

N.R.H.Q.E. PLAN No:- HQ/08-92/R1/R2/R3

N.R. TYPE PLAN No:- L-36/R1/R2/R3

NOTES:-

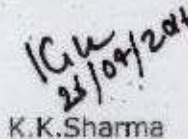
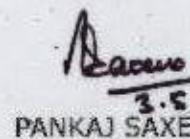
- ALL DIMENSIONS ARE IN MILLIMETERS.
- THIS DRAWING IS BASED ON R.D.S.O. PLAN NO. RDSO/T-4781(R).
- ALL R.C.C. WORK WILL BE IN GRADE M-25 (RMC) AND CC FLOORING IN GRADE M-15 (PREFERABLY RMC) AS PER I.S. CODE 456-2000.
- TOR STEEL SHALL CONFORM TO I.S. 1786-1985.
- ALL CORNERS OF CONCRETE FLOORING AT BOTTOM SHALL BE ROUNDED OFF TO 150 mm RADIUS UNLESS OTHERWISE SPECIFIED.
- THE BITUMINOUS EMULSION USED IN BITUMINOUS CONCRETE SHALL CONFORM TO IS: 8887-1995 (CATIONIC TYPE). (THE BITUMEN USED IN BITUMEN EMULSION SHALL BE OF GRADE A 35 CONFORMING TO IS: 73-1992).
- THE COMPOSITION OF BITUMINOUS CONCRETE SHALL BE AS FOLLOWS:

BITUMEN EMULSION	85 LITERS
PORTLAND CEMENT	164 gm.
AGGREGATE	1105 KG.
MAXIMUM SIZE OF AGGREGATE	6mm.
SAND	0.23 CU.M. MAX.
WATER	65 LITERS
- EPOXY MORTAR OF THE FOLLOWING PROPORTIONS BY WEIGHT SHALL BE USED FOR PROVIDING 10mm THICK EPOXY LAYER: ARALDITE GY 251-100, HARDENER HY 840-45, HARDENER HY 960-2, QUARTZ SAND GR 10-840.
- NON-SHRINKAGE FREE FLOW CEMENTITIOUS GROUT HAVING FOLLOWING PROPERTIES TO BE USED:-

AGE (DAYS)	COMPRESSIVE STRENGTH (N/Sq.mm)	FLEXURAL STRENGTH (N/Sq.mm)
1	24	2.5
3	45	7.0
7	55	9.0
28	65	10.0
- CONSTRUCTION JOINTS SHALL BE PROVIDED AT 10,000 mm C/C.
- FOR RAIL SEAT ASSEMBLY FOR 52 KG. REFER DRG. NO. RDSO/T-3731 AND FOR 60KG REFER DRG. NO. RDSO/T-7009.
- SE'S SHALL BE PROVIDED ON BALLASTED TRACK IN SUCH A WAY THAT BREATHING LENGTH DOES NOT FALL ON WASHABLE APRON.
- LAYING, DESTRESSING AND MAINTENANCE OF L.W.R. WILL BE SUBJECT TO INSTRUCTIONS CONTAINED IN THE L.W.R. MANUAL.
- MINIMUM LONGITUDINAL SLOPE OF THE DRAIN SHOULD BE KEPT AS 1 IN 250. DIRECTION OF SLOPE CAN BE DECIDED BASED ON YARD GRADIENT. USE OF "SUMP & PUMP" ARRANGEMENT CAN ALSO BE MADE IF REQUIRED.
- FOR DETAILS OF DRAINAGE SCHEME REFER NRHQE DRAWING NO. HQ/03/04-2016 (TYPE PLAN NO. L-43).
- PAINTING OF ANGLE TO BE DONE AS PER CE CIRCULAR NO. 258-R-1.
- TIE ROD (12X8)mm TO BE PROVIDED AFTER EVERY FIFTH PANEL TO HOLD ANGLE SPACING.

REVISION (R-3) :-

- GRADE OF CONCRETE CHANGED TO SUIT MODERATE ENVIRONMENTAL EXPOSURE CONDITIONS.
- CROSS SLOPE CHANGED FROM 1 IN 20 TO 1 IN 40.
- COMPOSITION OF BITUMINOUS CONCRETE MODIFIED.
- NON-SHRINKAGE FREE FLOW CEMENTITIOUS GROUT TO BE USED FOR FILLING GAPS BETWEEN THE BOTTOM OF SLEEPERS AND TOP OF BITUMINOUS CONCRETE.
- CROSS-SECTION OF SHUTTERING SHOWN.
- RCC DRAIN WITH COVER SHOWN.
- MODUS OPERANDI SHOWN.
- CHANGES IN NOTES AND OTHER DETAILS.

 K.K. Sharma XEN/P&D	 A.V. MITTAL DY. CE/P&D	 PANKAJ SAXENA CE/P&D
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DRAWING OFFICE ENGINEERING

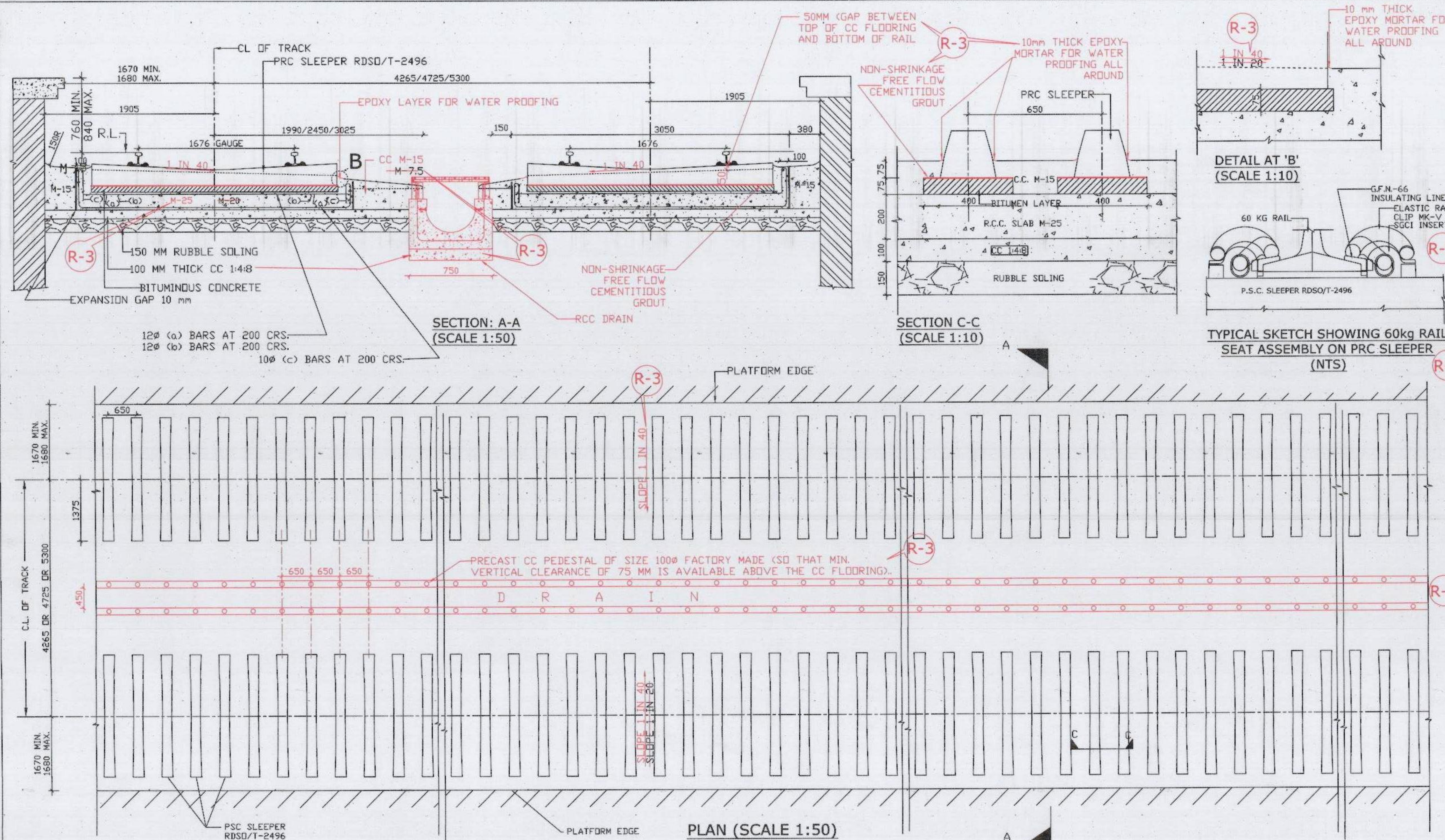
WASHABLE APRON FOR
B.G. 60 KG. UIC/52 KG
FOR 30 KMPH SPEED
WITH L.W.R. USING
R.C.C. SLAB FOUNDATION

PLAN, SECTION AND
R.C.C. DETAILS

SCALES: 1:50 & 1:10

CASE NO. : 397-W/O/4/POLICY/PLAN-II

N.R.H.Q.E. PLAN No:-HQ/08-92/R1/R2/R3



NOTES:- GENERAL MODUS OPERANDI

PRELIMINARY ARRANGEMENTS (PRE BLOCK PERIOD) :-

- CONCERNED DEPARTMENTS SUCH AS OPERATING, TRD, S&T & ELECTRICAL SHOULD BE INTIMATED WELL IN TIME FOR RENDERING NECESSARY CO-OPERATION.
- ARRANGEMENT FOR ALL MATERIAL, EQUIPMENTS, TOOLS & PLANT LIGHTING ARRANGEMENTS ETC. SHOULD BE MADE.
- LOCATION OF CABLES, PIPES ETC. SHOULD BE MARKED ON GROUND.
- EXISTING & FINAL LEVELS OF THE TRACK AND LONGITUDINAL DRAIN SHOULD BE NOTED AND TRANSFERRED TO THE GROUND.
- BAR CHART FOR VARIOUS ACTIVITIES SHOULD BE PREPARED.
- ACTIVITY WISE EXECUTION PROGRAM SHOULD BE PREPARED.

EXECUTION PROGRESS OF WORK (DURING BLOCK PERIOD) :-

- CABLES/PIPELINES SHOULD BE REMOVED.
- DISMANTLING/EXCAVATION OF THE EXISTING TRACK STRUCTURE / DRAIN BED SHOULD BE DONE UPTO FORMATION LEVEL.
- SPECIAL PRECAUTIONS SHOULD BE TAKEN DURING EXCAVATION OF SOIL. THE EXCAVATION DEPTH SHOULD NOT BE MORE THAN REQUIRED DEPTH.
- TO PREPARE THE SUBGRADE, REMOVE ALL THE SOFT AND UNDESIRABLE MATERIAL AND SURPLUS EARTH. THEN DRESS AND COMPACT IT WELL.
- PREPARE THE SUB-BASE WHERE SUBGRADE HAS POOR BEARING CAPACITY OF LESS THAN 11 TON PER SQUARE METER. SUB BASE OF DENSE GRANULAR MATERIAL OF MOORAM, BAJRI, SHINGLE OR OTHER DRAINABLE MATERIAL SHOULD BE PROVIDED. IN CASE OF BLACK COTTON SOIL OR OTHER SOIL SUBJECTED TO CAPILLARY ACTION OF WATER, A THIN SUB-BASE OF MOORUM OR COARSE SAND SHALL BE PROVIDED BELOW BASE COURSE CONSISTING OF STONE OR BOULDER SOLING AND THEN WATERED AND RAMMED.

- 150MM THICK RUBBLE SOLING IN BOTTOM.
- LAY 100mm LEAN CONCRETE (1:4:8) OVER RUBBLE SOLING.
- SPREAD REINFORCEMENT AND CAST RCC (M-25).
- 75 MM THICK BITUMINOUS CONCRETE PROVIDED UNDER SLEEPERS (2800 MM X 400 MM) USING SUITABLE SHUTTERING.
- CONSTRUCTION OF SIDE DRAIN (CAST IN SITU).
- PLACE THE PSC SLEEPERS ON BITUMINOUS CONCRETE AND ENSURE PROPER ALIGNMENT AND LEVEL.
- LINK THE TRACK ON SLEEPERS WITH ELASTIC RAIL CLIPS AFTER PLACING GROOVED RUBBER SOLE PLATE (GRSP) ON THE SLEEPERS.
- NON-SHRINKAGE FREE FLOW CEMENTITIOUS GROUT BE USED FOR FILLING GAPS BETWEEN THE BOTTOM OF SLEEPERS AND TOP OF BITUMINOUS CONCRETE.
- FLOORING CC M15 IN SLOPE 1 IN 40 TOWARDS DRAIN SHOULD BE PROVIDED AFTER REMOVAL OF SHUTTERING.
- EPOXY MORTAR 10 MM THICK SHOULD BE PROVIDED AS PER SPECIFIED PROPORTIONS AND JOINTS ROUNDED OFF FOR FREE FLOW OF WATER.
- ACTIVITIES SHOULD BE PLANNED (BY PREPARING BAR CHART) FOR SUFFICIENT TIME FOR CURING IN BETWEEN TWO CONSECUTIVE ACTIVITIES & WORK MAY BE COMPLETED WITHIN BLOCK PERIOD.
- WELDING, LAYING OF SEJ, DESTRESSING ETC. SHOULD BE DONE IN THE BLOCK ITSELF.

POST BLOCK ACTIVITIES:-

- SITE CLEARANCE & COMPLETION OF OTHER BALANCE WORKS IF ANY.

FOR TRIAL

PLAN (SCALE 1:50)

PRECAST RCC DRAIN
COVER 680X400X40
FACTORY MADE (M-30)

ANGLE ISA40X40
THICKNESS 8MM
PRECAST CC
PEDESTAL
FACTORY MADE
(M-15)
8Ø STEEL
BAR @ 650 C/C
(LENGTH OF BAR
450MM)
8Ø @ 250 C/C
PLASTIC NUT
BOLT (2.5"X0.5")
TO BE PROVIDED
@ 1m C/C
8Ø @ 250 C/C
5mm THICK 450Ø
SEMI CIRCULAR
PVC PIPE
(FOR SMOOTH
FINISH)

CROSS-SECTION OF
DRAIN (SCALE 1:10)

NON SHRINK FREE FLOW
CEMENTITIOUS GROUT
BITUMINOUS CONCRETE
SHUTTERING OF SUITABLE
MATERIAL TO FACILITATE
LAYING OF BITUMINOUS
CONCRETE AND
CEMENTITIOUS GROUT

CROSS-SECTION FOR
SHUTTERING
(SCALE 1:10)

DETAIL OF
LIFTING HOOK
(SCALE 1:10)

PRECAST RCC DRAIN
COVER (M-30)
(SCALE 1:10)

PRECAST
PADESTAL
(SCALE 1:10)