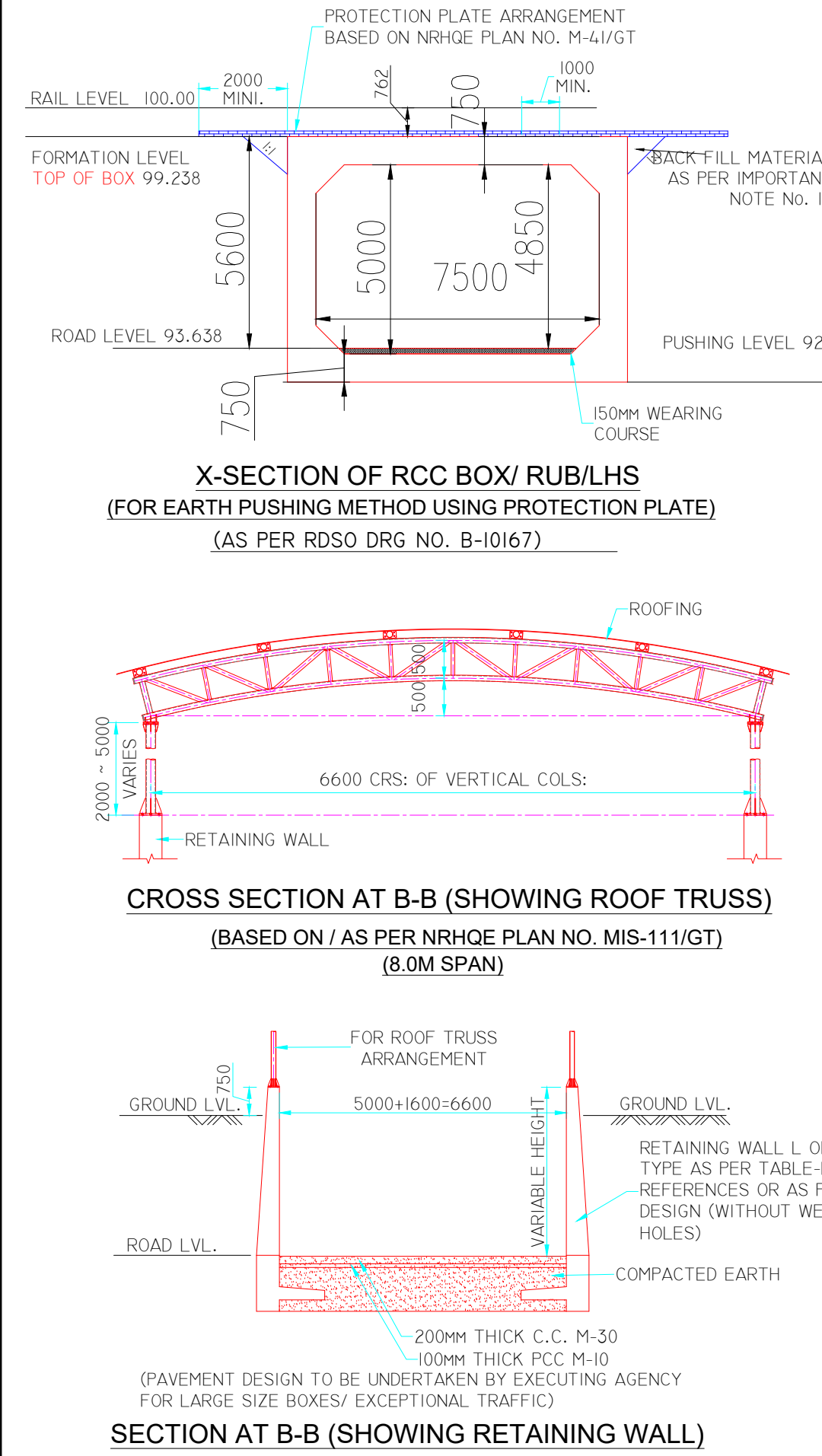
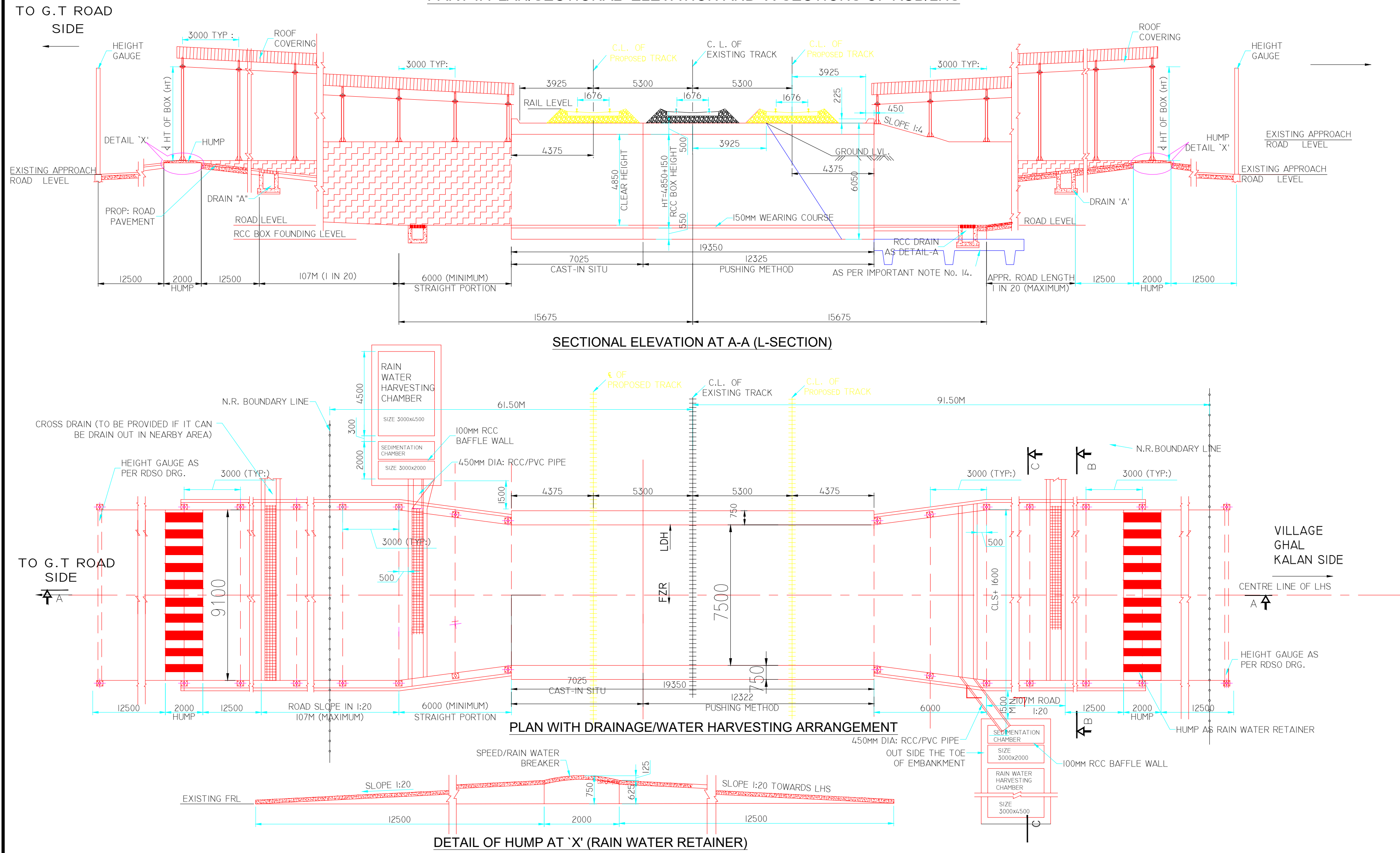


## PART-I: PLAN/SECTIONAL ELEVATION AND X-SECTIONS OF RUB/LHS



N.R.H.Q.E. PLAN No.

PROJ. ID:

LEGENDS:-

- EXISTING WORK SHOWN IN BLACK.
- PROPOSED WORK SHOWN IN RED.
- WORK TO BE DISMANTLED SHOWN IN GREEN.
- FUTURE WORK SHOWN IN YELLOW.
- TEMPORARY WORK SHOWN IN BLUE.

IMPORTANT NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
- STANDARD OF LOADING SHALL BE P.S.I. LOADING-2008.
- FOR STRUCTURAL DETAILS OF R.C.C. BOX REFER RDSO DRAWING NO. RDSO/B-10167.
- DESIGN CRITERIA IS BASED ON FOLLOWING IRS CODES: IRS BRIDGE RULES, IRS CONCRETE BRIDGE CODE, IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE ETC.
- P.C.E. SANCTION SHALL BE OBTAINED BY THE EXECUTING AGENCY PRIOR TO EXECUTION.
- CONSENT LETTER/UNDERSTANDING/NO.C. SHALL BE OBTAINED BEFORE STARTING CONSTRUCTION OF LHS AS PER RAILWAY BOARD LETTER NO. 2004/CE-IV/MISC-2 (RUBS) DATED 18.04.2012 FROM DISTRICT MAGISTRATE AND FOLLOWING SHALL BE ENSURED.
  - ENCUMBRANCE FREE LAND OF APPROACH ROAD SHALL BE PROVIDED BY STATE GOVERNMENT AS PER LATEST INSTRUCTION ISSUED BY RAILWAY BOARD.
  - DIVERSION OF TRAFFIC DURING CONSTRUCTION OF LHS WILL BE THE RESPONSIBILITY OF STATE GOVERNMENT.
  - L-XING SHALL BE CLOSED AT THE TIME OF COMMISSIONING THE LHS.
  - CLEAR SPAN (CLS) OF RCC BOX/RUB/LHS SHALL BE KEPT CONSIDERING TRAFFIC VEHICLE UNIT (TVU) OF L/C/TRESSPASS, EXISTING APPROACH ROAD WIDTH & R.O.W. AND SITE CONDITIONS.
  - 6.0 M LONG LEVEL ROAD SURFACE MAY BE PROVIDED ON BOTH SIDE OF LHS, BEFORE PROVIDING THE GRADED ROAD.
  - NO WEEP HOLE WILL BE PROVIDED IN RETAINING WALL AND THUS RETAINING WALL WILL BE DESIGNED AS A WATER RETAINING STRUCTURE. NO WEEP HOLES SHOULD BE PROVIDED IN THE RCC BOX ALSO.
  - JOINT IN BOX UNITS TO BE AVOIDED TO THE EXTENT POSSIBLE, IF PROVIDED, BOX UNITS SHALL BE MADE WATER TIGHT BY GROUTING AS PER LATEST RAILWAY BOARD GUIDELINE.
  - BARREL LENGTH OF BOX SHALL BE DECIDED BASED ON FILL HEIGHT ON THE BOX AS PER TABLE-C.
  - IF BARREL LENGTH IS TO BE CURTAILED DUE TO SOME REASONS, THEN END OF BOX CAN BE PROJECTED UP AS GULLAST RETAINER, DESIGNED SUITABLY.
  - MINIMUM BALLAST CUSHION OF 350MM SHALL BE PROVIDED OVER TOP OF BOX.
  - FOR DETAILS OF THRUST BED, EARLIER APPROVED DRAWINGS BY CBE OFFICE FOR SIMILAR SIZE OF BOX AND SOIL DATA SHALL BE ADOPTED AS PER STIPULATION CONTAINED IN CBE LETTER NO. 33-W/O/ GENL.CORRESP./ W.B.R. P-1-17 DATED 02.04.2025. IN CASES WHERE NON-STANDARD DESIGNS/DRGS ARE UNAVOIDABLE, THEN DESIGN/ DRAWING TO BE GOT APPROVED FROM CBE'S OFFICE.
  - HEIGHT GAUGE SHALL BE PROVIDED ON EITHER SIDE AS PER CENR LETTER NO. 196-S/CIRCULAR/ BR/HO/PT.1 DATED 15.01.2025, CLEARANCE SHOULD BE KEPT 15CM LOWER THAN VERTICAL CLEARANCE OF RUB/LHS.
  - RAIN WATER HARVESTING SYSTEM (RWH) SHOULD BE CLEANED/DESILTED PRIOR TO MONSOON IN EVERY YEAR.
  - IN CASE OF FLOODING, PUMPING SYSTEM SHOULD BE DEPLOYED.
  - ALL BOX SEGMENTS SHALL BE COVERED WITH CONCRETE CANVAS AT THE TOP AND SIDES WHERE REQUIRED.
  - BACK FILL MATERIALS SHALL BE AS PER CLAUSE 7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE. IN LIEU OF GRADED FILTER ON THE VERTICAL WALLS OF LHS, GEO-COMPOSITE DRAIN MAY BE USED FOR TRIAL PURPOSE AS PER RDSO LETTER NO. GE/GEN/COMMENTS/GAD/BS/VERTICAL (PART-I) DATED 15.09.2019.
  - ALL R.C.C. SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COALTAR OF APPROVED QUALITY @ 1:4:4. KO/SO/PM.
  - HUMP SHALL BE PROVIDED ACROSS THE FULL WIDTH OF ROAD AS SHALL EXTEND UP TO THE INNER FACES OF RETAINING WALL TO PREVENT INGRESS OF SURFACE WATER INSIDE LHS.
  - AS FAR AS POSSIBLE, BOX OF RDSO STANDARD SIZE SHOULD BE USED.
  - ANY CHANGE IN LOCATION IN EXCEPTIONAL CIRCUMSTANCES, SHOULD BE TAKEN UP ONLY AFTER APPROVAL OF REVISED GAD WITH CHANGED LOCATION.

(IMPORTANT NOTES:- NOT TO BE CHANGED)

SITE SPECIFIC NOTES:-

- ALL REINFORCEMENT STEEL SHALL BE OF HSD/TMT (GRADE DESIGNATION MINIMUM Fe-500) CONFORMING TO IS: 1786-2008.
- ALL GRADE OF CONCRETE SHALL BE DESIGN MIX AS PER SPECIFICATIONS LAID DOWN IN IRS CONCRETE BRIDGE CODE (REVISED-2014).
- ALREADY APPROVED DRAWINGS FOR RETAINING WALL MAY BE USED IF SOIL PARAMETERS ARE SAME OTHERWISE RETAINING WALL SHALL BE DESIGNED AS PER SITE CONDITIONS WITH SPECIFIC SITE SOIL PARAMETER.
- DRAINAGE ARRANGEMENT AS SHOWN IN THE DRAWING SHALL BE PROVIDED TO SUIT THE SITE REQUIREMENTS.
- GEO-TEXTILE AS PER RDSO SPECIFICATION MAY BE PROVIDED OUTSIDE THE BOX TO COVER THE JOINTS OF SEGMENTS WHEREVER POSSIBLE AND FILLING THE GAP BETWEEN BANK & BOX WALLS WITH GRAVEL & COURSE SAND ETC. FOR PREVENTION OF FLOW OF EARTH WITH WATER THROUGH JOINTS.
- STEEL REINFORCEMENT OF ADEQUATE BOND LENGTH SHOULD BE KEPT PROJECTING OUT OF LAST AND FIRST SEGMENT ON BOTH SIDE SO AS TO MAKE JOINT OF LHS AND RETAINING WALL AS MONOLITHIC.
- SHAPE OF RETAINING WALL MAY BE PROVIDED L-SHAPE/T-SHAPE KEEPING IN VIEW SITE CONDITION.
- SUITABLE WATER PROOFING ARRANGEMENT TO MAINTAIN BOX & RETAINING WALL WATER TIGHT TO BE PLANNED & PROVIDED BY EXECUTING AGENCY, IF LHS LOCATED NEAR WATER BODY/ AS REQUIRED DUE TO ANY OTHER SITE CONDITIONS.
- HEIGHT OF RETAINING WALL SHOULD BE KEPT IN SUCH A WAY TO ENSURE THAT WATER IS RESTRICTED FROM OVERFLOWING INTO LHS AREA.
- THE DRAINAGE ARRANGEMENT AT THE LHS INCLUDING THE RAIN WATER HARVESTING (RWH) SYSTEM AND ALLIED DRAINS SHOULD BE PLANNED IN CONFORMANCE WITH THE ROAD LEVEL OF THE BOX TO ENSURE NATURAL WATER DRAINAGE BY GRAVITY.
- EXECUTING AGENCY MAY DECIDE FOR THE PROVISION OF SHED IN APPROACHES AS PER REQUIREMENT AT SITE.
- RELEVANT GEO-TECHNICAL INVESTIGATION OF EXISTING FORMATION SOIL TO BE DONE AT EACH RUB/LHS SITE TO OBTAIN SOIL PARAMETERS AND GROUND WATER LEVEL (GWL).
- METHODOLOGY OF BOX INSERTION: ONE OPTION FROM (a) AND (b) AS RELEVANT TO BE SHOWN.
  - METHODOLOGY OF TRACK PROTECTION: BY PLATE PROTECTION/WIRE/LEAVING GRIDDERS OR ANY OTHERS METHOD.
  - PUSHING METHOD: BY EARTH PUSHING/ AIR PUSHING OR ANY OTHERS METHOD.

NOTES CONTINUE - - - - -

TENTATIVE DRAWING

NORTHERN RAILWAY  
DRAWING OFFICE/CONST./JALANDHAR

FIROZPUR DIVISION

PROPOSED ROAD UNDER BRIDGE OR LIMITED HEIGHT SUBWAY  
(RCC BOX SIZE: 1X7.5X5.0. M) IN LIEU OF L-XING NO. 57 AT  
RAILWAY KM. 74/4-5 ON LDH-FZR SECTION.

(BY PUSHING METHOD)  
GENERAL ARRANGEMENT

SCALES: 1:150, 1:75, 1:50

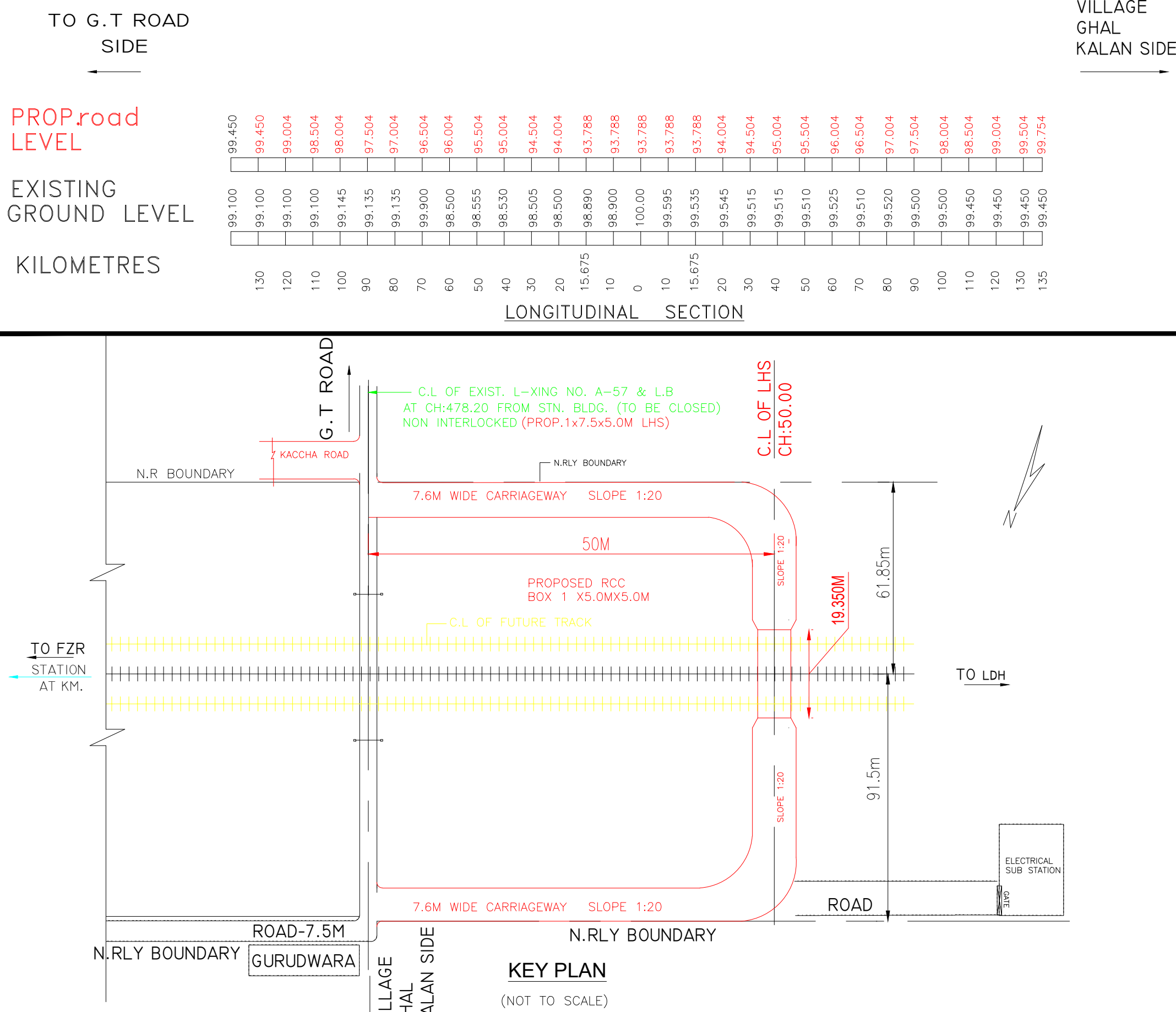
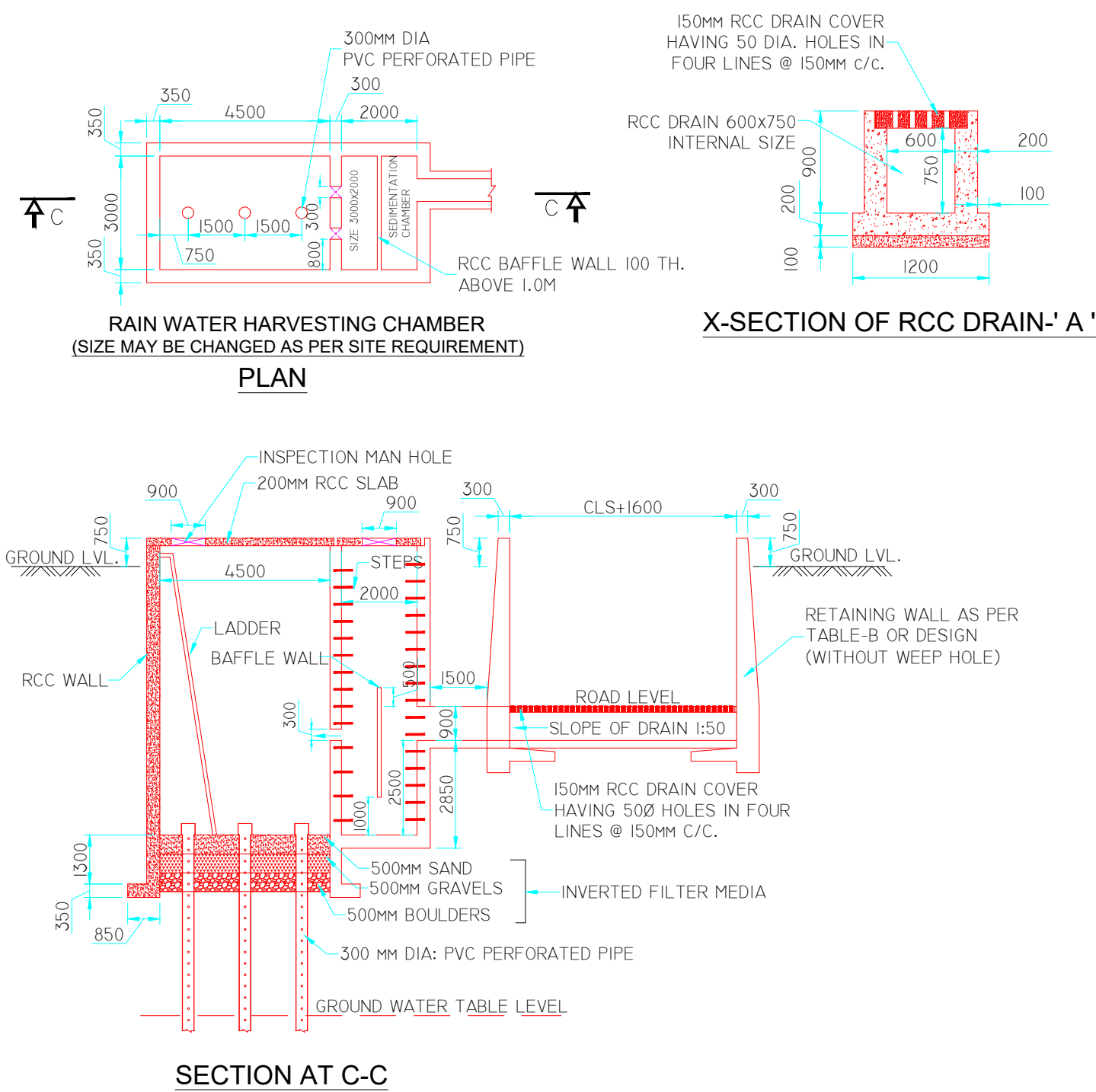
SHEET SIZE: A1

DY./CE/C/JUC PLAN NO. LHS-1230/GHAL KALAN/2026

N.R.DIVL: PLAN NO.

N.R.H.Q.,E.PLAN NO.

## PART-II: DRAINAGE AND RAIN WATER HARVESTING SYSTEM





[illegible]

**DETAIL OF HUMP AT 'X' (RAIN WATER RETAINER)**

	TO MARE KHURD SIDE	ARAINWALA SIDE
--	-----------------------	-------------------

The technical drawings consist of two parts:

- RAIN WATER HARVESTING CHAMBER (PLAN):** This diagram shows a rectangular chamber with a total length of 4500 mm and a total width of 3500 mm. It features four 1500 mm diameter circular inlets, each with a 750 mm diameter. A 3000 mm diameter PVC perforated pipe is connected to the chamber. An RCC baffle wall, 100 TH and 1.0M above the chamber floor, is located at the outlet. The chamber is divided into sections with dimensions of 350, 4500, 2000, 200, 800, and 200 mm. The internal size is noted as 3000x2000 mm.
- X-SECTION OF RCC DRAIN 'A':** This diagram shows a cross-section of the drain. It has a total width of 1200 mm and a total height of 900 mm. The top section is 150 mm high and 1200 mm wide. The middle section is 600 mm high and 600 mm wide. The bottom section is 750 mm high and 1200 mm wide. The drain is made of RCC and has a 150 mm RCC drain cover with four 50 mm diameter holes. The internal size is noted as 600x750 mm.

[illegible]

PROPOSED ROAD LEVEL

EXISTING GROUND LEVEL

KILOMETRES

LONGITUDINAL SECTION

KILOMETRES	EXISTING GROUND LEVEL (m)	PROPOSED ROAD LEVEL (m)
0.00	98.450	98.450
0.05	98.500	98.500
0.10	98.550	98.550
0.15	98.600	98.600
0.20	98.650	98.650
0.25	98.700	98.700
0.30	98.750	98.750
0.35	98.800	98.800
0.40	98.850	98.850
0.45	98.900	98.900
0.50	98.950	98.950
0.55	99.000	99.000
0.60	99.050	99.050
0.65	99.100	99.100
0.70	99.150	99.150
0.75	99.200	99.200
0.80	99.250	99.250
0.85	99.300	99.300
0.90	99.350	99.350
0.95	99.400	99.400
1.00	99.450	99.450
1.05	99.500	99.500
1.10	99.550	99.550
1.15	99.600	99.600
1.20	99.650	99.650
1.25	99.700	99.700
1.30	99.750	99.750
1.35	99.800	99.800

C.L. OF EXIST. →

L-XING NO. 35  
AT KM:34/3-4  
(TO BE CLOSED)  
NON-INTERLOCKED  
(PROP. 1x7.5x5.0M LHS)

RLY STATION ROAD 4.0M

GADDAR GHANDI ROAD 6.0M

TOWARDS MARE KHURD

N.R.L.Y. BOUNDARY

FKA END

FZR END

C.L. OF EXISTING TRACK

PROPOSED TRACK

PROPOSED BOC BOX  
1x7.5x5.0M AS PER  
RDSO STD. DRG.

N.R.L.Y. BOUNDARY

TOWARDS ARANWALA

GADDAR GHANDI ROAD

### KEY PLAN

(NOT TO SCALE)

(NOT TO SCALE)

PROJ. ID:05.03.30.25.3.30.008

LEGENDS:

1. EXISTING WORK SHOWN IN BLACK.
2. PROPOSED WORK SHOWN IN RED.
3. WORK TO BE DISMANTLED SHOWN IN GREEN.
4. FUTURE WORK SHOWN IN YELLOW.
5. TEMPORARY WORK SHOWN IN BLUE.

PROTECTION PLATE ARRANGEMENT  
BASED ON NRHQE PLAN NO. M-41/GT

2000  
MIN.

7'6"

7'50"

1000  
MIN.

RAIL LEVEL 100.00

FORMATION LEVEL  
TOP OF BOX 99.238

BACK FILL MATERIAL  
AS PER IMPORTANT  
NOTE NO. 19

1. EXISTING WORK SHOWN IN BLACK.  
2. PROPOSED WORK SHOWN IN RED.  
3. WORK TO BE DISMANTLED SHOWN IN GREEN.  
4. FUTURE WORK SHOWN IN YELLOW.  
5. TEMPORARY WORK SHOWN IN BLUE.

Technical drawing of a bridge cross-section. The drawing shows a central span of 7500 mm. The total width of the bridge deck is 15000 mm. The height of the bridge structure is 750 mm. The drawing includes labels for 'ROAD LEVEL 93.638', 'PUSHING LEVEL 92.738', and '150mm WEARING COURSE'. A list of specifications is provided on the right side of the drawing.

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE.
2. STANDARD OF LOADING SHALL BE ZST LOADING-2008.
3. FOR STRUCTURAL DETAILS OF R.C.C. BOX REFER RD50 DRAWING NO. RD50/B-10/67 DESIGN CRITERIA IS BASED ON FOLLOWING IRS CODES: IRS CONCRETE BRIDGE CODE, IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE ETC.
5. PCE SANCTION SHALL BE OBTAINED BY THE EXECUTING AGENCY PRIOR TO EXECUTION.
6. CONSENT LETTER/UNDERAKING/NOC SHALL BE OBTAINED BEFORE STARTING CONSTRUCTION OF LHS AS PER RAILWAY BOARD LETTER NO.-2006/CE-IV/MISC-2 (RUBS) DATED 18.04.2012 FROM DISTRICT MAGISTRATE AND

(FOR EARTH PUSHING METHOD USING PROTECTION PLATE)  
(AS PER RDSO DRG NO. B-10167)

2000 - 5000  
VARIES  
RETAINING WALL  
6600 CRS. OF VERTICAL COLS:  
500-500  
ROOFING

INSTRUCTION ISSUED BY RAILWAY BOARD:  
DIVERSION OF TRAFFIC DURING CONSTRUCTION OF LHS WILL BE THE RESPONSIBILITY OF STATE GOVERNMENT.  
1. L-ING SHALL BE CLOSED AT THE TIME OF COMMISSIONING THE LHS.  
2. CLEAR SPAN (CLS) OF RCC BOX/RUB/LHS SHALL BE KEPT CONSIDERING TRAFFIC VEHICLE UNIT (TVU) OF L/C/TESS/ASP, EXISTING APPROACH ROAD WIDTH WITH R.O.W AND SITE CONDITIONS.  
3. 6.0 M LONG LEVEL ROAD SURFACE MAY BE PROVIDED OVER THE TOP OF LHS. LHS ARE PROVIDING THE GRADED ROAD.  
4. NO WEEP HOLE WILL BE PROVIDED IN RETAINING WALL AND THIS RETAINING WALL WILL BE DESIGNED AS A WATER RETAINING STRUCTURE. NO WEEP HOLES SHOULD BE PROVIDED IN THE RCC BOX ALSO.  
5. JOINT IN BOX UNITS TO BE AVOIDED TO THE EXTENT POSSIBLE, IF PROVIDED, BOX UNITS SHALL BE MADE WATER TIGHT BY GROUTING AS PER LATEST RAILWAY BOARD GUIDELINE.  
6. BARREL LENGTH OF BOX SHALL BE DECIDED BASED ON FILL HEIGHT OF THE BOX AS PER TABLE-C.  
7. IF BARREL LENGTH IS TO BE CURTAILED DUE TO SOME REASONS, THEN END OF BOX CAN BE PROJECTED UP AS BALLAST RETAINER, DESIGNED SUITABLY.  
8. MINIMUM BALLAST CUSHION OF 350mm SHALL BE PROVIDED OVER TOP OF BOX.  
9. FOR DETAILS OF THRUST BED, EARLIER APPROVED DRAWINGS BY CBE OFFICE FOR SIMILAR SIZE OF BOX AND SOIL DATA SHALL BE ADOPTED AS PER STIPULATION CONTAINED IN CBE LETTER NO. 33-51/04 GENL.CORRESP./ W.BR.

(BASED ON / AS PER NRHQE PLAN NO. MIS-111/GT)  
(8.0M SPAN)

FOR ROOF TRUSS ARRANGEMENT

GROUND LVL.

750

5000±1600=6600

RETAINING WALL L OR U TYPE AS PER TABLE-B REFERENCES OR AS PER DESIGN (WITHOUT WEEP HOLES)

ROAD LVL.

COMPACTED EARTH

VARIABLE HEIGHT

18. ALL BOX SEGMENTS SHALL BE COVERED WITH CONCRETE CANVAS AT THE TOP AND SIDES WHERE REQUIRED.
19. BACK FILL MATERIALS SHALL BE AS PER CLAUSE 7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE. IN LIEU OF GRADED FILTER ON THE VERTICAL WALLS OF LHS, GEO-COMPOSITE DRAIN MAY BE USED FOR TRIAL PURPOSE AS PER ROSO LETTER NO. (G/EN/COMTS/GAD/IS/STRUCTURE) (PART-I) DATED 13.09.2019.
20. ALL R.C.C SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COALTAR OF APPROVED QUALITY @ 1.6KG/GSQM.
21. HUMP SHALL BE PROVIDED ACROSS THE FULL WIDTH OF ROAD AS SHALL EXTEND UPTO THE INNER FACES OF RETAINING WALL TO PREVENT INGRESS OF SURFACE WATER INSIDE LHS.
22. AS FAR AS POSSIBLE, BOX OF ROSO STANDARD SIZE SHOULD BE USED.
23. ANY CHANGE IN LOCATION IN EXCEPTIONAL CIRCUMSTANCES, SHOULD BE TAKEN UP ONLY AFTER APPROVAL OF REVISED GAD WITH CHANGED LOCATION.

**SITE SPECIFIC NOTES:-**

<p>PROPOSED ROAD LVL. OF BOX PORTION</p> <p>RAIL LVL. = 100.00</p> <p>FORMATION / BOX TOP LVL. = 99.238</p> <p>TOP SLAB = 0.750</p> <p>CLEAR PORTION/HT. OF BOX = 4.85</p> <p>PROPOSED ROAD LVL. = 93.638</p>	<p>3. RETAINING WALL SHALL BE DESIGNED AS PER SITE CONDITIONS WITH SPECIFIC SITE SOIL PARAMETER.</p> <p>4. DRAINAGE ARRANGEMENT AS SHOWN IN THE DRAWING SHALL BE PROVIDED TO SUIT THE SITE REQUIREMENTS</p> <p>5. GEO-TEXTILE AS PER POSSO SPECIFICATION MAY BE PROVIDED OUTSIDE THE BOX TO COVER THE JOINTS OF SEGMENTS WHEREVER PERMISSIBLE AND FILLING THE GAP BETWEEN BANK &amp; BOX WALLS WITH GRAVEL &amp; COURSE SAND ETC. FOR PREVENTION OF FLOW OF EARTH WITH WATER THROUGH JOINTS.</p> <p>6. STEEL REINFORCEMENT OF ADEQUATE BOND LENGTH SHALL BE PROVIDED IN THE PROTECTING OUT OF LAST AND FIRST SEGMENT ON BOTH SIDE SO AS TO MAKE JOINT OF LHS AND RETAINING WALL AS MONOLITHIC.</p> <p>7. SHAPE OF RETAINING WALL MAY BE PROVIDED L-SHAPE/T-SHAPE KEEPING IN VIEW SITE CONDITION.</p> <p>8. SUITABLE WATER PROOFING ARRANGEMENT TO MAINTAIN BOX &amp; RETAINING WALL WATER TIGHT TO BE PLANNED &amp;</p>
---	---

1. ALL REINFORCEMENT STEEL SHALL BE OF HSD/TMT (GRADE DESIGNATION MINIMUM FE-500) CONFORMING TO IS: 1786-2008.

- | RCC RETAINING WALL REFERENCES FOR APPROACH ROAD |  |                            |
|---|--|----------------------------|
| S.No.   | DRAWING NO.  | BRIEF REFERENCE            |
| 1.  | NRH/QE (P) PLAN NO. P-1873-RB/2020 SH.NO. 5        | R. WALL WITHOUT WEEP HOLES |
| 2.  | NRH/QE (P) PLAN NO. P-1680-RB/2019 SH.NO. 4        | R. WALL WITHOUT WEEP HOLES |
| 3.  | NR.HQ.EE PLAN NO. NCR/ENG.G./TYPE PLAN/BR./05-2016 | R. WALL WITHOUT WEEP HOLES |

S.No.	DRAWING NO.	BRIEF REFERENCE
1.	NRHQE (P) PLAN No. P-1873-RB/2020 SH.No. 5	R. WALL WITHOUT WEEP HOLES
2.	NRHQE (P) PLAN No. P-1680-RB/2019 SH.No. 4	R. WALL WITHOUT WEEP HOLES
3.	NRC.HQ.E PLAN No. NCR/ENGG./TYPE PLAN/BR./05-2016	R. WALL WITHOUT WEEP HOLES

NORTHERN RAILWAY  
DRAWING OFFICE/CONST./JALANDHAR  
**FIROZPUR DIVISION**  
PROPOSED ROAD UNDER BRIDGE OR LIMITED HEIGHT SUBWAY  
(RCC BOX SIZE 1x7.5x5.0. M) IN LIEU OF L-XING NO. B-35 AT  
KM:34/3-4 B/W FZR-PKA ON FZP -FKA SECTION.  
**(BY PUSHING METHOD)**  
GENERAL ARRANGEMENT

DRAWING OFFICE/CONST./JAI ANDHAR

PROPOSED ROAD UNDER BRIDGE OR LIMITED HEIGHT: \_\_\_\_\_

(BY PUSHING METHOD)

---

DY.CE/C/JUC PLAN NO. LHS/1235/FZP-FKA/2026

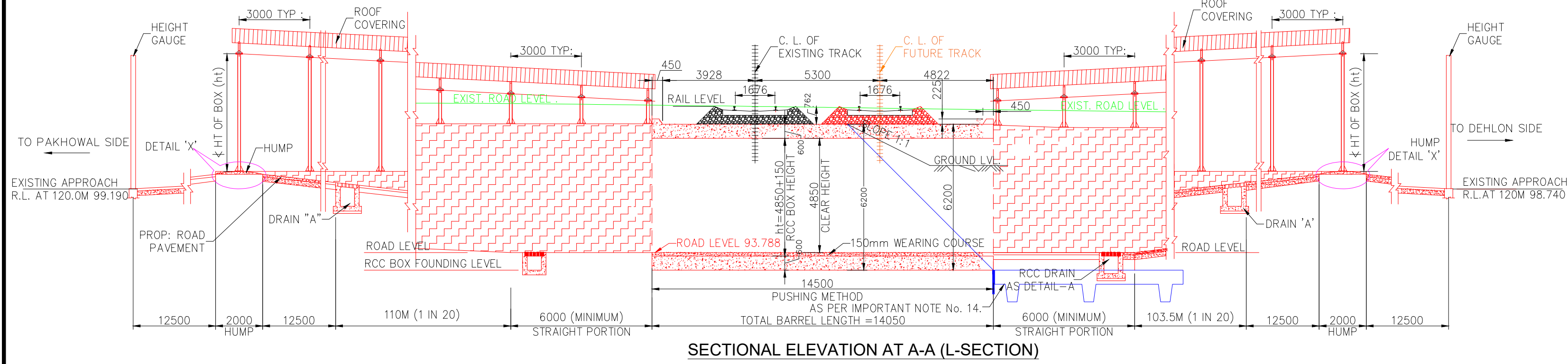
\_\_\_\_\_

N.R.DIVL: PLAN NO.

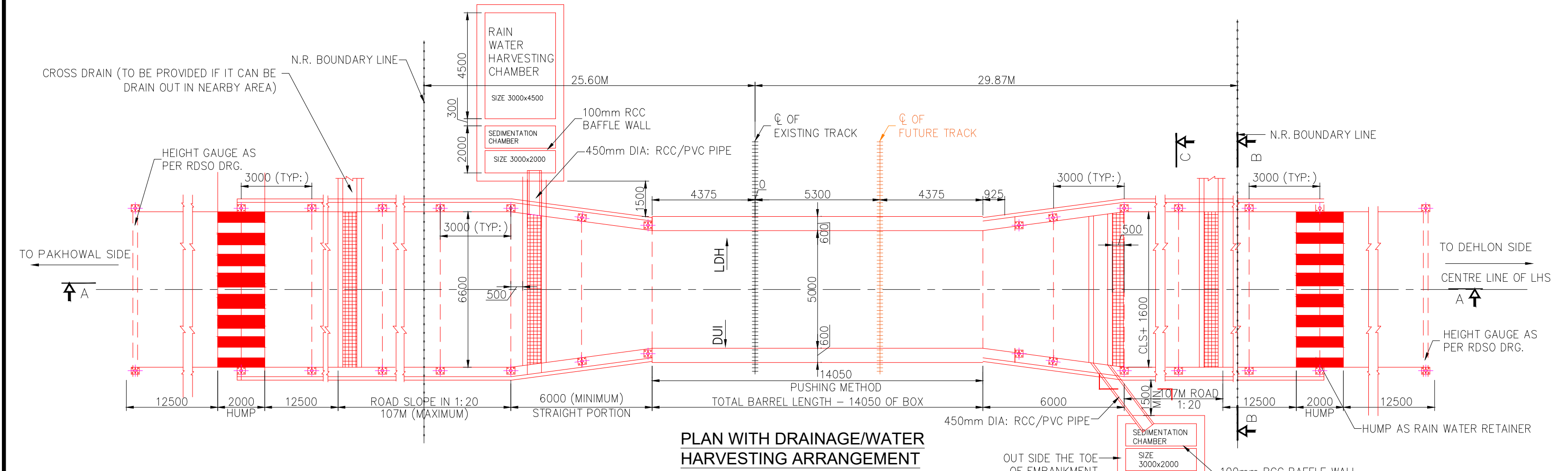
N.R.H.Q.,E.PLAN NO.



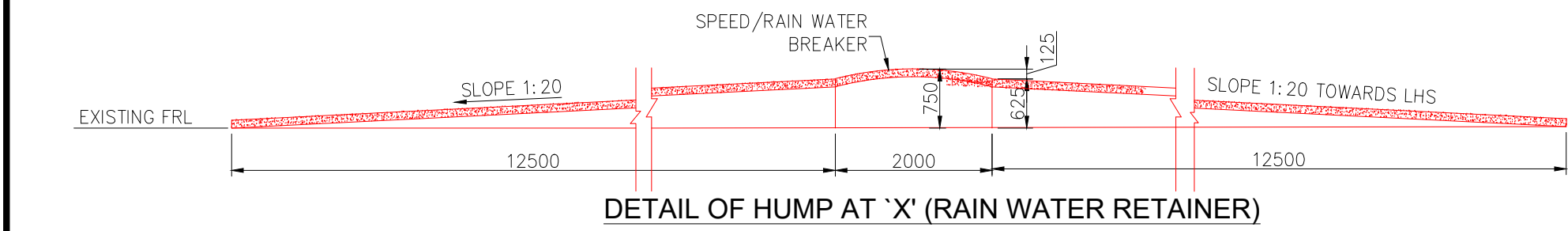
PART-I: PLAN/SECTIONAL ELEVATION AND X-SECTIONS OF RUB/LHS



SECTIONAL ELEVATION AT A-A (L-SECTION)



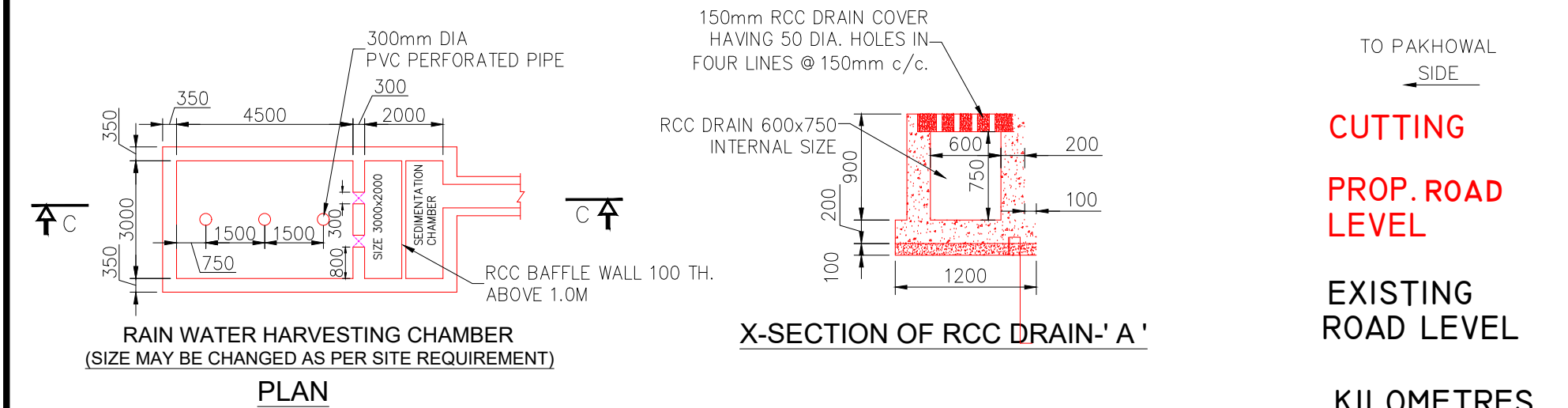
PLAN WITH DRAINAGE/WATER HARVESTING ARRANGEMENT



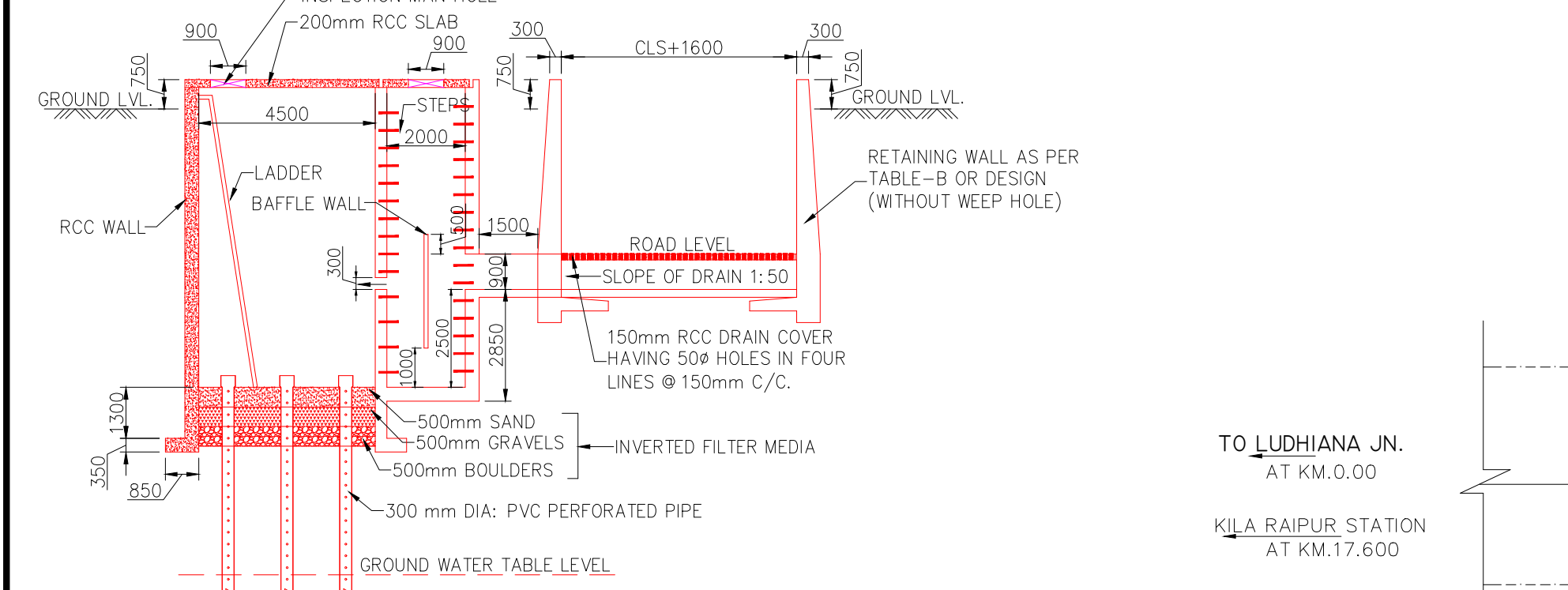
DETAIL OF HUMP AT 'X' (RAIN WATER RETAINER)



PROPOSED ROAD LVL. OF BOX PORTION



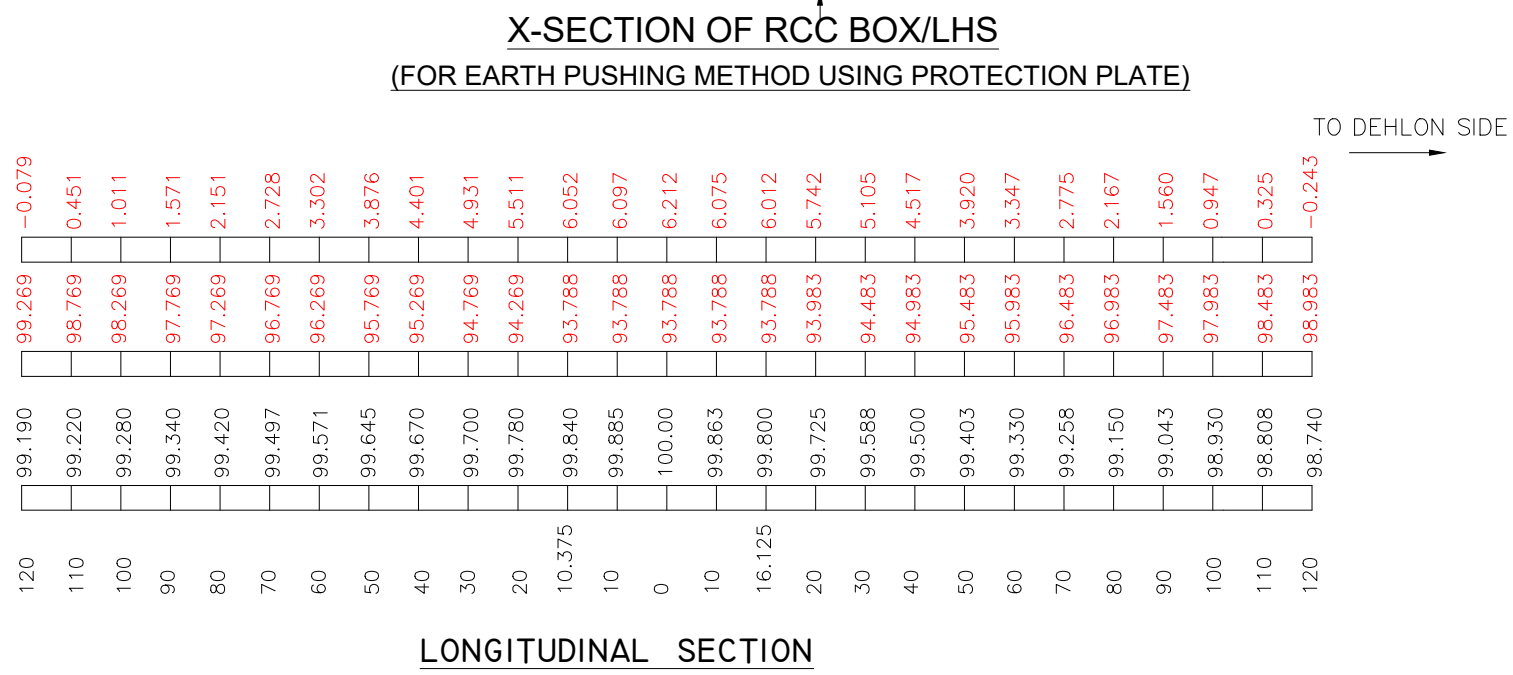
PLAN



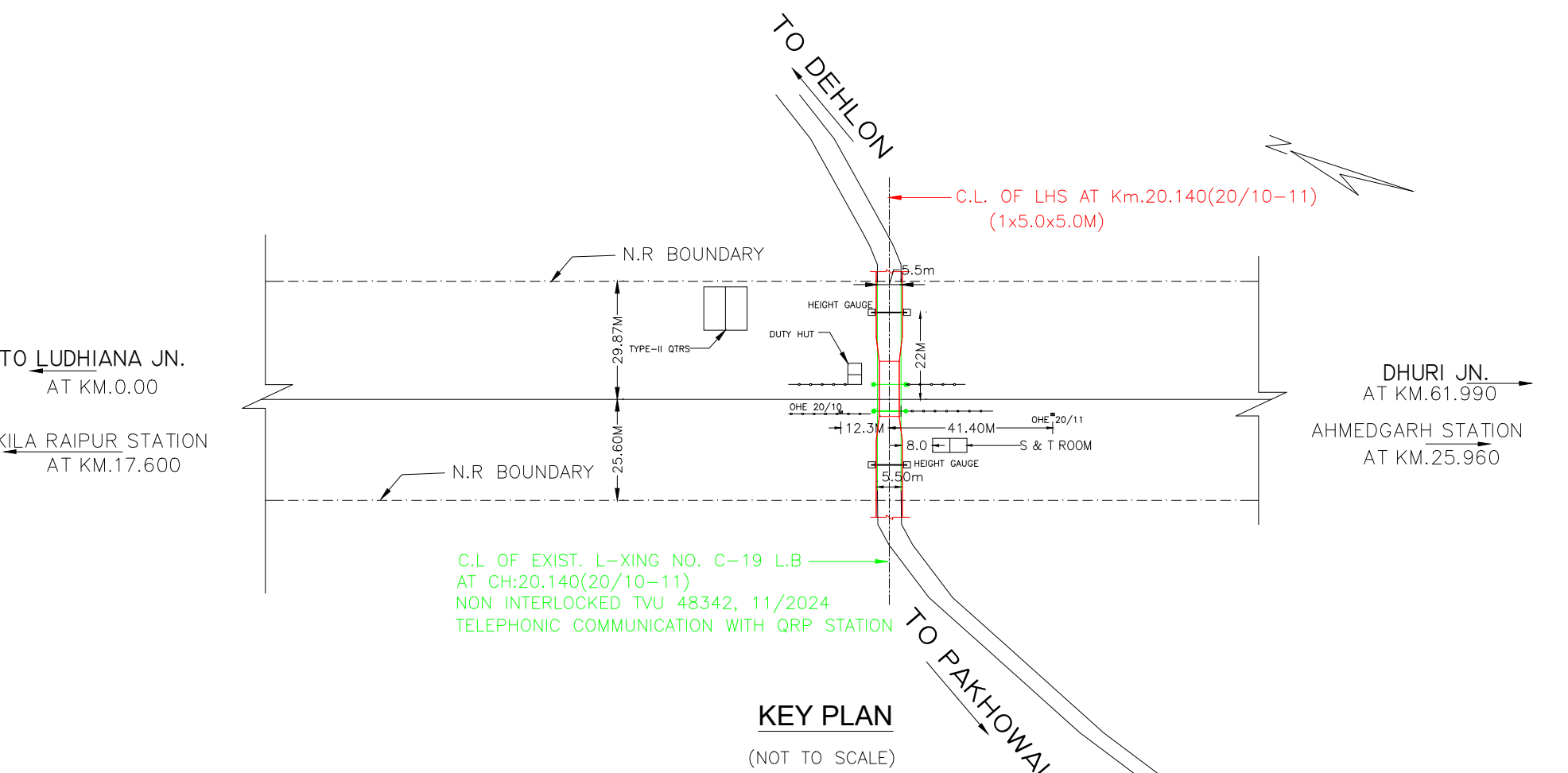
SECTION AT C-C

PART-II: DRAINAGE AND RAIN WATER HARVESTING SYSTEM

CUTTING  
PROP. ROAD LEVEL  
EXISTING ROAD LEVEL  
KILOMETRES



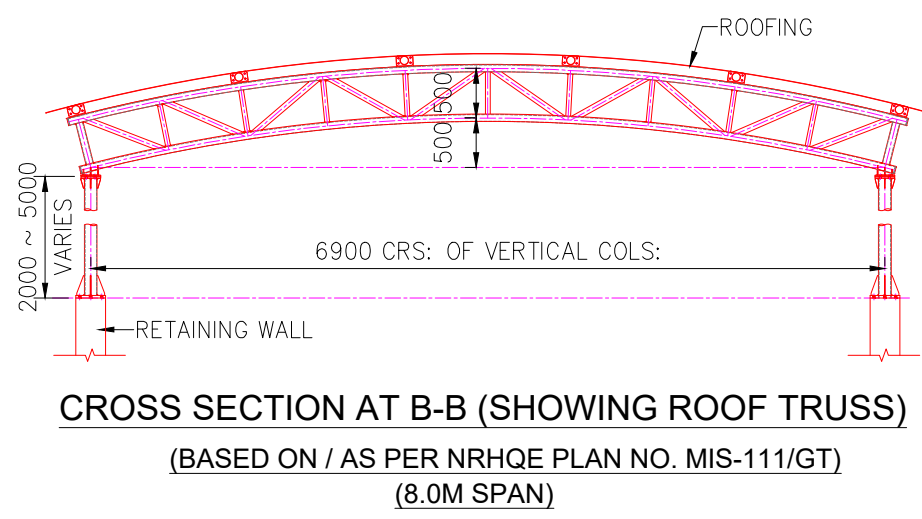
LONGITUDINAL SECTION



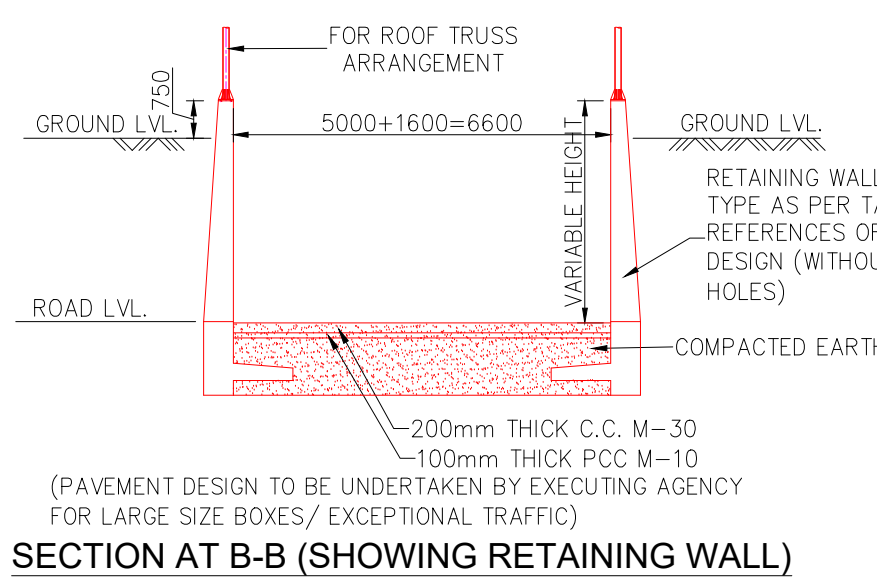
KEY PLAN  
(NOT TO SCALE)

SITE SPECIFIC NOTES:- (IMPORTANT NOTES:- NOT TO BE CHANGED)

1. ALL REINFORCEMENT STEEL SHALL BE OF HSD/TMT (GRADE DESIGNATION MINIMUM Fe-500) CONFORMING TO IS: 1786-2008.
2. ALL GRADE OF CONCRETE SHALL BE DESIGN MIX AS PER SPECIFICATIONS LAID DOWN IN IRS CONCRETE BRIDGE CODE (REVISED-2014).
3. ALREADY APPROVED DRAWINGS FOR RETAINING WALL MAY BE USED IF SOIL PARAMETERS ARE SAME OTHERWISE RETAINING WALL SHALL BE DESIGNED AS PER SITE CONDITIONS WITH SPECIFIC SITE SOIL PARAMETER.
4. DRAINAGE ARRANGEMENT AS SHOWN IN THE DRAWING SHALL BE PROVIDED TO SUIT THE SITE REQUIREMENTS GEO-TEXTILE AS PER RDSO SPECIFICATION MAY BE PROVIDED OUTSIDE THE BOX TO COVER THE JOINTS OF SEGMENTS WHEREVER POSSIBLE AND FILLING THE GAP BETWEEN BANK & BOX WALLS WITH GRAVEL & COURSE SAND ETC. FOR PREVENTION OF FLOW OF EARTH WITH WATER THROUGH JOINTS.
5. STEEL REINFORCEMENT OF ADEQUATE BOND LENGTH SHOULD BE KEPT PROJECTING OUT OF LAST AND FIRST SEGMENT ON BOTH SIDE SO AS TO MAKE JOINT OF LHS AND RETAINING WALL AS MONOLITHIC.
6. SHAPE OF RETAINING WALL MAY BE PROVIDED L-SHAPE/T-SHAPE KEEPING IN VIEW SITE CONDITION.
7. SUITABLE WATER PROOFING ARRANGEMENT TO MAINTAIN BOX & RETAINING WALL WATER TIGHT TO BE PLANNED & PROVIDED BY EXECUTING AGENCY, IF LHS LOCATED NEAR WATER BODY/ AS REQUIRED DUE TO ANY OTHER SITE CONDITIONS.
8. HEIGHT OF RETAINING WALL SHOULD BE KEPT IN SUCH A WAY TO ENSURE THAT WATER IS RESTRICTED FROM OVERFLOWING INTO LHS AREA.
9. THE DRAINAGE ARRANGEMENT AT THE LHS INCLUDING THE RAIN WATER HARVESTING (RWH) SYSTEM AND ALLIED DRAINS SHOULD BE PLANNED IN CONFORMANCE WITH THE ROAD LEVEL OF THE BOX TO ENSURE NATURAL WATER DRAINAGE BY GRAVITY.
10. EXECUTING AGENCY MAY DECIDE FOR THE PROVISION OF SHED IN APPROACHES AS PER REQUIREMENT AT SITE.
11. RELEVANT GEO-TECHNICAL INVESTIGATION OF EXISTING FORMATION SOIL TO BE DONE AT EACH RUB/LHS SITE TO OBTAIN SOIL PARAMETERS AND GROUND WATER LEVEL (GWL).
12. METHODOLOGY OF BOX INSERTION:- PUSHING METHOD:- BY EARTH PUSHING.



CROSS SECTION AT B-B (SHOWING ROOF TRUSS)  
(BASED ON /AS PER NRHQE PLAN NO. MIS-111/GT)  
(8.0M SPAN)



SECTION AT B-B (SHOWING RETAINING WALL)

RCC RETAINING WALL REFERENCES FOR APPROACH ROAD

S.No.	DRAWING NO.	BRIEF REFERENCE
1.	NRHQE (P) PLAN No. P-1873-RB/2020 SH.No. 5	R. WALL WITHOUT WEEP HOLES
2.	NRHQE (P) PLAN No. P-1680-RB/2019 SH.No. 4	R. WALL WITHOUT WEEP HOLES
3.	NRHQE PLAN No. NCR/ENGG./TYPE PLAN/BR./05-2016	R. WALL WITHOUT WEEP HOLES

TENTATIVE DRAWING

NORTHERN RAILWAY	
DRAWING OFFICE/CONST.-I/CHANDIGARH	
AMBALA DIVISION	
PROPOSED LIMITED HEIGHT SUBWAY (RCC BOX SIZE 1X5.0X5.0 M) IN LIEU OF L-XING NO. C-19 AT KM. 20.140. (20/10-II) BETWEEN QRP-AHH STATION ON LDH-DUI SECTION.	
(BY PUSHING METHOD) GENERAL ARRANGEMENT	
SCALES 1:150, 1:75, 1:50	SHEET SIZE: A1
DY/CE/C-I/CDG PLAN NO.	
N.R.H.Q.E.PLAN NO.	
N.R.H.Q.E.PLAN NO.	



**TO G.T ROAD SIDE**

**SECTIONAL ELEVATION AT A-A (L-SECTION)**

**TO G.T ROAD SIDE**

**PLAN WITH DRAINAGE/WATER HARVESTING ARRANGEMENT**

**DETAIL OF HUMP AT 'X' (RAIN WATER RETAINER)**

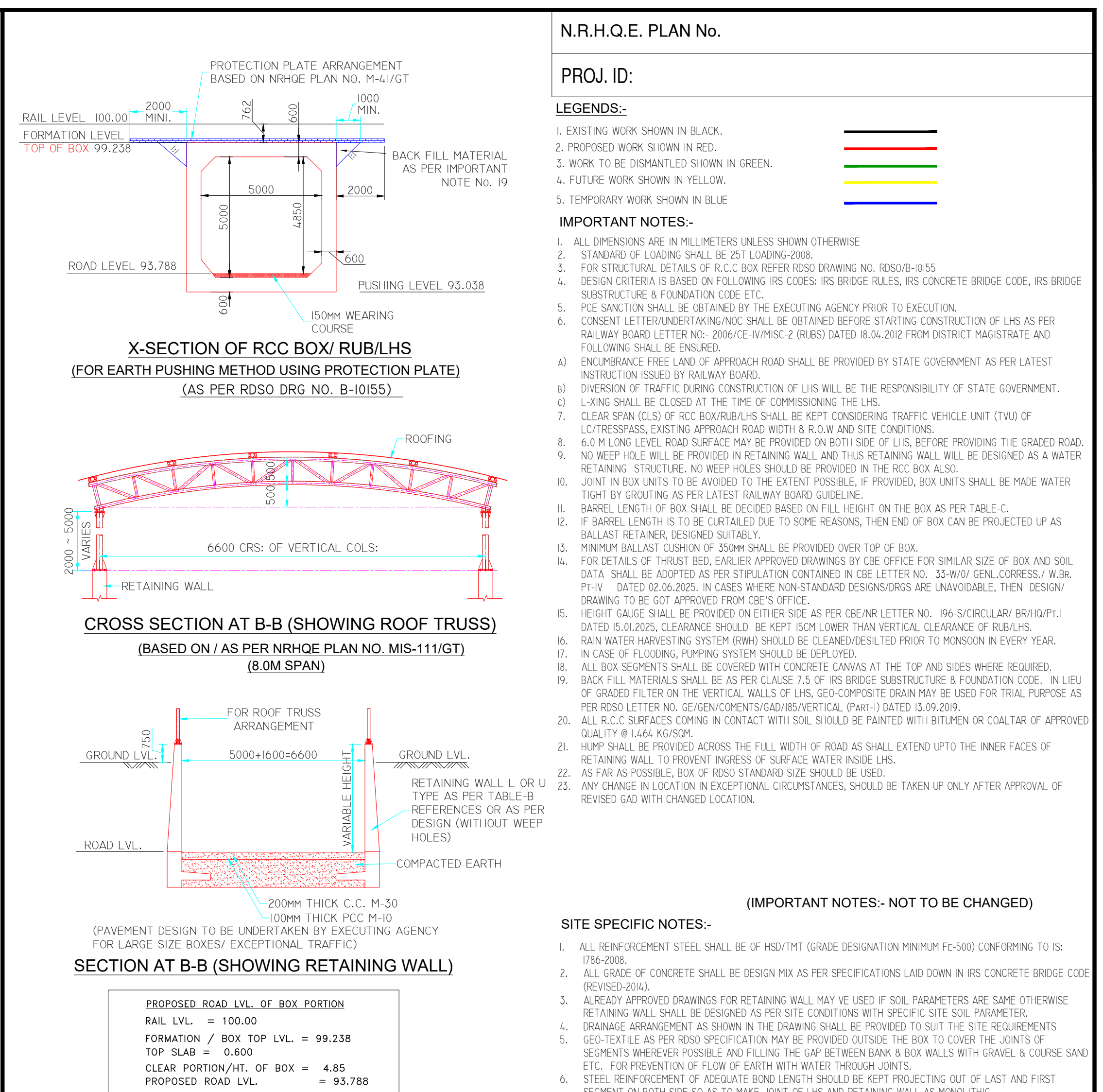
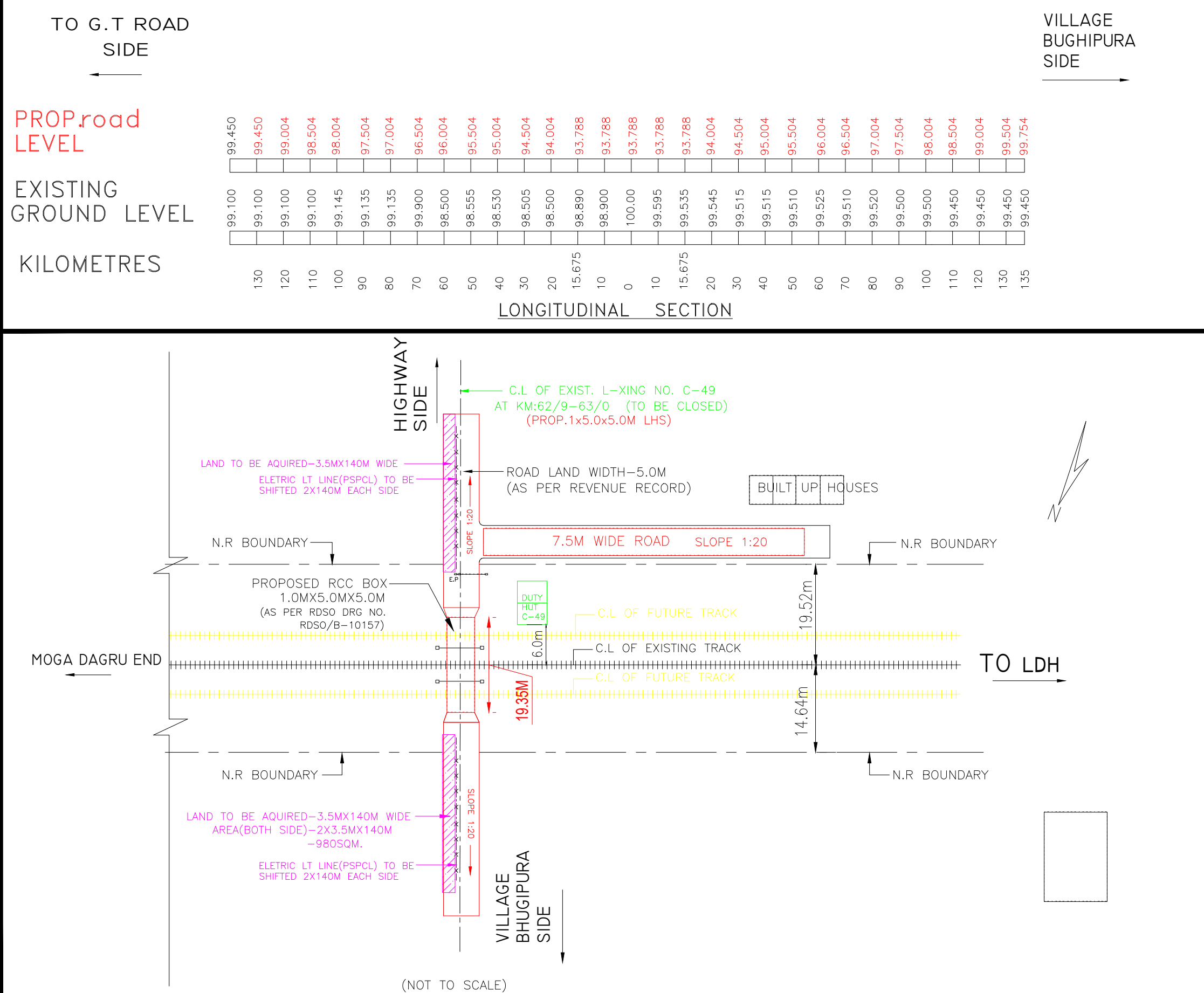
## PART-II: DRAINAGE AND RAIN WATER HARVESTING SYSTEM

**RAIN WATER HARVESTING CHAMBER**  
(SIZE MAY BE CHANGED AS PER SITE REQUIREMENT)

**PLAN**

**X-SECTION OF RCC DRAIN-'A'**

**SECTION A-A**



# TENTATIVE DRAWING

**FIROZPUR DIVISION**

(BY PUSHING METHOD)  
GENERAL ARRANGEMENT

SCALES 1:150, 1:75, 1:50

SHEET SIZE: A

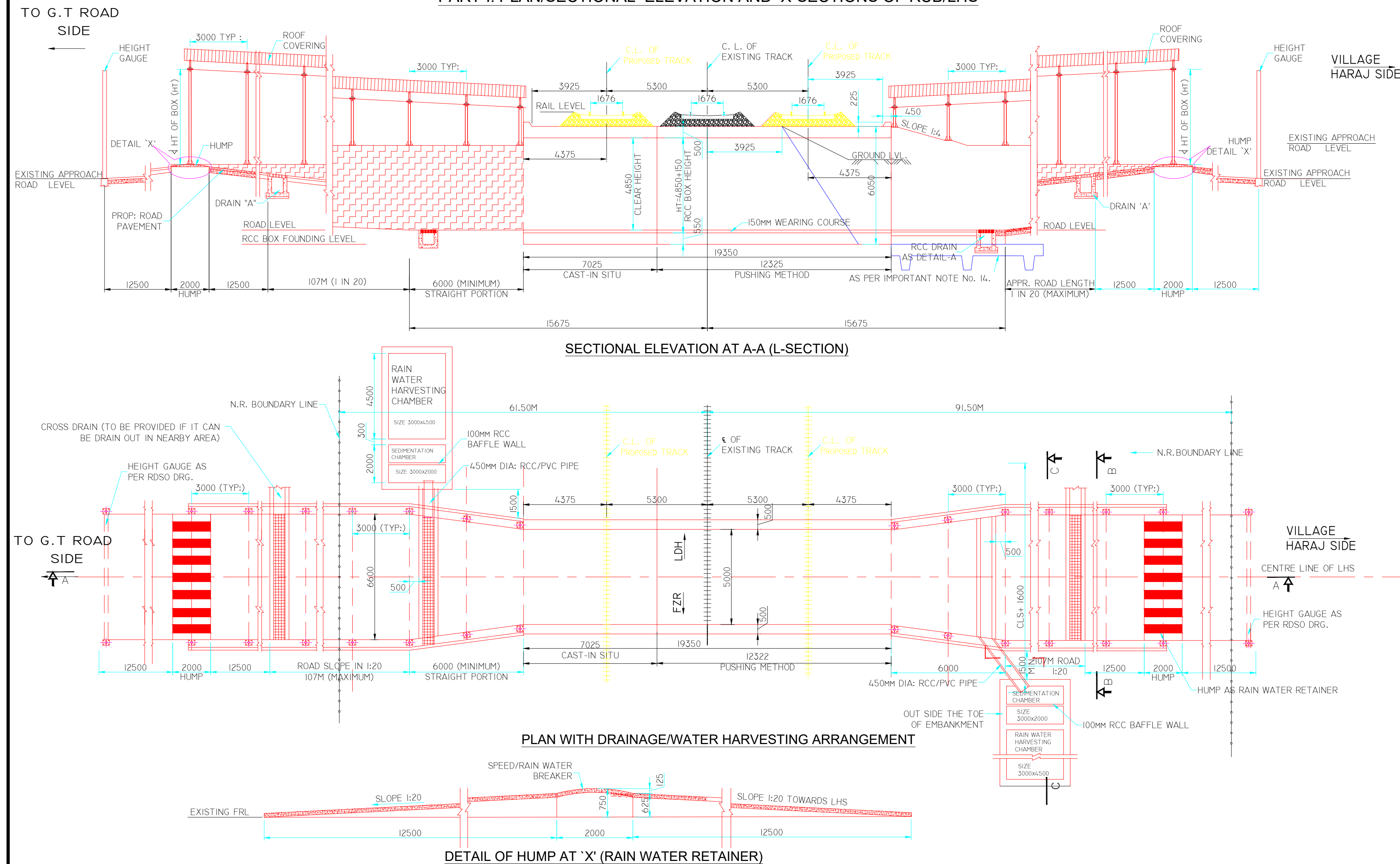
DY.CE/C/JUC PLAN NO. LHS/1231/BUGHIPURA/2026
--

N.R.DIVL: PLAN NO

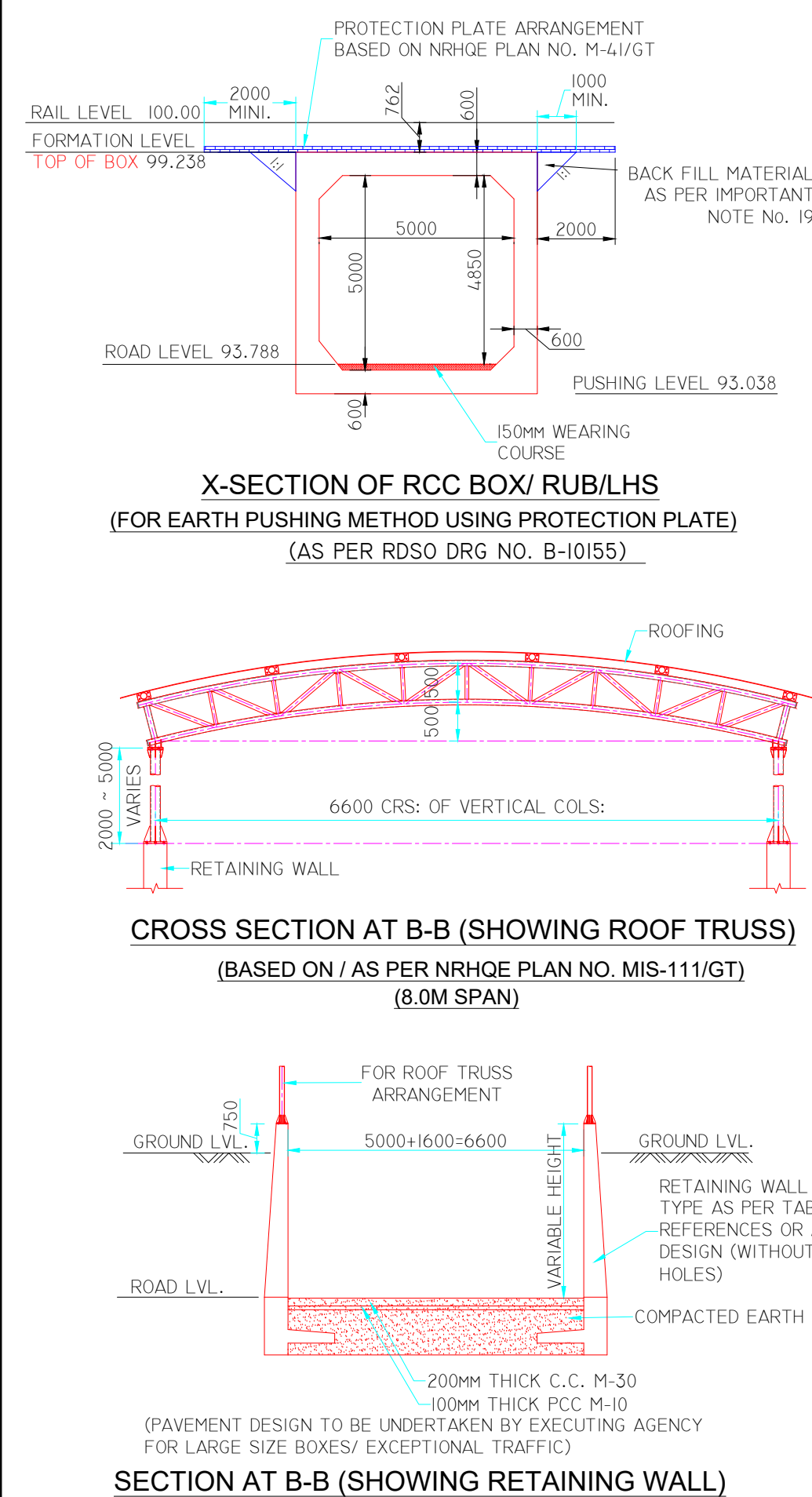
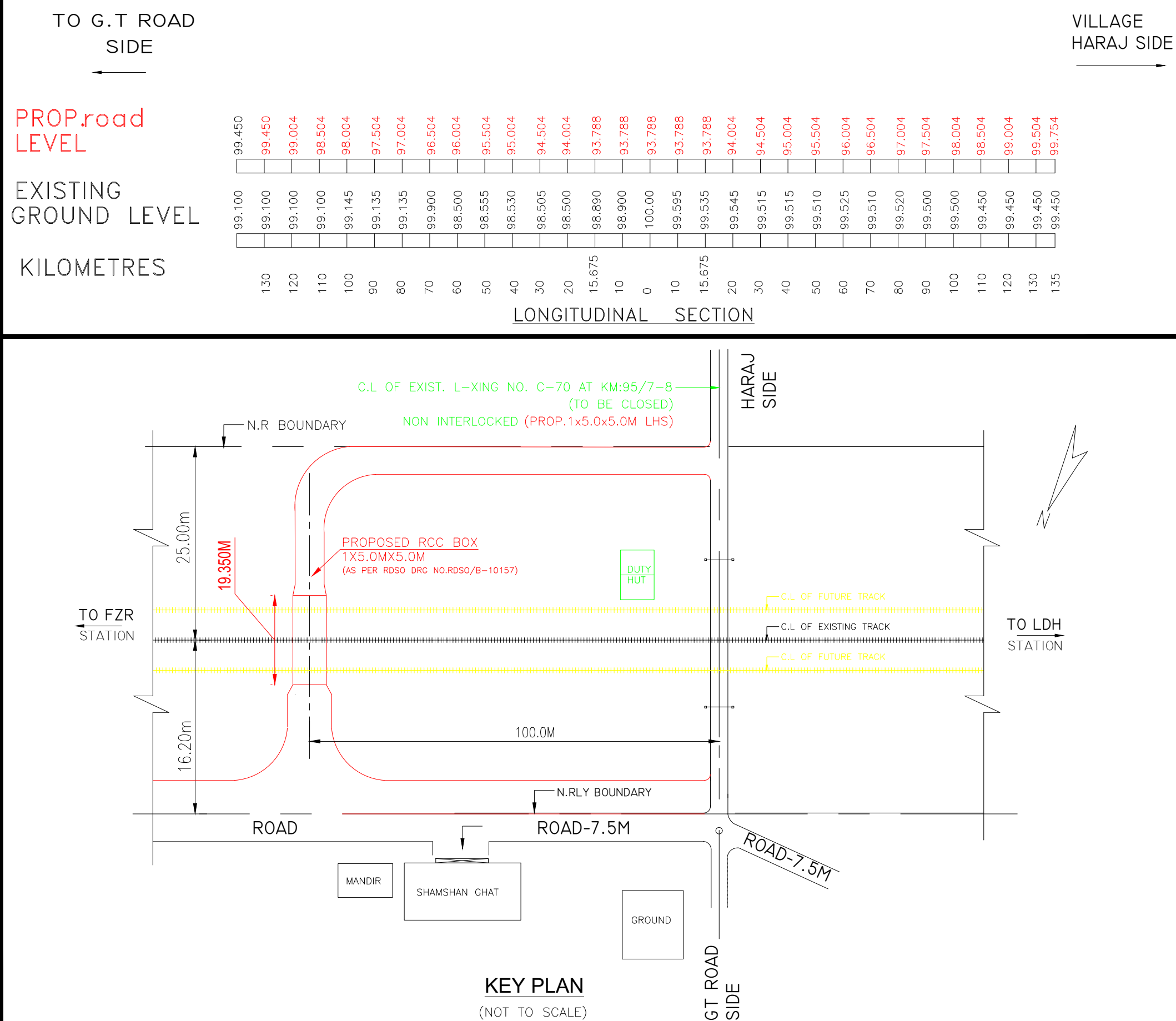
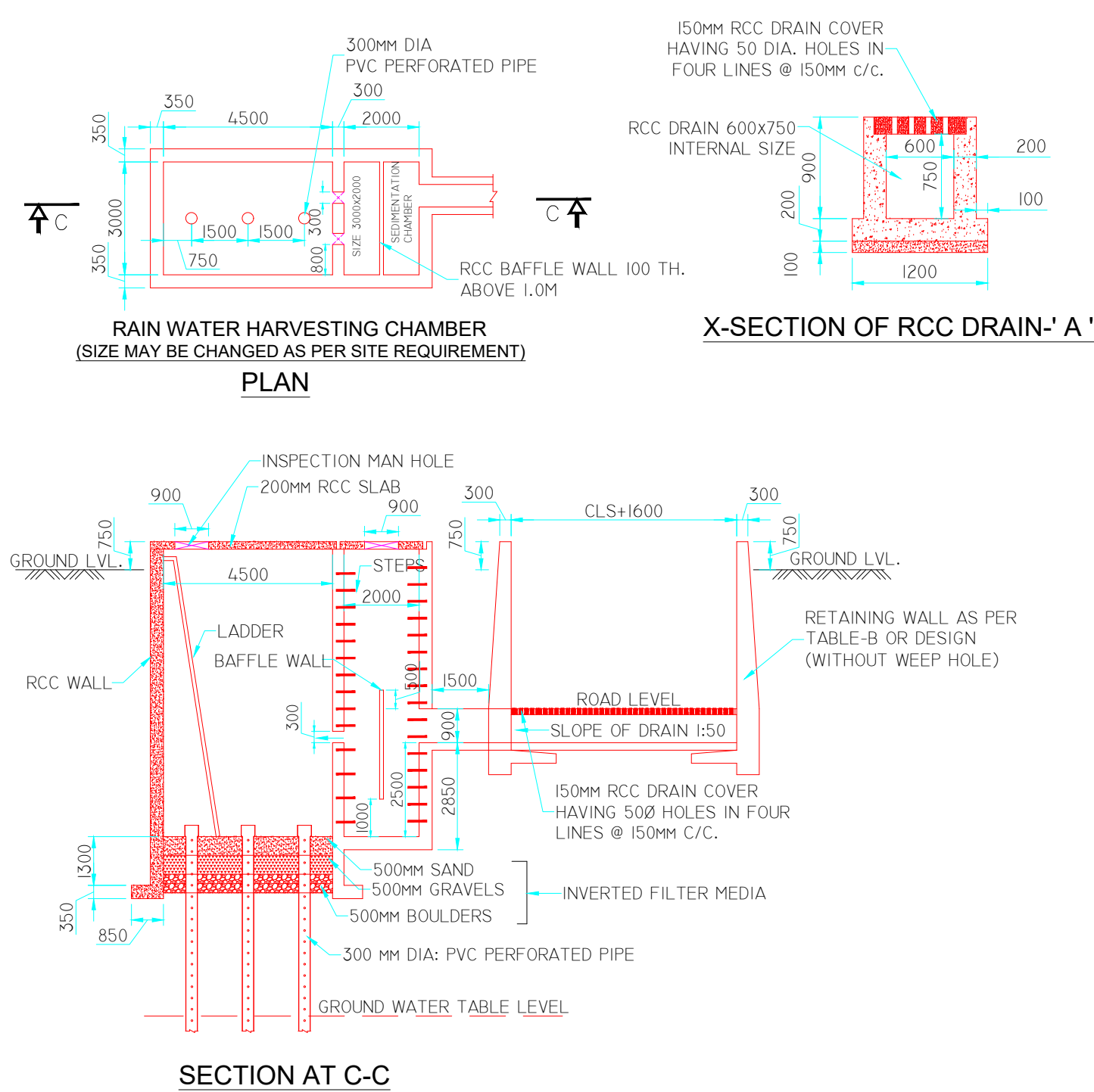
N.R.H.Q..E.PLAN NO



## PART-I: PLAN/SECTIONAL ELEVATION AND X-SECTIONS OF RUB/LHS



## PART-II: DRAINAGE AND RAIN WATER HARVESTING SYSTEM



PROPOSED ROAD LVL. OF BOX PORTION  
RAIL LVL. = 100.00  
FORMATION / BOX TOP LVL. = 99.238  
TOP SLAB = 0.600  
CLEAR PORTION/HT. OF BOX = 4.85  
PROPOSED ROAD LVL. = 93.788

### RCC RETAINING WALL REFERENCES FOR APPROACH ROAD

S.No.	DRAWING NO.	BRIEF REFERENCE
1.	NRHQE (P) PLAN No. P-1873-RB/2020 SH.No. 5	R. WALL WITHOUT WEEP HOLES
2.	NRHQE (P) PLAN No. P-1680-RB/2019 SH.No. 4	R. WALL WITHOUT WEEP HOLES
3.	NRC.HQ.E PLAN No. NCR/ENGG./TYPE PLAN/BR./05-2016	R. WALL WITHOUT WEEP HOLES

NOTES CONTINUE - - - - -

TENTATIVE DRAWING

NORTHERN RAILWAY  
DRAWING OFFICE/CONST./JALANDHAR

FIROZPUR DIVISION

PROPOSED ROAD UNDER BRIDGE OR LIMITED HEIGHT SUBWAY  
(RCC BOX SIZE 1X5.0X5.0. M) IN LIEU OF L-XING NO. C-70 AT  
KM:95/7-8 B/W TWB-FZR ON LDH -FZR SECTION.

(BY PUSHING METHOD)  
GENERAL ARRANGEMENT

SCALES 1:150, 1:75, 1:50

SHEET SIZE: A1

DY.CE/C/JUC PLAN NO. LHS/1232/HARAJ/2026

N.R.DIVL: PLAN NO.

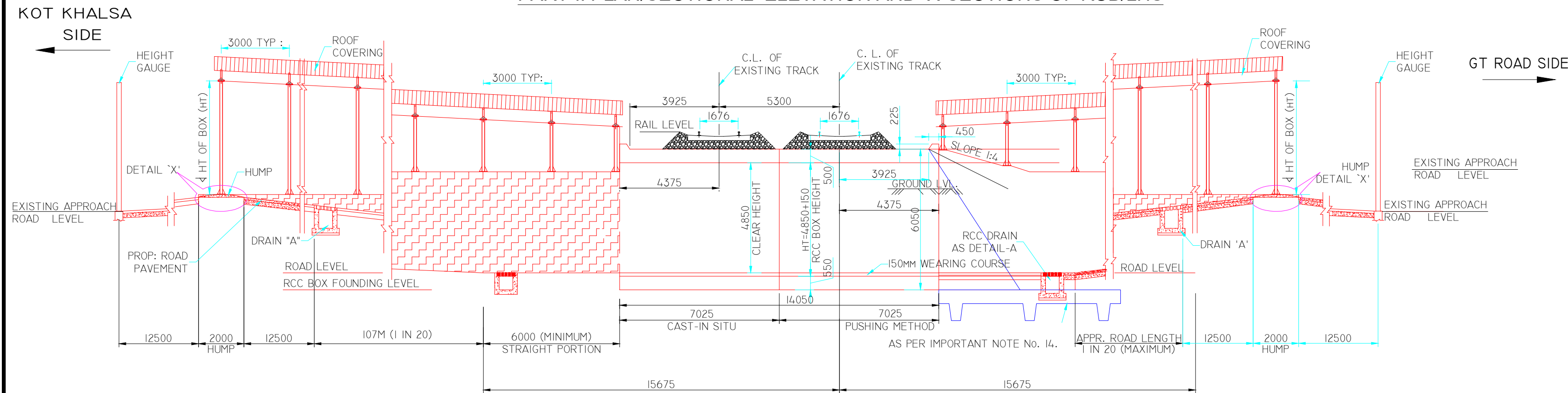
N.R.H.Q..E.PLAN NO.



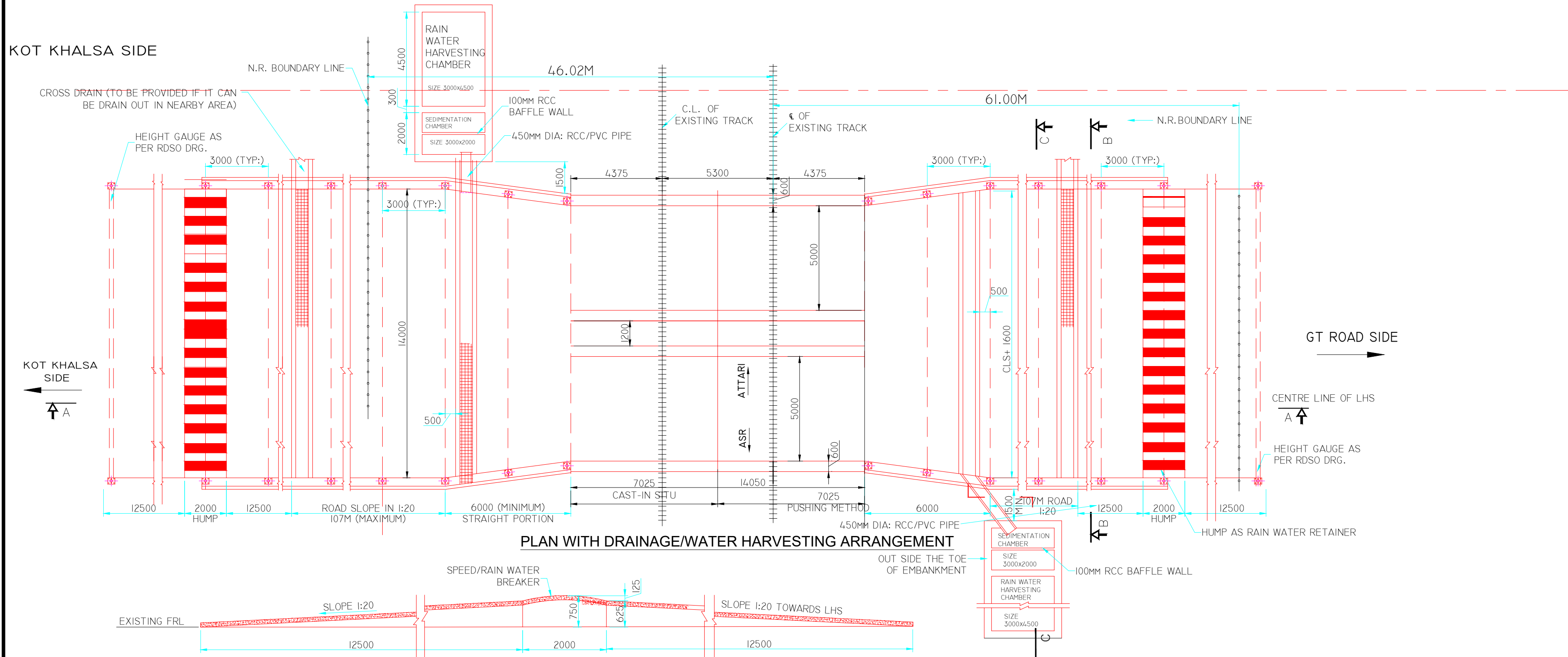




# PART-I: PLAN/SECTIONAL ELEVATION AND X-SECTIONS OF RUB/LHS

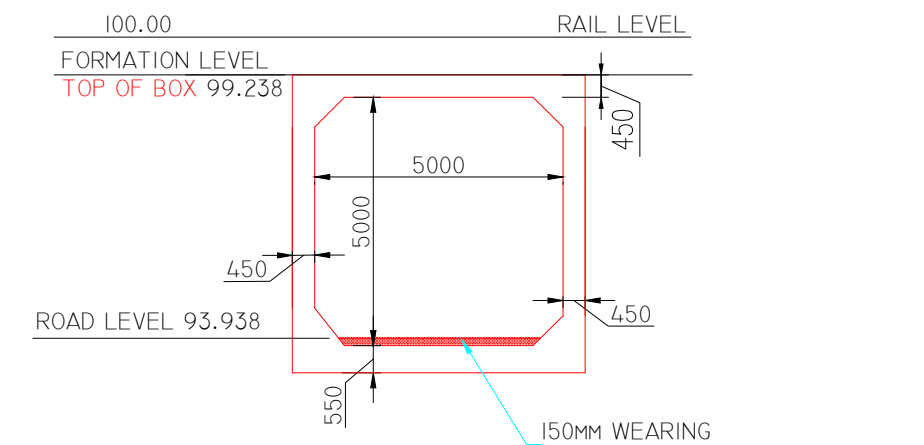


SECTIONAL ELEVATION AT A-A (L-SECTION)

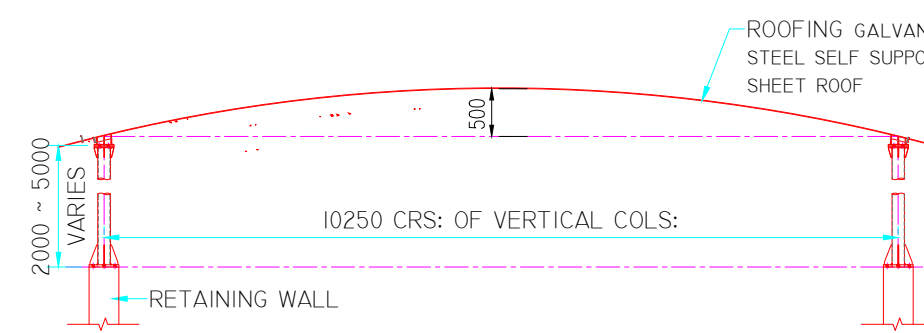


PLAN WITH DRAINAGE/WATER HARVESTING ARRANGEMENT

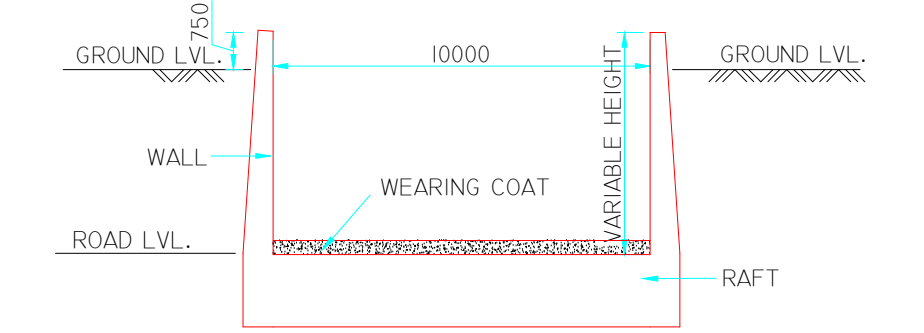
DETAIL OF HUMP AT 'X' (RAIN WATER RETAINER)



X-SECTION OF RCC BOX/ RUB/LHS  
(FOR EARTH PUSHING METHOD USING PROTECTION PLATE)



CROSS SECTION AT B-B (SHOWING ROOF TRUSS)  
(BASED ON / AS PER NRHQE PLAN NO. MIS-111/GT)  
(8.0M SPAN)



SECTION AT B-B (SHOWING RETAINING WALL)

PROPOSED ROAD LVL. OF BOX PORTION	
RAIL LVL. =	100.00
FORMATION / BOX TOP LVL. =	99.238
TOP SLAB =	0.450
CLEAR PORTION/HT. OF BOX =	4.85
PROPOSED ROAD LVL. =	99.938

## RCC RETAINING WALL REFERENCES FOR APPROACH ROAD

S.No.	DRAWING NO.	BRIEF REFERENCE
1.	NRHQE (P) PLAN NO. P-1873-RB/2020 SH.NO. 5	R. WALL WITHOUT WEEP HOLES
2.	NRHQE (P) PLAN NO. P-1680-RB/2019 SH.NO. 4	R. WALL WITHOUT WEEP HOLES
3.	NRC.HQE PLAN NO. NCR/ENGG./TYPE PLAN/BR/05-2016	R. WALL WITHOUT WEEP HOLES

## N.R.H.Q.E. PLAN No.

## PROJ. ID:

## LEGENDS:-

- EXISTING WORK SHOWN IN BLACK.
- PROPOSED WORK SHOWN IN RED.
- WORK TO BE DISMANTLED SHOWN IN GREEN.
- FUTURE WORK SHOWN IN YELLOW.
- TEMPORARY WORK SHOWN IN BLUE.

## IMPORTANT NOTES:-

- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS SHOWN OTHERWISE
- STANDARD OF LOADING SHALL BE PSTI LOADING-2008.
- FOR STRUCTURAL DETAILS OF R.C.C BOX REFER RDSO DRAWING NO. RDSO/B-10155
- DESIGN CRITERIA IS BASED ON FOLLOWING IRS CODES: IRS BRIDGE RULES, IRS CONCRETE BRIDGE CODE, IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE ETC.
- PCE SANCTION SHALL BE OBTAINED BY THE EXECUTING AGENCY PRIOR TO EXECUTION.
- CONSENT LETTER/UNDERSTANDING/NO.C. SHALL BE OBTAINED BEFORE STARTING CONSTRUCTION OF LHS AS PER RAILWAY BOARD LETTER NO:- 2006/CE-IV/MISC-2 (RUBS) DATED 18.04.2012 FROM DISTRICT MAGISTRATE AND FOLLOWING SHALL BE ENSURED.
  - ENCUMBRANCE FREE LAND OF APPROACH ROAD SHALL BE PROVIDED BY STATE GOVERNMENT AS PER LATEST INSTRUCTION ISSUED BY RAILWAY BOARD.
  - DIVERSION OF TRAFFIC DURING CONSTRUCTION OF LHS WILL BE THE RESPONSIBILITY OF STATE GOVERNMENT.
  - L-XING SHALL BE CLOSED AT THE TIME OF COMMISSIONING THE LHS.
  - CLEAR SPAN (CLS) OF RCC BOX/RUB/LHS SHALL BE KEPT CONSIDERING TRAFFIC VEHICLE UNIT (TVU) OF LC/TRESSPASS, EXISTING APPROACH ROAD WIDTH & R.O.W AND SITE CONDITIONS.
  - 6.0 M LONG LEVEL ROAD SURFACE MAY BE PROVIDED ON BOTH SIDE OF LHS, BEFORE PROVIDING THE GRADED ROAD.
  - NO WEEP HOLE WILL BE PROVIDED IN RETAINING WALL AND THUS RETAINING WALL WILL BE DESIGNED AS A WATER RETAINING STRUCTURE. NO WEEP HOLES SHOULD BE PROVIDED IN THE RCC BOX ALSO.
  - JOINT IN BOX UNITS TO BE AVOIDED TO THE EXTENT POSSIBLE, IF PROVIDED, BOX UNITS SHALL BE MADE WATER TIGHT BY GROUTING AS PER LATEST RAILWAY BOARD GUIDELINE.
  - BARREL LENGTH OF BOX SHALL BE DECIDED BASED ON FILL HEIGHT ON THE BOX AS PER TABLE-C.
  - IF BARREL LENGTH IS TO BE CURTAILED DUE TO SOME REASONS, THEN END OF BOX CAN BE PROJECTED UP AS BALLAST RETAINER, DESIGNED SUITABLY.
  - MINIMUM BALLAST CUSHION OF 350mm SHALL BE PROVIDED OVER TOP OF BOX.
  - FOR DETAILS OF THRUST BED, EARLIER APPROVED DRAWINGS BY CBE OFFICE FOR SIMILAR SIZE OF BOX AND SOIL DATA SHALL BE ADOPTED AS PER STIPULATION CONTAINED IN CBE LETTER NO. 33-W/O/ GENL.CORRESS./ W.BR. P-114 DATED 02.04.2025. IN CASES WHERE NON-STANDARD DESIGNS/DRGS ARE UNAVOIDABLE, THEN DESIGN/DRAWING TO BE GOT APPROVED FROM CBE'S OFFICE.
  - HEIGHT GAUGE SHALL BE PROVIDED ON EITHER SIDE AS PER CBE/ANR LETTER NO. 196-S/CIRCULAR/ BR/HO/PT.1 DATED 15.01.2025, CLEARANCE SHOULD BE KEPT 15CM LOWER THAN VERTICAL CLEARANCE OF RUB/LHS.
  - RAIN WATER HARVESTING SYSTEM (RWH) SHOULD BE CLEANED/DESILTED PRIOR TO MONSOON IN EVERY YEAR.
  - IN CASE OF FLOODING, PUMPING SYSTEM SHOULD BE DEPLOYED.
  - ALL BOX SEGMENTS SHALL BE COVERED WITH CONCRETE CANVAS AT THE TOP AND SIDES WHERE REQUIRED.
  - BACK FILL MATERIALS SHALL BE AS PER CLAUSE 7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE. IN LIEU OF GRADED FILTER ON THE VERTICAL WALLS OF LHS, GEO-COMPOSITE DRAIN MAY BE USED FOR TRIAL PURPOSE AS PER RDSO LETTER NO. GE/GEN/COMMENTS/GAD/BS/VERTICAL (PART-I) DATED 13.09.2019.
  - ALL R.C.C SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COALTAR OF APPROVED QUALITY @ 1:4:44 KO/SQ.M.
  - HUMP SHALL BE PROVIDED ACROSS THE FULL WIDTH OF ROAD AS SHALL EXTEND UPTO THE INNER FACES OF RETAINING WALL TO PREVENT INGRESS OF SURFACE WATER INSIDE LHS.
  - AS FAR AS POSSIBLE, BOX OF RDSO STANDARD SIZE SHOULD BE USED.
  - ANY CHANGE IN LOCATION IN EXCEPTIONAL CIRCUMSTANCES, SHOULD BE TAKEN UP ONLY AFTER APPROVAL OF REVISED GAD WITH CHANGED LOCATION.
  - LHS APPROACHES WILL BE COVERED WITH SHED.

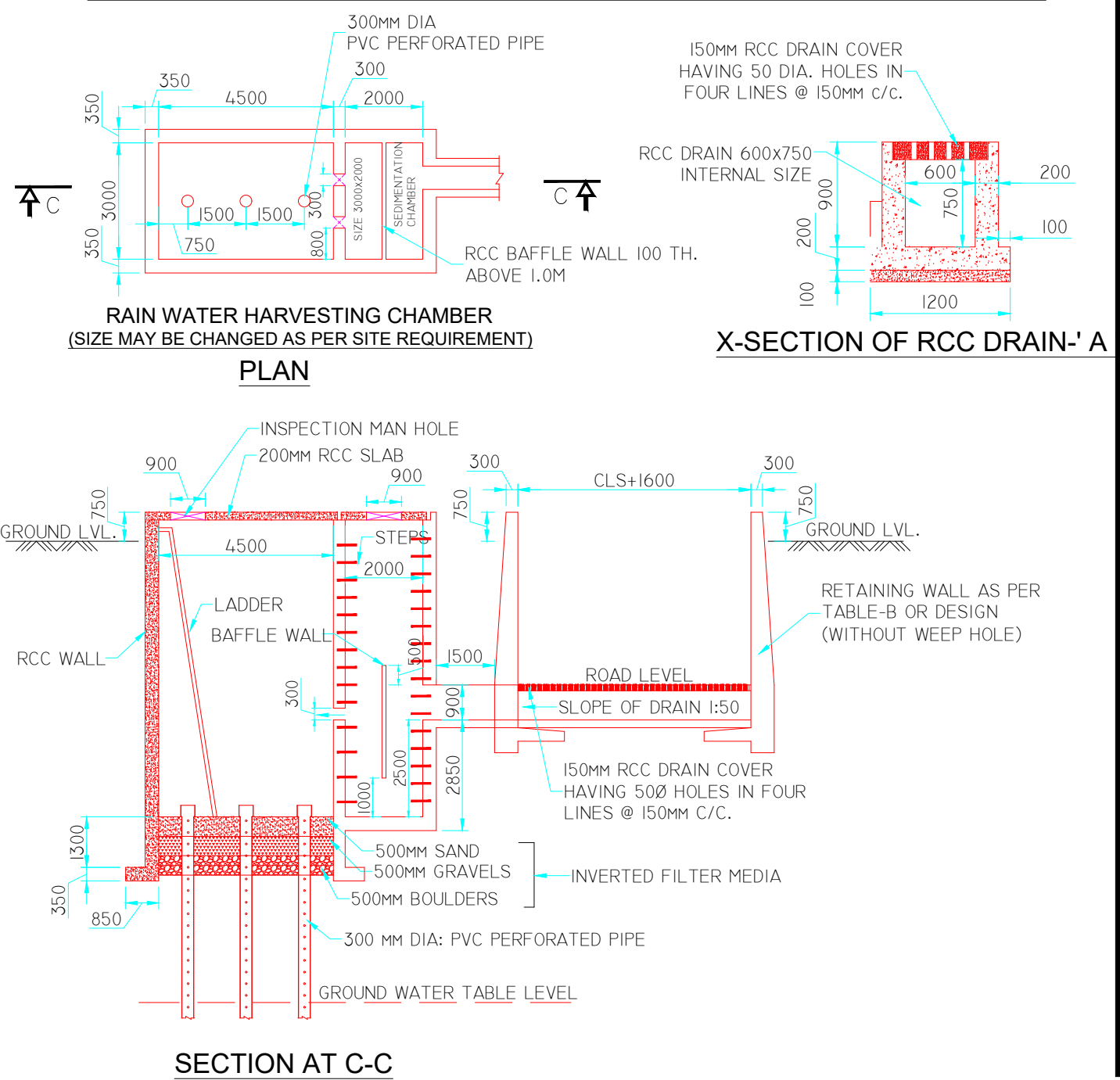
## (IMPORTANT NOTES:- NOT TO BE CHANGED)

## SITE SPECIFIC NOTES:-

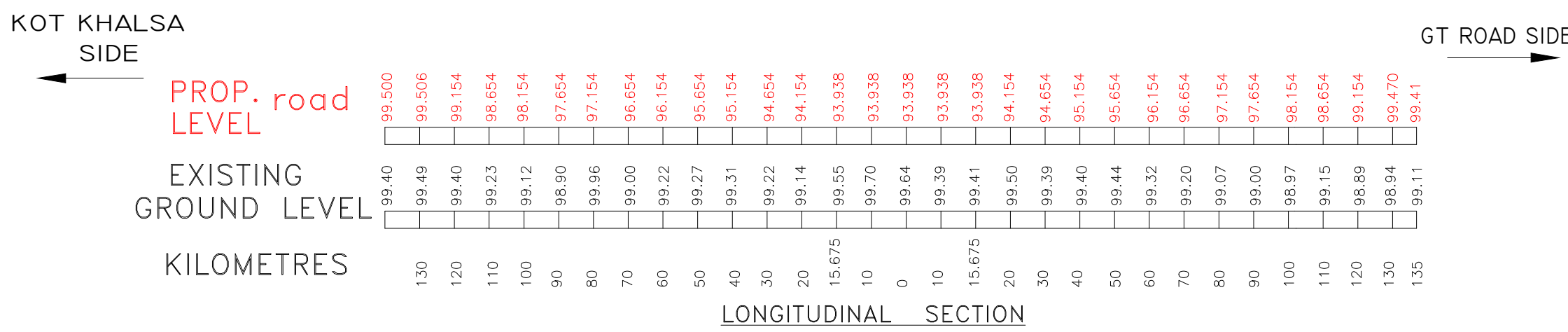
- ALL REINFORCEMENT STEEL SHALL BE OF HSD/TMT (GRADE DESIGNATION MINIMUM Fe-500) CONFORMING TO IS: 1786-2008.
- ALL GRADE OF CONCRETE SHALL BE DESIGN MIX AS PER SPECIFICATIONS LAID DOWN IN IRS CONCRETE BRIDGE CODE (REVISED-2014).
- ALREADY APPROVED DRAWINGS FOR RETAINING WALL MAY VE USED IF SOIL PARAMETERS ARE SAME OTHERWISE RETAINING WALL SHALL BE DESIGNED AS PER SITE CONDITIONS WITH SPECIFIC SITE SOIL PARAMETER.
- DRAINAGE ARRANGEMENT AS SHOWN IN THE DRAWING SHALL BE PROVIDED TO SUIT THE SITE REQUIREMENTS
- GEO-TEXTILE AS PER RDSO SPECIFICATION MAY BE PROVIDED OUTSIDE THE BOX TO COVER THE JOINTS OF SEGMENTS WHEREVER POSSIBLE AND FILLING THE GAP BETWEEN BANK & BOX WALLS WITH GRAVEL & COURSE SAND ETC. FOR PREVENTION OF FLOW OF EARTH WITH WATER THROUGH JOINTS.
- STEEL REINFORCEMENT OF ADEQUATE BOND LENGTH SHOULD BE KEPT PROJECTING OUT OF LAST AND FIRST SEGMENT ON BOTH SIDE SO AS TO MAKE JOINT OF LHS AND RETAINING WALL AS MONOLITHIC.
- SHAPE OF RETAINING WALL MAY BE PROVIDED L-SHAPE/T-SHAPE KEEPING IN VIEW SITE CONDITION.
- SUITABLE WATER PROOFING ARRANGEMENT TO MAINTAIN BOX & RETAINING WALL WATER TIGHT TO BE PLANNED & PROVIDED BY EXECUTING AGENCY, IF LHS LOCATED NEAR WATER BODY/ AS REQUIRED DUE TO ANY OTHER SITE CONDITIONS.
- HEIGHT OF RETAINING WALL SHOULD BE KEPT IN SUCH A WAY TO ENSURE THAT WATER IS RESTRICTED FROM OVERFLOWING INTO LHS AREA
- THE DRAINAGE ARRANGEMENT AT THE LHS INCLUDING THE RAIN WATER HARVESTING (RWH) SYSTEM AND ALLIED DRAINS SHOULD BE PLANNED IN CONFORMANCE WITH THE ROAD LEVEL OF THE BOX TO ENSURE NATURAL WATER DRAINAGE BY GRAVITY.
- EXECUTING AGENCY MAY DECIDE FOR THE PROVISION OF SHED IN APPROACHES AS PER REQUIREMENT AT SITE.
- RELEVANT GEO-TECHNICAL INVESTIGATION OF EXISTING FORMATION SOIL TO BE DONE AT EACH RUB/LHS SITE TO OBTAIN SOIL PARAMETERS AND GROUND WATER LEVEL (GWL).
- METHODOLOGY OF BOX INSERTION:- ONE OPTION FROM (a) AND (b) AS RELEVANT TO BE SHOWN.
  - METHODOLOGY OF TRACK PROTECTION:- BY PLATE PROTECTION/RELIEVING GRIDERS OR ANY OTHERS METHOD.
  - PUSHING METHOD:- BY EARTH PUSHING.

NOTES CONTINUE - - - - -

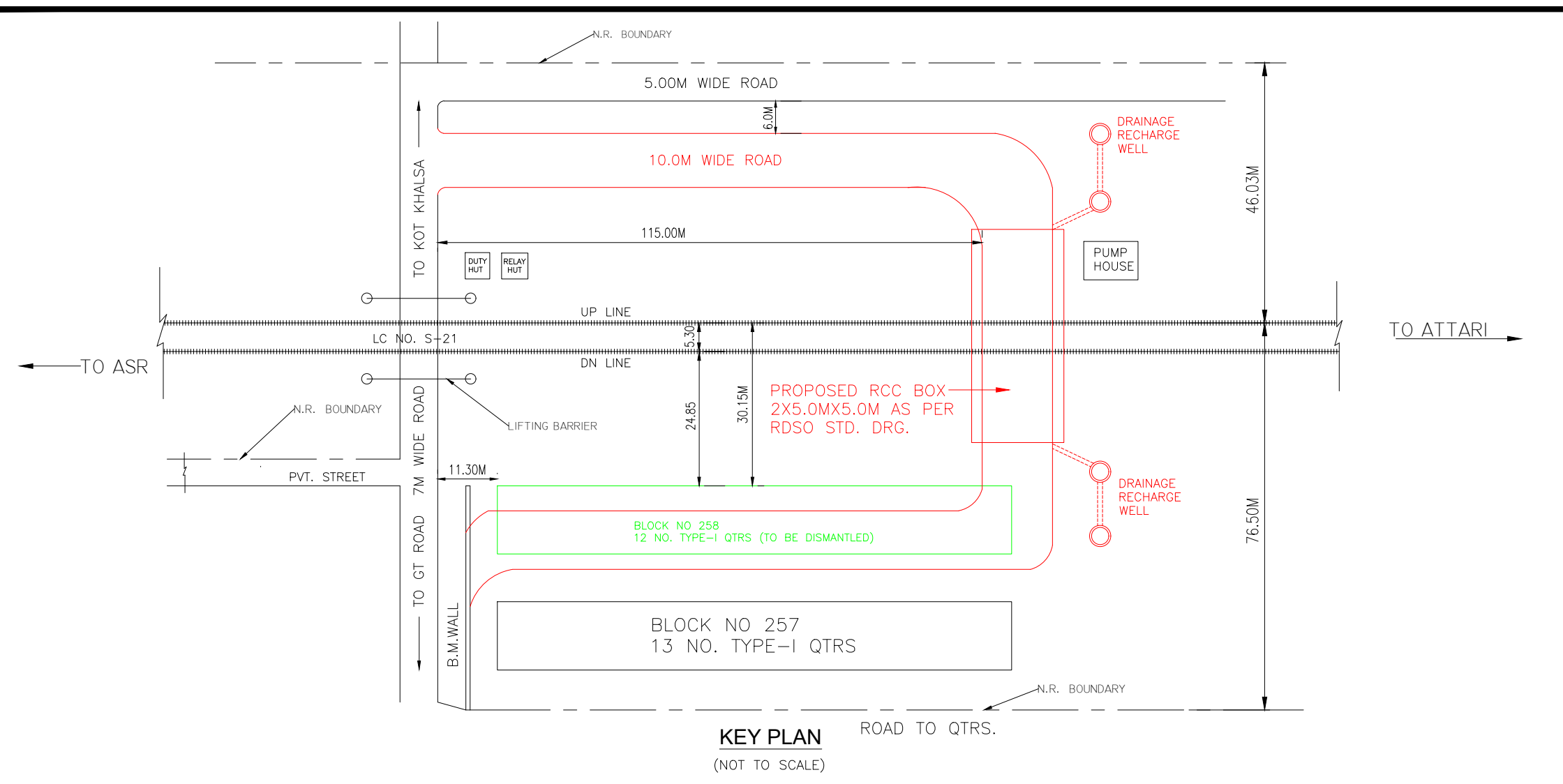
## PART-II: DRAINAGE AND RAIN WATER HARVESTING SYSTEM



SECTION AT C-C



LONGITUDINAL SECTION



KEY PLAN  
(NOT TO SCALE)

## TENTATIVE DRAWING

## NORTHERN RAILWAY DRAWING OFFICE/CONST./JALANDHAR

## FIROZPUR DIVISION

PROPOSED ROAD UNDER BRIDGE OR LIMITED HEIGHT SUBWAY (RCC BOX SIZE 2X5.0x5.0. M) IN LIEU OF L-XING NO. S-21 AT KM:514/29-31 ON ASR-ATTARI SECTION.

## (BY PUSHING METHOD) GENERAL ARRANGEMENT

SCALES 1:150, 1:75, 1:50

SHEET SIZE: A1

DY.CE/C/JUC PLAN NO. GAD-1240/ASR-ATTARI/2026

N.R.DIVL: PLAN NO.

N.R.H.Q.,E.PLAN NO.