DRAWING:

FOR
APPROVAL

REVISIONS :

REVISION DATE DESCRIPTION SIGNATURE

(NAKIL SAIFI)
TECH.GR-III(RAJESH KUMAR)
JGM/DESIGN(R.S.DHULL)
GM/DESIGN



- NOTES:-**
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
 - NO DIMENSION SHOULD BE SCALED FROM THIS DRAWING.
 - ALL STEELS FOR GIRDERS SHALL BE E350, GRADE 'A' AS PER IS:2062-2011. RECTANGULAR OR SQUARE HOLLOW STRUCTURAL PIPES OF GRADE YST 310 OR HIGHER TO BE USED AS PER IS:4923-1997.
 - THIS GAD HAS BEEN PREPARED FOR SPAN OF 41.5M. HOWEVER, THIS DRAWING CAN BE USED FOR SPAN RANGE OF 35 m. TO 41.5 m. AS PER SITE CONDITION, AFTER FULFILLING THE REQUIREMENT GIVEN IN I.R.S.O.D. (B.G.) 2004 (AS AMENDED FROM TIME TO TIME), ACCORDINGLY THE CHANGE IN GENERAL ARRANGEMENT DRAWING SHOULD BE APPROVED BY COMPETENT AUTHORITY AT ZONAL RAILWAYS LEVEL ITSELF.
 - LIVE LOAD ON FOB HAS BEEN TAKEN IN ACCORDANCE WITH CLAUSE 2.3.2.1 OF IRS BRIDGE RULE.
 - WIND LOAD ON FOB HAS BEEN TAKEN IN ACCORDANCE WITH CLAUSE 2.1.1 OF IRS BRIDGE RULE. MAXIMUM WIND PRESSURE IS TAKEN AS 75 Kg/m².
 - THIS DRAWING IS SUITABLE FOR USE UP TO SEISMIC ZONE-V. THE SEISMIC FORCE HAS BEEN CALCULATED IN ACCORDANCE WITH IRS SEISMIC CODE-2017 (REVISED 2020).
 - SNOW LOADING HAS NOT BEEN TAKEN IN THIS DESIGN.
 - NO IMPACT FACTOR IS TAKEN FOR DESIGN FOB AS PER CLAUSE 2.4.3 OF IRS BRIDGE RULE.
 - FABRICATION OF COMPONENTS OF FOB TO BE DONE IN WORKSHOP AS FAR AS POSSIBLE.
 - FEASIBILITY OF THIS STRUCTURE SHALL BE CHECKED AT SITE IN EVERY RESPECT BY ENGINEER INCHARGE BEFORE FABRICATION/ERECTION. IF THERE IS ANY CONFUSION/AMBIGUITY IN DIFFERENT DIMENSIONS PROVIDED IN THESE DRAWINGS, A FULL SCALE LAYOUT SHOULD BE PREPARED FOR THE VERIFICATION OF THE SAME BEFORE START OF EXECUTION OF THE WORK.
 - BEFORE FABRICATION WORK IS TAKEN UP, GIRDER PIECES TO BE FABRICATED (ALONG WITH ITS EXACT DIMENSIONS) AND THEIR NUMBERS SHALL BE WORKED OUT. MOREOVER EXACT DIMENSIONS AND THEIR NUMBERS OF OTHER COMPONENTS SUCH AS BRACINGS, CROSS GIRDERS, MAIN COLUMN, STAIRCASE COLUMN, STAIRCASE GIRDERS ETC. ALSO TO BE WORKED OUT IN ORDER TO AVOID ANY PROBLEM AT LATER STAGE.
 - FABRICATION OF STEEL WORKS SHALL BE DONE AS ACCORDANCE WITH IRS B1-2000 SPECIFICATION.
 - ALL WELDS TO BE MADE BY USING APPROVED WELDING PROCEDURE AND BY QUALIFIED WELDERS AS PER PROVISIONS OF IRS WELDED BRIDGE CODE. WELDERS QUALIFIED FOR A PARTICULAR WELD POSITION, WELDING TECHNIQUE AND SIZE ONLY, SHALL MAKE THE WELD.
 - AUTOMATIC SUBMERGED ARC WELDING (SAW) SHOULD BE DONE IN FILLET WELDS OF CONNECTION OF FLANGE TO WEB OF MAIN GIRDER. OTHER WELDS SHOULD ALSO BE DONE BY SUBMERGE ARC WELDING TO THE MAXIMUM EXTENT POSSIBLE. FCW OR GMAW WELDING MAY BE DONE IN CASES WHERE SAW WELDING IS NOT POSSIBLE.
 - WELDING MAY BE DONE IN ACCORDANCE WITH PROVISIONS GIVEN FOR WELDING IN THE IRS WELDED BRIDGE CODE OR THE SPECIFICATION/CODES REFERRED IN THIS FOR THIS PURPOSE.
 - (a) IN CASE OF END PLATFORM, THERE WILL BE MAIN GIRDER OF F.O.B. FROM ONE SIDE ON TRESTLE ONLY. IN SUCH CASE EXTEND THE GIRDER SO THAT IT CAN GO UP TO OTHER COLUMN AT SAME COLUMN GROUP IF REQUIRED. (b) IN CASE OF ISLAND PLATFORM, MAIN GIRDERS OF F.O.B. SHALL REST ON TRESTLE FROM BOTH SIDES.
 - HAND RAILING SHOWN IN THESE DRAWINGS IS INDICATIVE ONLY. IMPROVED TYPE OF SIDE RAILING WITH STAINLESS STEEL MATERIAL OR TOUGHENED GLASS MAY BE ADOPTED. SIDE RAILING SHOULD BE AESTHETICALLY GOOD AND ERGONOMIC. ENGINEER-IN-CHARGE SHOULD DECIDE ABOUT THE SIDE RAILINGS TO BE PROVIDED, CONSIDERING THESE FACTORS.
 - LIFT MAY BE PROVIDED WITH THIS FOB AS PER REQUIREMENT AT SITE AND FEASIBILITY OF ITS PROVISION. DECISION REGARDING PROVISION OF LIFT MAY BE DECIDED BY COMPETENT AUTHORITY AT ZONAL RAILWAY LEVEL. FOR PROVISION OF LIFT, SUITABLE DESIGN AND DRAWING OF LIFT WELL AND OTHER ASSOCIATED STRUCTURE MAY BE DEVELOPED AT ZONAL RAILWAY LEVEL CONSIDERING THE VARIOUS SITE SPECIFIC REQUIREMENTS. LIFT WELL SHOULD BE AESTHETICALLY GOOD. TUBULAR SECTIONS MAY BE USED IN DESIGN AND DRAWING OF LIFT WELL, IF FEASIBLE. N.R.H.Q.E (P) PLAN NO-266-FB/2016 SH.NO. 1, 2, 3, 4, 5, 6, 7, 8 & 9 (TOTAL 09 DRAWINGS) MAY BE REFERRED FOR THIS PURPOSE.
 - COMPLETE STRUCTURE SHOULD BE MATERIALIZED AS PER IRS B1-2001 SPECIFICATION.
 - TO PROMOTE SAFETY, HANDRAIL SHALL BE PAINTED DURABLE BRIGHT YELLOW SO THAT IT IS EASILY VISIBLE.
 - THIS DRAWINGS OF RAMPS, STAIRCASE AND LIFT REFERRED ARE AS UNDER :-
1) IN 12 RAMP: DRG. NO. RDSO/B-10433/7-8.
2) IN 8 RAMP: DRG. NO. RDSO/B-10439/1-14.
3) STAIRCASE : DRG. NO. RDSO/B-10433/5-6.
4) LIFT: N.R.H.Q.E (P) PLAN NO. 266/FB/2016 SHEET 1 TO 9.
 - THE COMBINATIONS OF DRAWINGS OF WALKWAY, 1 IN 12 OR 1 IN 8 RAMP AND STAIRCASE & /OR LIFT SHALL BE SUITABLY DECIDED BY NORTHERN RAILWAY IN CONGRUITY WITH EXTENT GUIDELINES FOR THEIR USAGE DEPENDING ON SITE CONDITIONS AND REQUIREMENTS.
 - THE VALUE OF LIVE LOAD IS TAKEN AS 490 KG/M² AS PER IRS BRIDGE RULES. CARE SHOULD BE TAKEN IN FIELD THAT THE VALUE OF LIVE LOAD IMPOSED SHALL NOT EXCEED ITS DESIGN VALUE.
 - FLOOR VIBRATION CHECKED AS PER IRC:SP-56:2011, IS:800 APPENDIX-C. BS NA 1991-2 (2003) (ANNEX EURO CODE.1) AND SETRA TECHNICAL GUIDE FOR ASSESSMENT OF VIBRATION BEHAVIOUR OF FOOT BRIDGE UNDER PEDESTRIAN LOADING.
 - EXTRA ALLOWANCE OF 275MM AS PER NOTE (e) OF PARA 10 OF IRSOD IN CLEAR HEIGHT OF 6250MM FROM RAIL LEVEL TO BOTTOM OF FOB IN EXISTING OR PROPOSED ELECTRIFIED 25 KV AC SYSTEM. FOR RAISING OF TRACK IN FUTURE SHALL BE PROVIDED BY NORTHERN RAILWAYS. STAIRCASE MODIFICATION SHALL BE MADE IN THE HEIGHT OF COLUMNS. EXTRA STEPS IN STAIRCASE AND EXTRA LENGTH OF RAMP IF REQUIRED SHALL BE ACCOMMODATED IN THE CONCRETE PART AT THE GROUND ENTRANCE GAD SHALL BE PREPARED ACCORDINGLY.
 - IN CASE OF ANY PLATFORM, WHEREVER ADEQUATE PLATFORM IS NOT AVAILABLE, AS PER SITE REQUIREMENT, SPACING OF THE COLUMN TRESTLE CAN BE REDUCED FROM 4M UP TO 2.5M BY NORTHERN RAILWAY PROVIDED THAT THE CLEAR SPAN OF FOB SHALL NOT BE INCREASED BEYOND 41.5M. THIS WILL HAVE NO DESIGN IMPLICATIONS. FURTHER REDUCTION REDUCTION IN THE SPACING OF COLUMNS IS REQUIRED OR WIDTH OF ISLAND PLATFORM CAN ACCOMMODATE ONLY ONE ROW OF COLUMNS SHALL BE SUITABLY DESIGNED BY NORTHERN RAILWAY.
 - FREQUENCY RANGE CLASSIFICATION IN BOTH VERTICAL AND HORIZONTAL DIRECTIONS, THERE ARE FOUR FREQUENCY RANGES, CORRESPONDING TO A DECREASING RISK OF RESONANCE:
RANGE 1: MAXIMUM RISK OF RESONANCE.
RANGE 2: MEDIUM RISK OF RESONANCE.
RANGE 3: LOW RISK OF RESONANCE FOR STANDARD LOADING SITUATIONS.
RANGE 4: NEGLECTABLE RISK OF RESONANCE.

ACCELERATION 0 0.5 1 2.5

RANGE	0	0.5	1	2.5
RANGE 1	0	0.5	1	2.5
RANGE 2	0	0.5	1	2.5
RANGE 3	0	0.5	1	2.5
RANGE 4	0	0.5	1	2.5

TABLE 2.1: ACCELERATION RANGES (IN M/S²) FOR VERTICAL VIBRATIONS

ACCELERATION 0 0.1 0.15 0.3 0.8

RANGE	0	0.1	0.15	0.3	0.8
RANGE 1	0	0.1	0.15	0.3	0.8
RANGE 2	0	0.1	0.15	0.3	0.8
RANGE 3	0	0.1	0.15	0.3	0.8
RANGE 4	0	0.1	0.15	0.3	0.8

TABLE 2.2: ACCELERATION RANGES (IN M/S²) FOR HORIZONTAL VIBRATIONS
THE ACCELERATION IS LIMITED IN ANY CASE TO 0.10 M/S² TO AVOID "LOCK-IN" EFFECT

FREQUENCY 0 1 1.7 2.1 2.6 5

RANGE	0	1	1.7	2.1	2.6	5
RANGE 1	0	1	1.7	2.1	2.6	5
RANGE 2	0	1	1.7	2.1	2.6	5
RANGE 3	0	1	1.7	2.1	2.6	5
RANGE 4	0	1	1.7	2.1	2.6	5

TABLE 2.3: FREQUENCY RANGES (HZ) OF THE VERTICAL AND LONGITUDINAL VIBRATIONS

FREQUENCY 0 0.3 0.5 1.1 1.3 2.5

RANGE	0	0.3	0.5	1.1	1.3	2.5
RANGE 1	0	0.3	0.5	1.1	1.3	2.5
RANGE 2	0	0.3	0.5	1.1	1.3	2.5
RANGE 3	0	0.3	0.5	1.1	1.3	2.5
RANGE 4	0	0.3	0.5	1.1	1.3	2.5

TABLE 2.4: FREQUENCY RANGES (HZ) OF THE TRANSVERSE HORIZONTAL VIBRATIONS

REFERENCE OF DRAWING:-

S.No.	DESCRIPTION	DRAWING NO.	SHEET NO.
1.	GENERAL ARRANGEMENT OF FOB	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	1 OF 9
2.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	2 OF 9
3.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	3 OF 9
4.	DETAILS OF SPICE JOINT/CAMBER DIAGRAM	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	4 OF 9
5.	DETAILS OF CROSS GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	5 OF 9
6.	DETAILS OF MAIN COLUMN AND TRESTLE	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	6 OF 9
7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	7 OF 9
8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	8 OF 9
9.	DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	9 OF 9

STATUS OF DRAWING:

FOR APPROVAL

REVISIONS :

REVISION	DATE	DESCRIPTION	SIGNATURE

B.B.S. TOMAR
(C.B.E.)

S.K. GARG
(DYCE/BD)

PUSHKAL RAI
(SSE/BR/DESIGN)

INDERJIT SINGH
(SSE/BR/DRG)

HQ. OFFICE

CLIENT:- **NORTHERN RAILWAY**

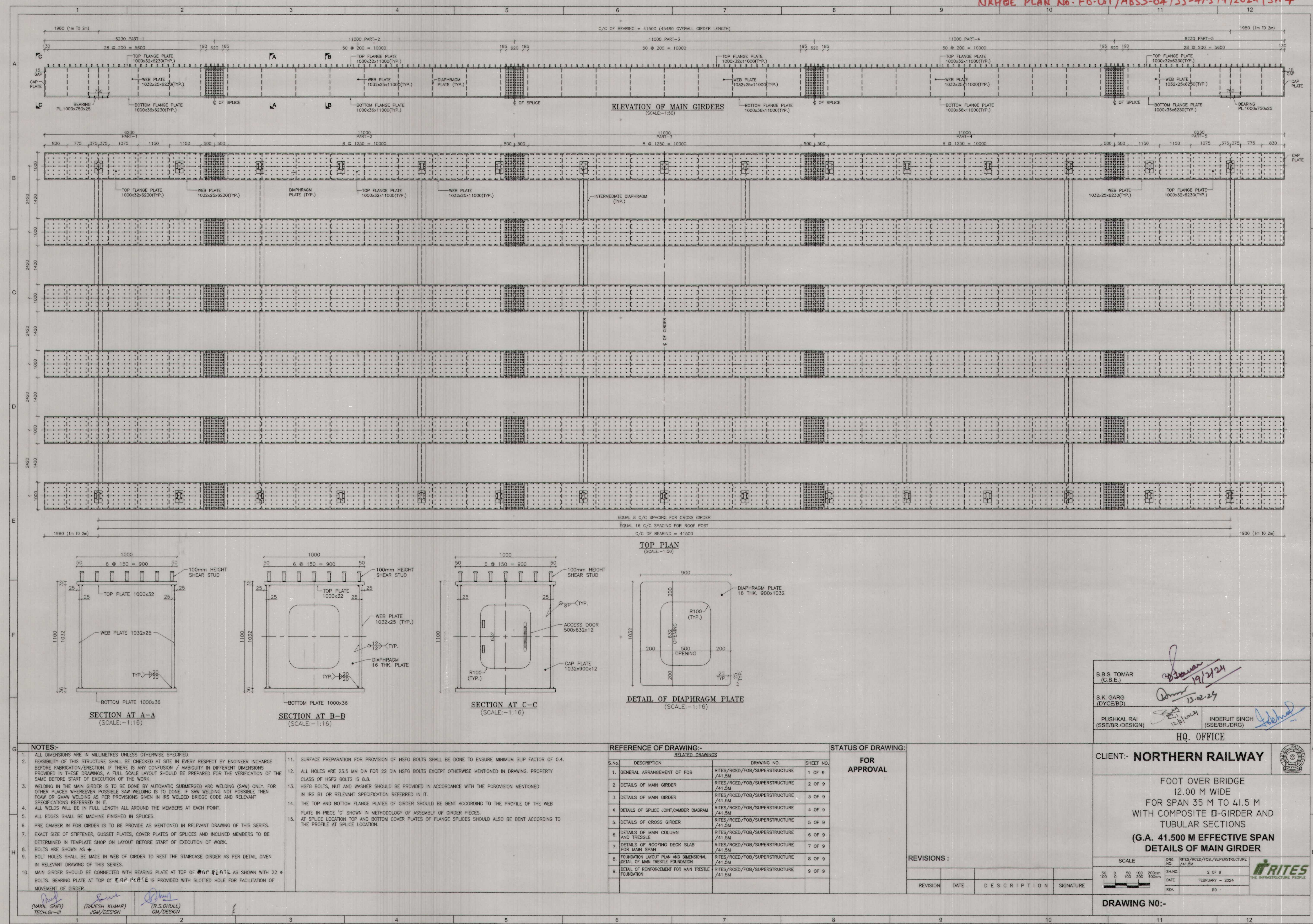
FOOT OVER BRIDGE
12.00 M WIDE
FOR SPAN 35 M TO 41.5 M
WITH COMPOSITE I-GIRDER AND
TUBULAR SECTIONS
(G.A. 41.500 M EFFECTIVE SPAN
GENERAL ARRANGEMENT

SCALE: 1:100

DATE: 12/12/2024

REV: 01

DRAWING NO:-



NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED.
- FEASIBILITY OF THIS STRUCTURE SHALL BE CHECKED AT SITE IN EVERY RESPECT BY ENGINEER INCHARGE BEFORE FABRICATION/ERECTION. IF THERE IS ANY CONFUSION / AMBIGUITY IN DIFFERENT DIMENSIONS PROVIDED IN THESE DRAWINGS, A FULL SCALE LAYOUT SHOULD BE PREPARED FOR THE VERIFICATION OF THE SAME BEFORE START OF EXECUTION OF THE WORK.
- WELDING IN THE MAIN GIRDER IS TO BE DONE BY AUTOMATIC SUBMERGED ARC WELDING (SAW) ONLY. FOR OTHER PLACES WHEREVER POSSIBLE SAW WELDING IS TO BE DONE. IF SAW WELDING NOT POSSIBLE THEN FCAW OR GMAW WELDING AS PER PROVISIONS GIVEN IN IRS WELDED BRIDGE CODE AND RELEVANT SPECIFICATIONS REFERRED IN IT.
- ALL WELDS WILL BE IN FULL LENGTH ALL AROUND THE MEMBERS AT EACH POINT.
- ALL EDGES SHALL BE MACHINE FINISHED IN SPLICES.
- PRE CAMBER IN FOB GIRDER IS TO BE PROVIDED AS MENTIONED IN RELEVANT DRAWING OF THIS SERIES.
- EXACT SIZE OF STIFFENER, GUSSET PLATES, COVER PLATES OF SPLICES AND INCLUDED MEMBERS TO BE DETERMINED IN TEMPLATE SHOP ON LAYOUT BEFORE START OF EXECUTION OF WORK.
- BOLTS ARE SHOWN AS $\bullet$.
- BOLT HOLES SHALL BE MADE IN WEB OF GIRDER TO REST THE STAIRCASE GIRDER AS PER DETAIL GIVEN IN RELEVANT DRAWING OF THIS SERIES.
- MAIN GIRDER SHOULD BE CONNECTED WITH BEARING PLATE AT TOP OF $\bullet$ CAP PLATE AS SHOWN WITH 22 $\bullet$ BOLTS. BEARING PLATE AT TOP OF $\bullet$ CAP PLATE IS PROVIDED WITH SLOTTED HOLE FOR FACILITATION OF MOVEMENT OF GIRDER.

- SURFACE PREPARATION FOR PROVISION OF HSFG BOLTS SHALL BE DONE TO ENSURE MINIMUM SLIP FACTOR OF 0.4.
- ALL HOLES ARE 23.5 MM DIA FOR 22 DIA HSFG BOLTS EXCEPT OTHERWISE MENTIONED IN DRAWING. PROPERTY CLASS OF HSFG BOLTS IS 8.8.
- HSFG BOLTS, NUT AND WASHER SHOULD BE PROVIDED IN ACCORDANCE WITH THE PROVISION MENTIONED IN IRS B1 OR RELEVANT SPECIFICATION REFERRED IN IT.
- THE TOP AND BOTTOM FLANGE PLATES OF GIRDER SHOULD BE BENT ACCORDING TO THE PROFILE OF THE WEB PLATE IN PIECE 'C' SHOWN IN METHODOLOGY OF ASSEMBLY OF GIRDER PIECES.
- AT SPLICE LOCATION TOP AND BOTTOM COVER PLATES OF FLANGE SPLICES SHOULD ALSO BE BENT ACCORDING TO THE PROFILE AT SPLICE LOCATION.

REFERENCE OF DRAWING:-			STATUS OF DRAWING:-	
RELATED DRAWINGS			FOR APPROVAL	
S.No	DESCRIPTION	DRAWING NO.	SHEET NO.	
1.	GENERAL ARRANGEMENT OF FOB	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	1	OF 9
2.	DETAILS OF MAIN GIRDER	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	2	OF 9
3.	DETAILS OF MAIN GIRDER	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	3	OF 9
4.	DETAILS OF SPLICE JOINT/CAMBER DIAGRAM	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	4	OF 9
5.	DETAILS OF CROSS GIRDER	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	5	OF 9
6.	DETAILS OF MAIN COLUMN AND TRESSLE	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	6	OF 9
7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	7	OF 9
8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	8	OF 9
9.	DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION	RITES/RCD/FOB/SUPERSTRUCTURE /41.5M	9	OF 9

REVISIONS :			
REVISION	DATE	DESCRIPTION	SIGNATURE

B.B.S. TOMAR
(C.B.E.)

S.K. GARG
(DYCE/BD)

PUSHKAL RAI
(SSE/BR/DESIGN)

[Signature]
19/2/24

[Signature]
23-02-24

[Signature]
12-01-2024

INDERJIT SINGH
(SSE/BR/DRG)

HQ. OFFICE

CLIENT:- **NORTHERN RAILWAY**

FOOT OVER BRIDGE
12.00 M WIDE
FOR SPAN 35 M TO 41.5 M
WITH COMPOSITE $\square$ -GIRDER AND
TUBULAR SECTIONS
**(G.A. 41.500 M EFFECTIVE SPAN
DETAILS OF MAIN GIRDER**

SCALE

50 100 200 400mm

SRD. RITES/RCD/FOB/SUPERSTRUCTURE
NO. /41.5M

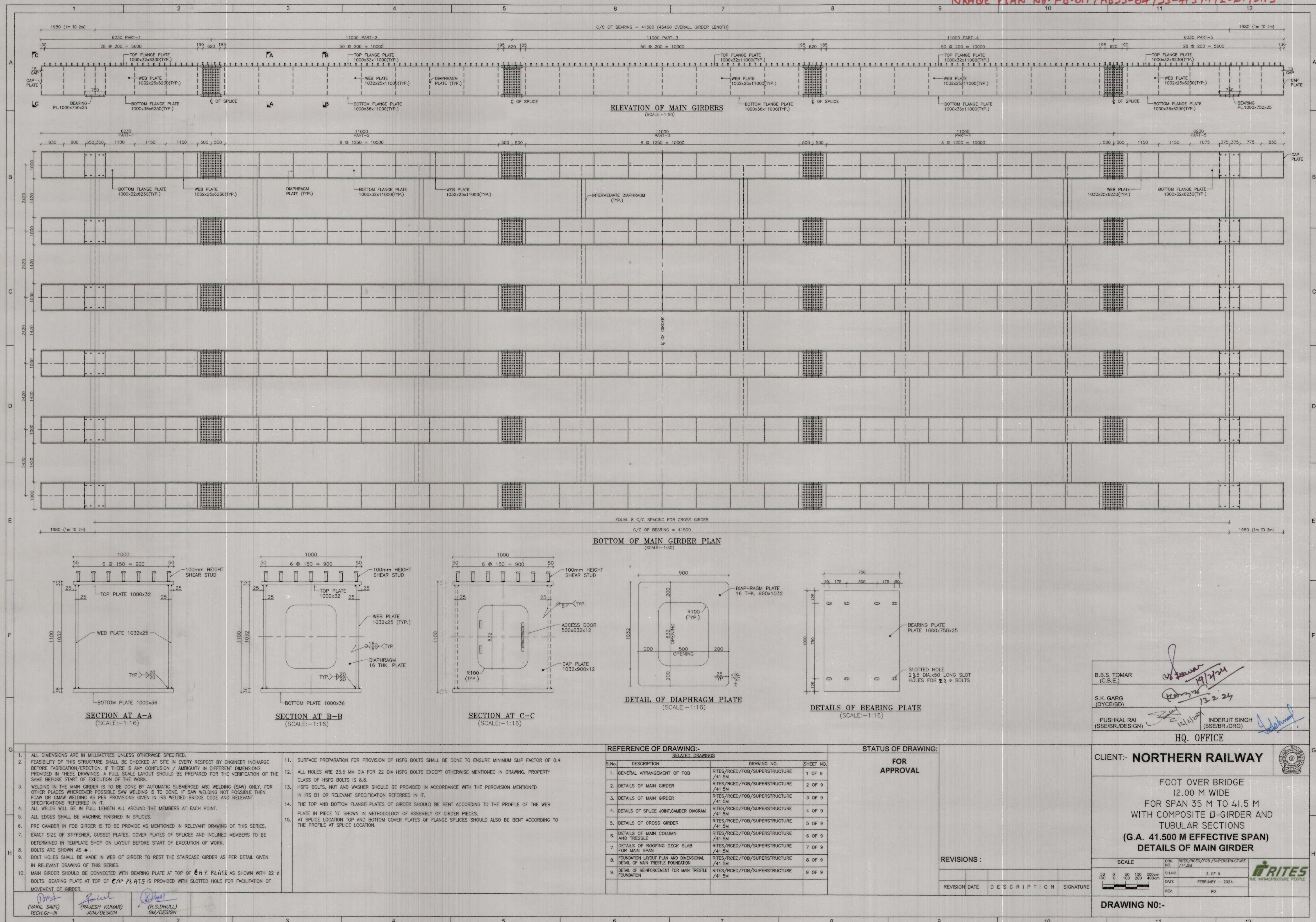
SH.NO. 2 OF 9

DATE FEBRUARY - 2024

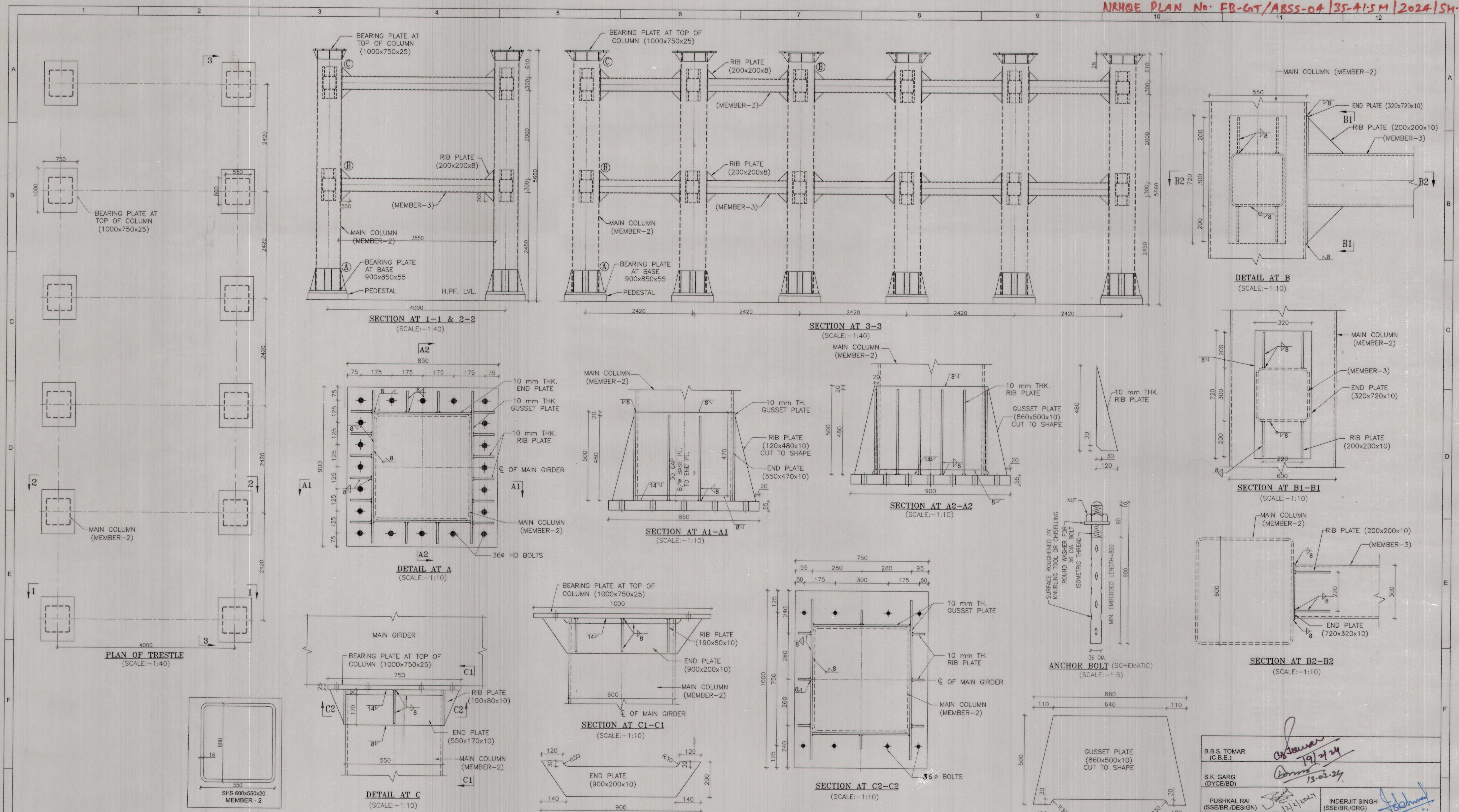
REV. RO

IRITES
THE INFRASTRUCTURE PEOPLE

DRAWING NO:-



DRAWING NO:-



NOTES:- - ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE SPECIFIED. - FEASIBILITY OF THIS STRUCTURE SHALL BE CHECKED AT SITE IN EVERY RESPECT BY ENGINEER INCHARGE BEFORE FABRICATION/ERECTION. IF THERE IS ANY CONFUSION / AMBIGUITY IN DIFFERENT DIMENSIONS PROVIDED IN THESE DRAWINGS, A FULL SCALE LAYOUT SHOULD BE PREPARED FOR THE VERIFICATION OF THE SAME BEFORE START OF EXECUTION OF THE WORK. - SUITABLE NOTCH/CUT IN THE RIB PLATE SHOULD BE PROVIDED SO THAT IT DOES NOT INFRINGE WITH THE WELD OF MAIN COLUMN WITH BASE PLATE/BEARING PLATE. - ALL MEMBERS MEETING AT A JOINT ARE FILLET WELDED EXCEPT OTHERWISE STATED. - ALL WELDS WILL BE IN FULL LENGTH AROUND THE MEMBERS AT EACH JOINT. - EXACT SIZE OF RIB PLATES & GUSSET TO BE DETERMINED IN TEMPLATE SHOP. - ANCHOR BOLTS ARE SHOWN AS $\blacklozenge$. - ALL ANCHOR BOLTS ARE OF 36 ϕ EXCEPT OTHERWISE SHOWN AS PER IS:1367 PROPERTY CLASS 6.6.	REFERENCE OF DRAWING:- <table border="1"> <thead> <tr> <th>S.No.</th><th>DESCRIPTION</th><th>DRAWING NO.</th><th>SHEET NO.</th></tr> </thead> <tbody> <tr> <td>1.</td><td>GENERAL ARRANGEMENT OF FOB</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>1 OF 9</td></tr> <tr> <td>2.</td><td>DETAILS OF MAIN GIRDER</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>2 OF 9</td></tr> <tr> <td>3.</td><td>DETAILS OF MAIN GIRDER</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>3 OF 9</td></tr> <tr> <td>4.</td><td>DETAILS OF SPURCE JOINT/CAMBER DIAGRAM</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>4 OF 9</td></tr> <tr> <td>5.</td><td>DETAILS OF CROSS GIRDER</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>5 OF 9</td></tr> <tr> <td>6.</td><td>DETAILS OF MAIN COLUMN AND TRESTLE</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>6 OF 9</td></tr> <tr> <td>7.</td><td>DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>7 OF 9</td></tr> <tr> <td>8.</td><td>FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>8 OF 9</td></tr> <tr> <td>9.</td><td>DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION</td><td>RITES/RCED/FOB/SUPERSTRUCTURE /41.5M</td><td>9 OF 9</td></tr> </tbody> </table>	S.No.	DESCRIPTION	DRAWING NO.	SHEET NO.	1.	GENERAL ARRANGEMENT OF FOB	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	1 OF 9	2.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	2 OF 9	3.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	3 OF 9	4.	DETAILS OF SPURCE JOINT/CAMBER DIAGRAM	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	4 OF 9	5.	DETAILS OF CROSS GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	5 OF 9	6.	DETAILS OF MAIN COLUMN AND TRESTLE	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	6 OF 9	7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	7 OF 9	8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	8 OF 9	9.	DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	9 OF 9	STATUS OF DRAWING:- FOR APPROVAL REVISIONS: <table border="1"> <thead> <tr> <th>REVISION</th><th>DATE</th><th>DESCRIPTION</th><th>SIGNATURE</th></tr> </thead> <tbody> <tr> <td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	REVISION	DATE	DESCRIPTION	SIGNATURE					CLIENT:- NORTHERN RAILWAY FOOT OVER BRIDGE 12.00 M WIDE FOR SPAN 35 M TO 41.5 M WITH COMPOSITE $\square$-GIRDER AND TUBULAR SECTIONS DETAILS OF MAIN COLUMN OF TRESTLE SCALE: 1:40 DWG. NO. RITES/RCED/FOB/SUPERSTRUCTURE /41.5M SH. NO. 6 OF 9 DATE: FEBRUARY - 2024 REV. 80 DRAWING NO:-
S.No.	DESCRIPTION	DRAWING NO.	SHEET NO.																																																
1.	GENERAL ARRANGEMENT OF FOB	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	1 OF 9																																																
2.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	2 OF 9																																																
3.	DETAILS OF MAIN GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	3 OF 9																																																
4.	DETAILS OF SPURCE JOINT/CAMBER DIAGRAM	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	4 OF 9																																																
5.	DETAILS OF CROSS GIRDER	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	5 OF 9																																																
6.	DETAILS OF MAIN COLUMN AND TRESTLE	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	6 OF 9																																																
7.	DETAILS OF ROOFING DECK SLAB FOR MAIN SPAN	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	7 OF 9																																																
8.	FOUNDATION LAYOUT PLAN AND DIMENSIONAL DETAIL OF MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	8 OF 9																																																
9.	DETAIL OF REINFORCEMENT FOR MAIN TRESTLE FOUNDATION	RITES/RCED/FOB/SUPERSTRUCTURE /41.5M	9 OF 9																																																
REVISION	DATE	DESCRIPTION	SIGNATURE																																																