

Section VII-8: Tender Drawings and Documents

A- Tender Drawings

B- Tender Documents

Section VII-8

A: Tender Drawings

List of Drawings



-Black colour shows Tender drawings which have not been revised



-Blue colour shows Tender drawings which have been revised



-Red colour shows New additional Tender drawings

Note:

1. Tenderer shall download Tender drawings from HRIDC website. Tender Drawings are available for downloading on HRIDC website under Active Tender Section (<https://hridc.co.in/active-tender.php>). Tender drawings uploaded on HRIDC website for Package 4 shall be deemed to form part of final Tender Documents. List of Tender Drawings are enclosed hereunder.

S. No	TITLE	DRAWING NO.
1 ALIGNMENT PLAN AND L-SECTION:		
1.	Conceptual plan and longitudinal section from chainage 10.0KM to chainage 15.185KM (tunnel)	GC-HRIDC-ALL-DRW-ALN-P&P-10-15KM_A1
2.	Conceptual plan and longitudinal section from chainage 15.185KM to chainage 20.0KM	GC-HRIDC-ALL-DRW-ALN-P&P-15-20KM_A1
3.	Conceptual plan and longitudinal section from chainage 24.0KM to chainage 30.0KM (tunnel)	GC-HRIDC-ALL-DRW-ALN-P&P-24-30KM_A2
2 TUNNEL		
1.	Conceptual drawing for Single track tunnel cross section (Rock)	GC-HRIDC-C4-DRW-TTL-CLT-01001_A1
2.	Conceptual drawing for Single track tunnel cross section (Soil)	GC-HRIDC-C4-DRW-TTL-CLT-01002_A1
3.	Conceptual drawing for Support class III from CH: 24940 to CH: 26000	GC-HRIDC-C4-DRW-TTL-CLT-01003_A0
4.	Conceptual drawing for Support class IV from CH: 24880 to CH: 24940	GC-HRIDC-C4-DRW-TTL-CLT-01004_A0
5.	Conceptual drawing for Support class VI (i) from CH: 26000 to CH: 28420	GC-HRIDC-C4-DRW-TTL-CLT-01005_A0
6.	Conceptual drawing for Support class VI(ii) from CH: 28420 to CH: 28480	GC-HRIDC-C4-DRW-TTL-CLT-01006_A0
7.	Conceptual drawing for Tunnel typical detail of lattice girder	GC-HRIDC-C4-DRW-TTL-CLT-01007_A0
8.	Conceptual drawing for Cut & cover section of tunnel	GC-HRIDC-C4-DRW-TTL-CLT-01008_A1

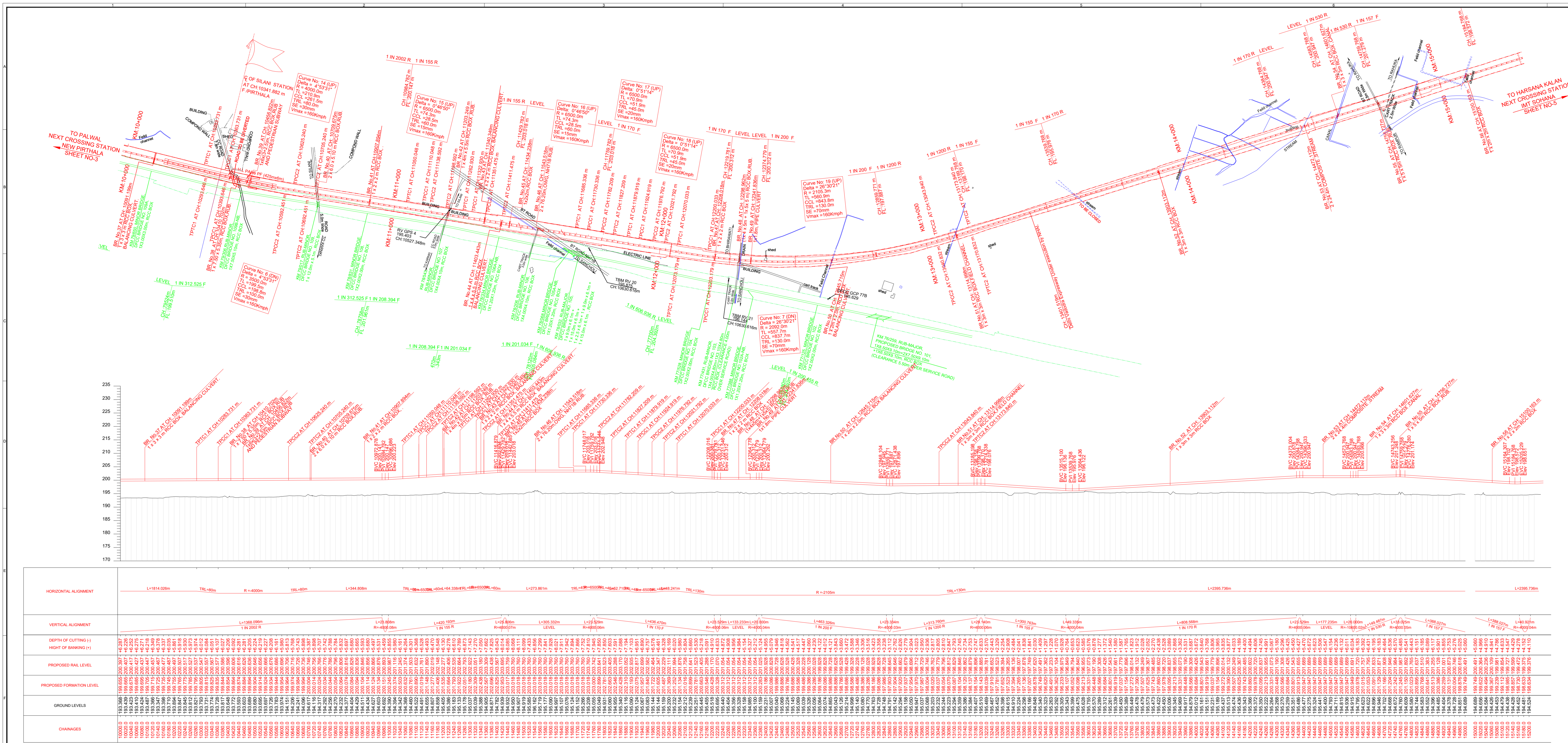
S. No	TITLE	DRAWING NO.
9.	Conceptual drawing for Cross passage junction with main tunnel	GC-HRIDC-C4-DRW-TTL-CLT-01009_A1
10.	Conceptual drawing for Permanent Ventilation shaft junction with main tunnel	GC-HRIDC-C4-DRW-TTL-CLT-01010_A2 (Sheet 1 of 3)
		GC-HRIDC-C4-DRW-TTL-CLT-01010_A2 (Sheet 2 of 3)
		GC-HRIDC-C4-DRW-TTL-CLT-01010_A2 (Sheet 3 of 3)
11.	Conceptual drawing for Construction cum utility shaft	GC-HRIDC-C4-DRW-TTL-CLT-01011_A2
12.	Conceptual drawing for Portal-1 & Abutment A2 of proposed HORC viaduct	GC-HRIDC-C4-DRW-TTL-CLT-01012_A1
13.	Conceptual drawing for Portal-2 & open cutting area with 100m ballastless track	GC-HRIDC-C4-DRW-TTL-CLT-01013_A1
3 BRIDGES		
3.1 MINOR BRIDGES		
1.	Conceptual general arrangement drawing for Balancing culvert Bridge no. 047 Span 1.0x2.0x2.0 RCC box at Ch: 12208.018	GC-HRIDC-C4-DRW-BRD-GAD-01047_A1
2.	Conceptual general arrangement drawing for Drain + Road Bridge no. 048 span 1x4.0x5.0+1x5x5 RCC box at Ch: 12298.962	GC-HRIDC-C4-DRW-BRD-GAD-01048_A1
3.	Conceptual general arrangement drawing for pipe culvert Bridge no. 049 span 1.0x1.80ø Pipe culvert at Ch: 12341.836	GC-HRIDC-C4-DRW-BRD-GAD-01049_A1
4.	Conceptual general arrangement drawing for Balancing culvert Bridge no. 050 Span 1.0x2.0x2.0 RCC box at Ch: 12645.715	GC-HRIDC-C4-DRW-BRD-GAD-01050_A1
5.	Conceptual general arrangement drawing canal Bridge no. 051 span 1.0x3.0x3.0 RCC box at Ch: 13114.998	GC-HRIDC-C4-DRW-BRD-GAD-01051_A1
6.	Conceptual general arrangement drawing for Balancing culvert Bridge no. 052 Span 1.0x3.0x3.0 RCC box at Ch: 13903.112	GC-HRIDC-C4-DRW-BRD-GAD-01052_A1

S. No	TITLE	DRAWING NO.
7.	Conceptual general arrangement drawing for canal Bridge no. 054 1.0x3.0x3.0 RCC box at Ch: 14601.627	GC-HRIDC-C4-DRW-BRD-GAD-01054_A1
8.	Conceptual general arrangement drawing for Road under bridge, Bridge no. 055 Span 1x5.0x5.0 RCC box at Ch: 14756.727	GC-HRIDC-C4-DRW-BRD-GAD-01055_A1
9.	Conceptual general arrangement drawing for Balancing culvert Bridge no. 056 Span 1.0x2.0x2.0 RCC box at Ch: 15100.163	GC-HRIDC-C4-DRW-BRD-GAD-01056_A1
10.	Conceptual general arrangement drawing for Road under bridge, Bridge no. 057 Span 1x5.0x5.0 RCC box at Ch: 15944	GC-HRIDC-C4-DRW-BRD-GAD-01057_A1
11.	Conceptual general arrangement drawing proposed RUB no. 060 Span 2x7.0x5.6 RCC box at Ch: 16827	GC-HRIDC-C4-DRW-BRD-GAD-01060_A2
3.2 MAJOR BRIDGES		
1.	Conceptual general arrangement drawing for stream bridge no.53 2x24.4 CG at Ch: 14472.112m	GC-HRIDC-C4-DRW-BRD-GAD-01053_A2
2.	Conceptual general arrangement drawing for Canal Br.no. 058 1 x 5 x 5.4m + 1 x 12.2m + 1 x 5 x 5.4m PSC U slab Ch: 16127	GC-HRIDC-C4-DRW-BRD-GAD-01058_A2
3.	Conceptual general arrangement drawing proposed RUB no. 059 2 x 12.2m PSC U slab Ch: 16727	GC-HRIDC-C4-DRW-BRD-GAD-01059_A2
4.	Conceptual general arrangement drawing proposed Canal Br. No. 061 1x5x5.4+1x12.2+1x5x5.4m PSC U slab Ch: 16917	GC-HRIDC-C4-DRW-BRD-GAD-01061_A2
5.	Conceptual general arrangement drawing proposed RUB no. 062 1 x 12.2m PSC U slab Ch: 17500	GC-HRIDC-C4-DRW-BRD-GAD-01062_A2

S. No	TITLE	DRAWING NO.
4 MISCELLANEOUS DRAWINGS (CONCEPTUAL PLANS)		
1.	Jurisdictional sketch of C-4 package	GC-HRIDC-C4-SK-CIVIL-001_A1
2.	Schematic diagram of HORC tunnel	GC-HRIDC-C4-SK-TUNNEL-001_A1
3.	Conceptual Plan Typical embankment/cutting profile	GC-HRIDC-SK-GEN-001_A2
4.	Conceptual Plan Drains for Embankment	GC-HRIDC-SK-GEN-008_A2
5.	Conceptual Plan Steel barricade	GC-HRIDC-SK-GEN-009
6.	Conceptual Plan Interfacing location bank benching	GC-HRIDC-C4-SK-012_A2
7.	Conceptual Plan CC Toe wall	GC-HRIDC-SK-GEN-014_A2
8.	Conceptual Plan Typical details of protection work	GC-HRIDC-SK-GEN-015_A1
9.	Conceptual Plan Barbed wire fencing	GC-HRIDC-SK-GEN-016_A1
10.	Conceptual Plan for Transition system of bridge approaches	GC-HRIDC-SK-GEN-019_A1
11.	Conceptual plan for Trolley Refuge in embankment	GC-HRIDC-SK-GEN-022
12.	Conceptual plan for Trolley Refuge in cutting	GC-HRIDC-SK-GEN-023
13.	Conceptual sketch for NP4 pipe of 450mm Dia	GC-HRIDC-SK-GEN-028_A1
14.	Conceptual sketch for box culvert 500 x 500 mm size	GC-HRIDC-SK-GEN-029_A1
15.	Conceptual general arrangement drawing crossing of HORC rail line below Vadodara expressway	GC-HRIDC-SK-GEN-030
16.	Conceptual sketch for road within PROWs in RUBs.	GC-HRIDC-SK-GEN-031
17.	Conceptual sketch for details of inspection steps from cutting in formation to ground	GC-HRIDC-C4-SK-TUNNEL-002_A0
5 GENERAL ELECTRICAL SERVICES DRAWINGS		
1.	Indicative layout plan of Sub-station 11/0.433KV near utility shaft	GC-HRIDC-C4-DRW-TTL-ELE-001_A2
2.	Indicative layout plan of Sub-station 11/0.433KV	GC-HRIDC-C4-DRW-TTL-ELE-002_A2
3.	Power supply for lighting arrangement (Indicative)	GC-HRIDC-C4-DRW-TTL-ELE-003_A2
4.	Power supply arrangement for emergency and maintenance power socket diagram (Indicative)	GC-HRIDC-C4-DRW-TTL-ELE-004_A2
5.	Single line diagram of HT system in tunnel (Indicative)	GC-HRIDC-C4-DRW-TTL-ELE-005_A1

S. No	TITLE	DRAWING NO.
6	LAND AREA FOR TUNNEL	
1.	Land area near Portal-1	HRIDC-C4-SK-LANDPLAN-001_A1
2.	Land area near permanent Ventilation shaft 1 & 2	HRIDC-C4-SK-LANDPLAN-002_A1
3.	Land area near Construction cum utility shaft	HRIDC-C4-SK-LANDPLAN-003_A1
4.	Land area near permanent Ventilation shaft 3 & 4	HRIDC-C4-SK-LANDPLAN-004_A1
5.	Land details from Ch: 28341m to 29680m	HRIDC-C4-SK-LANDPLAN-005_A1

1. Conceptual Plan and Longitudinal Section



LEGEND:

EXISTING RAILWAY TRACK	—
PROPOSED UP & DN LINE	—
DISMANTLING WORKS	---
DFCC WORKS	---
PROPOSED DIVERSIONS	---
EXISTING ROAD	---
PRO HORC BOUNDARY	---
EXPRESSWAY BOUNDARY	---
HT LINE	---
ELECTRICAL LINE(L)	---
STREAM / CANAL / DRAIN	---
WELL	---
POND	---
PRO TOE LINE	---

- NOTE:**
- ALL DIMENSIONS ARE IN METRE UNLESS OTHERWISE STATED
 - ALL THE LEVELS ARE WITH RESPECT TO MEAN SEA LEVEL.
 - TRACK CENTRE BETWEEN MAIN LINES OF HORC HAS BEEN KEPT AS MIN 5.30m
 - PUBLIC UTILITIES HT/LT LINES OFC CABLES WATER/SEWER LINES ETC INTERFERING WITH DFC TRACKS SHALL BE RELOCATED.
 - ARRANGEMENT & SIZE OF THE BRIDGE SHOWN IN THE DRAWING IS TENTATIVE AND MAY CHANGE AS PER THE APPROVED GAD.
 - VERTICAL CLEARANCE FROM LOWEST CONDUCTOR OF HT POWER LINE TO PROPOSED RAIL LEVEL ARE SHOWN

PROPOSED TRACK STRUCTURE (TO SUIT FOR 25T AXLE LOAD)

- 1. TRACK = 60KG RAILS
- 2. TRACK CENTRE BETWEEN MAIN LINES OF HORC HAS BEEN KEPT AS MIN 5.30m
- 3. SLEEPER DENSITY = 1660 No.S PER KM
- 4. BALLAST CUSHION : 350mm
- 5. ALL TURNOUTS ARE : 1 in 12 UNLESS OTHERWISE SPECIFIED.

ABBREVIATIONS:

- BVC - BEGIN OF VERTICAL CURVE
- PVI - POINT OF VERTICAL INTERSECTION
- EVC - END OF VERTICAL CURVE

LEGEND FOR PROFILE:

- PROPOSED RAIL PROFILE
- PROPOSED FORMATION PROFILE
- GROUND PROFILE

GCHORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHAITY RAM PD	<i>[Signature]</i>	SHIVOM DWIVEDI CPM/HRDC	<i>[Signature]</i>
SUDHAR AGRAWAL DPO/CIVIL	<i>[Signature]</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>[Signature]</i>
KRISHAN CHAND SAINI CRE/CIVIL	<i>[Signature]</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONPAT BYPASSING DELHI AREA BY LINKING ASAOJI-PATLI-SULTANPUR-ASADAH BY NEW ELECTRIFIED BG DOUBLE LINE

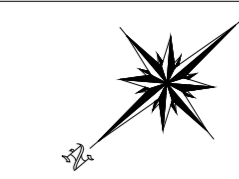
CLIENT:
HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

TITLE:
CONCEPTUAL PLAN AND LONGITUDINAL SECTION FROM CHANGE BUREAU TO CHANGE 15 (ISSUE 11) (TUNNEL)

GC DRG NO.	GC-HRIDC-ALL-DRW-14P-10-18KM-AL
DATE:	07.31.2022
REVISION DATE:	02.01.2023
CONSULTANTS:	AARVEE ASSOCIATES
DRN/AM (CADD)	G PRASAD / M
CHECKED	N. J. RAO (VP)
APPROVED	<i>[Signature]</i>

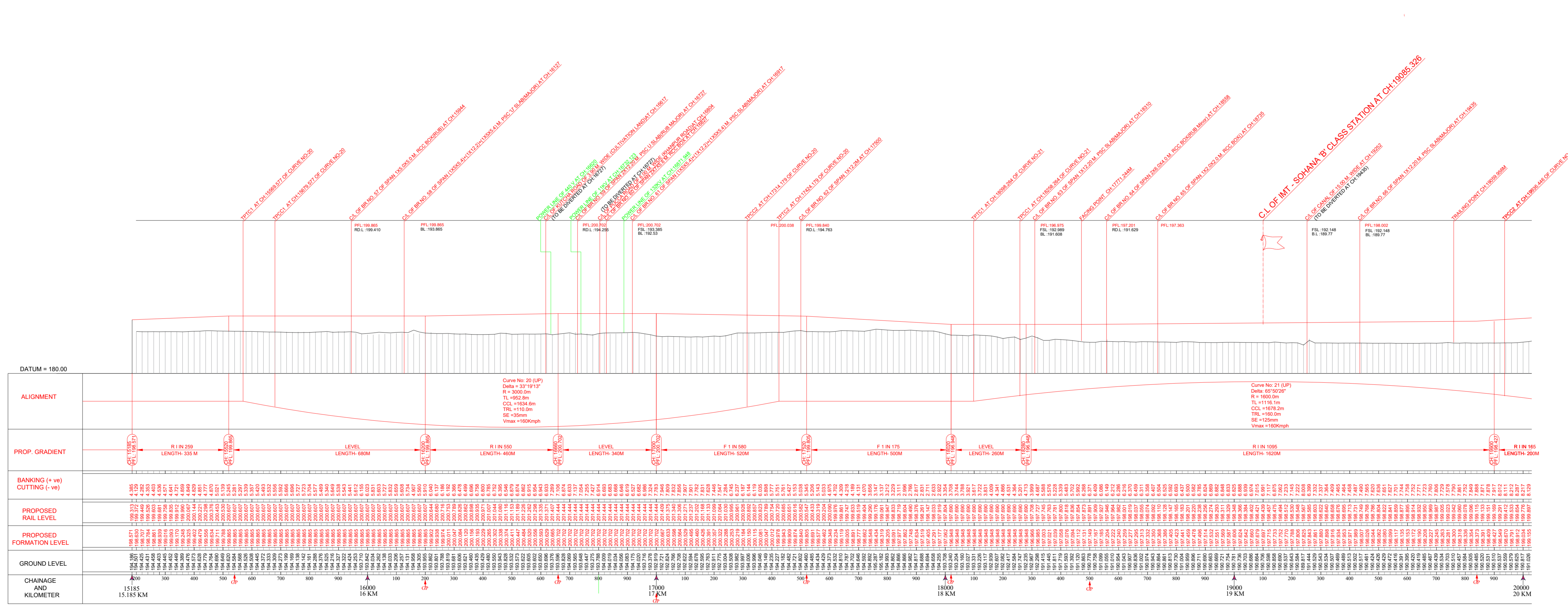
DRS NO. AA/22/ASAD/DR/P/R/3 SHEET No. 5 OF 24
SCALE : H = 1:5000 V = 1:5000 ISSUED DATE: 26.11.2019 REV DATE: 06-08-2022



- NOTES:-**
- EXISTING WORK SHOWN IN BLACK.
 - PROPOSED WORK SHOWN IN RED.
 - ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SPECIFIED.
 - CHAINAGE IS RECKONED 0.00 FROM C.L. OF NEW PITHLA STATION BUILDING.
 - RAIL LEVEL SHOULD BE 0.742M ABOVE FORMATION LEVEL FOR TRACK STRUCTURE 60KG NEW RAIL ON PSC SLEEPER (1660x300) WITH 350mm BALLAST CUSHION.
 - RULLING GRADIENT IS 1 IN 150 OF THIS SECTION (COMPENSATED).
 - VERTICAL CURVE WILL BE PROVIDED AS PER IRPWV PARA 419.
 - CROSS LONGITUDINAL DRAINAGE ARRANGEMENT BET TRACK SHOULD BE PROVIDED WHEREVER REQUIRED.
 - TROLLEY REFUGE IN BANKING / CUTTING SHALL BE PROVIDED AS PER PROVISION OF IRPWV.
 - STANDARD OF LOADING (FOR PROP. LINE) - 32.5 T LOADING-2008 & HIGH RISE OHE.
 - TELEPHONE CABLE TO BE LAID FOR TELECOMMUNICATION.
 - ALL ELECTRICAL XING WILL BE AS PER PARA II (D) OF CHAPTER I GENERAL OF SCHEDULE I OF S.O.D 2004.



PLAN



SECTION

LIST OF TBM

TBM No.	Easting	Northing	Elevation
SM-1	705588.878	3121113.675	194.387
SM-2	704954.348	3119500.444	193.724
SM-3	703625.564	3118824.368	193.601

LEGEND

EXISTING CENTRE LINE	—
PROPOSED CENTRE LINE	—
DFC CENTRE LINE	—
EXISTING TPTC	—
PROPOSED TPTC	—
TBM	—
KM-STONE	—
PROPOSED BOUNDARY	—
EXISTING BRIDGE	—
PROPOSED BRIDGE	—
NALKA CANAL DRAIN	—
PERMANENT STRUCTURE	—
TEMPORARY STRUCTURE	—
PROPOSED GATE LODGE	—
TOE LINE	—
ROAD	—
POWER LINE WITH POLE	—
PYLON	—
EMBANKMENT / BUND	—
ROCKY AREA	—
COMPOUND WALL	—
DITCH / QUARRY	—
BARBED WIRE FENCING	—
GROUND LEVEL	—

GCMORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM JOS		SHRY CM DAVEDI	
SUDHIR AGRAWAL		RAJU SOLANGI	
KRISHAN CHAND SAINI		DOMECOLOGOTHY	
CREDICAL			

NORTHERN RAILWAY
DELHI DIVISION

PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONPAT BYPASSING DELHI AREA BY LINING ASADI-PATILSULA-TAMPURASADDAH BY NEW ELECTRIFIED BG DOUBLE LINE.

CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

SIGN:

DRAWING NAME: CONCEPTUAL PLAN AND LONGITUDINAL SECTION
FROM CHAINAGE 15.185KM TO CHAINAGE 20.000KM

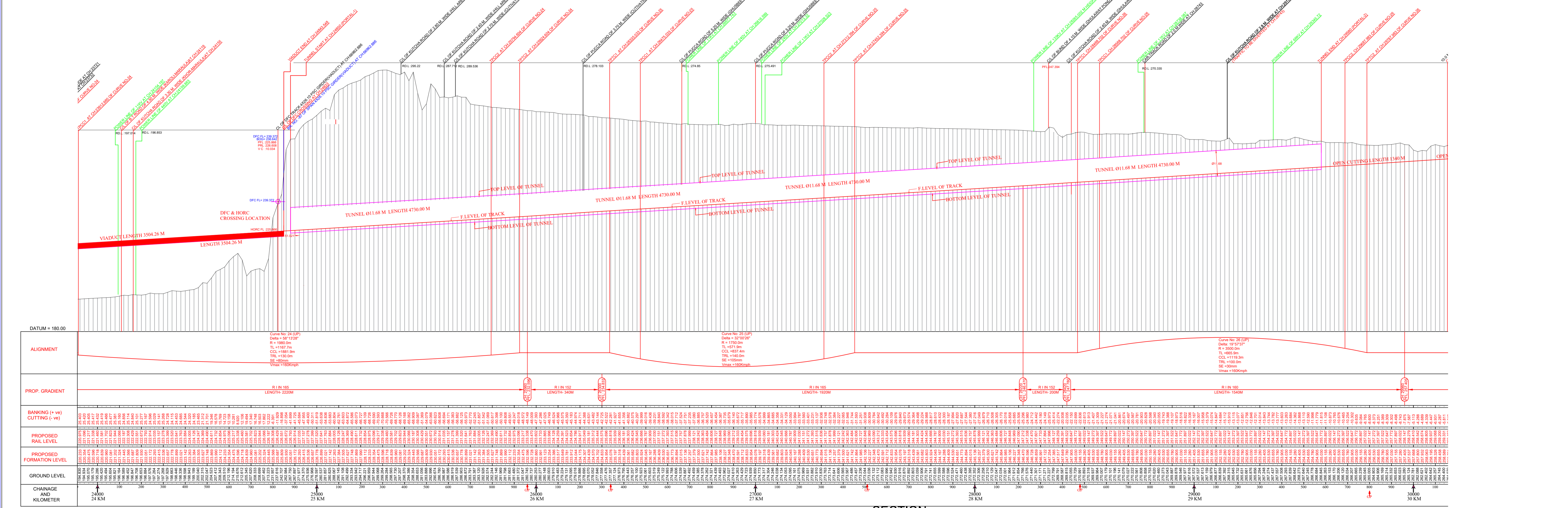
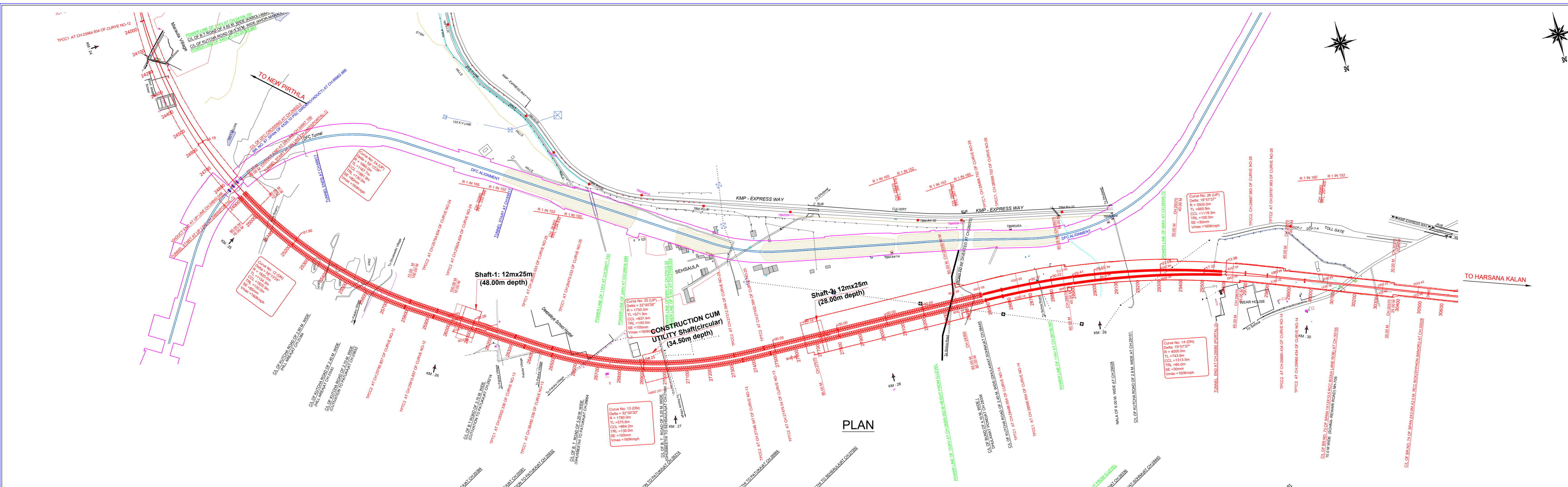
ISSUE DATE: 07.11.2023 **REVISED DATE:** 02.01.2023

SCALE: 1:10000

CONTAINT:

DRAWN BY: L/MOHANTY **CHECKED BY:** SVR/AM J **PROJECT INCHARGE:** A. E. BERRY

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



- NOTES**
- EXISTING WORK SHOWN IN BLACK
 - PROPOSED WORK SHOWN IN RED
 - ALL DIMENSIONS ARE IN METER UNLESS OTHERWISE SPECIFIED
 - CHAINAGE IS RECKONED FROM C.L. OF NEW PRITHLA STATION BUILDING
 - RAIL LEVEL SHOULD BE 0.742m ABOVE FORMATION LEVEL FOR TRACK STRUCTURE
 - 60KG NEW RAIL ON PSC SLEEPER (1660MM) WITH 35mm BALLAST CUSHION
 - RULLING GRADIENT IS 1 IN 150 OF THIS SECTION (COMPENSATED)
 - VERTICAL CURVE WILL BE PROVIDED AS PER IRPM PARA 419
 - CROSS LONGITUDINAL DRAINAGE ARRANGEMENT BET TRACK SHOULD BE PROVIDED WHEREVER REQUIRED
 - TROLY REFUGE IN BANKING / CUTTING SHALL BE PROVIDED AS PER PROVISION OF IRPM
 - CES SANCTION WILL BE OBTAINED BEFORE EXECUTION OF WORK FALLING UNDER PARA 1102(D) OF IRPM
 - STANDARD OF CLEARANCE FOR PROF. LINE: 12.5 T LOADING 200t & HIGH RISE OHL
 - TELEPHONE CABLE TO BE LAID FOR TELECOMMUNICATION
 - ALL ELECTRICAL X-ING WILL BE AS PER PARA 11 (I) OF CHAPTER I GENERAL OF SCHEDULE I OF SOD 2004

LIST OF TBM

TBM No.	Easting	Northing	Elevation
SM-9	699327.653	3121920.632	253.2
SM-10	699341.016	312185.520	271.558
SM-11	698369.541	312145.720	284.291
SM-12	697601.655	3122685.020	276.11

LEGEND

EXISTING CENTRE LINE	—
DFC CENTRE LINE	—
EXISTING TPTIC	—
PROPOSED TPTIC	—
TBM	—
KM-STONE	—
PROPOSED BOUNDARY	—
EXISTING BRIDGE	—
PROPOSED BRIDGE	—
NALA CANAL DRAIN	—
PERMANENT STRUCTURE	—
TEMPORARY STRUCTURE	—
PROPOSED GATE LOOGE	—
TOE LINE	—
POWER LINE WITH POLE	—
PYLON	—
EMBANKMENT / BUND	—
ROCKY AREA	—
COMPOUND WALL	—
DITCH / QUARRY	—
BARRER WIRE FENCING	—
GROUND LEVEL	—

NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHIEF ENGINEER		SRV CHA CHIEF	
SESHI KRISHNA		RAIL ENGINEER	
KRISHAN CHAND		RAIL ENGINEER	

NORTHERN RAILWAY

DELHI DIVISION

PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWA TO SONPAT BYPASSING DELHI AREA BY LINKING ASHOTI/PATLI/SULTANPUR-AMUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

DRIVING NAME: CONCEPTUAL PLAN AND LONGITUDINAL SECTION FROM CHAINAGE 24000 TO CHAINAGE 30000 (TUNNEL)

SCALE: 1:1000

DATE: 07.11.2022

REVISION DATE: 14.01.2023

CONSULTANT: RITES LIMITED

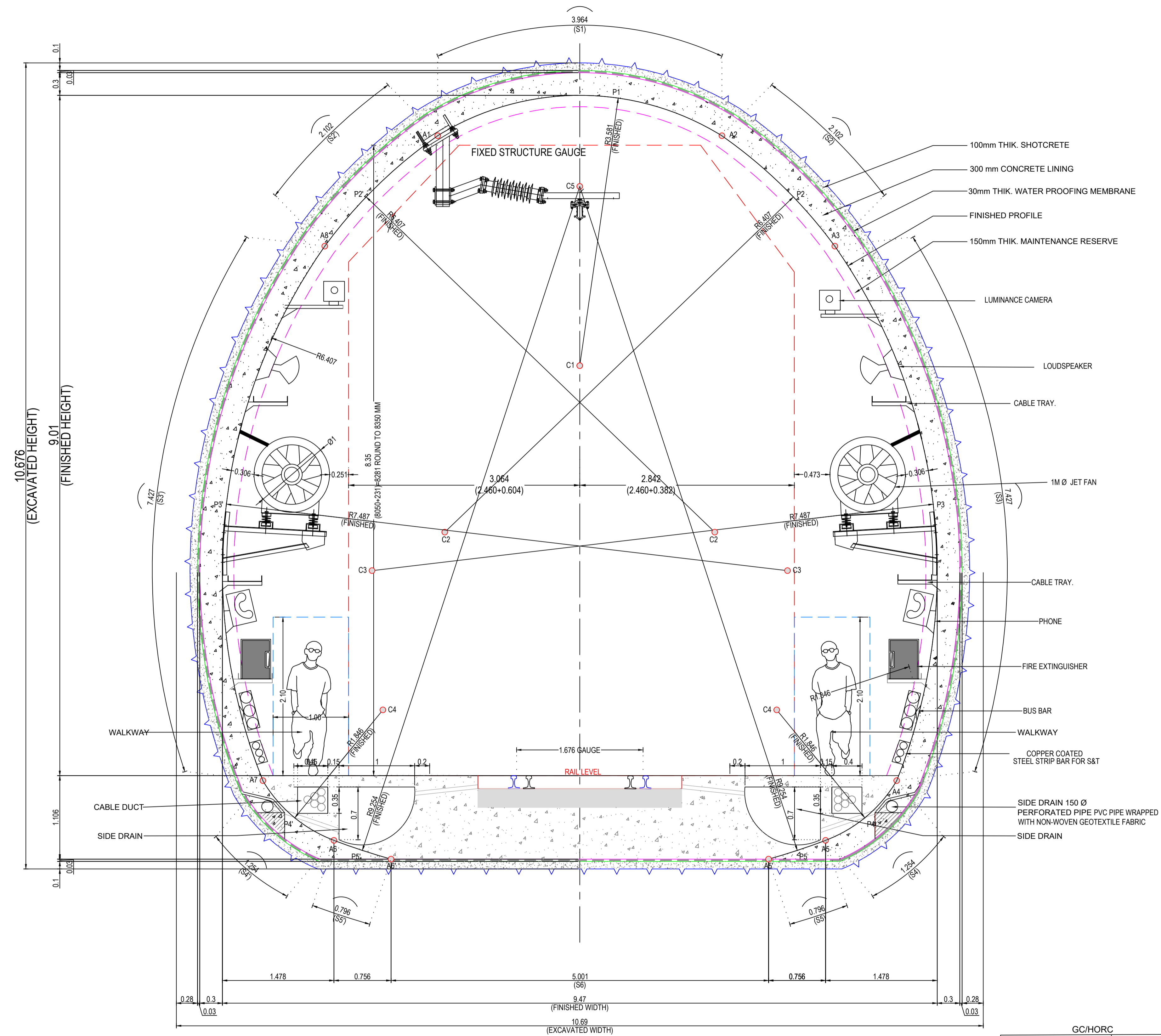
APPROVED BY: [Signature]

FOR APPROVAL: [Signature]

FOR APPROVAL: [Signature]

FOR APPROVAL: [Signature]

2. Tunnel



NOTES:-

- ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
- NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
- TUNNEL EXCAVATED BY HEADING AND BENCHING METHOD (NATM).
- THE GRADE OF SHOTCRETE WITH SFRS AS PER DETAIL DESIGN.
- NEAR PORTAL PULL LENGTH SHOULD BE LIMITED TO 500 MM, ONLY AFTER SUPPORTING EXCAVATED STRETCH (500 MM), THEN NEXT CYCLE OF EXCAVATION SHALL BE CARRIED OUT.
- IT IS PROPOSED TO PROVIDE 50 MM THICK SFRS IMMEDIATELY AFTER EXCAVATION OF FACE.
- IT IS PROPOSED TO PROVIDE 100 MM THICK SFRS ON SLOPE PROTECTION. ALTERNATIVELY, PLAIN SHOTCRETE WITH WIREMESH 150x150x5mm MAY ALSO BE USED.
- PROPOSED ROCK BOLT SHALL BE WITH FOLLOWING SPECIFICATION CONFORMING TO IS 1786, DIAMETER OF ROCK BOLT = 25 MM, GRADE OF ROCK BOLT Fe415 FULLY GROUTED, SIZE OF ANCHOR PLATE = 150X150X8MM
- PROPOSED SUPPORT SYSTEM IS BASED ON GIR PROVIDED BY GEOLOGIST. ACTUAL SUPPORT SYSTEM MAY BE REVISED BASED ON ACTUAL RESPONSE OF STRATA DURING EXCAVATION.
- THE NUT OF THE GROUTED ROCK BOLT SHALL BE TIGHTENED 12 HOURS AFTER INSTALLATION TO ACHIEVE A FORCE AT THE ANCHOR PLATE OF APPROX. 20KN. THIS FORCE SHALL BE APPLIED BY CALIBRATED TORQUE WRENCH.
- THE LENGTH AND THE DIRECTION OF ROCK BOLTS MAY BE ALTERED IN CONSULTATION WITH SITE GEOLOGIST AND ENGINEER-IN-CHARGE. WHEREVER REQUIRED, ADDITIONAL SPOT BOLTING SHALL BE DONE IN LOCALIZED AREA OF POTENTIAL INSTABILITY OR WEAKNESS AS DETERMINED DURING EXCAVATION.
- SLOPE SUPPORT SHALL BE INSTALLED AS EXCAVATION PROGRESSES SUCH THAT NOT MORE THAN 2.0m VERTICAL HEIGHT OF SLOPE IS LEFT UNSUPPORTED AT ANY TIME.
- PULLOUT TEST SHALL BE CARRIED OUT ON ROCK BOLTS FOR 190KN.
- DRAINAGE PIPE SHALL BE 150mmØ. PERFORATED PVC PIPE WRAPPED WITH NON-WOVEN GEOTEXTILE FABRIC AS PER IS-4984.
- EXCAVATION SEQUENCE WILL BE PROVIDED BASED ON GFC.
- EXCAVATION AT EAST PORTAL LOCATION SHALL BE MATCHED WITH DEEP CUT EXCAVATION.
- GUARD RAIL SHALL BE PROVIDED THROUGHOUT THE LENGTH OF BALLASTLESS TRACK.
- BALLASTLESS TRACK TO BE DESIGN FOR 32.5 T AXLE LOADING.
- DIMENSIONS OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
- 230V SOCKET AT 200M INTERVAL FOR S&T SYSTEM SHALL BE PROVIDED.
- SEPARATE EARTHING MET CONNECTION FOR S&T SYSTEM SHALL BE PROVIDED.
- ANCHOR BOLT FOR ROCS SHALL BE INSTALLED DURING TUNNEL LINING.
- CABLE CROSSING SHALL BE PROVIDED AT EVERY CROSS PASSAGE.
- LUMINANCE CAMERA, LOUDSPEAKER, JET FAN, PHONE, BUS BAR, COPPER COATED STEEL STRIP BAR FOR S&T AND ROCS WORK (EXCLUDING ANCHOR BOLTS) IS NOT IN THE SCOPE OF WORK OF C-4.

S.N.	CURVE NAME	RADIUS (m.)	START	END	ARCH. LENGTH (m.)
1	S1	R3.581	A1	A2	3.964
2	S2	R6.407	A2	A3	2.102
3	S3	R7.487	A3	A4	7.427
4	S4	R1.846	A4	A5	1.254
5	S5	R9.254	A5	A5'	0.796
6	S6	R0	A5'	A6'	5.001
7	S5'	R9.254	A6'	A6	0.796
8	S4'	R1.846	A6	A7	1.254
9	S3'	R7.487	A7	A8	7.427
10	S2'	R6.407	A8	A1	2.102

EXCAVATED AREA	= 91.704 Sqm.
FINISHED AREA	= 71.063 Sqm.
EXCAVATED WIDTH	= 10.690m
EXCAVATED HEIGHT	= 10.676m
FINISHED WIDTH	= 9.470m
FINISHED HEIGHT	= 9.010m

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAHA BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC		HRDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

GC/HORC DRG. NO:- GC-HRDC-C4-DRW-TTL-CLT-01001_A1

DRAWING NAME: CONCEPTUAL DRAWING FOR SINGLE TRACK TUNNEL CROSS SECTION (ROCK)

ISSUE DATE: 07.11.2022 | REVISED DATE: 03.01.2023

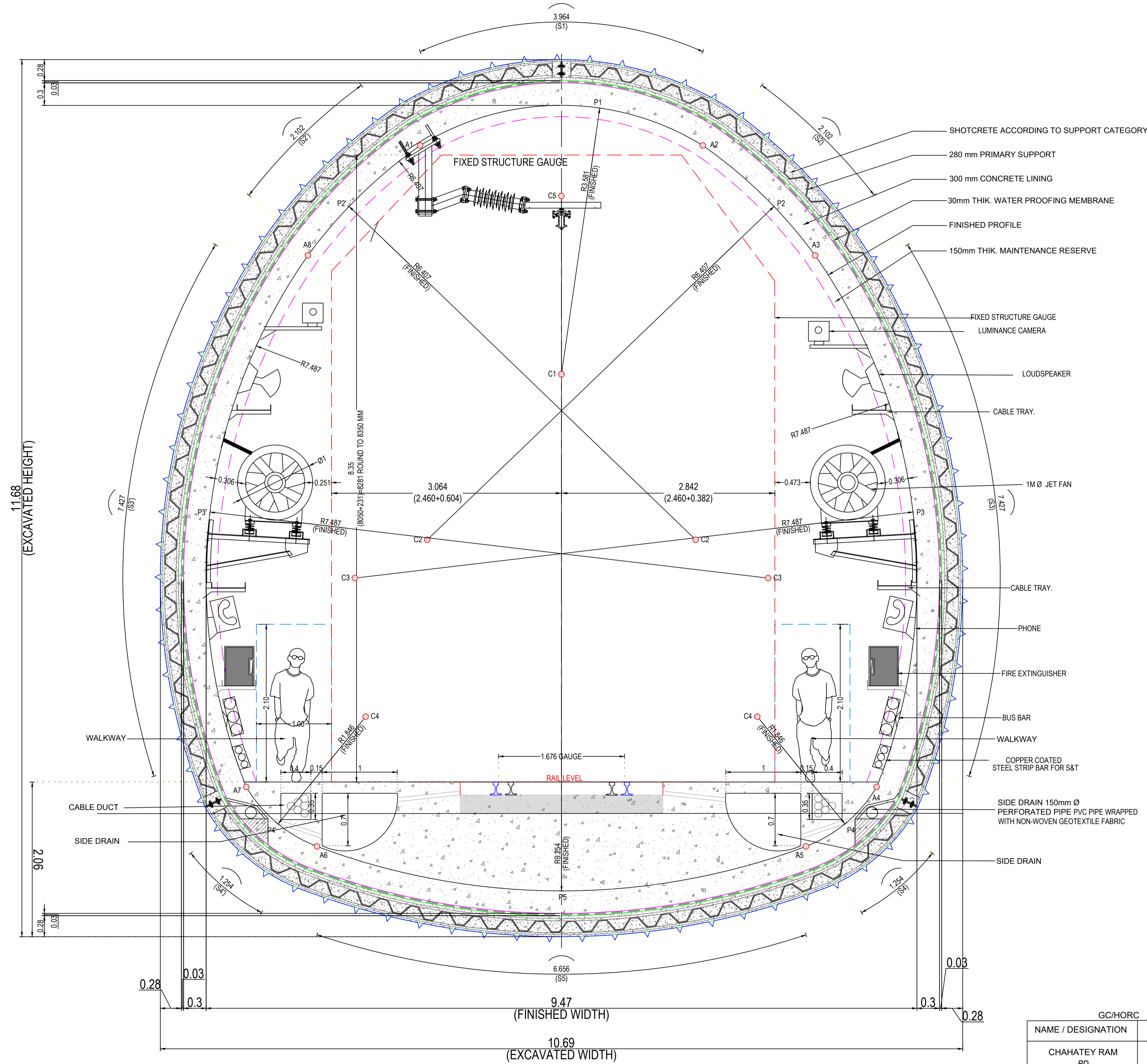
SCALE: AS SHOWN

SMC DRG. NO:- SMC/HRDC/TUNICS-7

CONSULTANT: S.M. CONSULTANTS

DESIGNER: DIVENDRA KUMAR (TUNNEL DESIGNER) | B.R. SHARMA (CONSULTANT / TUNNEL) | A.A. SAMANT (PROJECT INCHARGE)

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



- ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
- NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
- TUNNEL EXCAVATED BY HEADING, BENCHING / MULTI DRIFT METHOD (NATM).
- THE GRADE OF SHOTCRETE WITH SFRS AS PER DETAIL DESIGN.
- PROPOSED SUPPORT SYSTEM IS BASED ON GIR PROVIDED BY GEOLOGIST. ACTUAL SUPPORT SYSTEM MAY BE REVISED BASED ON ACTUAL RESPONSE OF STRATA DURING EXCAVATION.
- DRAINAGE PIPE SHALL BE 150mmØ, PERFORATED PVC PIPE WRAPPED WITH NON-WOVEN GEOTEXTILE FABRIC AS PER IS-4989
- EXCAVATION SEQUENCE WILL BE PROVIDED BASED ON GFC.
- PIPE ROOFING/FOREPILING OF 114 MM DIA SHALL BE PROVIDED WHERE EVER IT IS REQUIRED.
- SELF DRILLING ANCHOR OF CAPACITY 190 KN SHALL BE PROVIDED FOR PRIMARY SUPPORT DURING EXCAVATION.
- LATTICE GIRDER 25-25-32 OF DEPTH 187 MM/ ISMB 200 MM SHALL BE INCASED IN SFRS OF MINIMUM THICKNESS 250 MM.
- GUARD RAIL SHALL BE PROVIDED THROUGHOUT THE LENGTH OF BALLASTLESS TRACK.
- BALLASTLESS TRACK TO BE DESIGN FOR 32.5 T AXLE LOADING.
- DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
- SEPARATE EARTHING MET CONNECTION FOR S&T SYSTEM SHALL BE PROVIDED.
- ANCHOR BOLT FOR ROCS SHALL BE INSTALLED DURING TUNNEL LINING.
- CABLE CROSSING SHALL BE PROVIDED AT EVERY CROSS PASSAGE.
- LUMINANCE CAMERA, LOUDSPEAKER, JET FAN, PHONE, BUS BAR, COPPER COATED STEEL STRIP BAR FOR S&T AND ROCS WORK (EXCLUDING ANCHOR BOLTS) IS NOT IN THE SCOPE OF WORK OF C-4.

S.N.	CURVE NAME	RADIUS (m.)	START	END	ARCH. LENGTH (m.)
1	S1	R3.581	A1	A2	3.964
2	S2	R6.407	A2	A3	2.102
3	S3	R7.487	A3	A4	7.427
4	S4	R1.846	A4	A5	1.254
5	S5	R9.254	A5	A6	6.656
6	S4	R1.846	A6	A7	1.254
7	S3	R7.487	A7	A8	7.427
8	S2	R6.407	A8	A1	2.102

EXCAVATED AREA	= 101.090 Sqm.
FINISHED AREA	= 71.063 Sqm.
EXCAVATED WIDTH	= 10.690m
EXCAVATED HEIGHT	= 11.680m
FINISHED WIDTH	= 9.470m
FINISHED HEIGHT	= 9.010m

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING
 ASAOTI-PATLI-SULTANPUR-ASAUDAHA BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

GC/HORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01002_A1

DRAWING NAME: CONCEPTUAL DRAWING FOR SINGLE TRACK TUNNEL CROSS SECTION (SOIL)

ISSUE DATE: 07.11.2022 | REVISION DATE: 03.01.2023

SCALE: AS SHOWN

SMC DRG. NO.: SMC/HRIDC/TUNICS-7

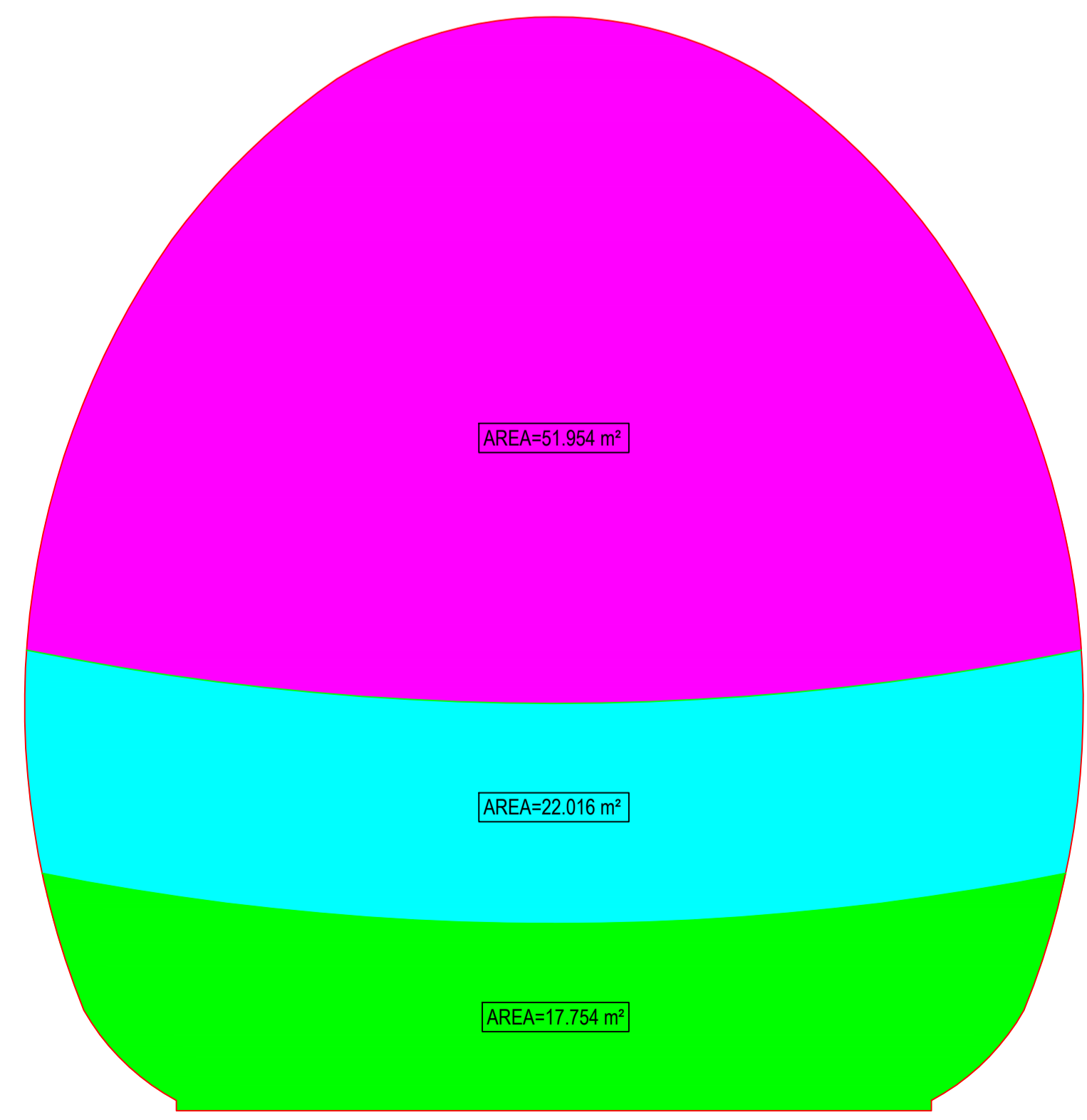
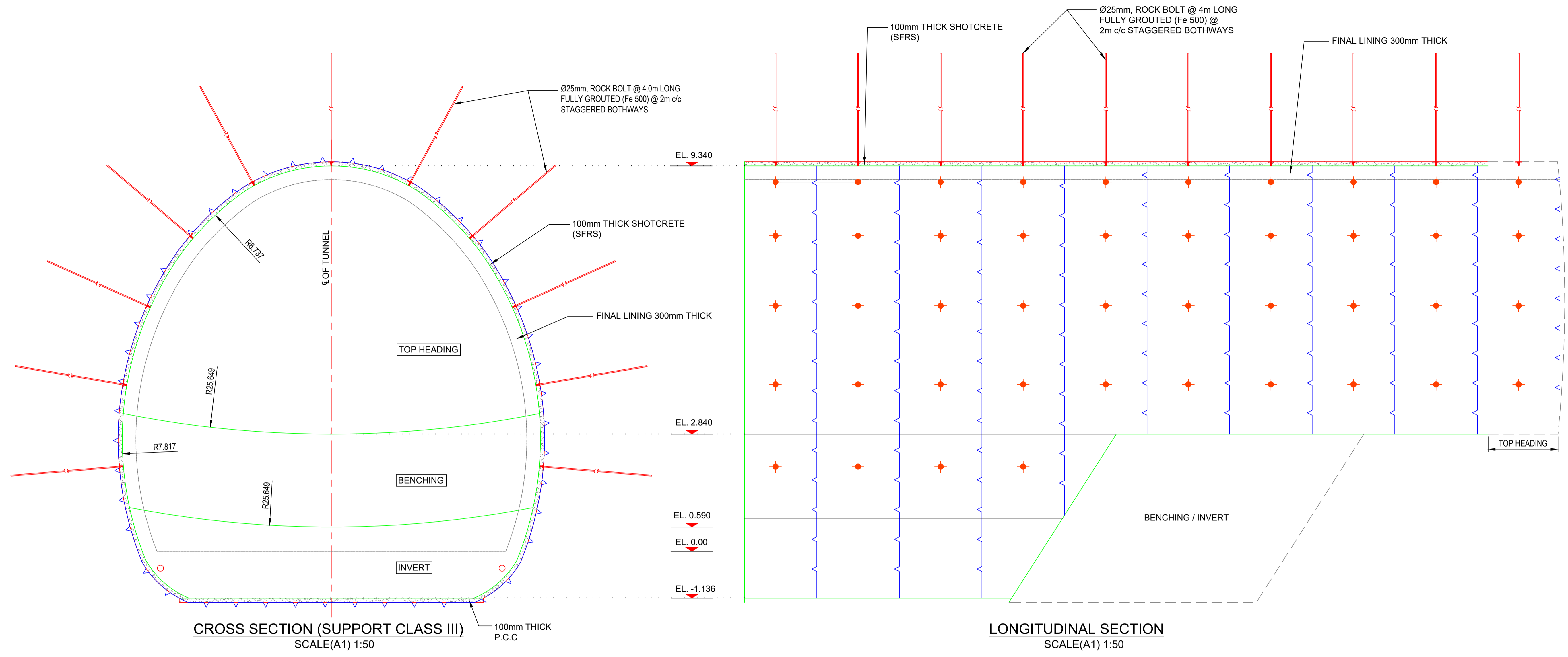
CONSULTANT: S.M. CONSULTANTS (An ISO 9001 Company)

DESIGNED BY: SIVENDRA KUMAR (TUNNEL DESIGNER)

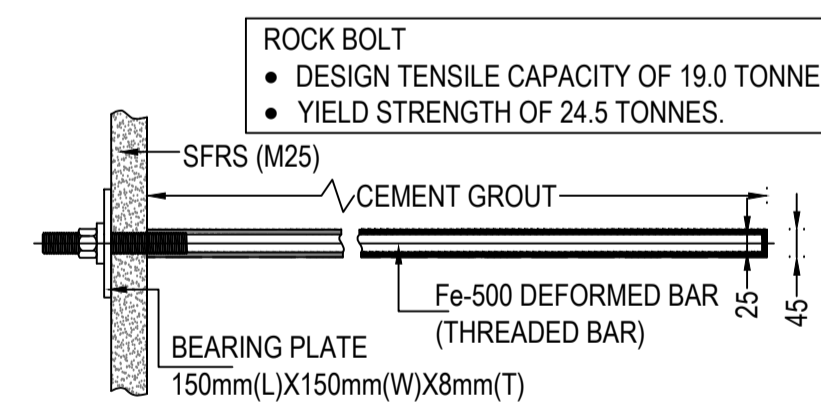
CHECKED BY: B.R. SHARMA (CONSULTANT/TUNNEL)

PROJECT INCHARGE: A.A. SAMANT

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



EXCAVATION AREA
SCALE(A1) 1:50



FULLY CEMENT GROUTED SPOT / ROCK BOLT

GC/HORC		HRDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONPAT BYPASSING DELHI AREA BY LINKING
ASAOTI-PATLI-SULTANPUR-ASAUDAHA BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO.: GC-HRIDC-C4-DRW-TTL-CLT-01003_AD

DRAWING NAME: CONCEPTUAL DRAWING FOR SUPPORT CLASS III FROM CH:24940 TO CH:26000

ISSUE DATE: 07/11/2022 **REVISED DATE:**

SCALE: AS SHOWN

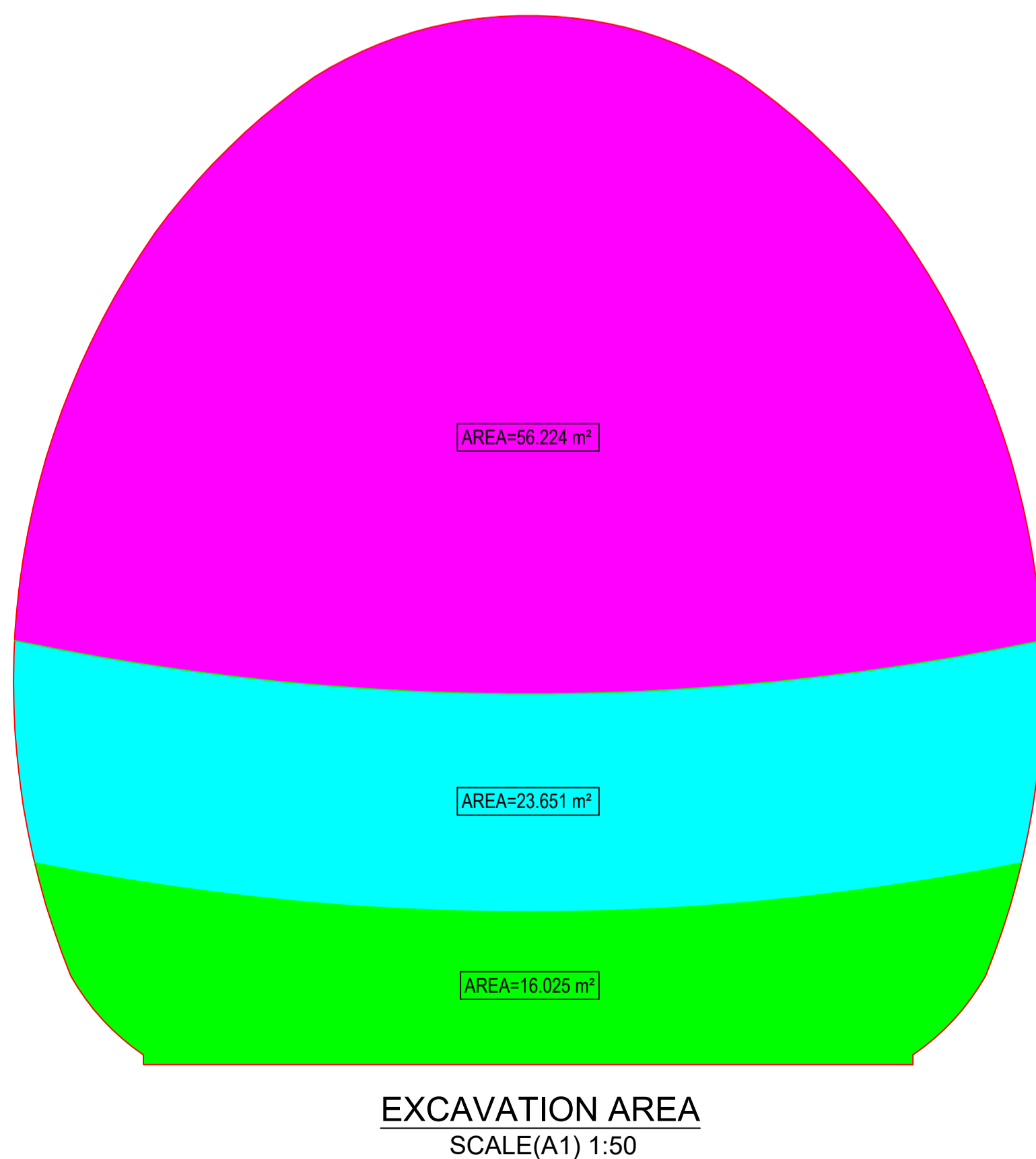
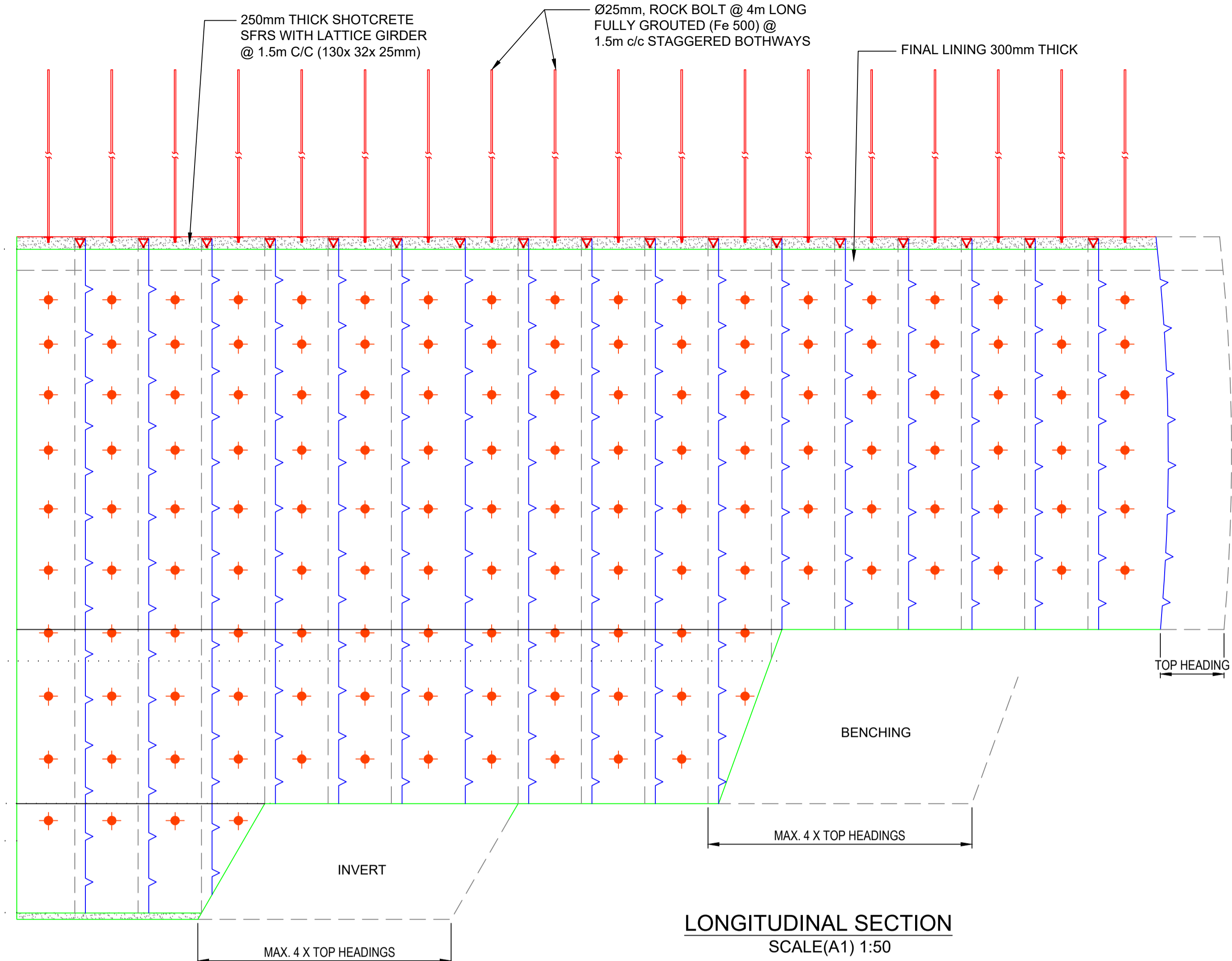
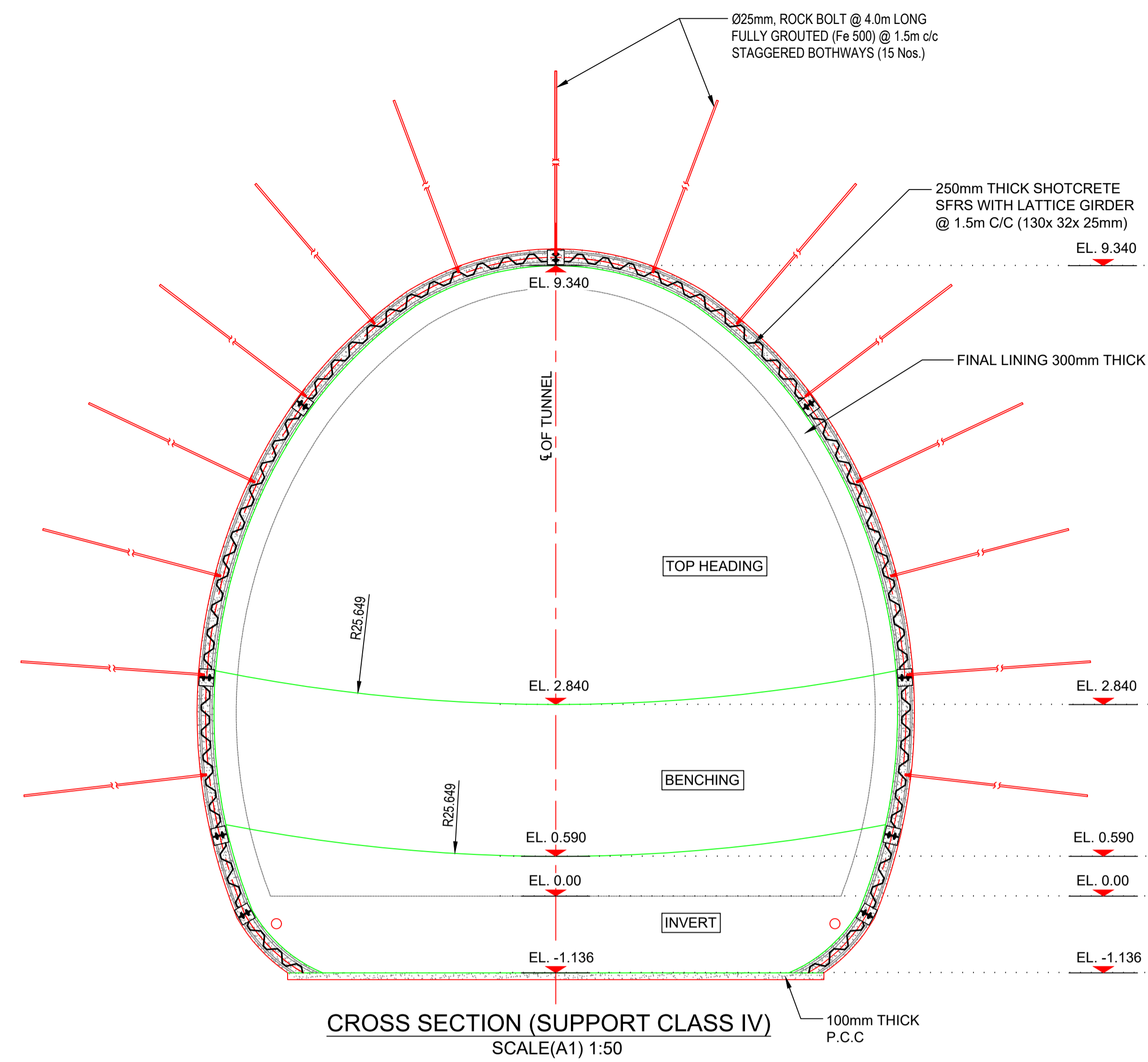
SMC DRG. NO.: SMC/HRDC/TUNICS-7

CONSULTANT: RITES THE INFRASTRUCTURE PEOPLE SMEC

DESIGNER: SUDHIR AGRAWAL

PROJECT ENGINEER: SHIV OM DWIVEDI

RELEASER FOR APPROVAL: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGML&U	<i>JGML&U</i>

PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAHA BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO.: GC-HRIDC-C4-DRW-TTL-CLT-01004_AD

DRAWING NAME: CONCEPTUAL DRAWING FOR SUPPORT CLASS IV FROM CH.24880 TO 24940

ISSUE DATE: 07/11/2022 **REVISED DATE:**

SCALE: AS SHOWN

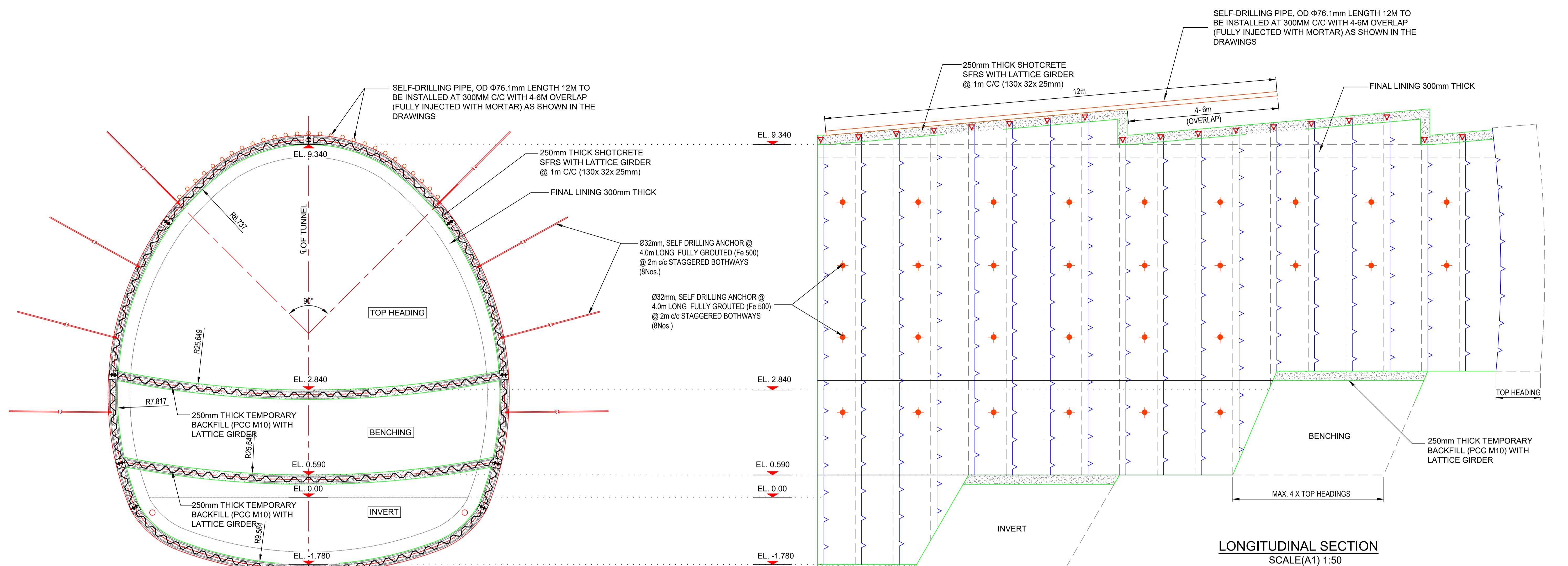
SMC DRG. NO.: SMC-HRIDC/TUNICS-7

CONSULTANT: RITES (The Infrastructure People) and SMEC (Member of the Sellen Group)

DESIGNER: SIVENDRA KUMAR TUNNEL DESIGNER

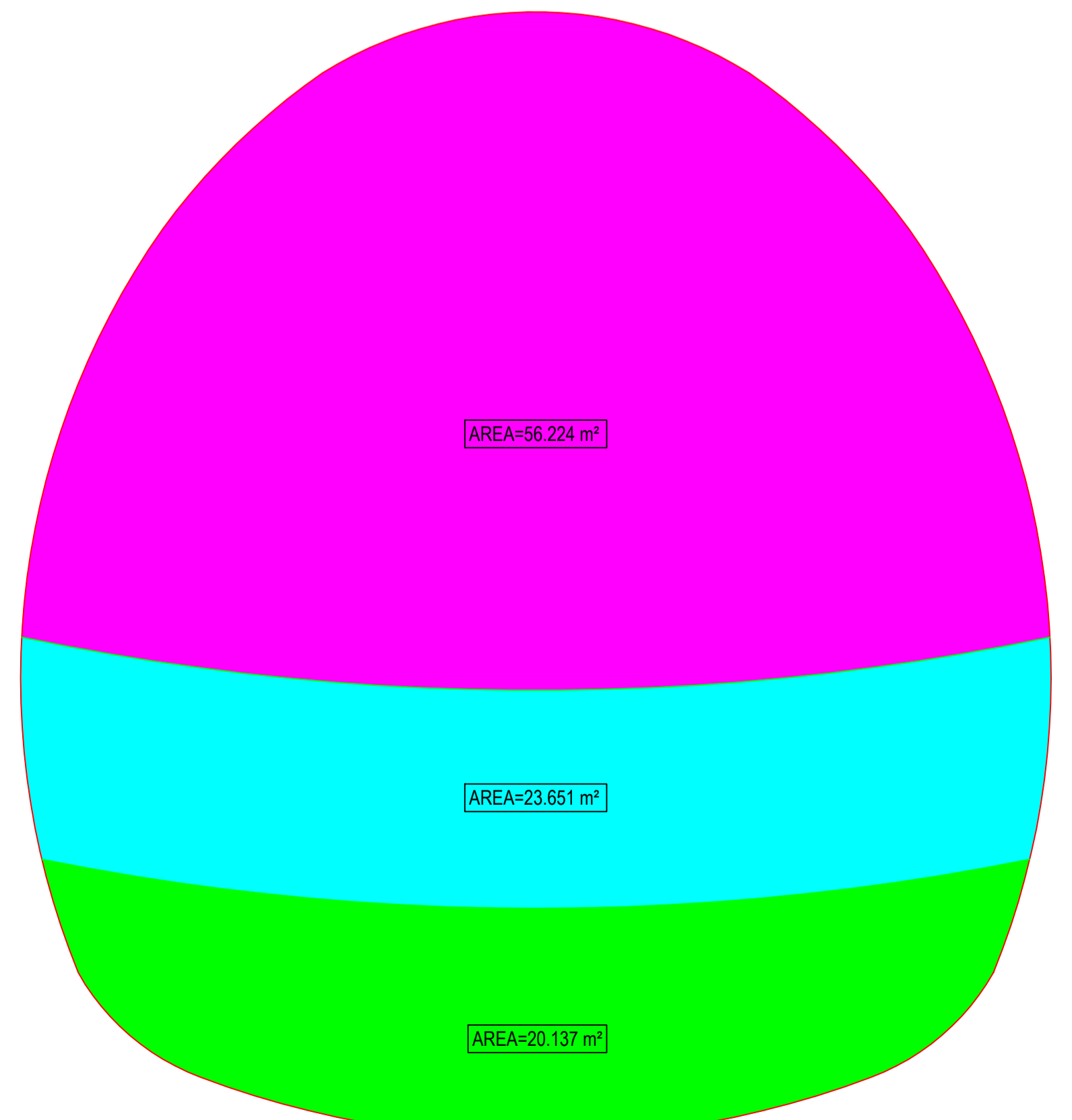
PROJECT INCORPORATE: B R SHARMA S/CONSULTANT/TUNNEL, A. A. SAMANT

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

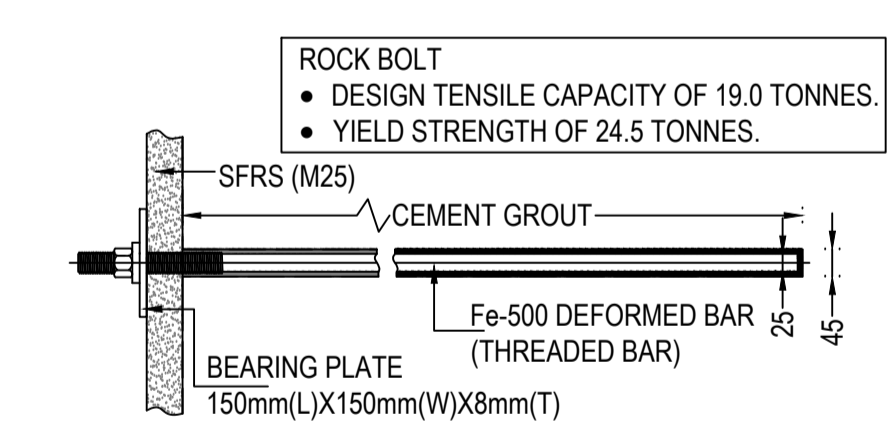


CROSS SECTION (SUPPORT CLASS VI (i))
SCALE(A1) 1:50

LONGITUDINAL SECTION
SCALE(A1) 1:50



EXCAVATION AREA
SCALE(A1) 1:50



FULLY CEMENT GROUTED SPOT / ROCK BOLT

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Plg.	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING
ASAOTI-PATLI-SULTANPUR-ASAUDAHA BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

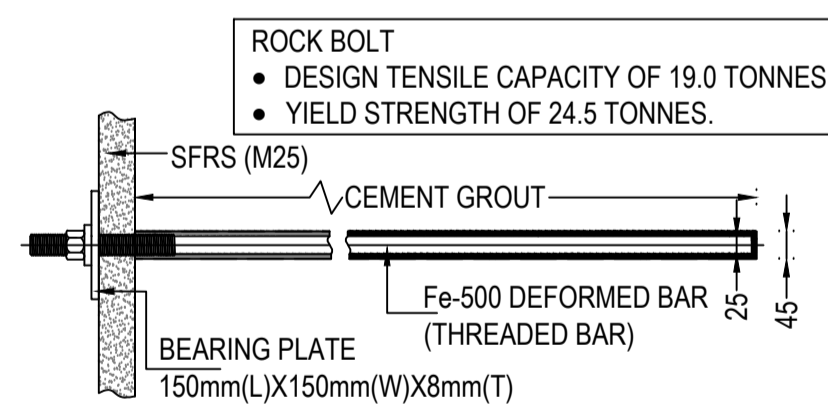
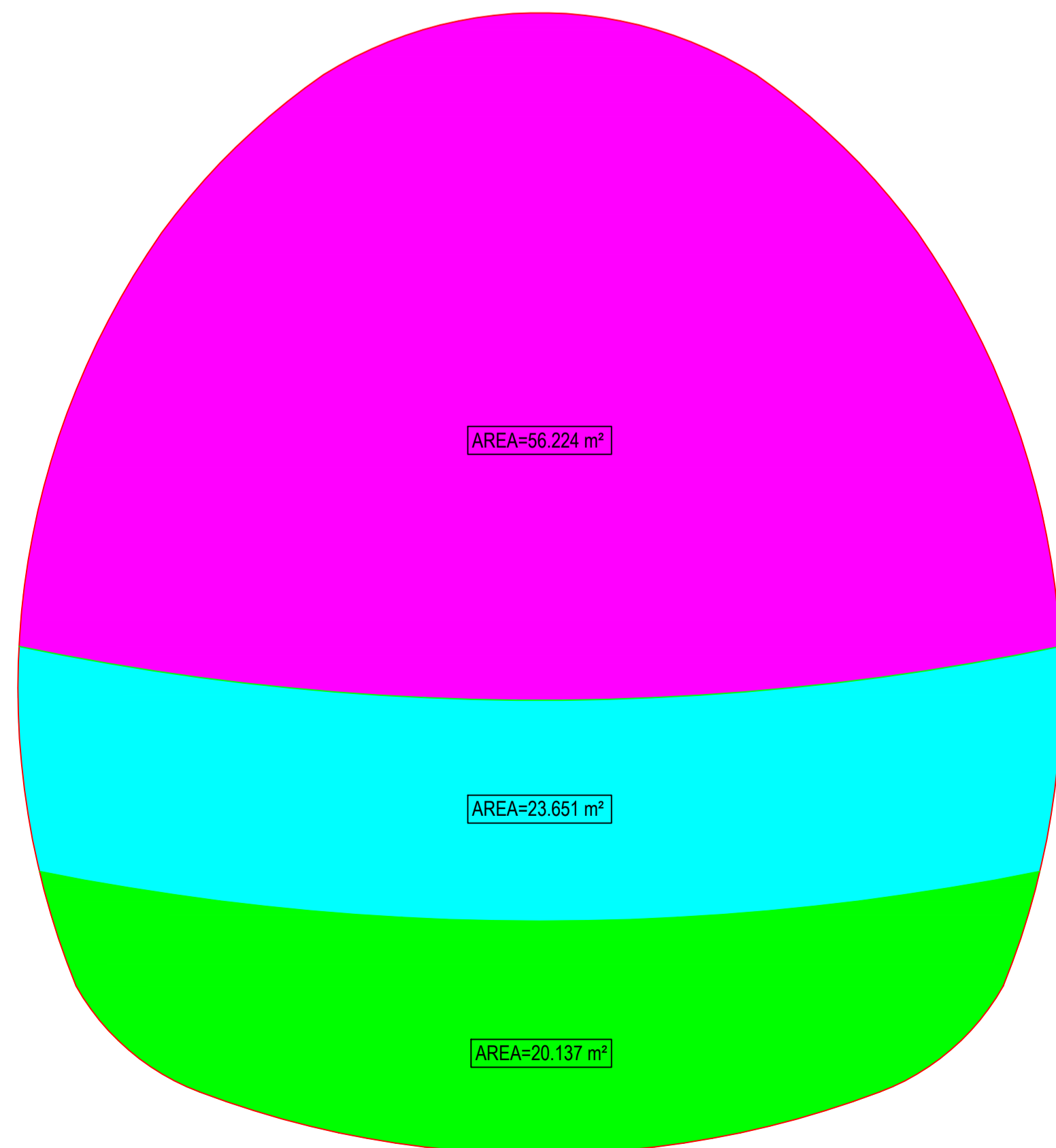
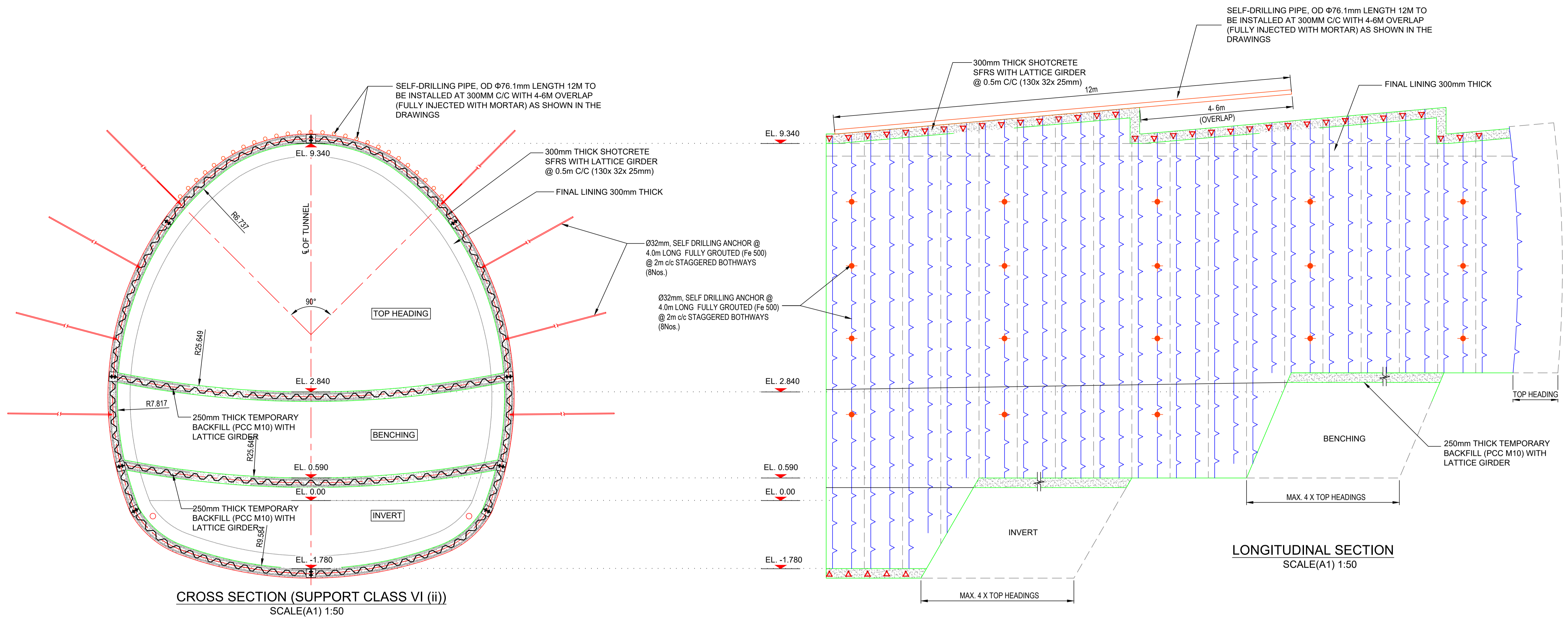
GC/HORC DRG. NO:- GC-HRIDC-C4-DRAW-TTL-CLT-01005_A0

DRAWING NAME: CONCEPTUAL DRAWING FOR SUPPORT CLASS VI(i) FROM CH:26000 TO 28420

ISSUE DATE: 07/11/2022
SCALE: AS SHOWN
SMC DRG. NO.: SMCHRIDC/TUNICS-7

CONSULTANT: RITES (The Infrastructure People) and SMEC (Member of the Sellen Group)

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



FULLY CEMENT GROUTED SPOT / ROCK BOLT

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig.	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING
ASAOTI-PALI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO.: GC-HRIDC-C4-DRW-TTL-CLT-01006_A0
DRAWING NAME: CONCEPTUAL DRAWING FOR SUPPORT CLASS VI(ii) FROM CH:28420 TO CH:28480

ISSUE DATE: 07.11.2022
SCALE: AS SHOWN
SMC DRG. NO.: SMC/HRIDC/TUNCS-7

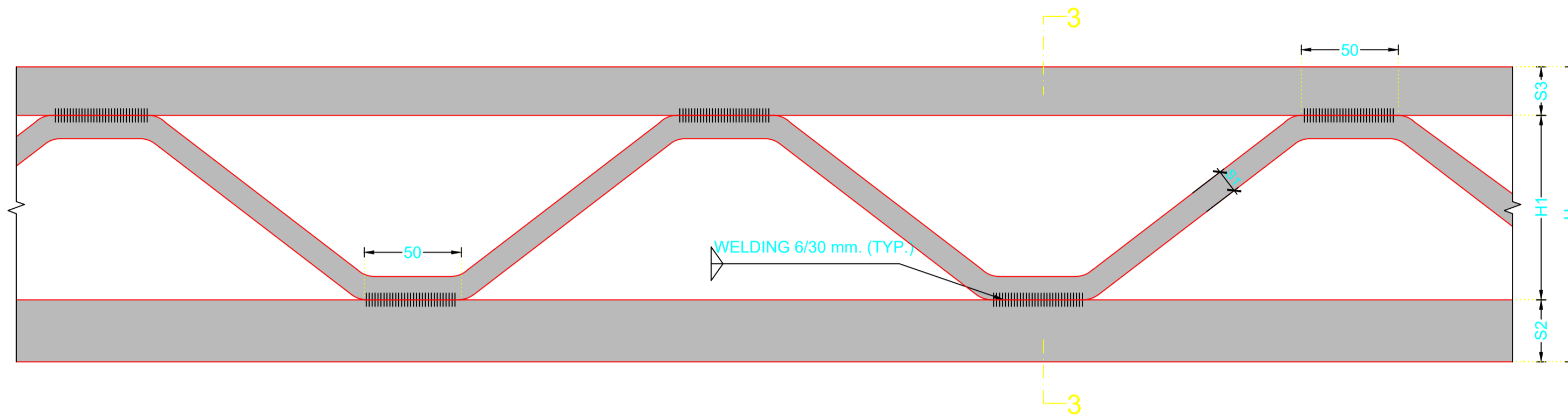
CONSULTANT: S.M. CONSULTANTS
An ISO 9001 Company
SIVENDRA KUMAR
TECHNICAL SUPERVISOR
B. R. SHARMA
Sr. CONSULTANT / ENGINEER
A. A. SAMANT
PROJECT INCHARGE

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

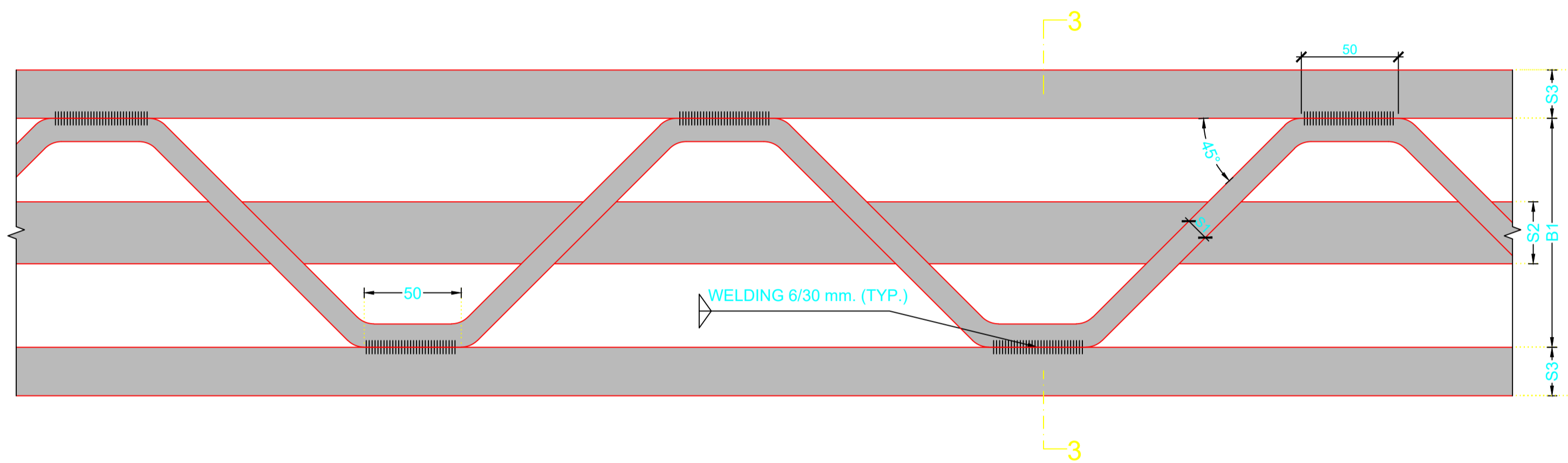
DETAILS OF LATTICE GIRDERS

TYPE	H (mm)	H1 (mm)	B (mm)	B1 (mm)	S1 (mm)	S2 (mm)	S3 (mm)	BXB (mm)	T (mm)
TYPE-1	187	130	208	158	Ø12	Ø32	Ø25	240X240	12

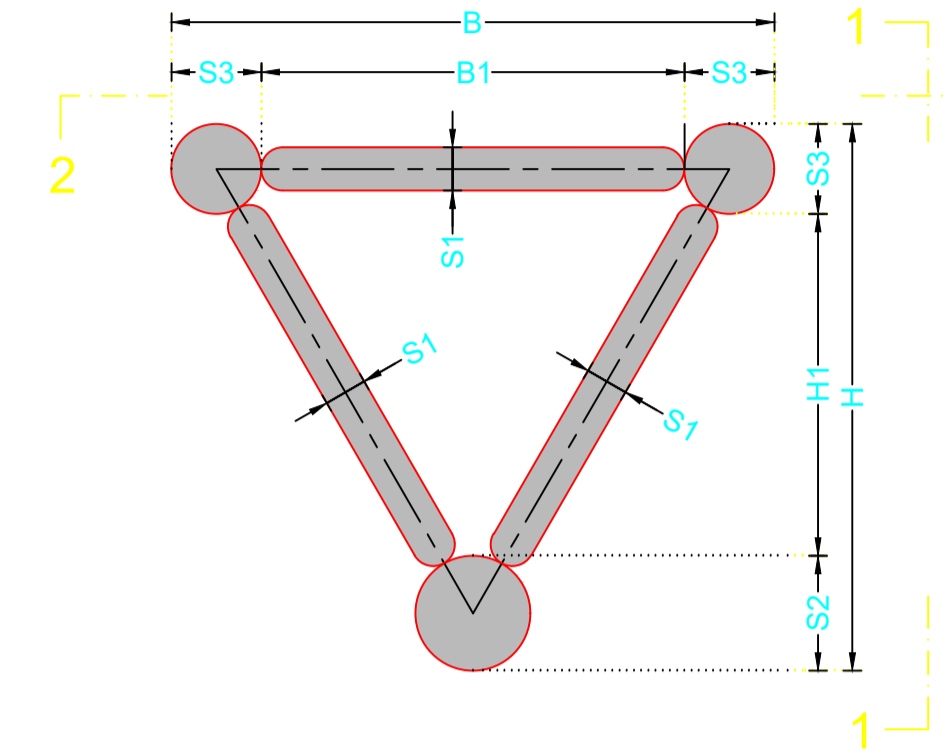
VIEW 1-1



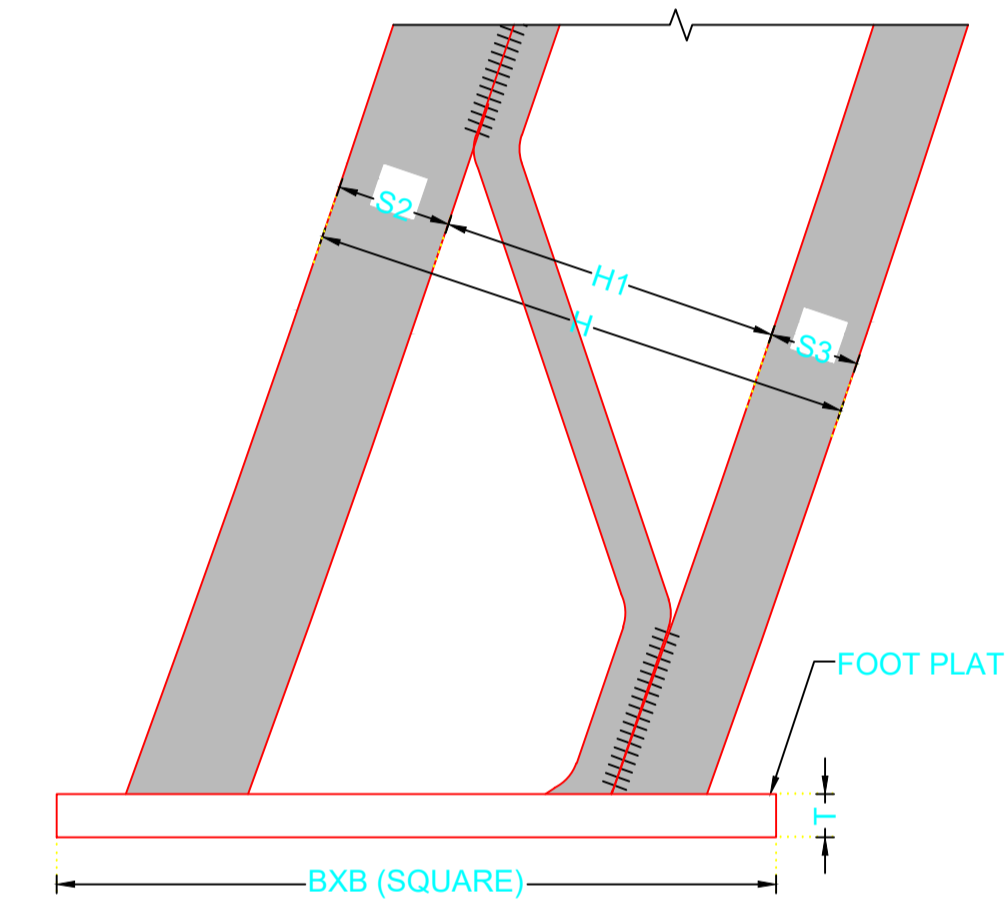
VIEW 2-2



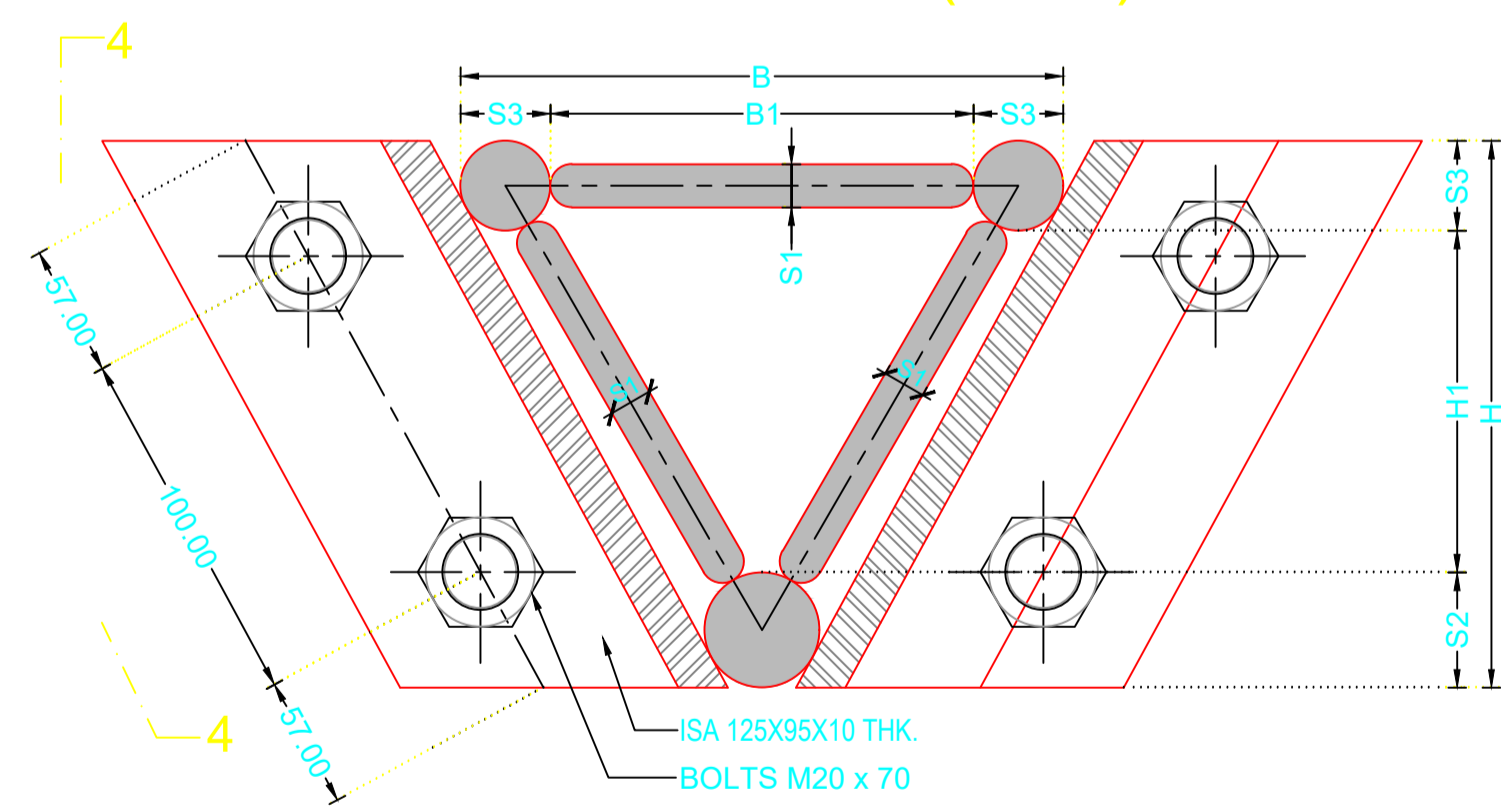
SECTION 3-3



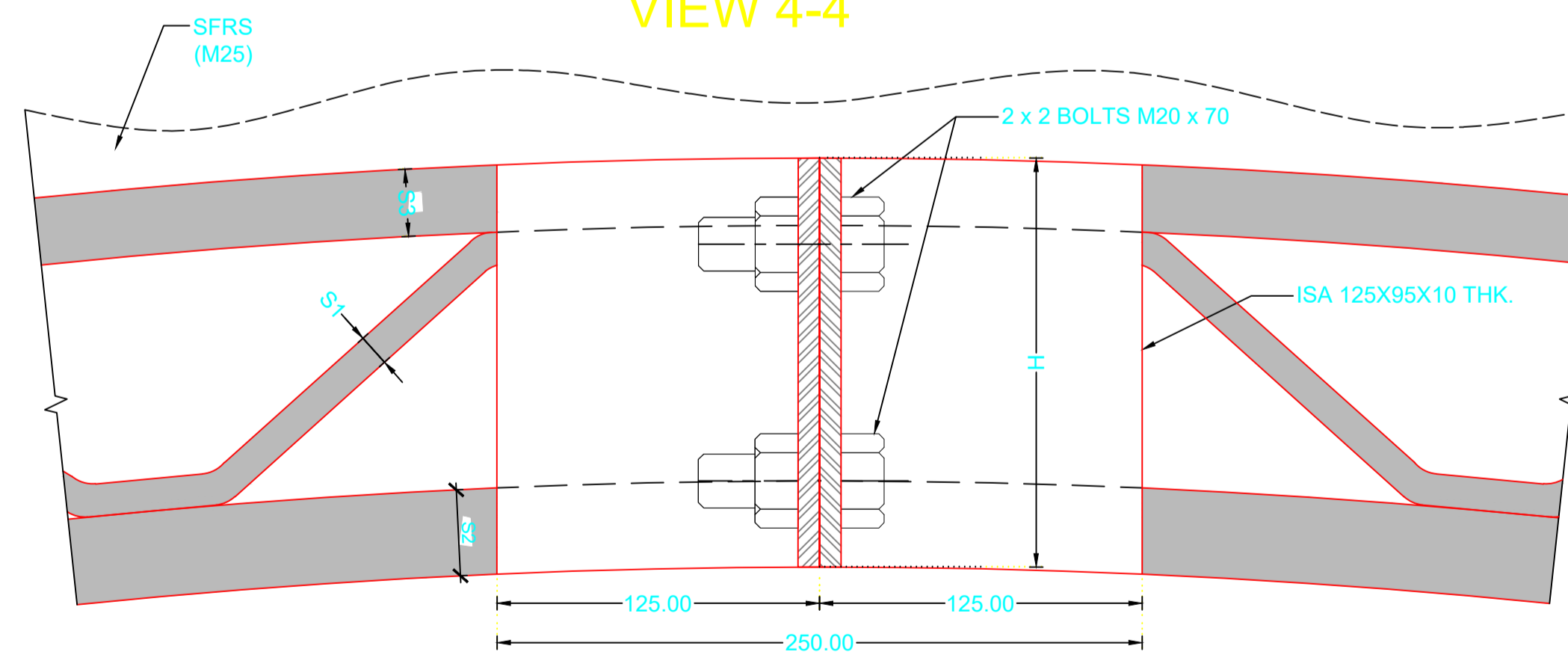
DETAIL OF FOOT PLATE
(VALID FOR TEMPORARY STRUCTURE)



JOINT DETAIL (TYP.)



VIEW 4-4



NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWING.
3. STEEL BARS SHOWN AS S1, S2 & S3 SHALL BE OF GRADE Fe-500 CONFORMING TO IS:1786.
4. ALL STRUCTURAL STEELS SHALL CONFORM TO IS:2062.
5. ALL WELDING SHALL BE CARRIED OUT BY USING SHIELDED ARC METHOD AS DESCRIBED IN THE SP-12, ISI HANDBOOK FOR GAS WELDERS AND ISI HANDBOOK OF MANUAL METAL ARC WELDING FOR WELDERS.

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOJI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01007_A0

DRAWING NAME: CONCEPTUAL DRAWING FOR TUNNEL TYPICAL DETAIL OF LATTICE GIRDER

ISSUE DATE: 07/11/2022 | REVISION DATE:

SCALE: AS SHOWN

SMC DRG. NO.: SMC/HRIDC/TUNICS-7

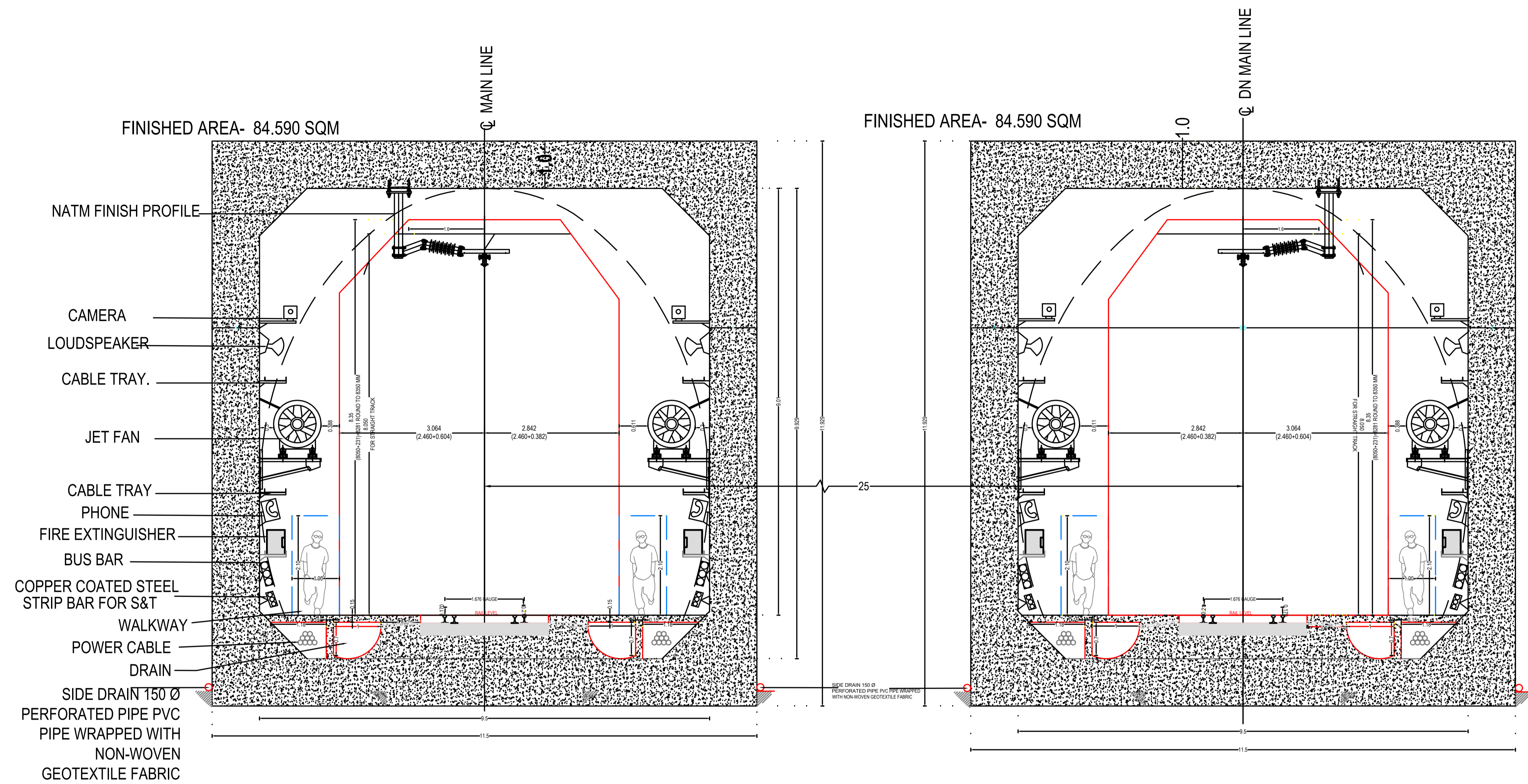
CONSULTANT: S.M. CONSULTANTS

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

NOTES:~

1. ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METERS, UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE MEASURED FROM THE DRAWING.
3. MINIMUM EXCAVATION LINE SHALL INCLUDE CONSTRUCTION & DEFORMATION TOLERANCE.
4. GUARD RAIL SHALL BE PROVIDED THROUGHOUT THE LENGTH OF BALLASTLESS TRACK
5. BALLASTLESS TRACK TO BE DESIGN FOR 32.5 T AXLE LOADING
6. DIMENSIONS OF SLAB THICKNESS ARE TENTATIVE.
7. SEPARATE EARTHING MET CONNECTION FOR S&T SYSTEM SHALL BE PROVIDED.
8. ANCHOR BOLT FOR ROCS SHALL BE INSTALLED DURING TUNNEL LINING.
9. CABLE CROSSING SHALL BE PROVIDED AT EVERY CROSS PASSAGE.
10. LUMINANCE CAMERA, LOUDSPEAKER, JET FAN, PHONE, BUS BAR, COPPER COATED STEEL STRIP BAR FOR S&T AND ROCS WORK (EXCLUDING ANCHOR BOLTS) IS NOT IN THE SCOPE OF WORK OF C-4.



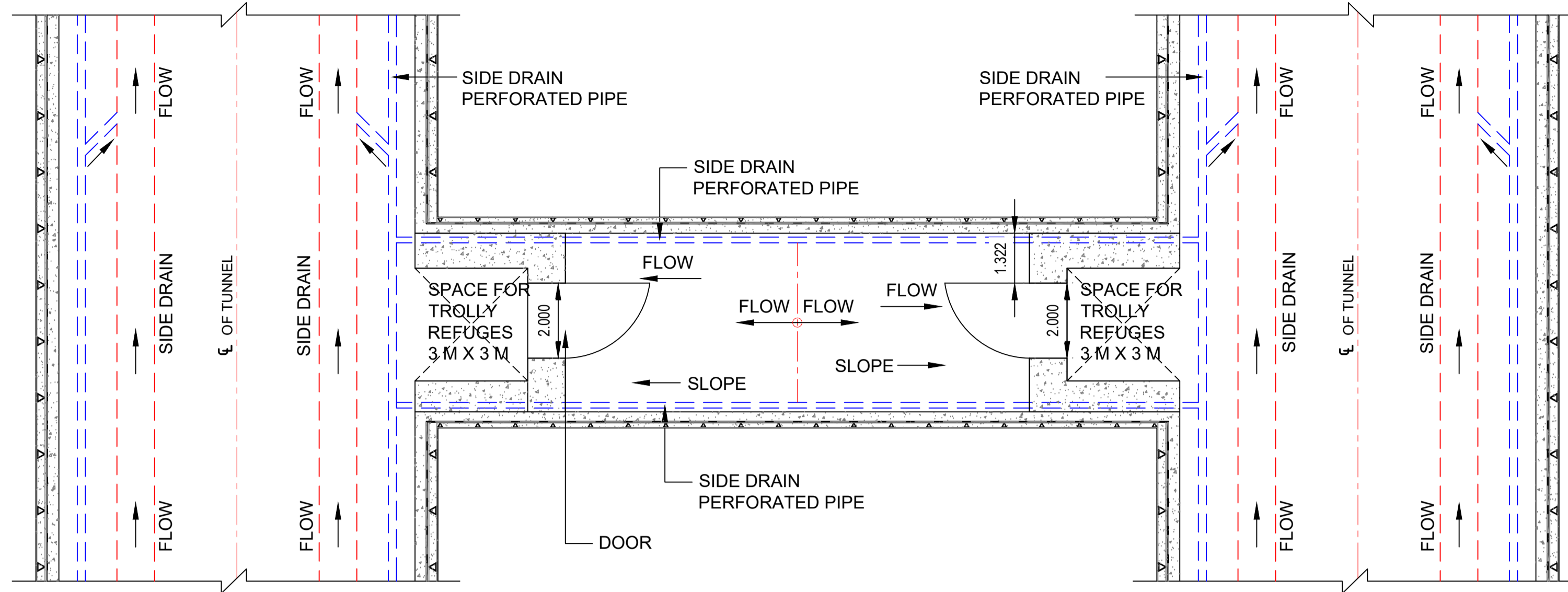
PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING
 ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

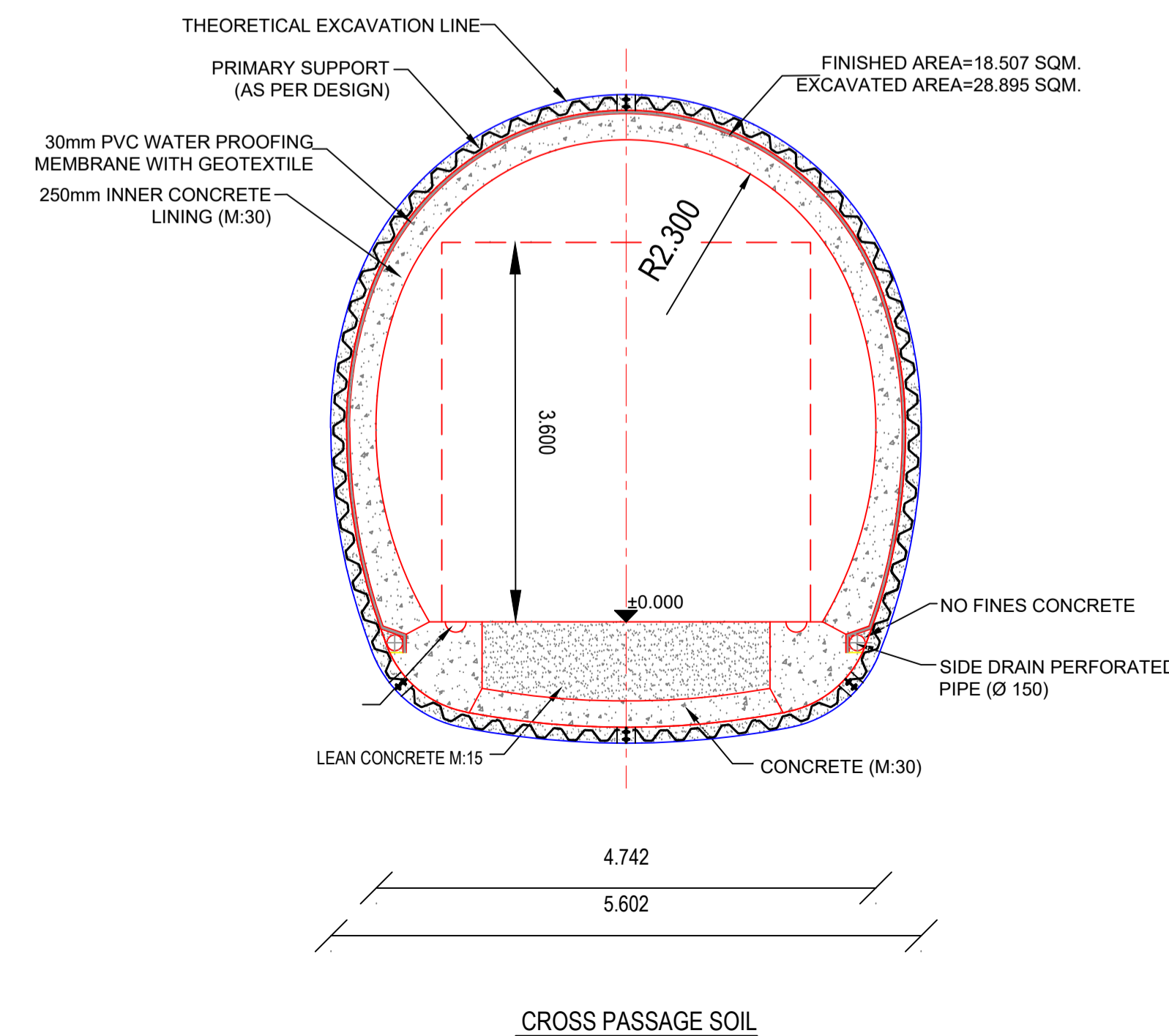
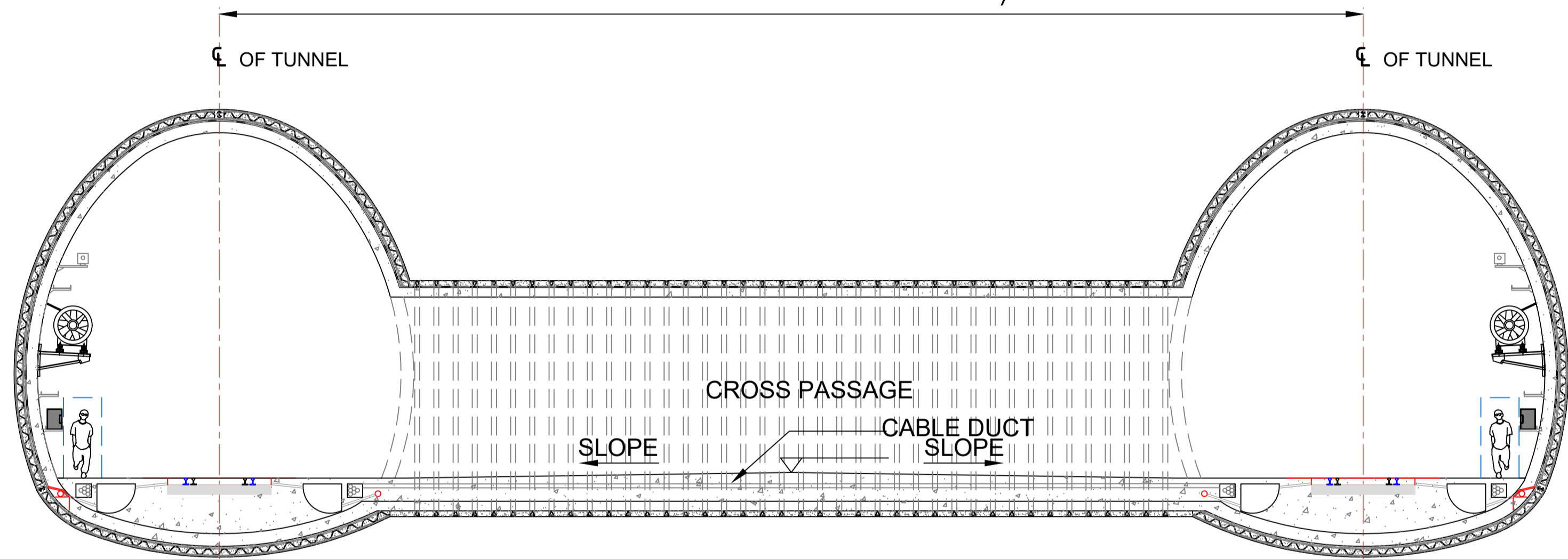
GENERAL CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.

GCHORC DRG. NO:- GCHRIDC-C4-DRW-TTL-CLT-01008_A1	
DRAWING NAME: CONCEPTUAL DRAWING FOR CUT & COVER SECTION OF TUNNEL	
ISSUE DATE: 07.11.2022	REVISED DATE: 03.01.2023
SCALE: AS SHOWN	
SMC DRG. NO:- SMC/HRIDC/TUNICS-7	
CONSULTANT: An ISO 9001 Company	
 S.V. KULKARNI TUNNEL DESIGNER	 B. R. SHARMA S. CONSULTANT / TUNNEL
 A. A. SAMANT PROJECT INCHARGE	RELEASED FOR: <input type="checkbox"/> PRELIMINARY FOR APPROVAL <input checked="" type="checkbox"/> TENDER <input type="checkbox"/> CONSTRUCTION

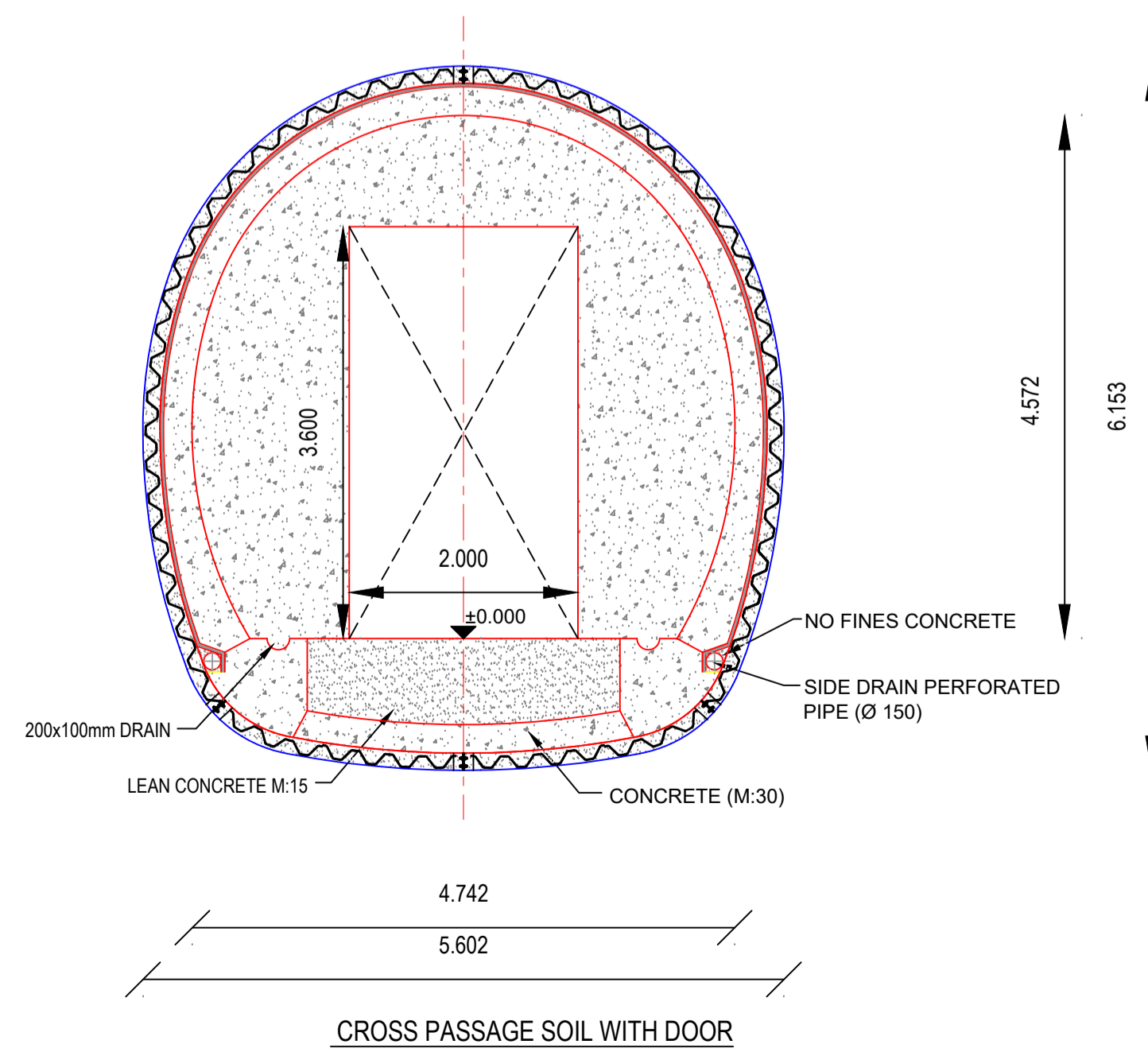
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/S	
		AM/S&T	
REETU PATIAL CDE/CIVIL			
AMARNATH SINGH CRE/S&T		AM/Civil/Plg.	
STIPHEN SAHOO SRE/Elect.		JGM/L&U	



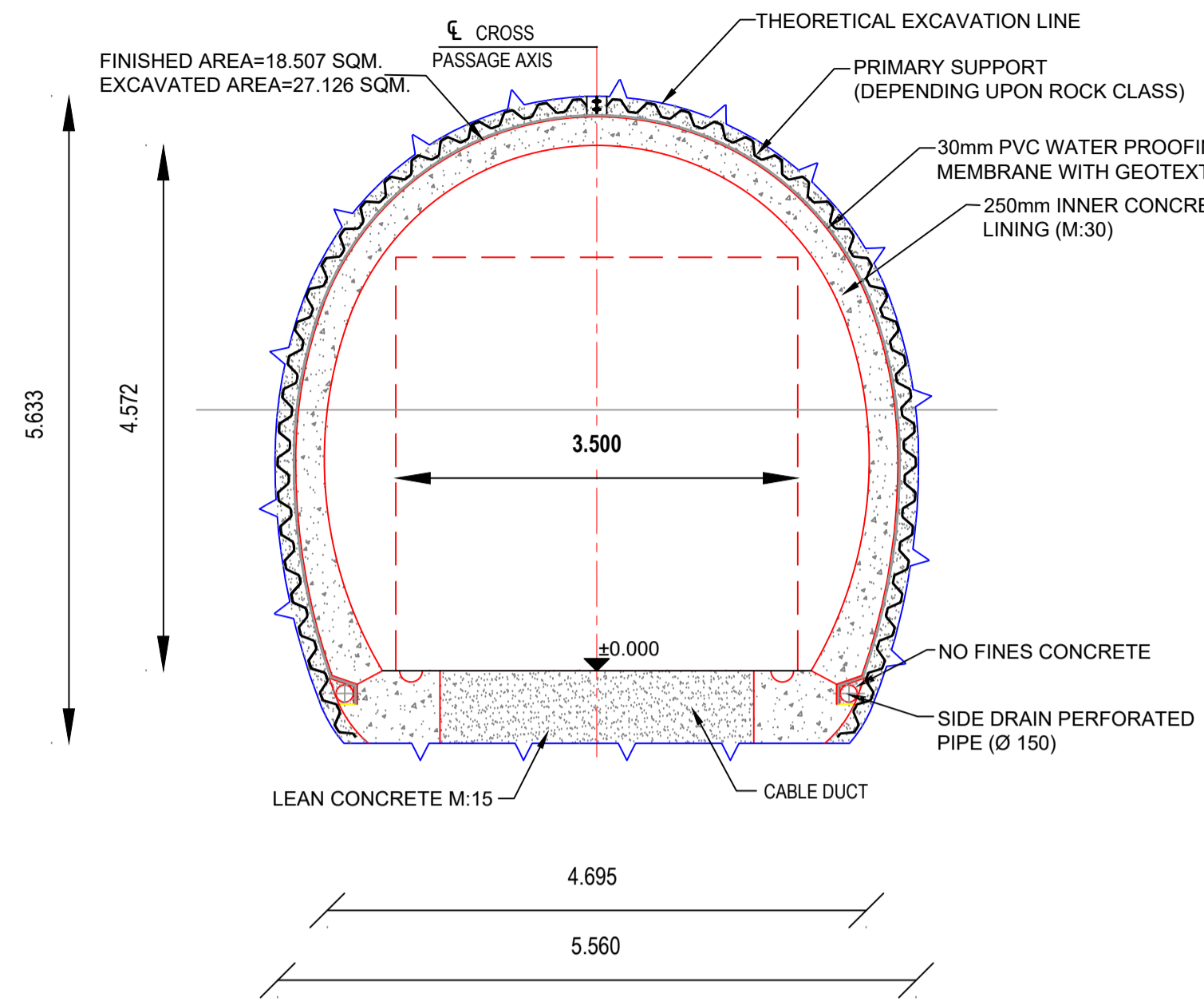
29.815(C/C DISTANCE BETWEEN TWO TUBES CAN VARY AS PER CP LOCATION)



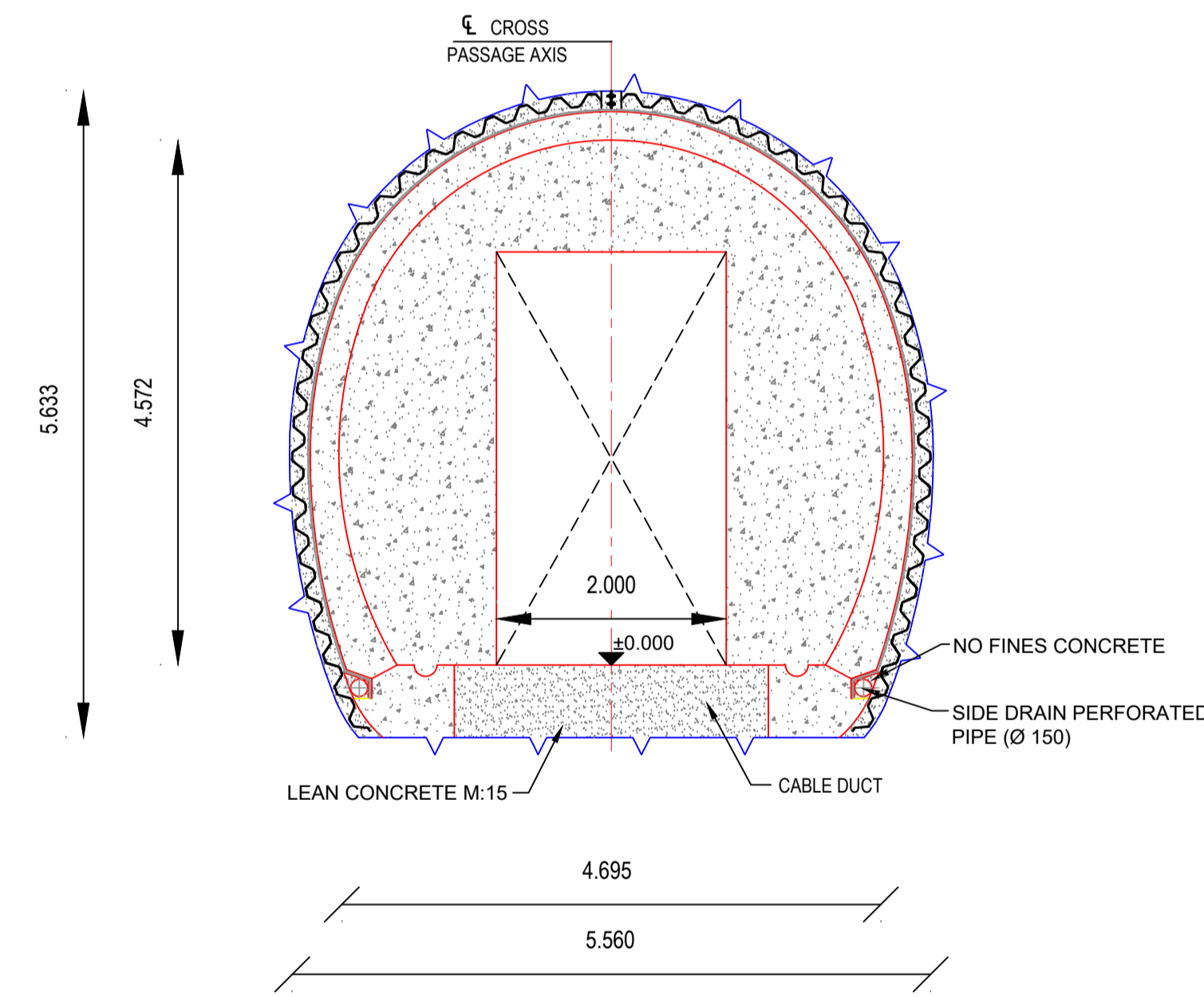
CROSS PASSAGE SOIL



CROSS PASSAGE SOIL WITH DOOR



CROSS PASSAGE ROCK



CROSS PASSAGE ROCK WITH DOOR

- NOTES:-**
1. ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METRE, UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
 3. TUNNEL EXCAVATED BY HEADING, BENCHING / MULTI DRIFT METHOD (NATM).
 4. CROSS PASSAGE SHALL BE PROVIDED AT 400 M INTERVAL.
 5. THE GRADE OF SHOTCRETE WITH SFERS AS PER DETAIL DESIGN.
 6. PROPOSED SUPPORT SYSTEM IS BASED ON GIR PROVIDED BY GEOLOGIST. ACTUAL SUPPORT SYSTEM MAY BE REVISED BASED ON ACTUAL RESPONSE OF STRATA DURING EXCAVATION.
 7. DRAINAGE PIPE SHALL BE 150mmØ, PERFORATED PVC PIPE WRAPPED WITH NON-WOVEN GEOTEXTILE FABRIC AS PER IS-4989
 8. EXCAVATION SEQUENCE WILL BE PROVIDED BASED ON GFC.
 9. PIPE ROOFING/FOREPULPING OF 114 MM DIA SHALL BE PROVIDED WHERE EVER IT IS REQUIRED.
 10. SELF DRILLING ANCHOR OF CAPACITY 190 KN SHALL BE PROVIDED FOR PRIMARY SUPPORT DURING EXCAVATION.
 11. LATTICE GIRDER 25-25-32 OF DEPTH 187 MM/ ISMB 200 MM SHALL BE INCASED IN SFERS OF MINIMUM THICKNESS 250 MM.
 12. DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOJI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01009_A1

DRAWING NAME:- CONCEPTUAL DRAWING FOR CROSS PASSAGE JUNCTION WITH MAIN TUNNEL

ISSUE DATE:- 07/11/2022 REVISED DATE:- 03/01/2023

SCALE:- AS SHOWN

SMC DRG. NO:- SMC/HRIDC/TUN/CS-7

CONSULTANT:- RITES Limited in consortium with SMEC International Pty. Ltd.

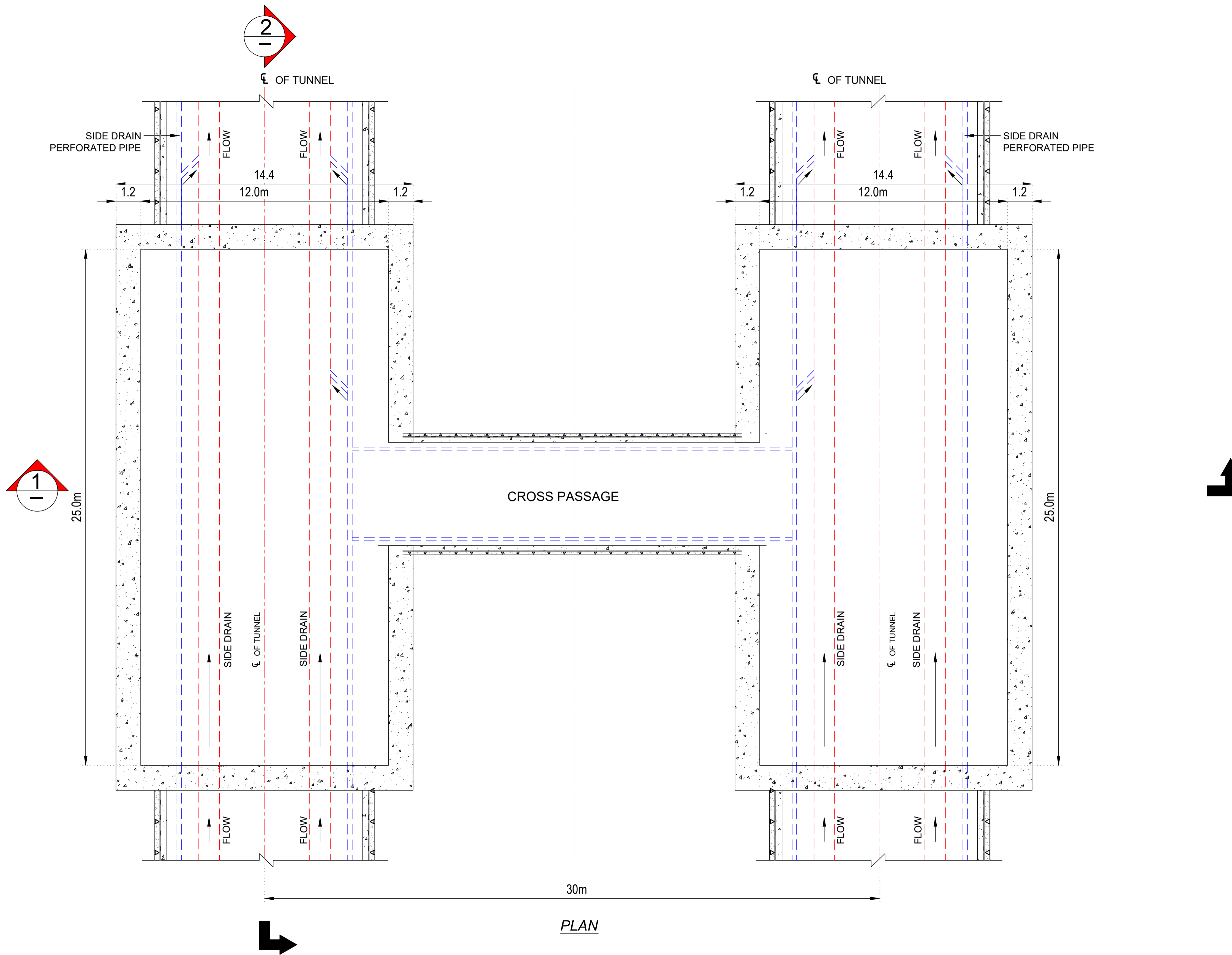
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE/CIVIL	<i>Reetu Patial</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen Sahoo</i>	JGM/L&U	<i>Stephen Sahoo</i>

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

DESIGNED BY: SIVENDRA KUMAR TUNNEL DESIGNER

CHECKED BY: B R SHARMA S/CONSULTANT/TUNNEL

APPROVED BY: A. A. SAMANT PROJECT INCHARGE



PLAN

- NOTES:-**
1. ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
 3. TUNNEL EXCAVATED BY HEADING, BENCHING / MULTI DRIFT METHOD (NATM).
 4. THE GRADE OF SHOTCRETE WITH SFRS AS PER DETAIL DESIGN.
 5. PROPOSED SUPPORT SYSTEM IS BASED ON GIR PROVIDED BY GEOLOGIST. ACTUAL SUPPORT SYSTEM MAY BE REVISED BASED ON ACTUAL RESPONSE OF STRATA DURING EXCAVATION.
 6. DRAINAGE PIPE SHALL BE 150mmØ, PERFORATED PVC PIPE WRAPPED WITH NON-WOVEN GEOTEXTILE FABRIC AS PER IS-4989
 7. EXCAVATION SEQUENCE WILL BE PROVIDED BASED ON GFC.
 8. PIPE ROOFING/FOREPULING OF 114 MM DIA SHALL BE PROVIDED WHERE EVER IT IS REQUIRED.
 9. SELF DRILLING ANCHOR OF CAPACITY 190 KN SHALL BE PROVIDED FOR PRIMARY SUPPORT DURING EXCAVATION.
 10. LATTICE GIRDER 25-25-32 OF DEPTH 187 MM/ ISMB 200 MM SHALL BE INCASSED IN SFRS OF MINIMUM THICKNESS 250 MM.
 11. DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
 12. INSERT PLATES SHALL BE PROVIDED IN THE WALL FOR PROVISION OF SS STAIRS OF MINIMUM WIDTH OF 1.5M.
 13. ROOFING SYSTEM OVER SHAFTS SHALL BE PROVIDED AS PER DBR.

LOCATION	
SHAFT-1	CH:26080
SHAFT-2	CH:26080
SHAFT-3	CH:27680
SHAFT-4	CH:27680

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



GCHORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01010_A2 SHEET: 1 OF 3

DRAWING NAME: CONCEPTUAL DRAWING FOR PERMANENT VENTILATION SHAFT JUNCTION WITH MAIN TUNNEL

ISSUE DATE: 07.11.2022 REVISED DATE: 09.01.2023

SCALE: AS SHOWN

SMC DRG. NO:- SMC/HRIDC/TUNCS-7

CONSULTANT: S.M. CONSULTANTS

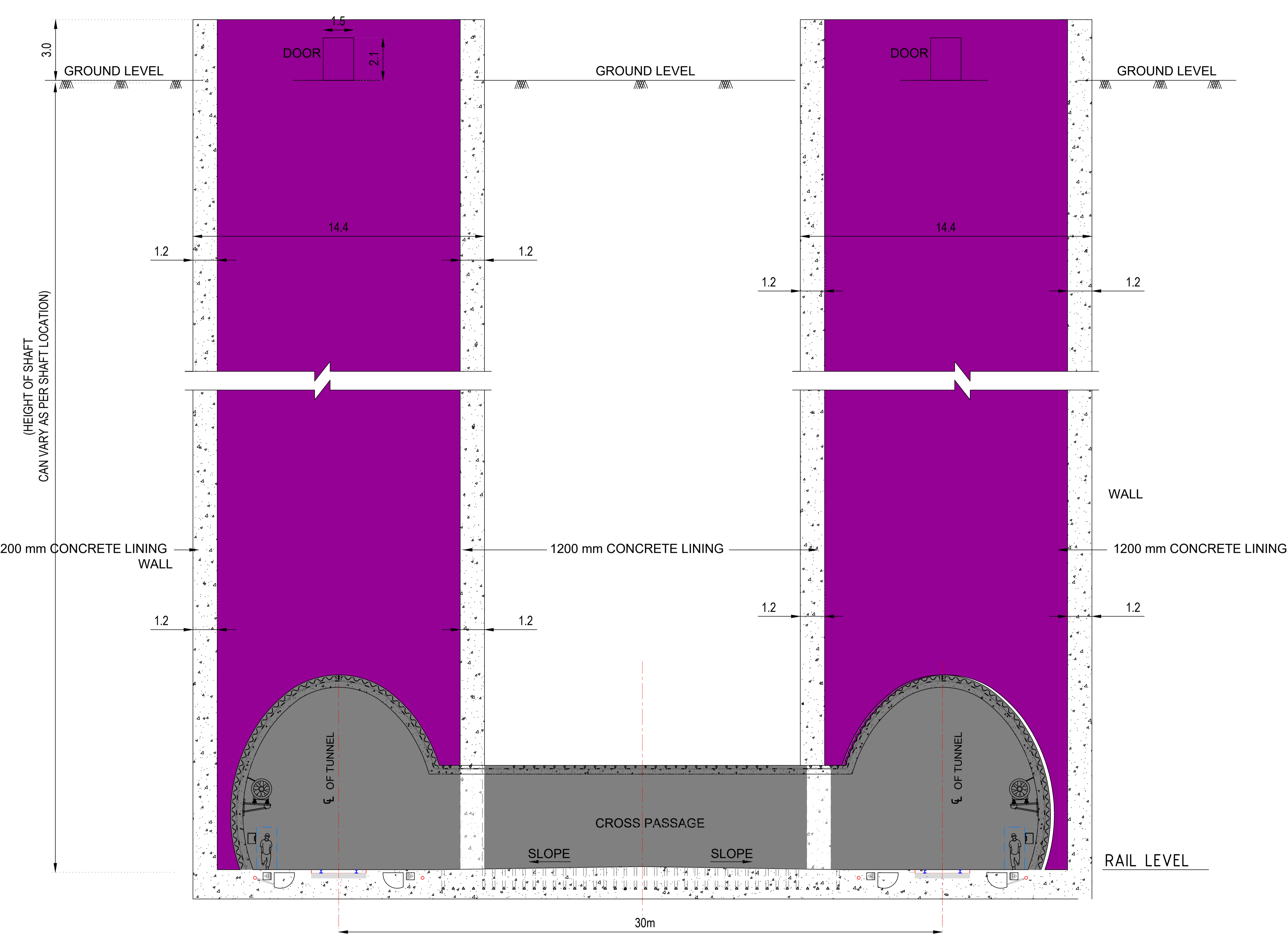
AN ISO 9001 Company

Professional / Release / Date / Signature / Seal / Stamp

SIVENDRA KUMAR TUNNEL DESIGNER B. R. SHARMA S.M. CONSULTANTS / TUNNEL A. A. SAMANT PROJECT INCHARGE

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>MS</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
		AM/S&T	
REETU PATIAL CDE / CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Plg.	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>Stephen</i>



SECTIONAL ELEVATION 1-1

- NOTES:-**
1. ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
 3. TUNNEL EXCAVATED BY HEADING, BENCHING / MULTI DRIFT METHOD (NATM).
 4. THE GRADE OF SHOTCRETE WITH SFRS AS PER DETAIL DESIGN. PROPOSED SUPPORT SYSTEM IS BASED ON GIR PROVIDED BY GEOLOGIST. ACTUAL SUPPORT SYSTEM MAY BE REVISED BASED ON ACTUAL RESPONSE OF STRATA DURING EXCAVATION.
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 6. EXCAVATION SEQUENCE WILL BE PROVIDED BASED ON GFC.
 7. PIPE ROOFING/FOREPULPING OF 114 MM DIA SHALL BE PROVIDED WHERE EVER IT IS REQUIRED.
 8. SELF DRILLING ANCHOR OF CAPACITY 190 KN SHALL BE PROVIDED FOR PRIMARY SUPPORT DURING EXCAVATION.
 9. LATTICE GIRDER 25-25-32 OF DEPTH 187 MM/ ISMB 200 MM SHALL BE INCASERD IN SFRS OF MINIMUM THICKNESS 250 MM.
 10. DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
 11. INSERT PLATES SHALL BE PROVIDED IN THE WALL FOR PROVISION OF SS STAIRS OF MINIMUM WIDTH OF 1.5M.
 - 12.

LOCATION	
SHAFT-1	CH:26080
SHAFT-2	
SHAFT-3	CH:27680
SHAFT-4	

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



GCHORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01010_A2 SHEET: 2 OF 3

DRAWING NAME: CONCEPTUAL DRAWING FOR PERMANENT VENTILATION SHAFT JUNCTION WITH MAIN TUNNEL

ISSUE DATE: 07.11.2022 REVISED DATE: 09.01.2023

SCALE: AS SHOWN

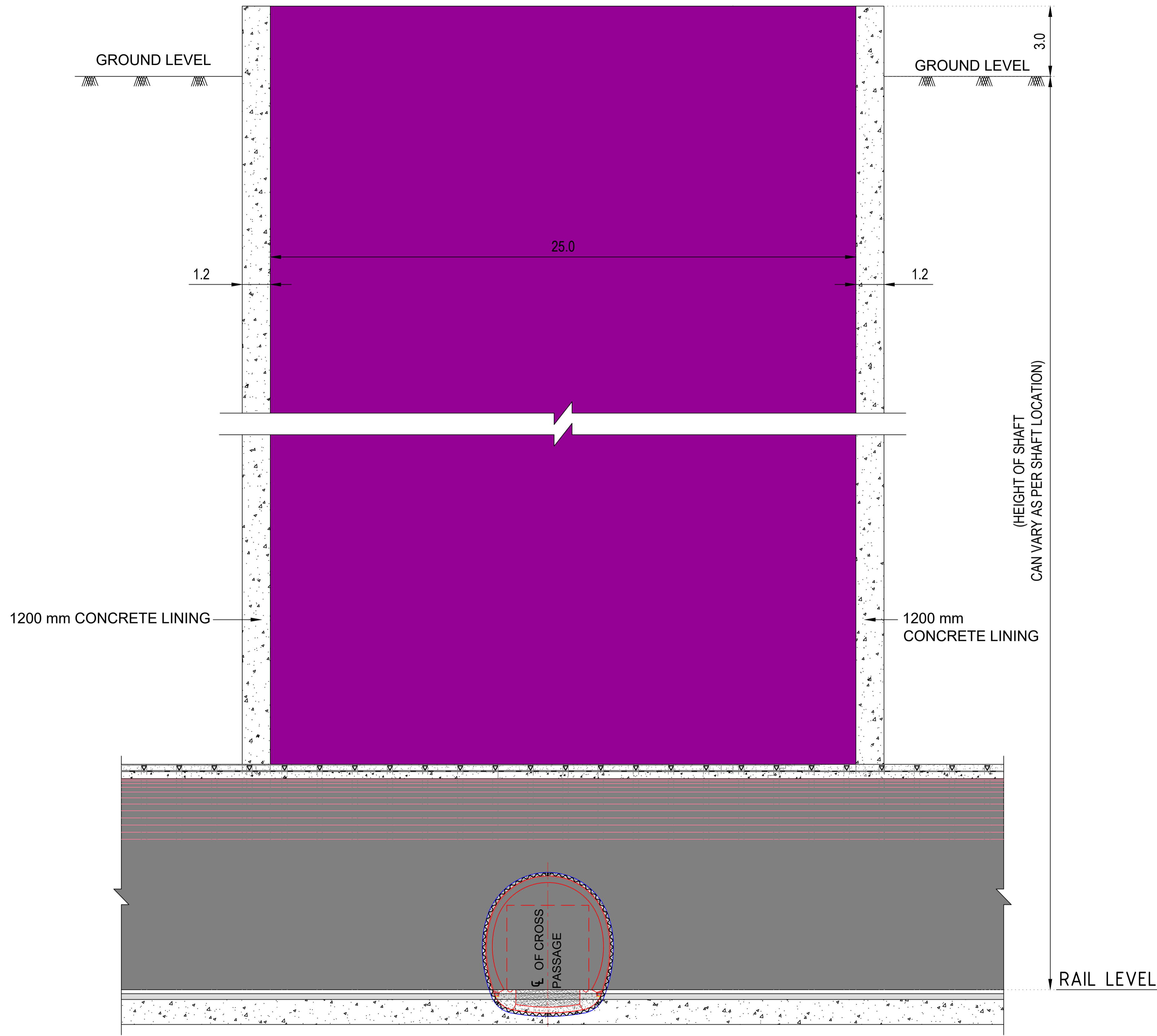
SMC DRG. NO:- SMC/HRIDC/TUNCS-7

CONSULTANT: S.M. CONSULTANTS
 An ISO 9001 Company
 Professional / Related / Government / South Andhra / New Delhi
 Web: www.smcindia.com, E-Mail: smc@smcindia.com

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

SIVENDRA KUMAR TUNNEL DESIGNER
 B. R. SHARMA SFC CONSULTANT / TUNNEL
 A. A. SAMANT PROJECT INCHARGE

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Shudh</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
		AM/S&T	
REETU PATIAL CDE / CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig.	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>Stephen</i>



SECTIONAL ELEVATION 2-2

NOTES:-

1. ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSIONS SHALL BE MEASURED FROM DRAWING.
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11. DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
12. INSERT PLATES SHALL BE PROVIDED IN THE WALL FOR PROVISION OF SS STAIRS OF MINIMUM WIDTH OF 1.5M.

LOCATION	
SHAFT-1	CH:26080
SHAFT-2	
SHAFT-3	CH:27680
SHAFT-4	

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOPTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC: CHAHATEY RAM PD, SUDHIR AGRAWAL DPD/CIVIL, REETU PATIAL CDE /CIVIL, AMARNATH SINGH CRE/S&T, STIPHEN SAHOO SRE/Elect.

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>MS</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
		AM/S&T	
REETU PATIAL CDE /CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Plg.	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>JGM</i>

CONCEPTUAL DRAWING FOR PERMANENT VENTILATION SHAFT JUNCTION WITH MAIN TUNNEL

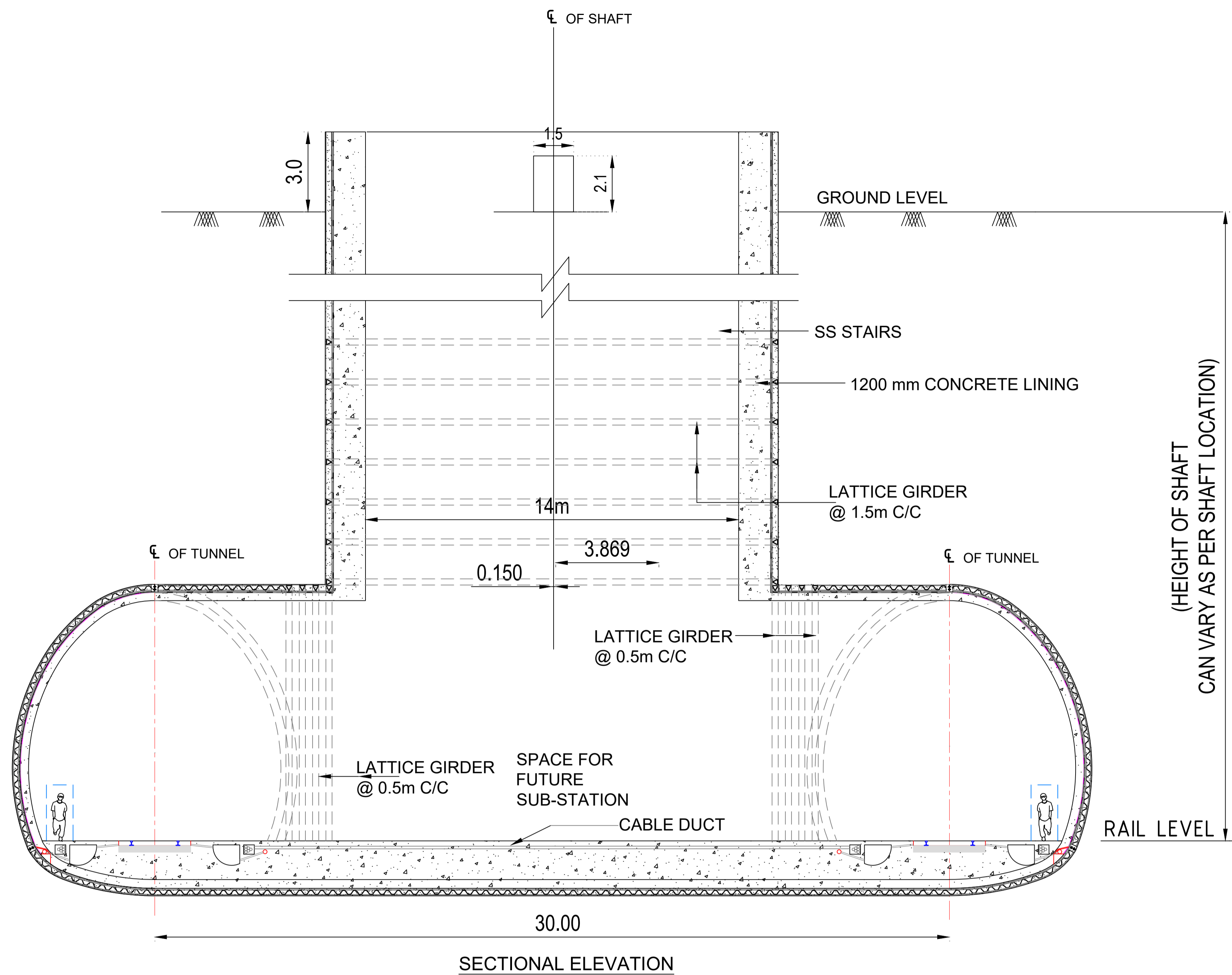
ISSUE DATE: 07.11.2022 | REVISED DATE: 09.01.2023

SCALE: AS SHOWN

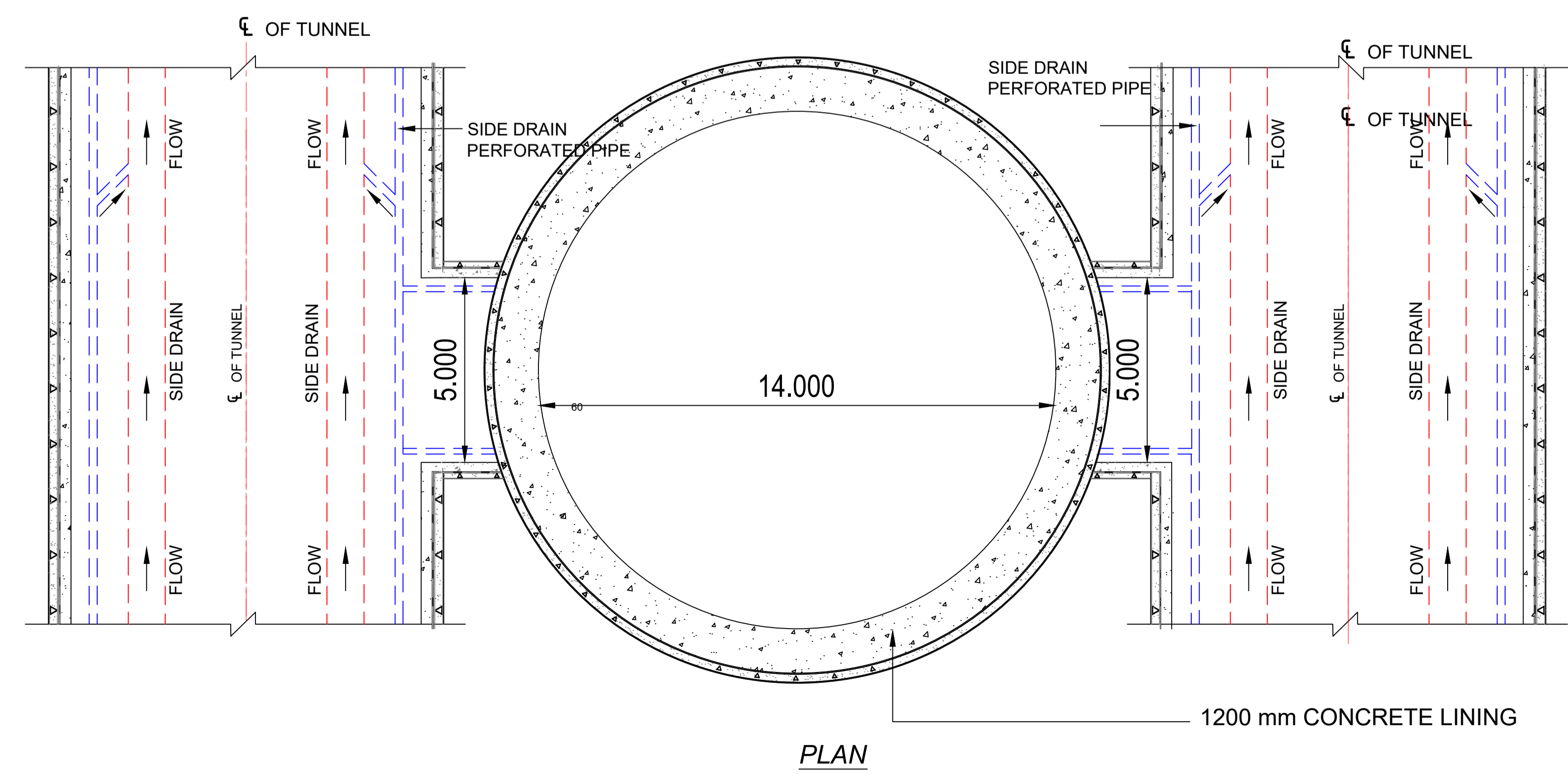
SMC DRG. NO.: SMC/HRIDC/TUNCS-7

CONSULTANT: S.M. CONSULTANTS

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION



SECTIONAL ELEVATION



PLAN

- NOTES:-**
1. ALL DIMENSIONS, NORTHING & EASTING AND LEVELS ARE IN METER, UNLESS OTHERWISE SPECIFIED.
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 7. SELF DRILLING ANCHOR OF CAPACITY 190 KN SHALL BE PROVIDED FOR PRIMARY SUPPORT DURING EXCAVATION.
 8. LATTICE GIRDER 25-25-32 OF DEPTH 187 MM/ ISMB 200 MM SHALL BE INCASED IN SFRS OF MINIMUM THICKNESS 250 MM.
 9. DIMENSION OF PRIMARY SUPPORT & CONCRETE ARE TENTATIVE.
 10. INSERT PLATES SHALL BE PROVIDED IN THE WALL FOR PROVISION OF SS STAIRS OF MINIMUM WIDTH OF 1.5M.
 11. ROOFING SYSTEM OVER SHAFTS SHALL BE PROVIDED AS PER DBR.

GC/HORC		HRDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju Solanki</i>
		AM/S&T	
REETU PATIAL CDE / CIVIL	<i>Reetu</i>		
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath Singh</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>Stephen</i>

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOPTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01011_A2

DRAWING NAME: CONCEPTUAL DRAWING FOR CONSTRUCTION CUM UTILITY SHAFT

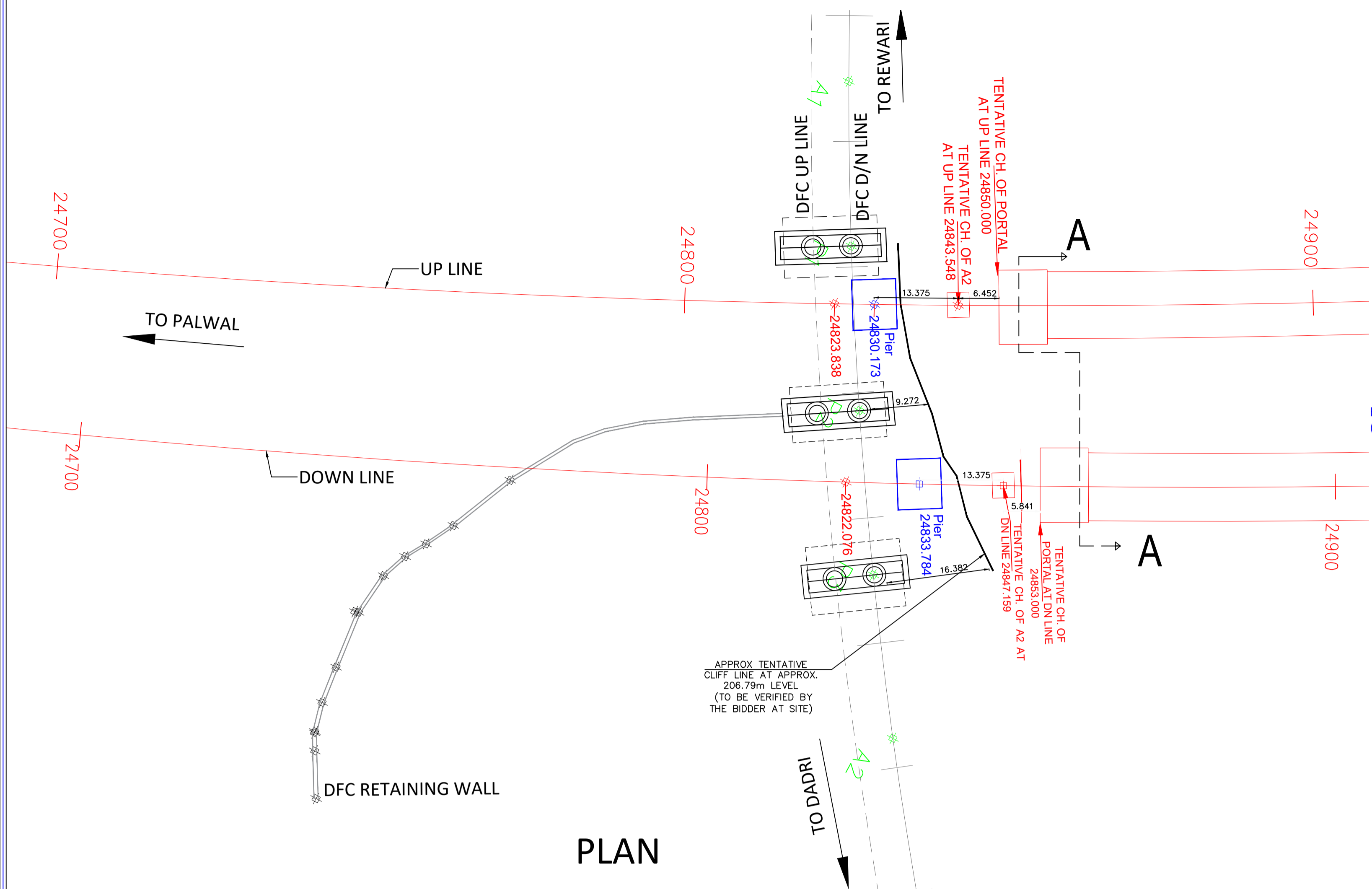
ISSUE DATE: 07.11.2022 | REVISED DATE: 09.01.2023

SCALE: AS SHOWN

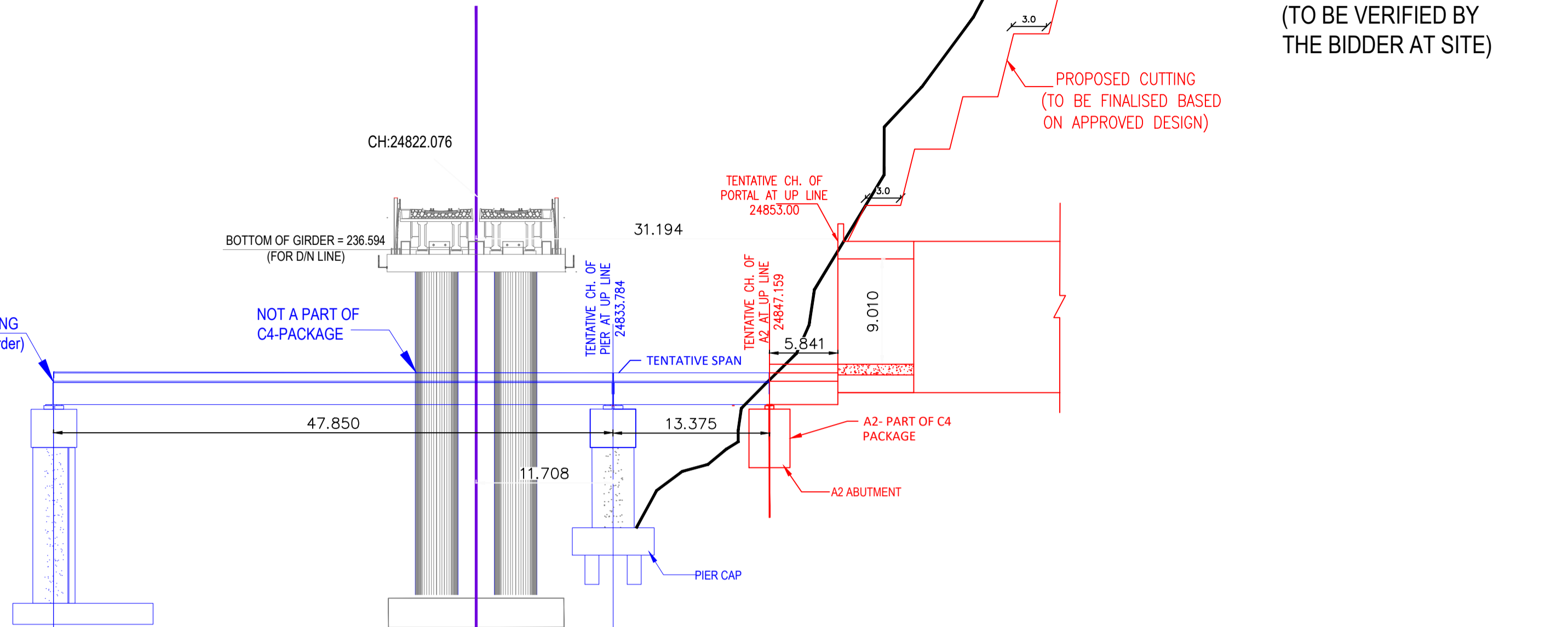
SMC DRG. NO:- SMC/HRIDC/TUNCS-7

CONSULTANT: S.M. CONSULTANTS AN ISO 9001 Company

PRELIMINARY FOR APPROVAL: TENDER: CONSTRUCTION:

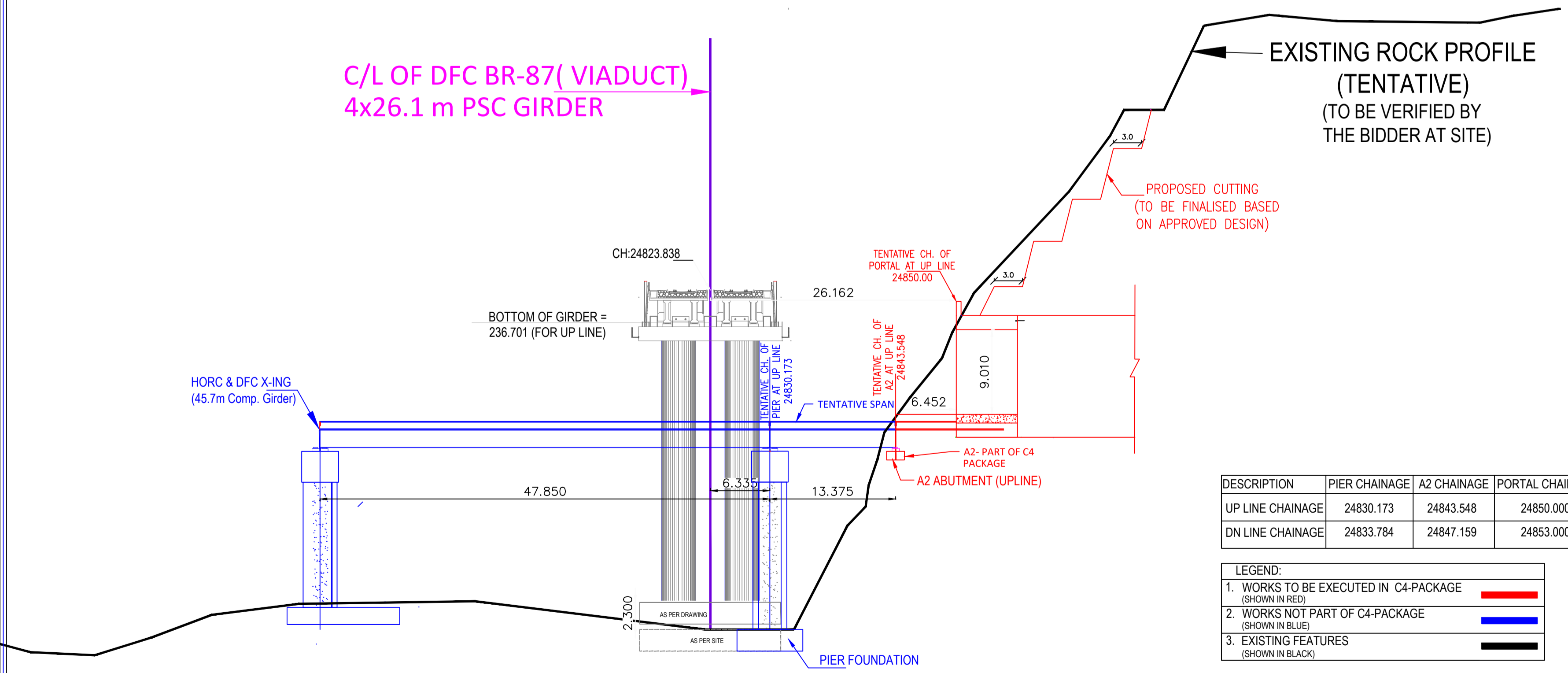


C/L OF DFC BR-87 (VIADUCT)
4x26.1 m PSC GIRDER

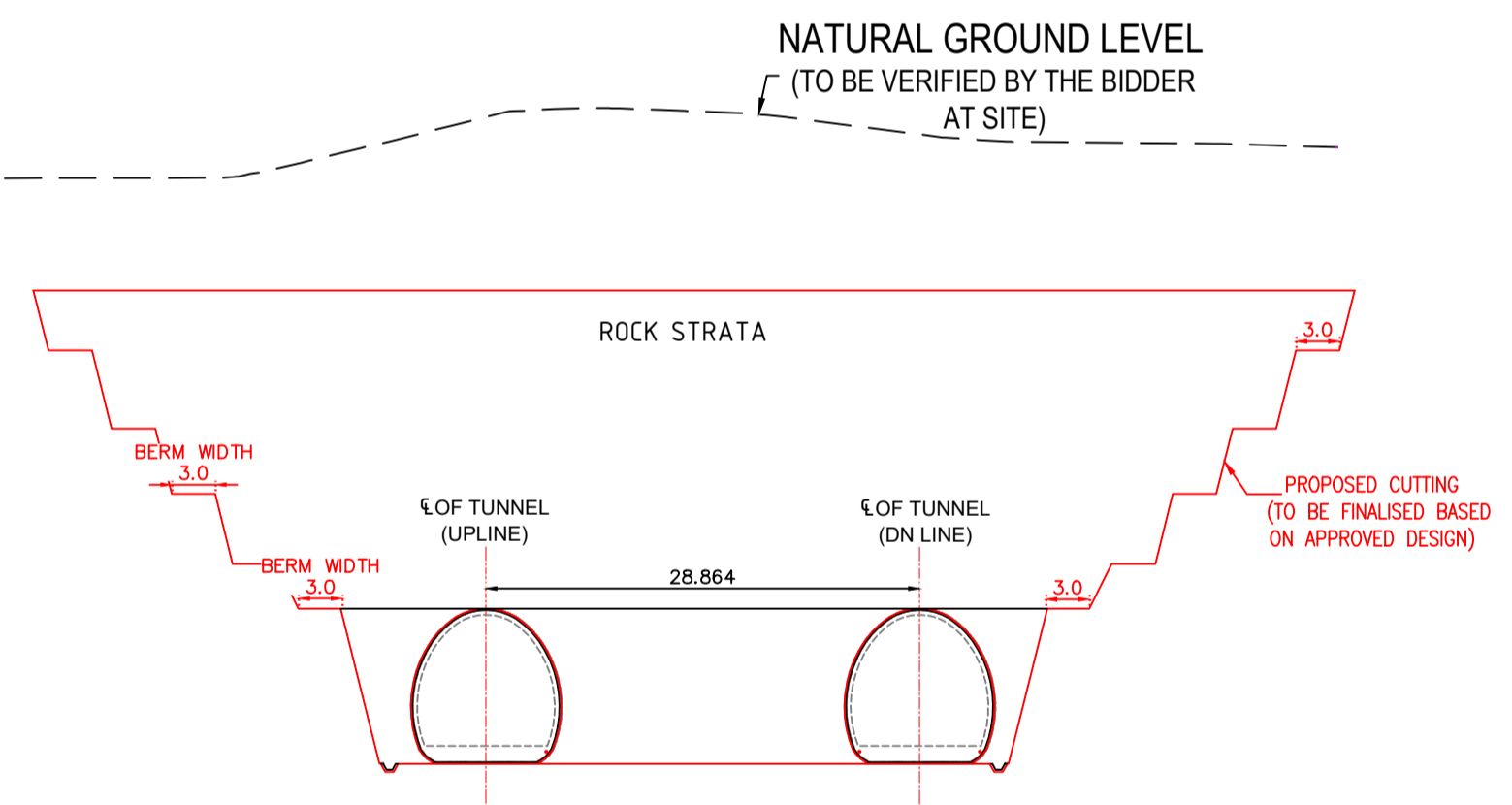


SECTION AT DN LINE

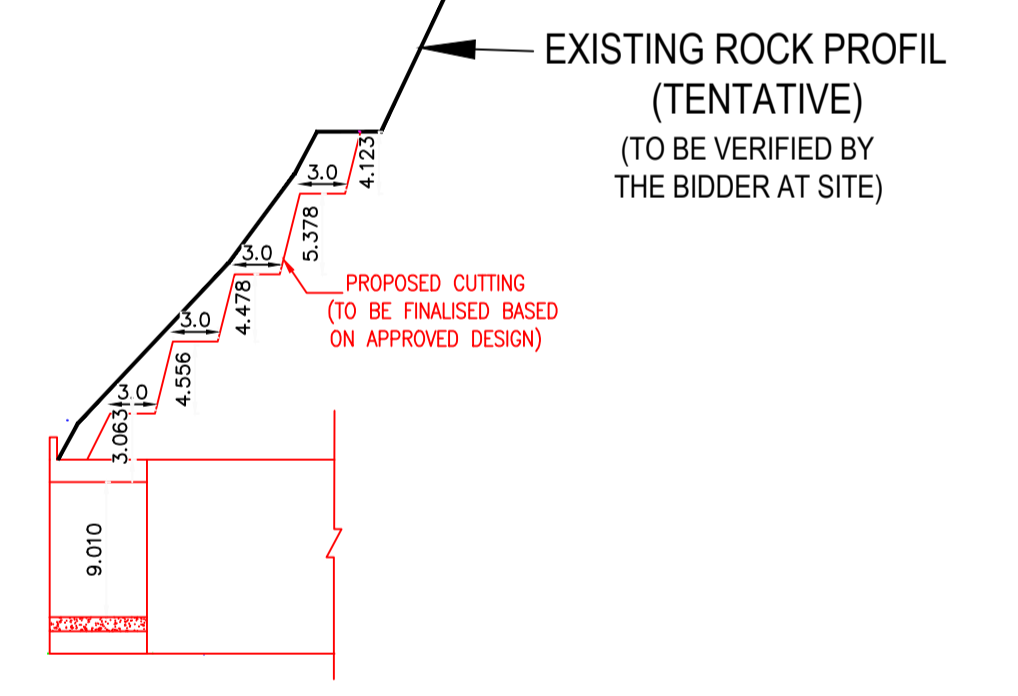
C/L OF DFC BR-87 (VIADUCT)
4x26.1 m PSC GIRDER



SECTION AT UP LINE



SECTION A-A (ELEVATION)



SECTION A-A (SIDE VIEW)

DESCRIPTION	PIER CHAINAGE	A2 CHAINAGE	PORTAL CHAINAGE
UP LINE CHAINAGE	24830.173	24843.548	24850.000
DN LINE CHAINAGE	24833.784	24847.159	24853.000

LEGEND:

1. WORKS TO BE EXECUTED IN C4-PACKAGE (SHOWN IN RED)	—
2. WORKS NOT PART OF C4-PACKAGE (SHOWN IN BLUE)	—
3. EXISTING FEATURES (SHOWN IN BLACK)	—

NOTE:

- THE CHAINAGE OF PORTALS OF UP & DOWN LINE SHOWN ARE TENTATIVE AND WILL BE FINALISED BASED ON THE APPROVED DESIGN OF TUNNEL.
- CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00m, WITH RESPECT TO UP MAIN LINE.

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sh</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
REETU PATIAL CDE/CIVIL	<i>Reetu</i>	AM/S&T	
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Plg.	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>Stephen</i>

PROJECT: HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT: HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT: GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GOHORC DRG. NO.: GC-HRIDC-C4-DRW-TTL-CLT-01012_A1

DRAWING NAME: CONCEPTUAL DRAWING FOR PORTAL-1 & ABUTMENT A2 OF PROPOSED HORC VIADUCT

ISSUE DATE: 07.11.2022 **REVISED DATE:** 09.01.2023

SCALE: AS SHOWN

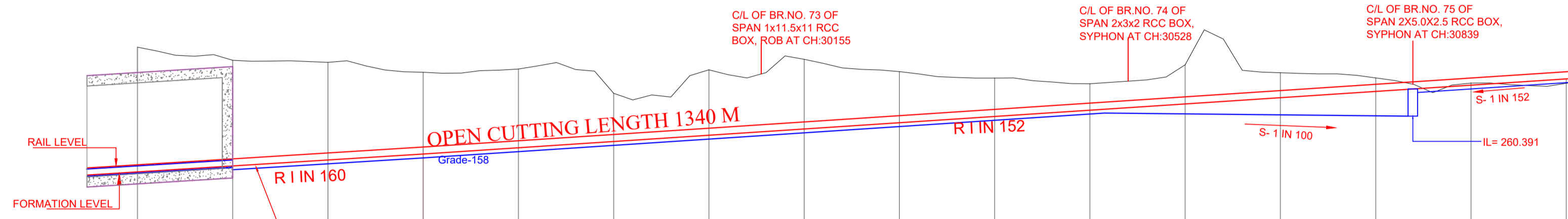
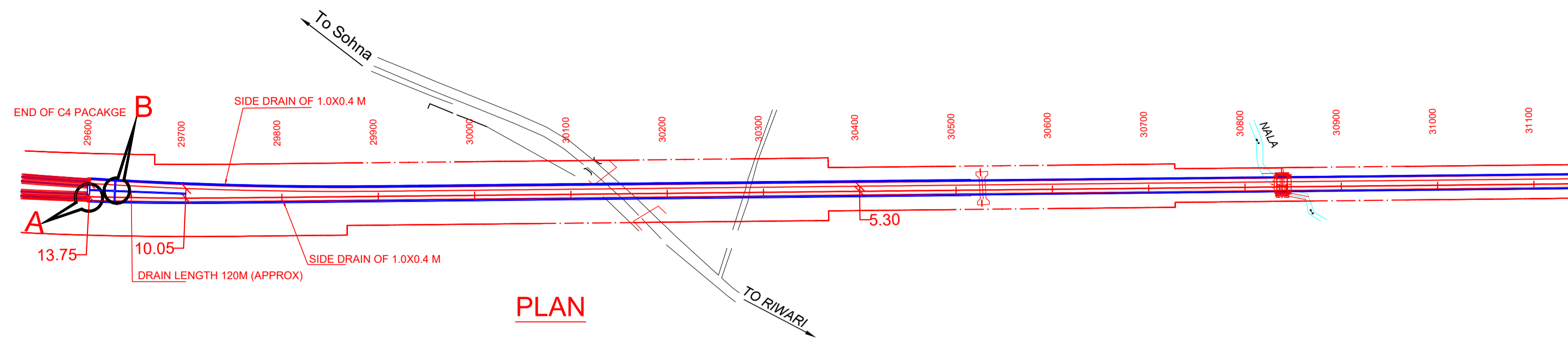
SMC DRG. NO.: SMC/HRIDC/TUN/CS- 7

CONSULTANT: S.M. CONSULTANTS
AN ISO 9001 Company

DESIGNER: SIVENDRA KUMAR TUNNEL DESIGNER
CHECKER: B. R. SHARMA
PROJECT INCHARGE: A. A. SAMANT

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

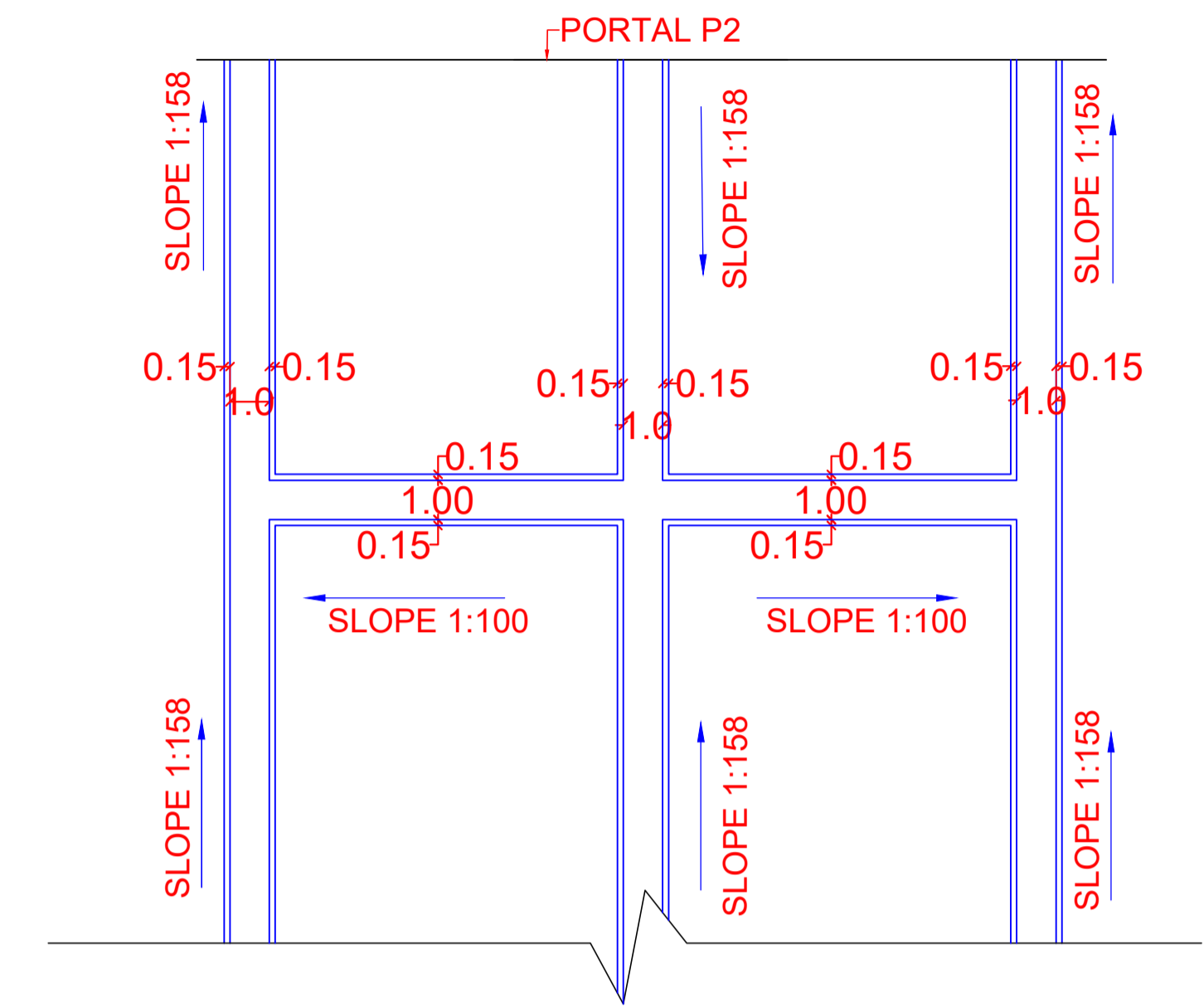
DETAILS OF SIDE DRAIN & PORTAL 2



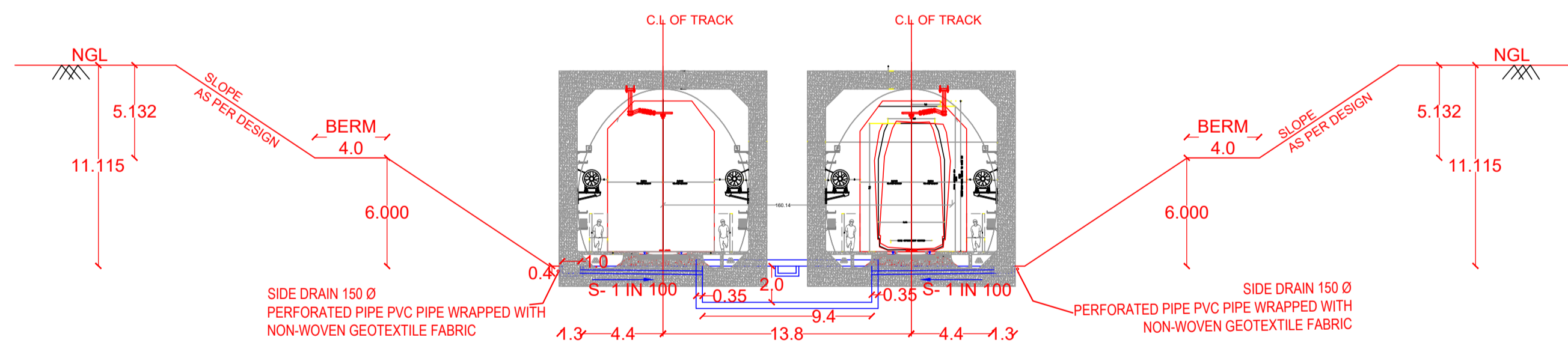
DATUM = 240.00

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PROPOSED FORMATION LEVEL	254.530	255.155	255.780	256.405	257.063	257.721	258.379	259.037	259.695	260.353	261.010	261.668	262.326	262.984	263.642	264.300
GROUND LEVEL	267.640	266.263	266.034	265.005	265.332	262.781	265.257	266.352	265.071	264.378	263.787	265.780	264.938	264.402	263.860	263.832
CHAINAGE	29500	29600	29700	29800	29900	30000	30100	30200	30300	30400	30500	30600	30700	30800	30900	31000

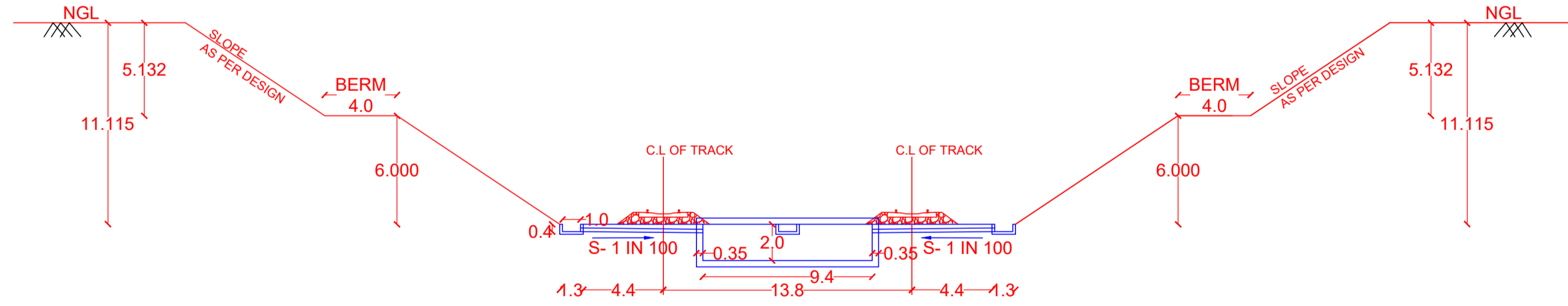
LONGITUDINAL SECTION



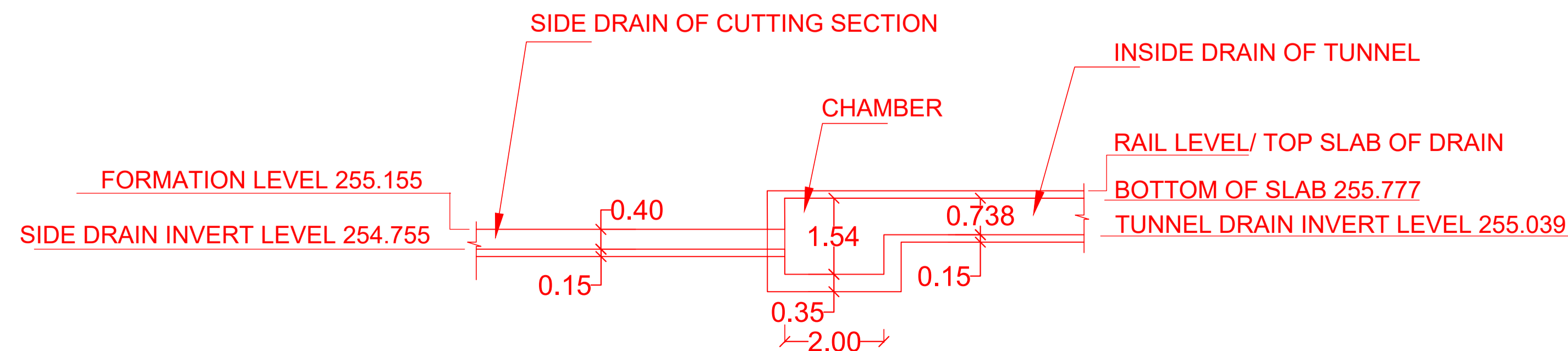
DETAILS OF 'B'



CROSS SECTION AT CUTTING AT PORTAL



CROSS SECTION AT CUTTING BEFORE PORTAL



DETAILS OF 'A'
DRAIN SLOPE AS PER FORMATION

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Shiv</i>	RAJU SOLANKI DGM/CIVIL/S	<i>Raju</i>
REETU PATIAL CDE/CIVIL	<i>Reetu</i>	AM/S&T	
AMARNATH SINGH CRE/S&T	<i>Amarnath Singh</i>	AM/Civil/Pig	<i>Amarnath</i>
STIPHEN SAHOO SRE/Elect.	<i>Stephen</i>	JGM/L&U	<i>Stephen</i>

PROJECT:- HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:- HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

GENERAL CONSULTANT:- GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

GC/HORC DRG. NO:- GC-HRIDC-C4-DRW-TTL-CLT-01013_A1

DRAWING NAME: CONCEPTUAL DRAWING FOR PORTAL-2 & OPEN CUTTING AREA WITH 100M BALLASTLESS TRACK

ISSUE DATE: 07.11.2022 | REVISED DATE: 06.01.2023

SCALE: AS SHOWN

SMC DRG. NO:- SMC/HRIDC/TUNCS-7

CONSULTANT: S.M. CONSULTANTS (An ISO 9001 Company)

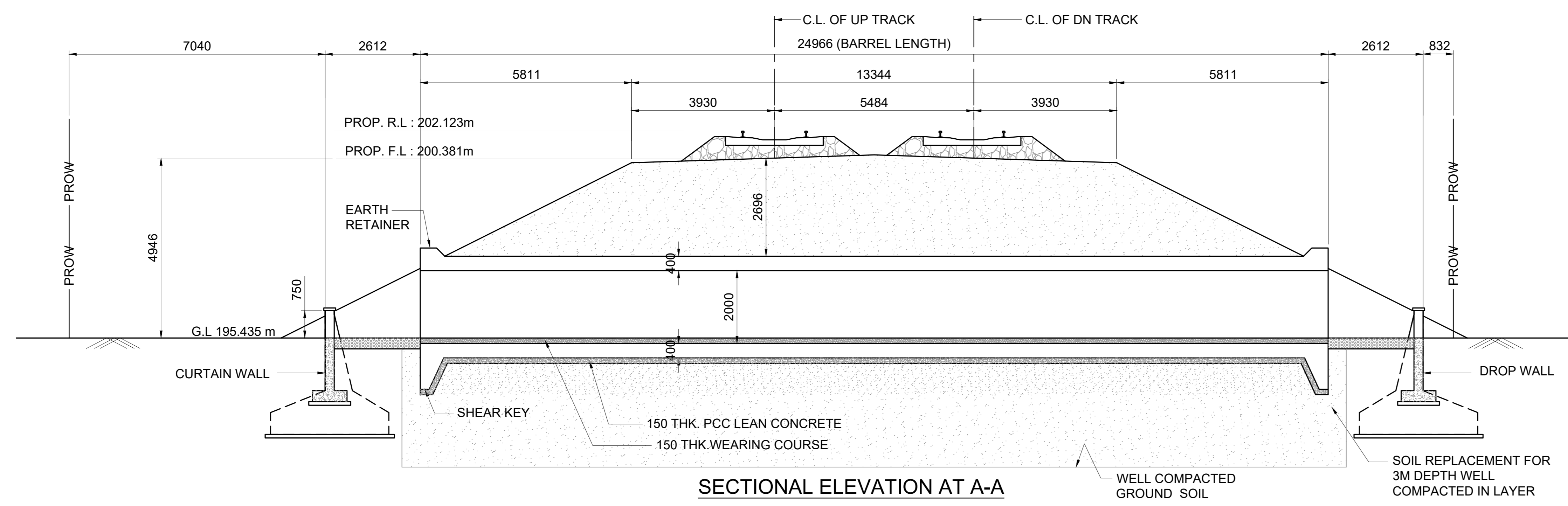
DESIGNER: SIVENDRA KUMAR TUNNEL DESIGNER (S.K. SHARMA)

PROJECT INCHARGE: A.A. SAMANT

RELEASED FOR: PRELIMINARY FOR APPROVAL TENDER CONSTRUCTION

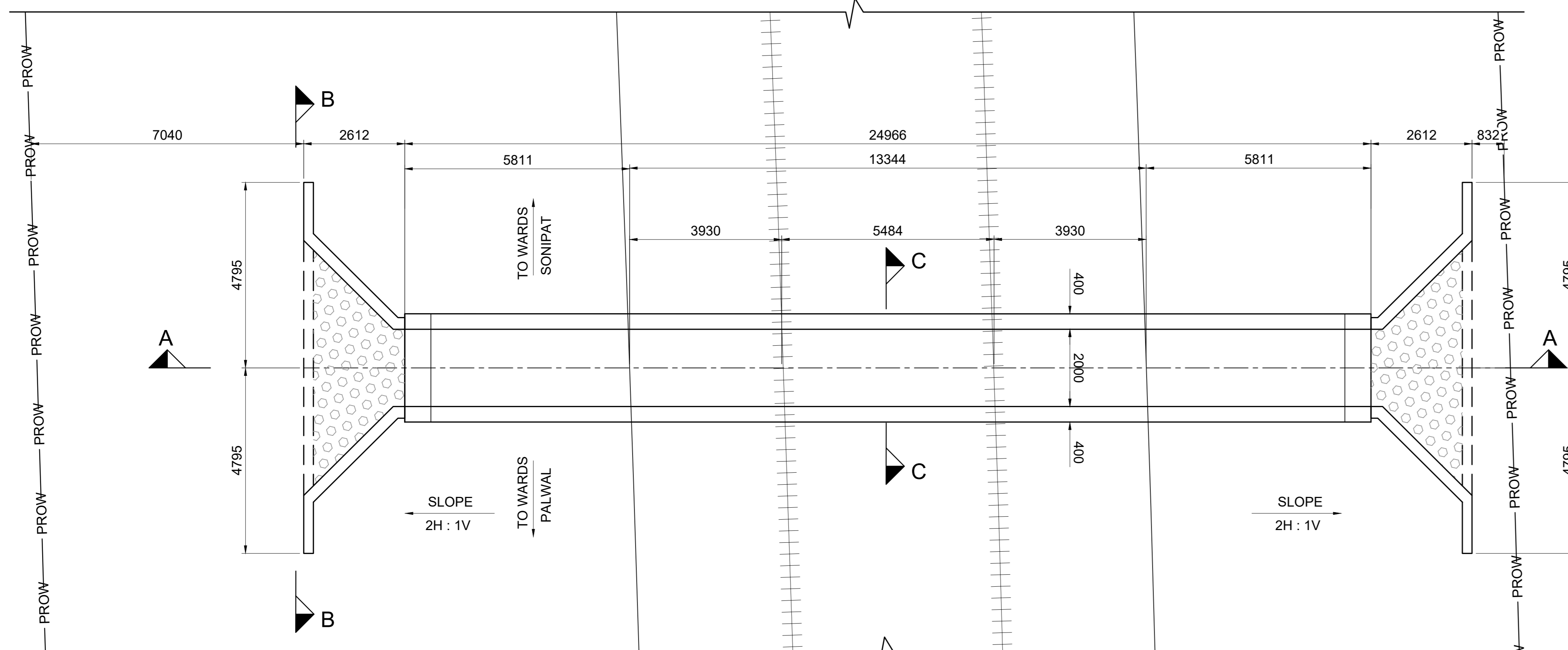
3. Bridges

3.1 Minor Bridges



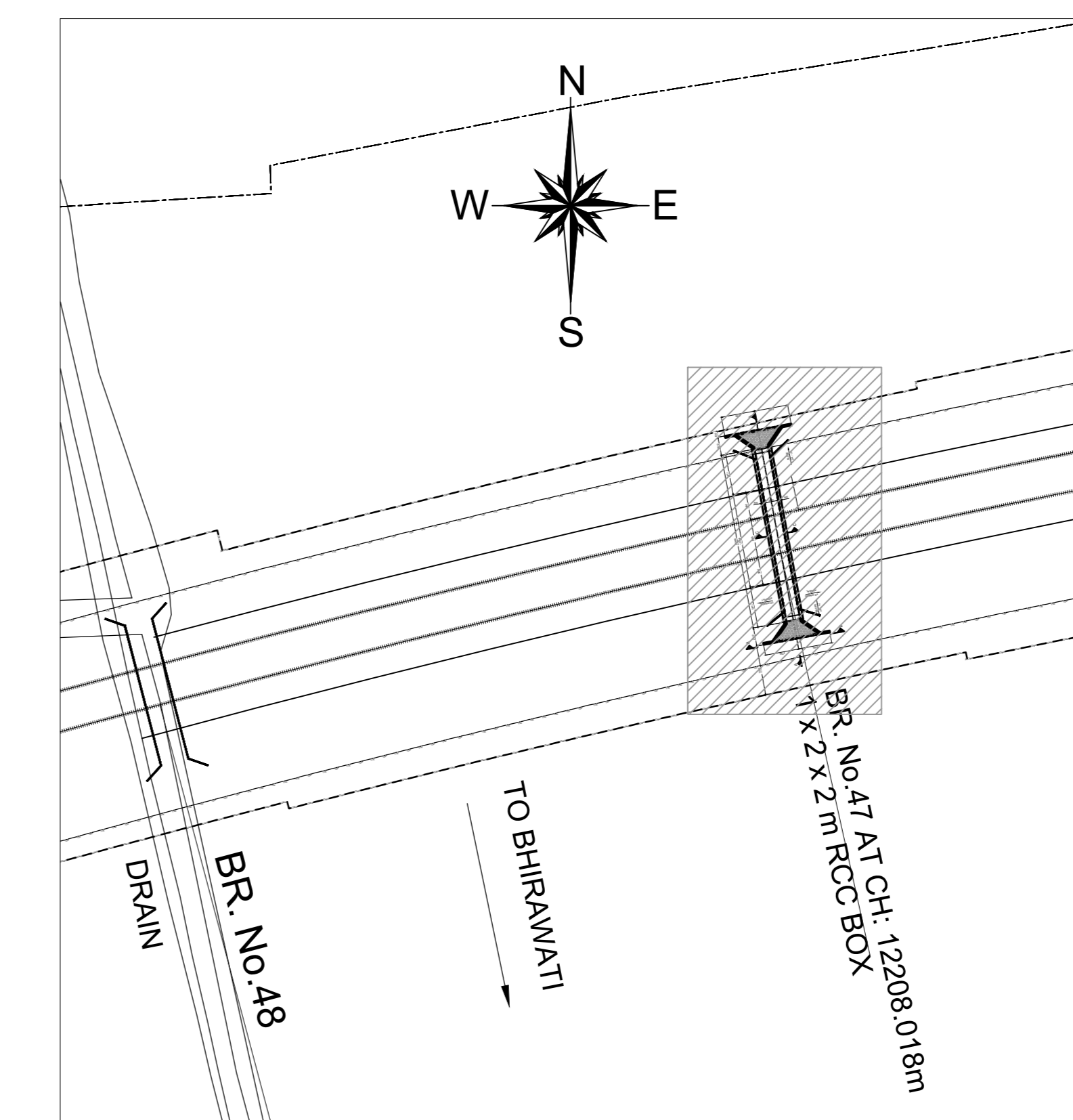
SECTIONAL ELEVATION AT A-A

SCALE 1:100



PLAN AT TOP

SCALE 1:100



KEY PLAN

(NOT TO SCALE)

LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL

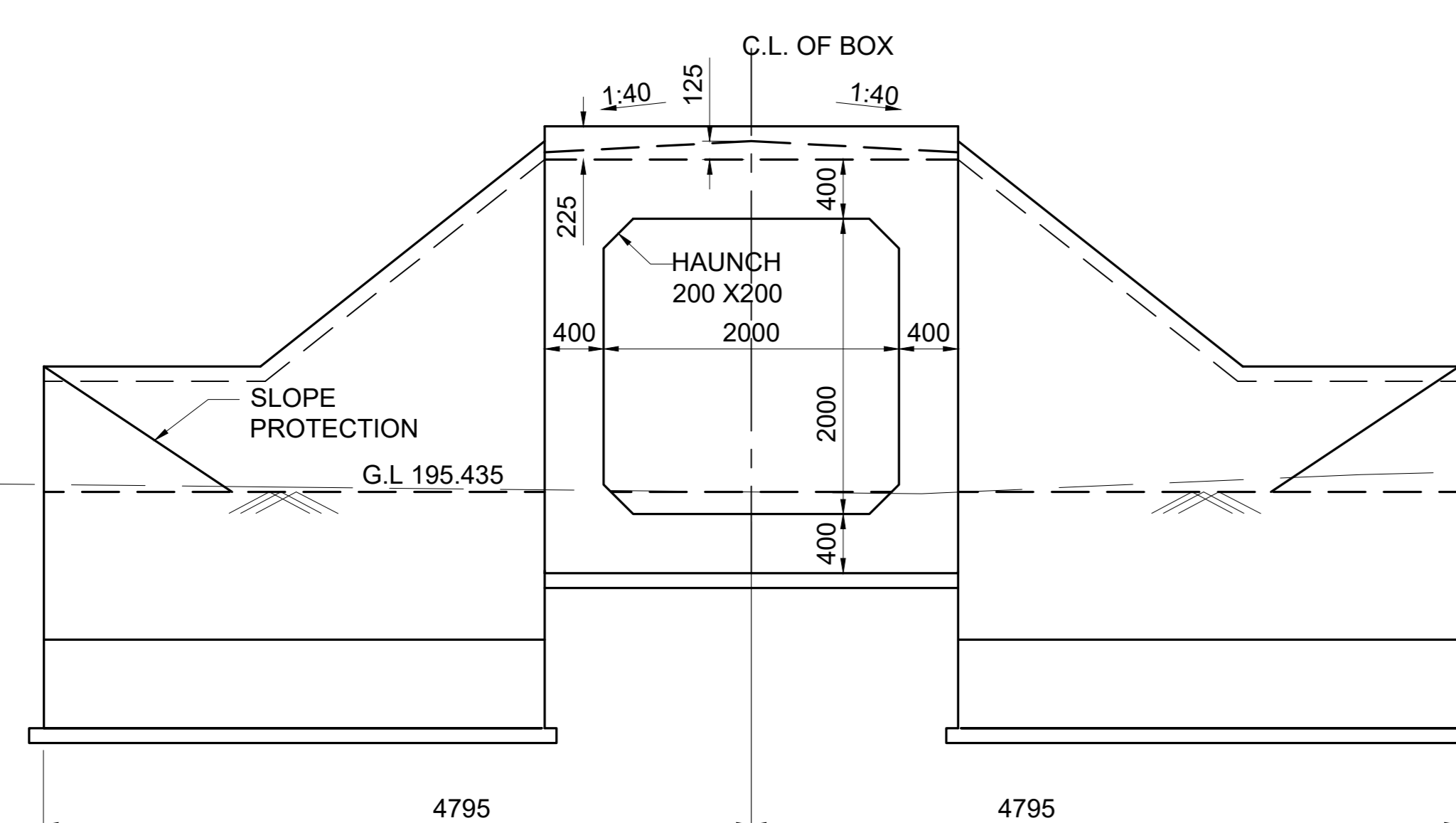
NOTES :

A) GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
- THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
- FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
- BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
- THE EXISTING DETAILS ARE AS PER SITE SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE EXECUTION.
- ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
- SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
- ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
- THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
- DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
- THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.

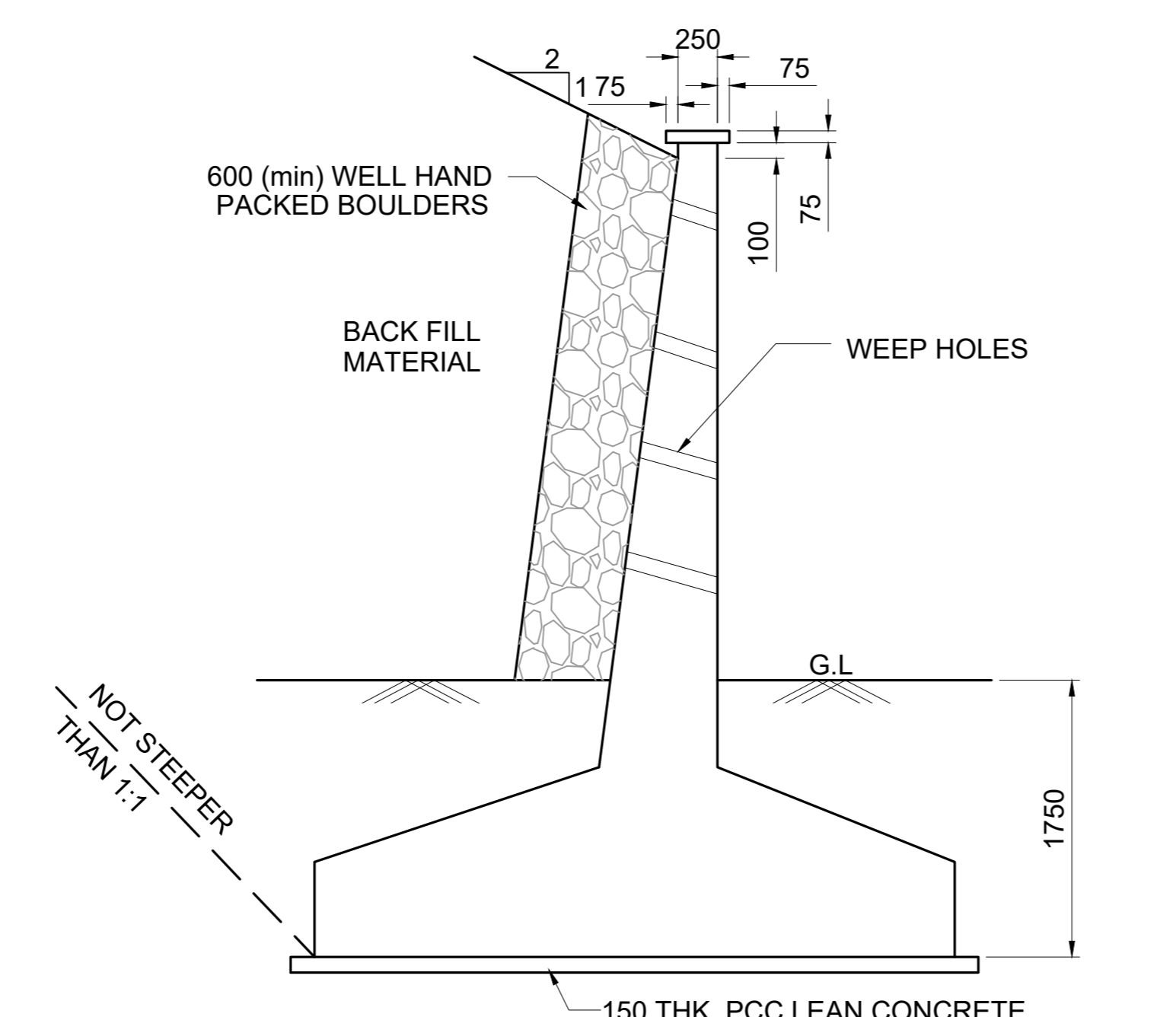
B) TECHNICAL NOTES :

- PROTECTION WORK ON SLOPE OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
- INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
- FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
- ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
- PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
- DIMENSION OF THE BOX MAY BE SUITABLY MODIFIED AS PER SITE REQUIREMENT HEIGHT OF BOX SHOWN INCLUDES MINIMUM REQUIRED CLEAR OPENING HEIGHT AND WEARING COARSE. OVERALL HEIGHT OF BOX OPENING MAY VARY AS PER SITE REQUIREMENT AND ACTUAL ROAD/GROUND PROFILE.
- DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - IRS BRIDGE RULE
 - IRS CONCRETE BRIDGE CODE
 - IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
- SEISMIC ZONE - IV
- EXPOSURE CONDITION - MODERATE.
- DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
- THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE.
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- ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.



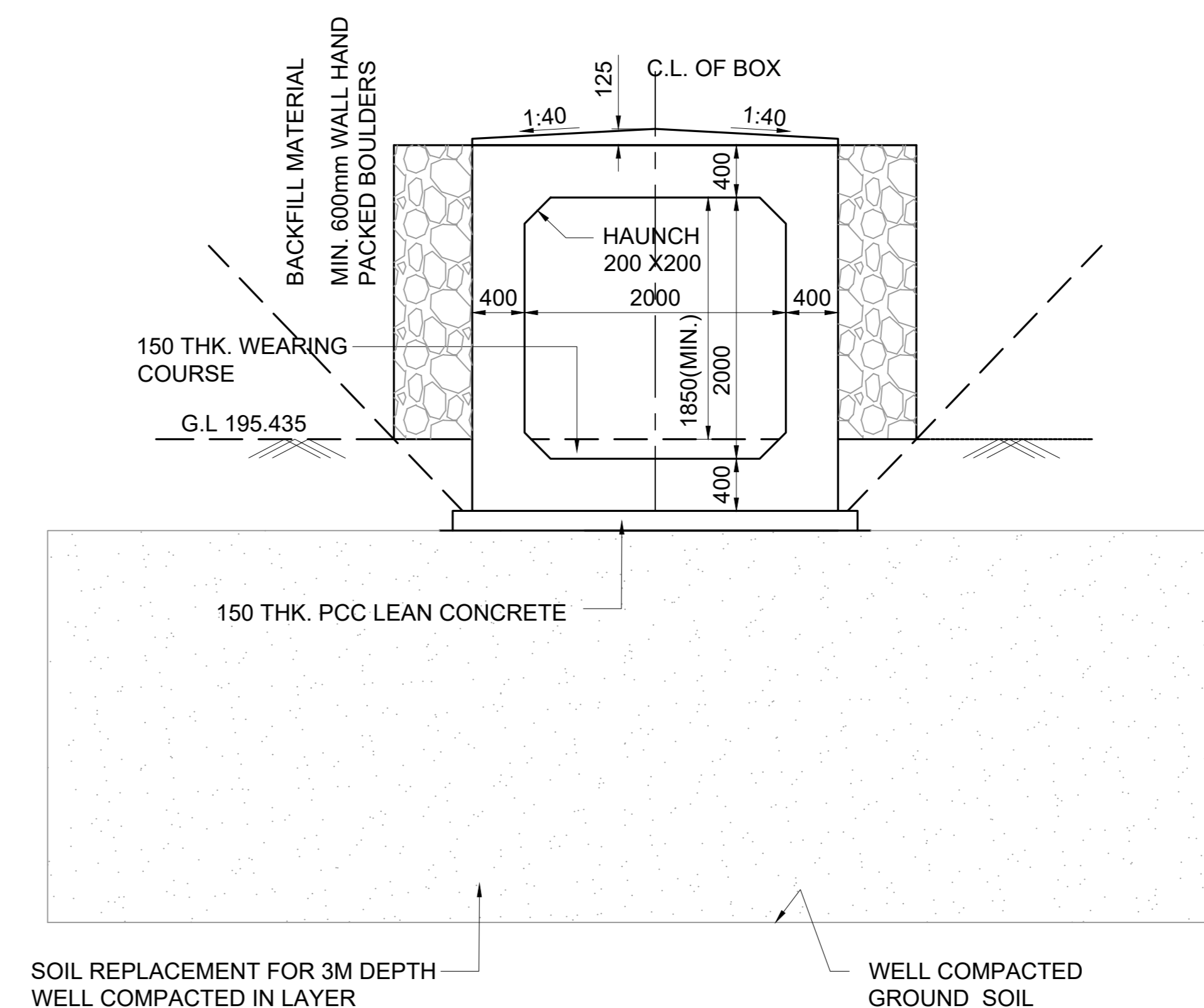
VIEW AT B-B

SCALE 1:50



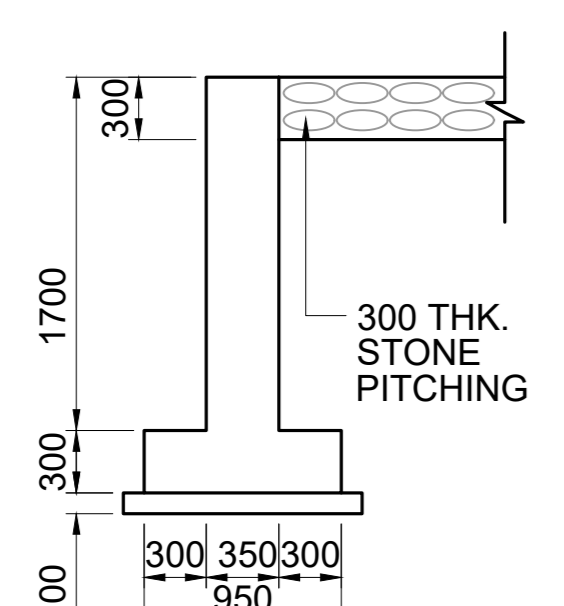
TYPICAL DETAIL OF RETURN WALL / WING WALL

SCALE 1:50



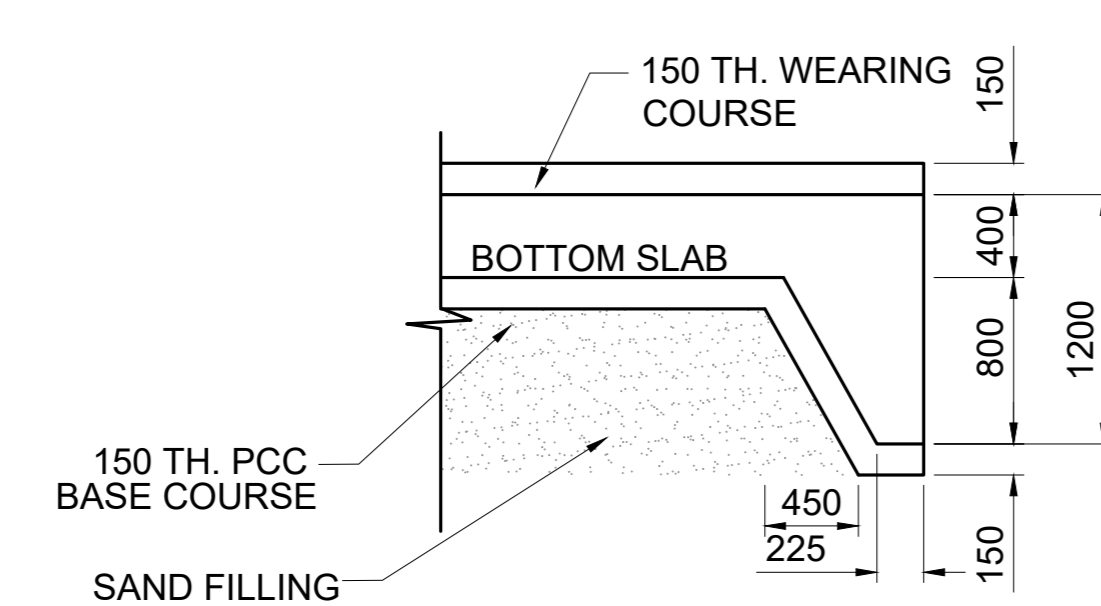
SECTION C-C

SCALE 1:50



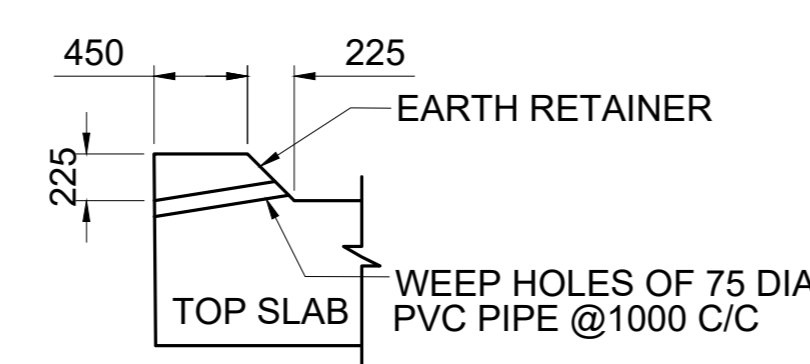
DROP / CURTAIN WALL DETAILS

SCALE 1:50



SHEAR KEY

SCALE 1:50



EARTH RETAINER

SCALE 1:50

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
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PROJECT:

HARYANA ORBITAL RAIL CORRIDOR

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CLIENT:

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

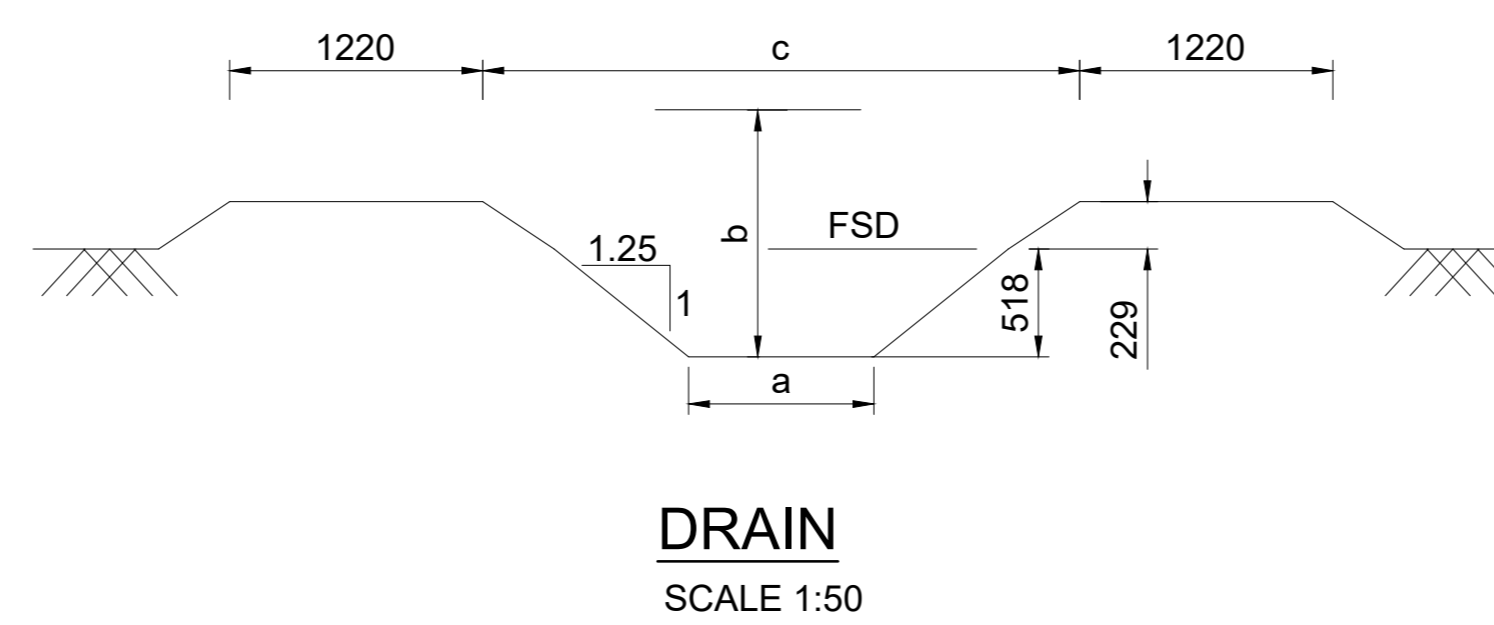
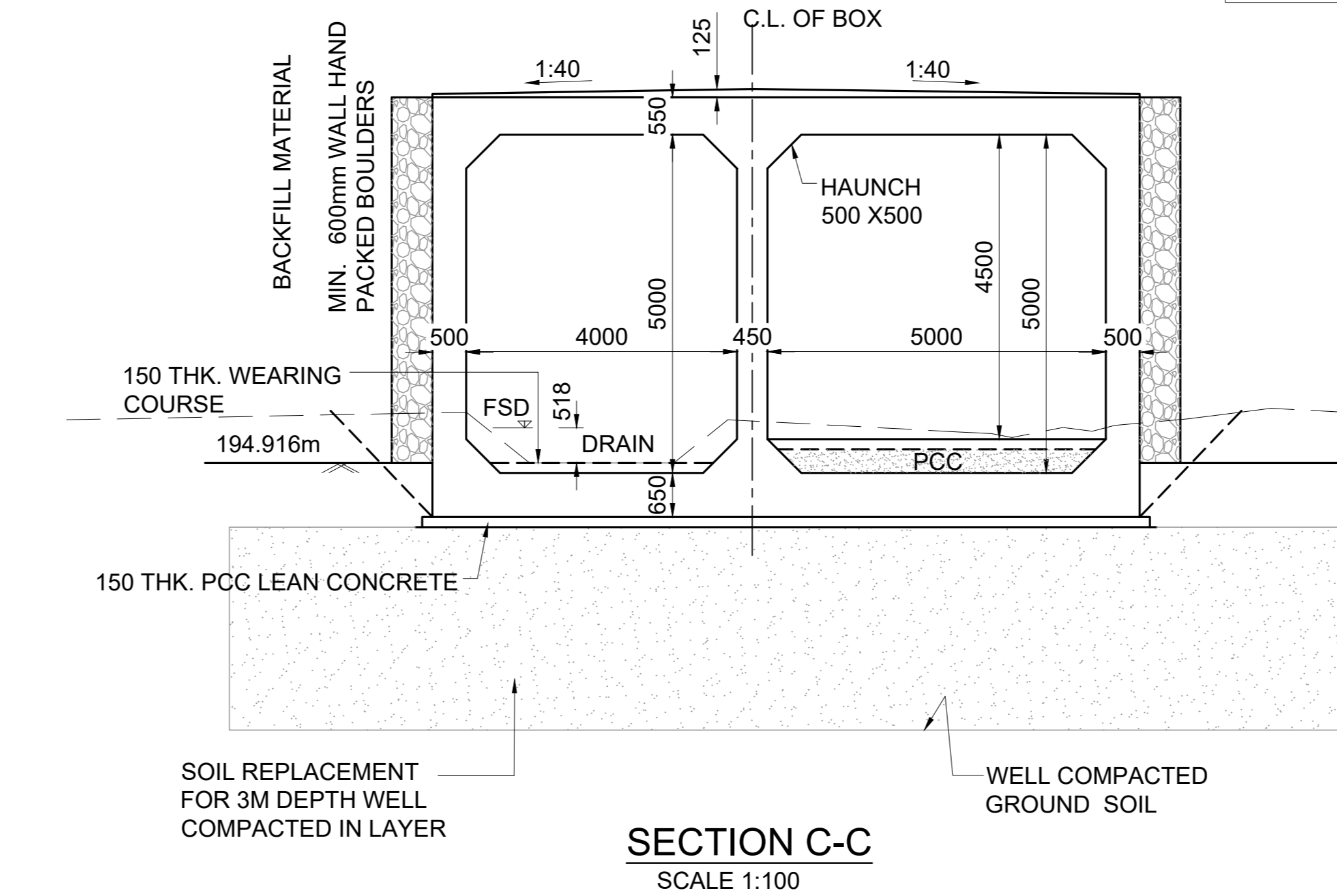
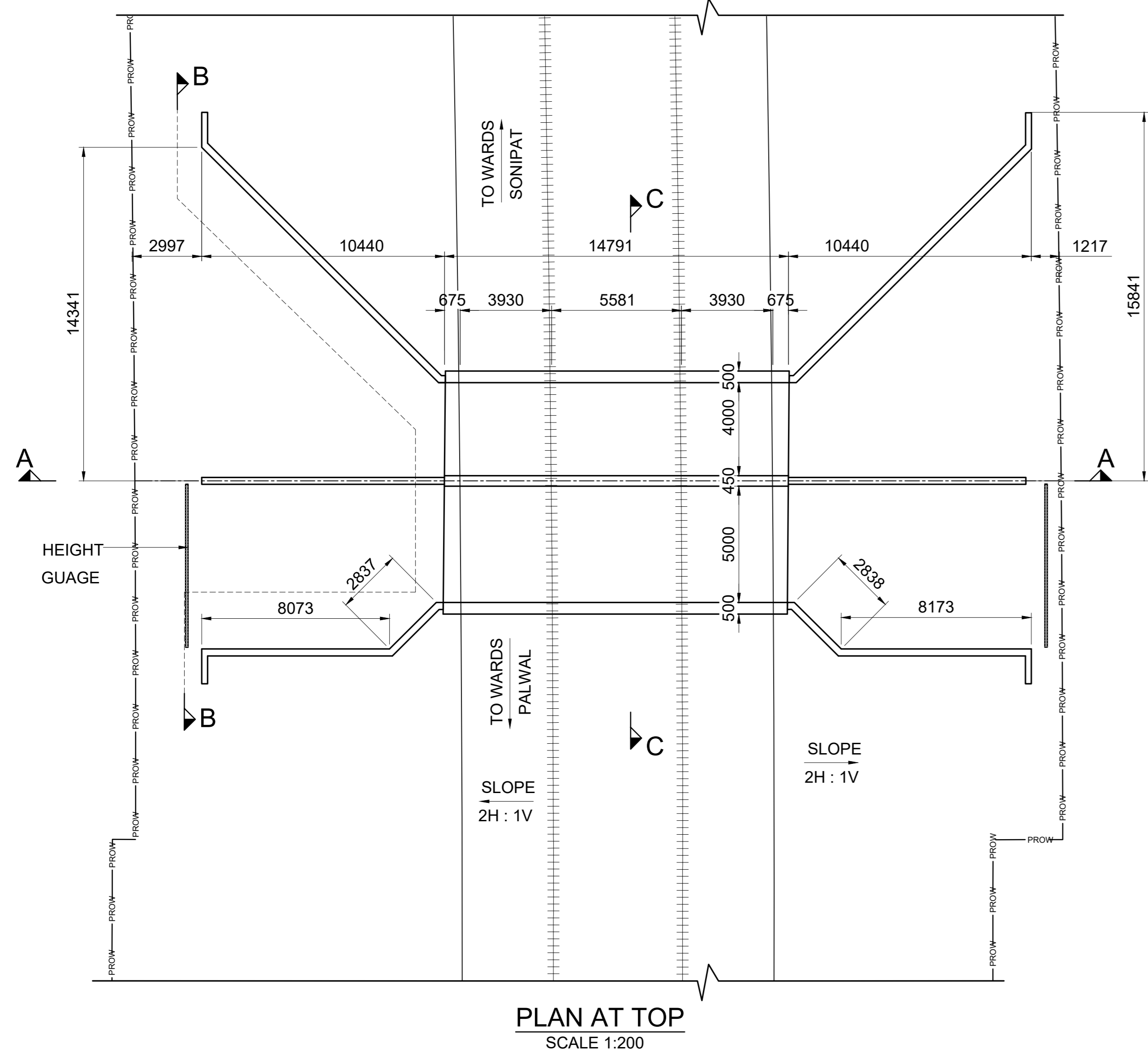
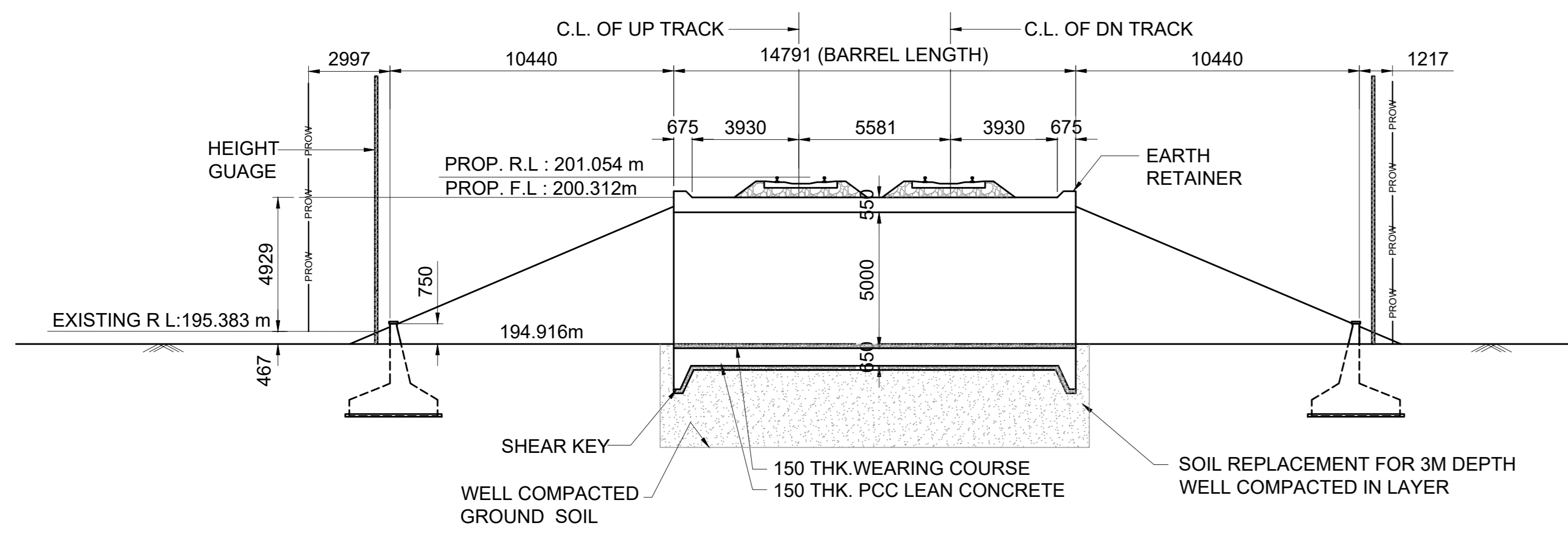


TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING

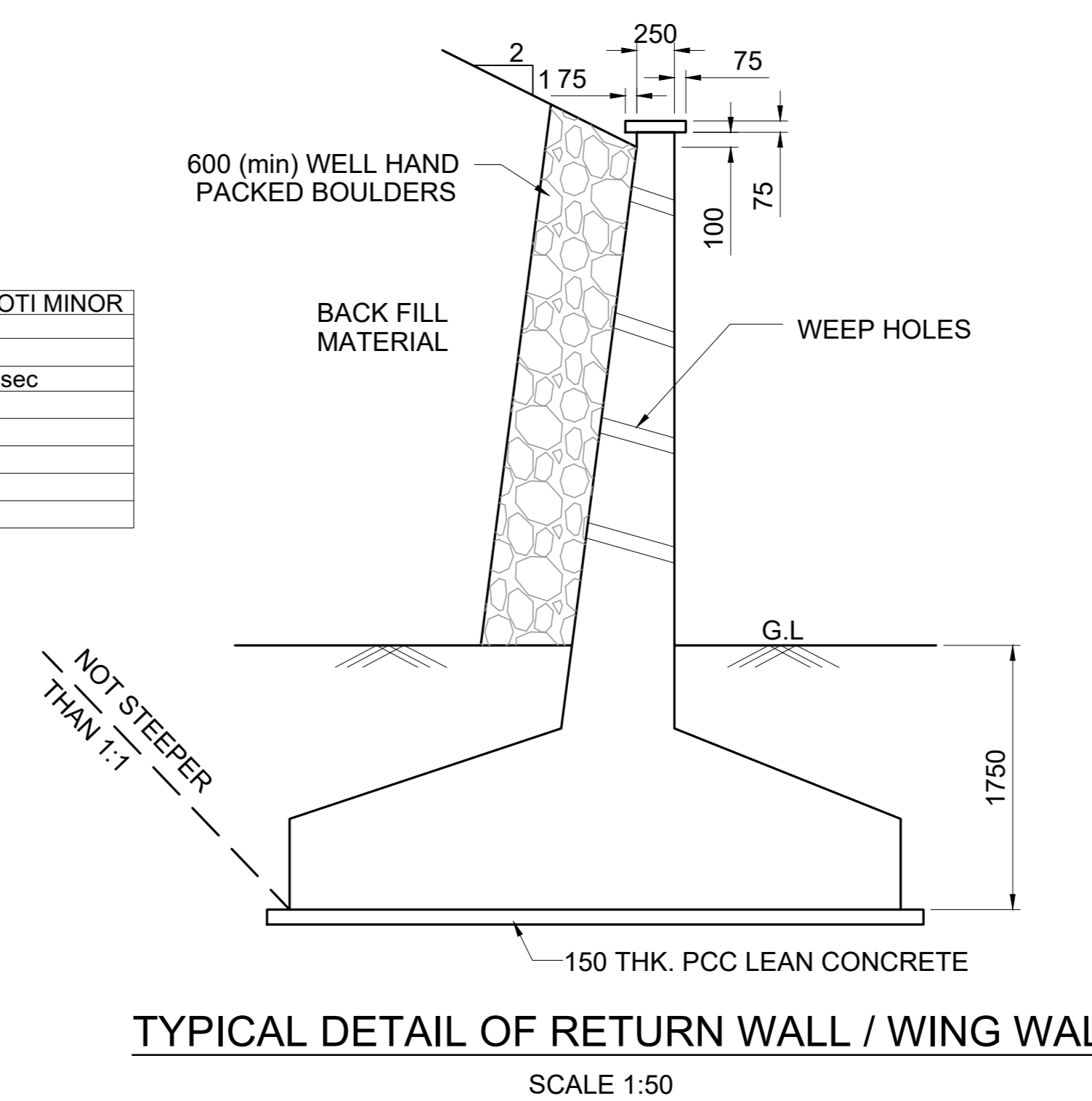
FOR BALANCING CULVERT BRIDGE NO. 047
SPAN 1.0X2.0X2.0 RCC BOX AT CH: 12208.018

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01047_A1 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 07-11-2022 REVISED DATE 21-11-2022

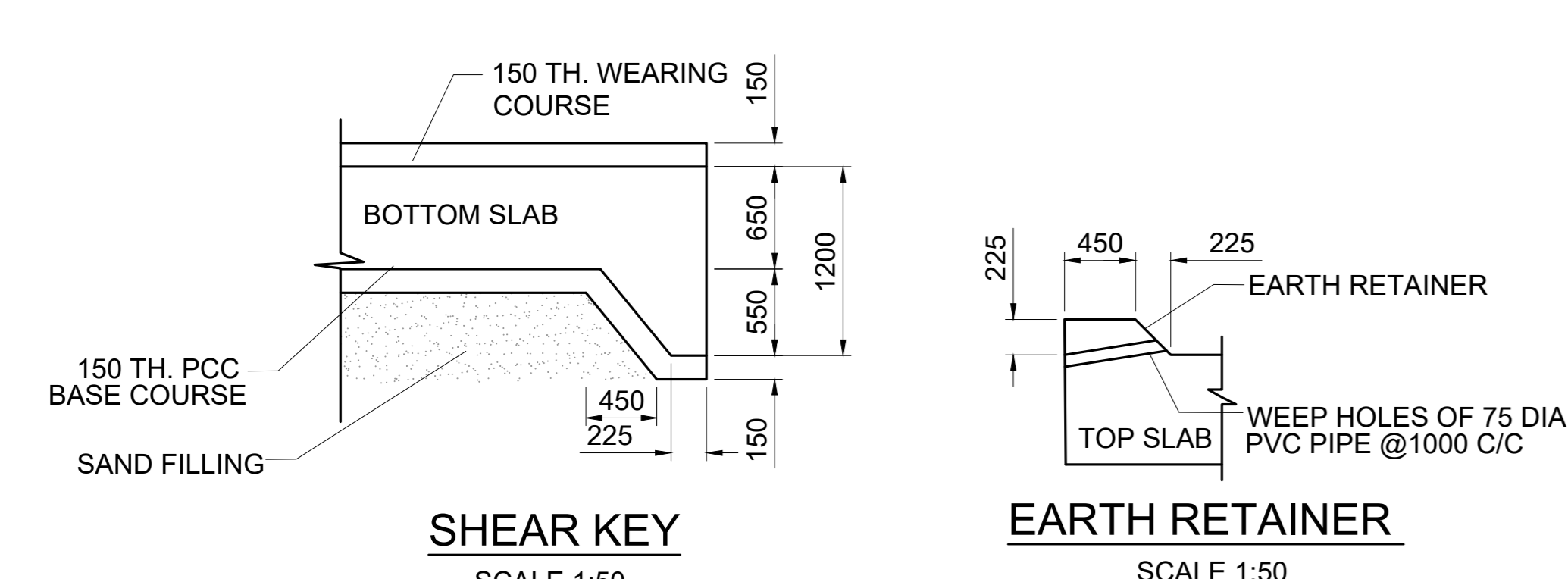
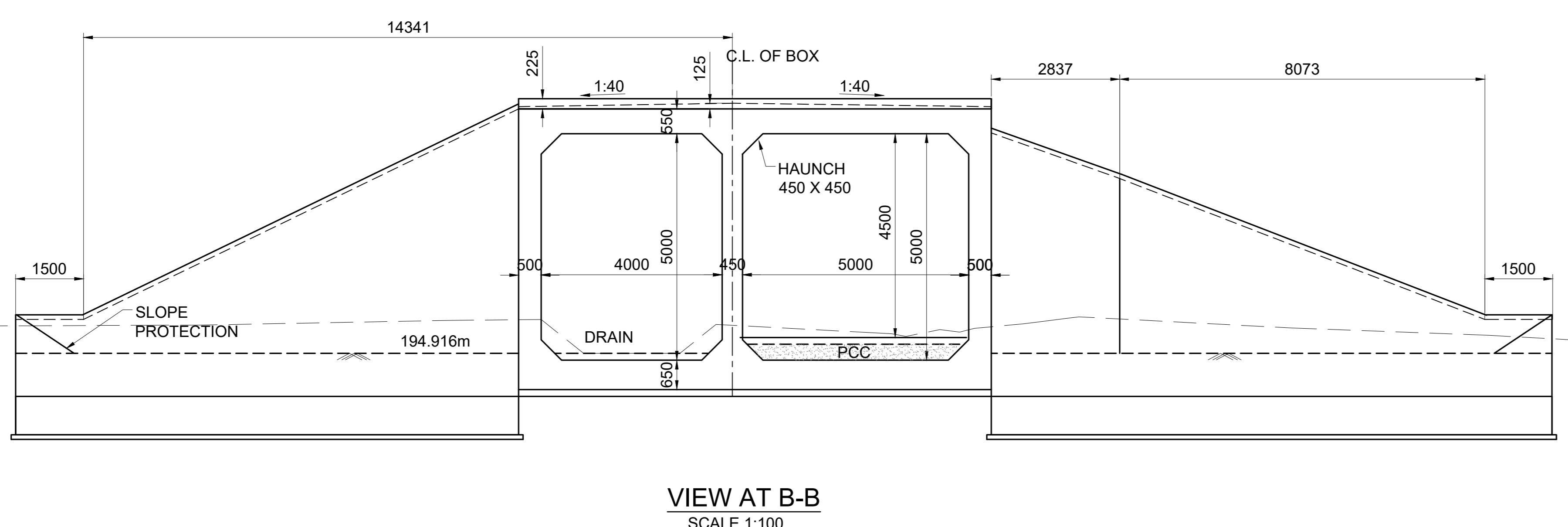
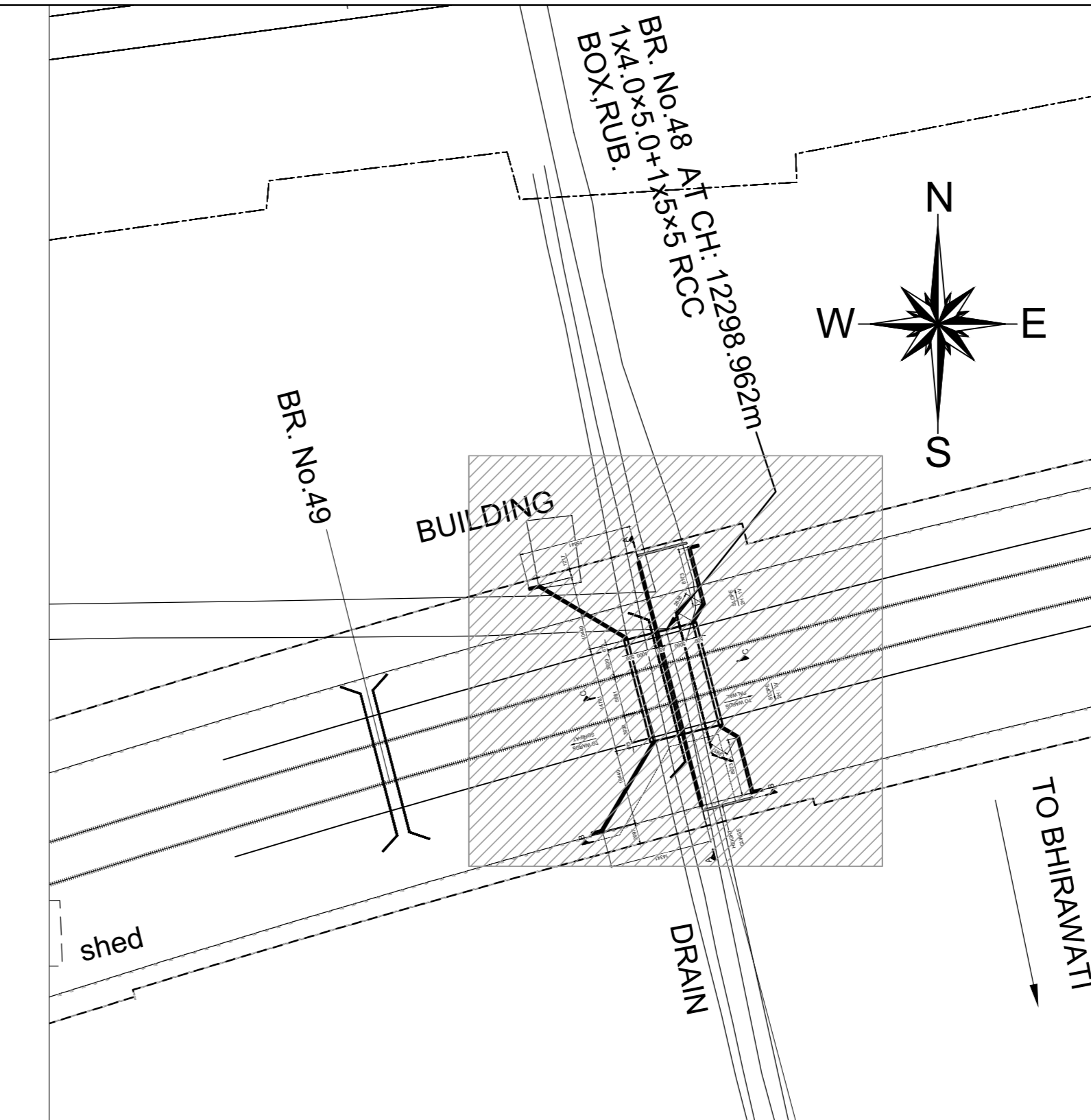


HYDRAULIC DATA OF DRAIN		
NO	NAME OF MINOR	BHIRAOTI MINOR
1	RD	1120
2	FREE BOARD	0.229
3	DISCHARGE	7.00 Cusec
4	BED WIDTH	a 0.893
5	F.S.D	b 0.518
6	SIDE SLOPE	c 1.25%
7	TOP WIDTH	c 2.188
8	SHAPE	
9		



LEGEND	
PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
RL	ROAD LEVEL
FSD	FULL SUPPLY DEPTH

- NOTES :**
- A) GENERAL NOTES**
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 - PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
 - DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
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 - (ii) IRS CONCRETE BRIDGE CODE
 - (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
 - SEISMIC ZONE- IV
 - EXPOSURE CONDITION- MODERATE.
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 - FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
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 - FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
 - HEIGHT GAUGE SHALL BE PROVIDED AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
 - SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.
 - SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN THE EXISTING LINED CANAL/DRAIN AND THE BOX.
- IMPORTANT NOTE:**
TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL. HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING. OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY. THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.



GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

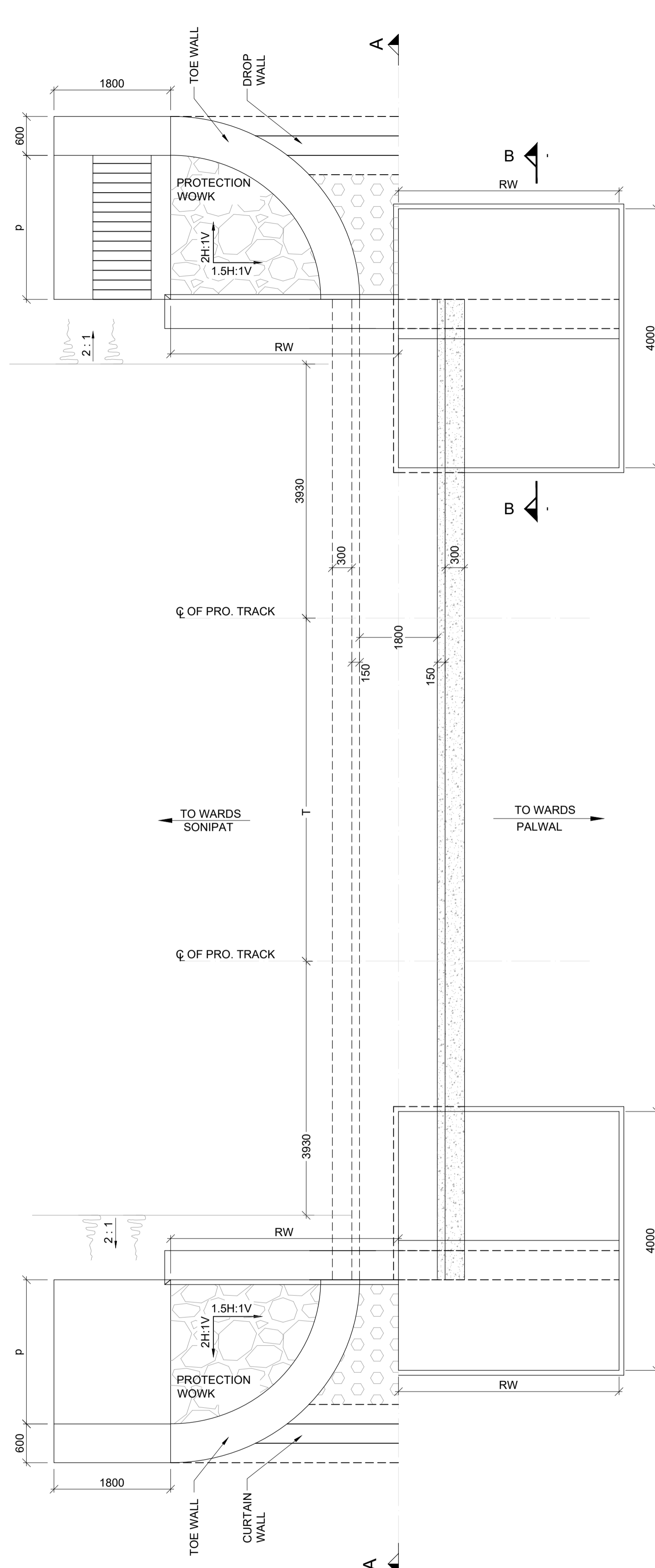
PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWA TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

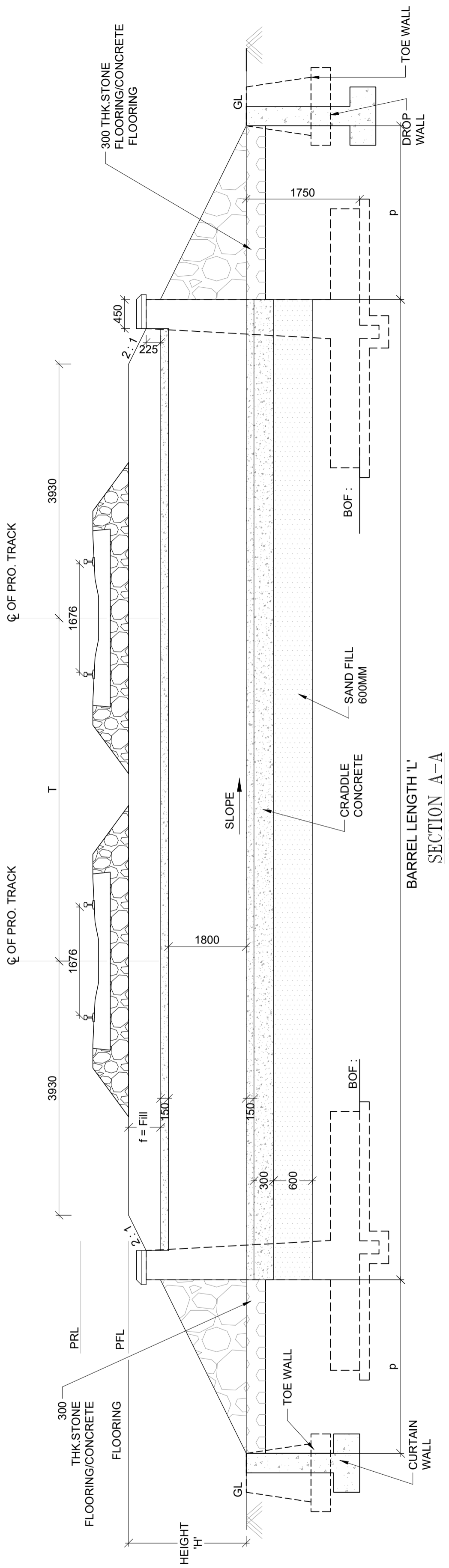
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR DRAIN + ROAD BRIDGE NO. 048 SPAN 1x4.0x5.0+1x5x5 RCC BOX AT CH: 12298.962

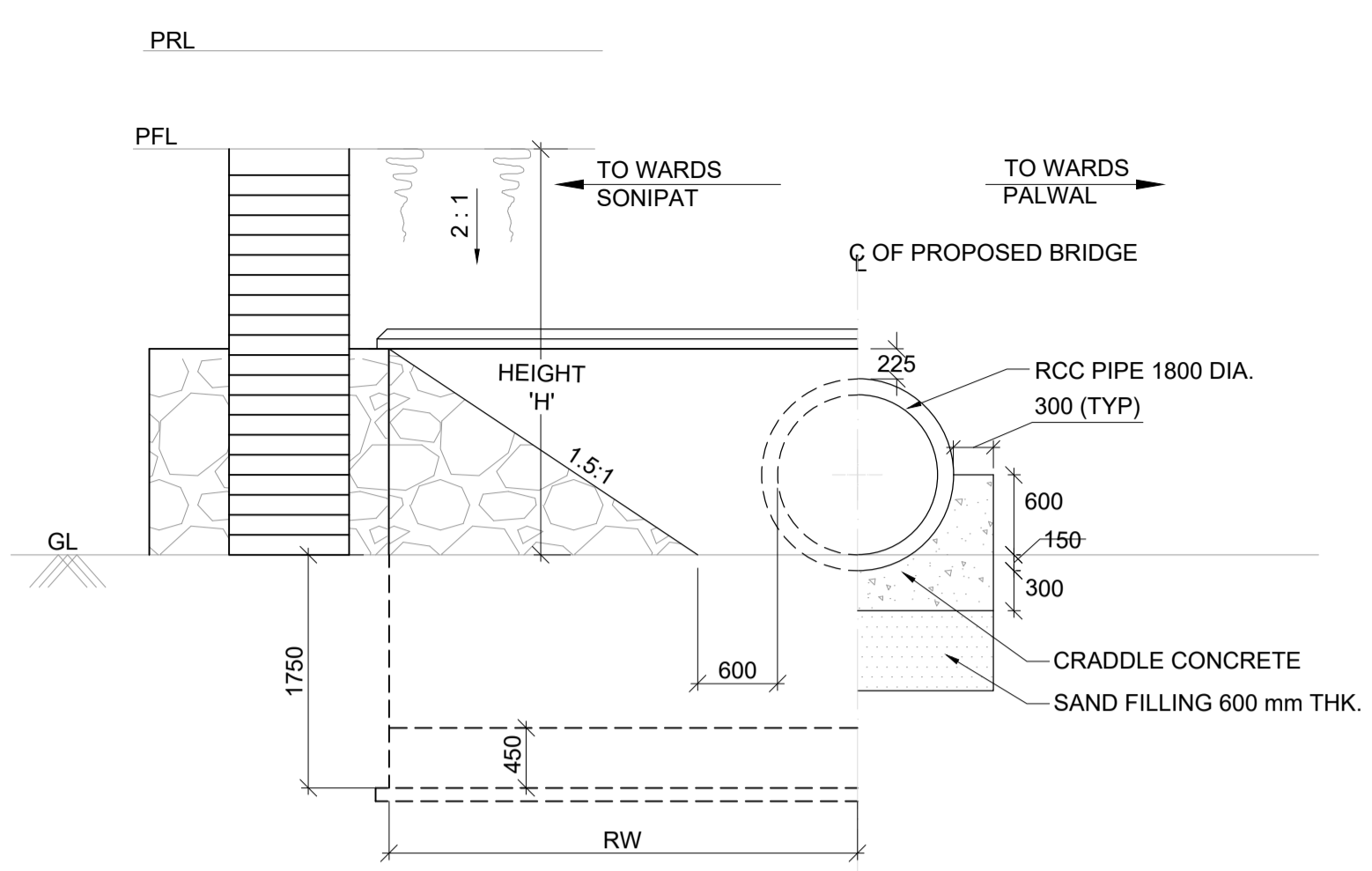
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01048_A1	SHEET NO. 1 OF 1
SCALE : AS SHOWN	ISSUE DATE 07-11-2022
	REVISED DATE 21-11-2022



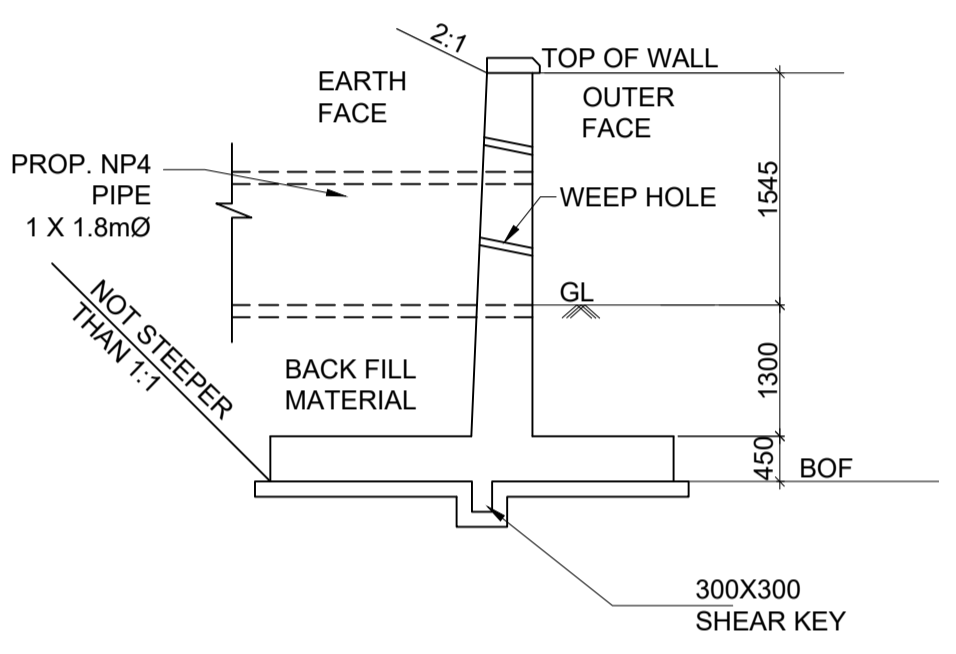
HALF PLAN AT TOP HALF PLAN AT BOTTOM
(SCALE 1:50)



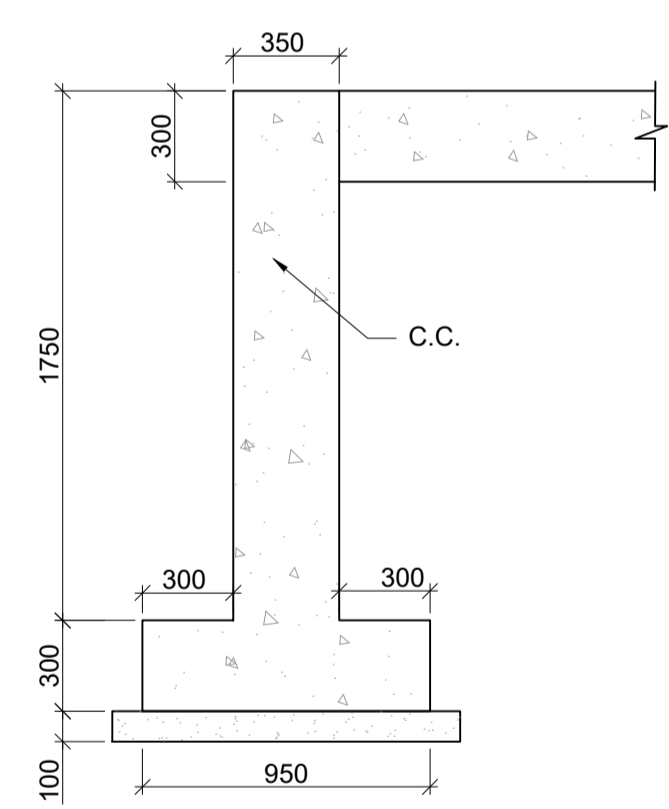
SECTION A-A
(SCALE 1:50)



HALF ELEVATION HALF SECTION
(SCALE 1:50)



SECTION B-B
(SCALE 1:75)



DROP / CURTAIN WALL
(SCALE 1:25)

LEGEND

P.F.L	PROPOSED FORMATION LEVEL
P.R.L	PROPOSED RAIL LEVEL
G.L	GROUND LEVEL
BOF	BOTTOM OF FOUNDATION
PROP.	PROPOSED
EXG.	EXISTING
THK.	THICKNESS
CH.	CHAINAGE
PCC	PLAIN CEMENT CONCRETE
RCC	REINFORCED CEMENT CONCRETE
BR.	BRIDGE

CONSTRUCTION DEPTH

1) RAIL (60kg)	172 mm
2) RUBBER PAD	10 mm
3) WIDER PSC SLEEPER HEIGHT AT RAIL SEAT	210 mm
4) MINIMUM BALLAST THK.	350 mm
TOTAL	742 mm

COLOR CODE LEGEND

RED	PROPOSED
CONTINUOUS	VISIBLE
DOTTED	INVISIBLE
BLACK	EXISTING

Sr. No.	Chainage (in m)	Br. No.	Span	Prop. RL	Prop. FL	BL	Clear Height	Track on	No. of tracks	T c/c	RW	P	f	H	L
1	12341.836	49	1x1.8m	201.054	200.312	194.996	1.800	Curve	2	5.640	4.765	3.3	3.366	5.316	26.064

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
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SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

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HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

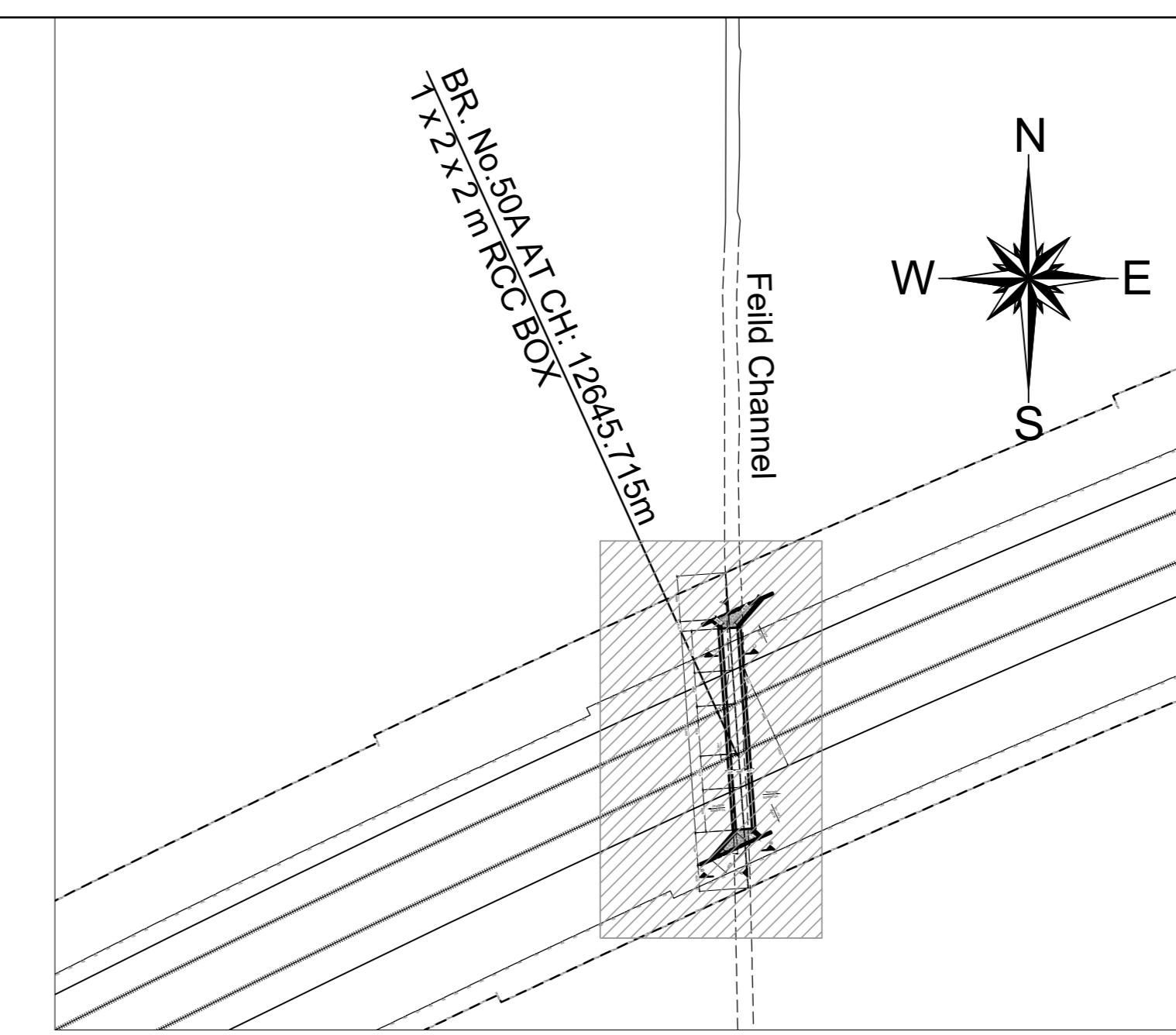
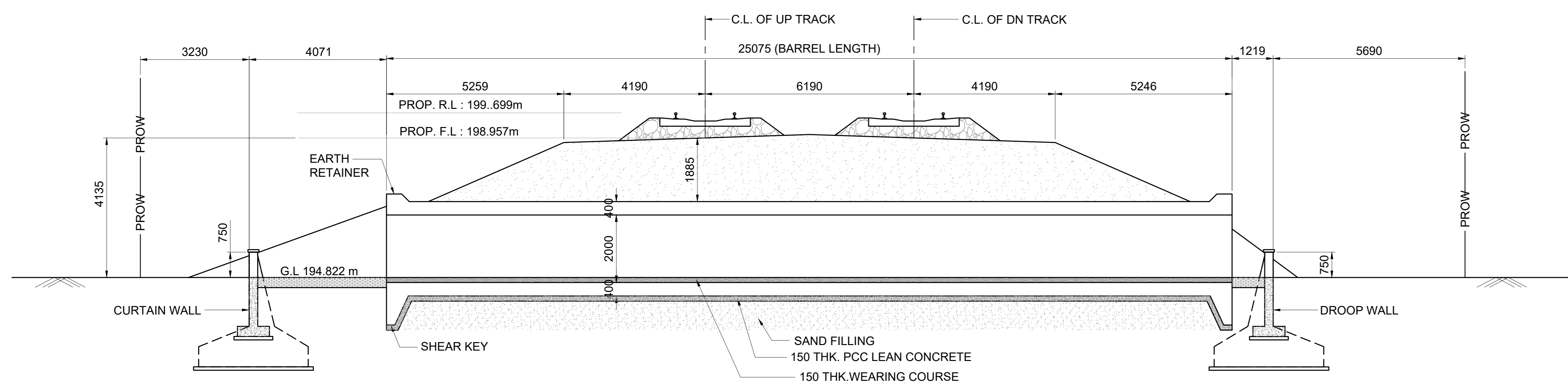
CONSULTANT:
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR PIPE CULVERT BRIDGE NO. 049 SPAN
1.0X1.800 PIPE CULVERT AT CH: 12341.836

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01049_A1
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022



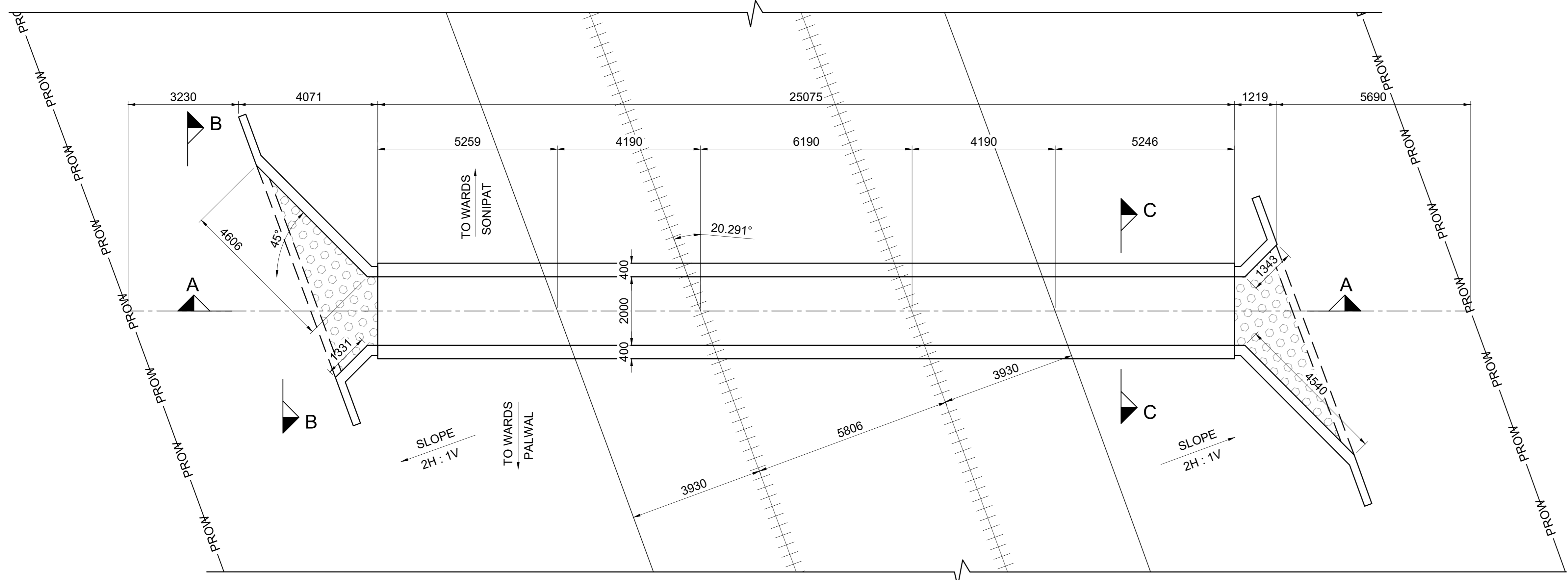
NOTES :

A) GENERAL NOTES

- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
- THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
- FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
- BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
- THE EXISTING DETAILS ARE AS PER SITE SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE EXECUTION.
- ENGINEER IN CHARGE/SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
- SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
- ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
- THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
- DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
- THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.

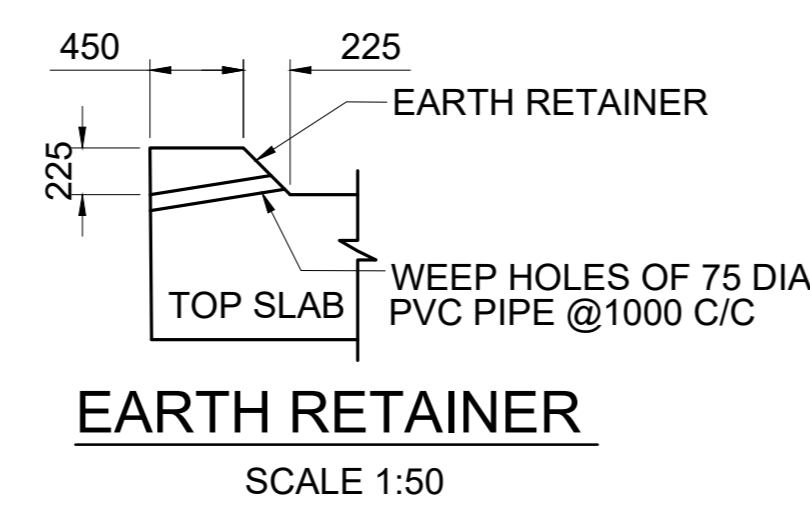
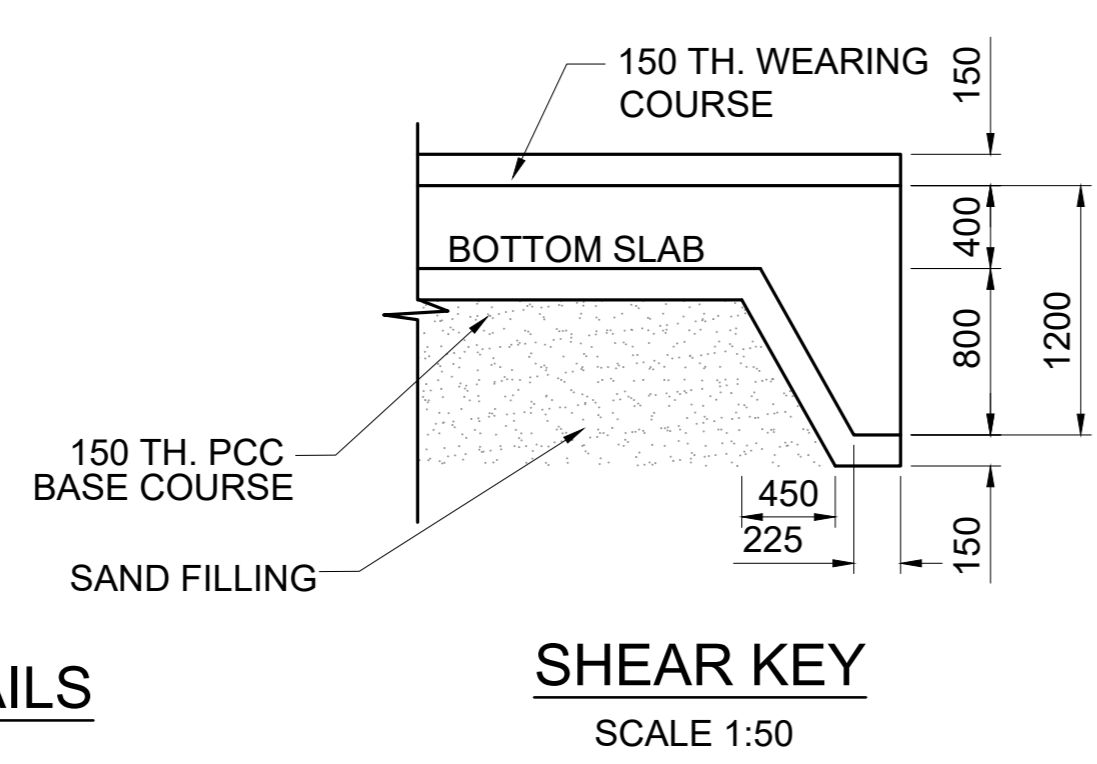
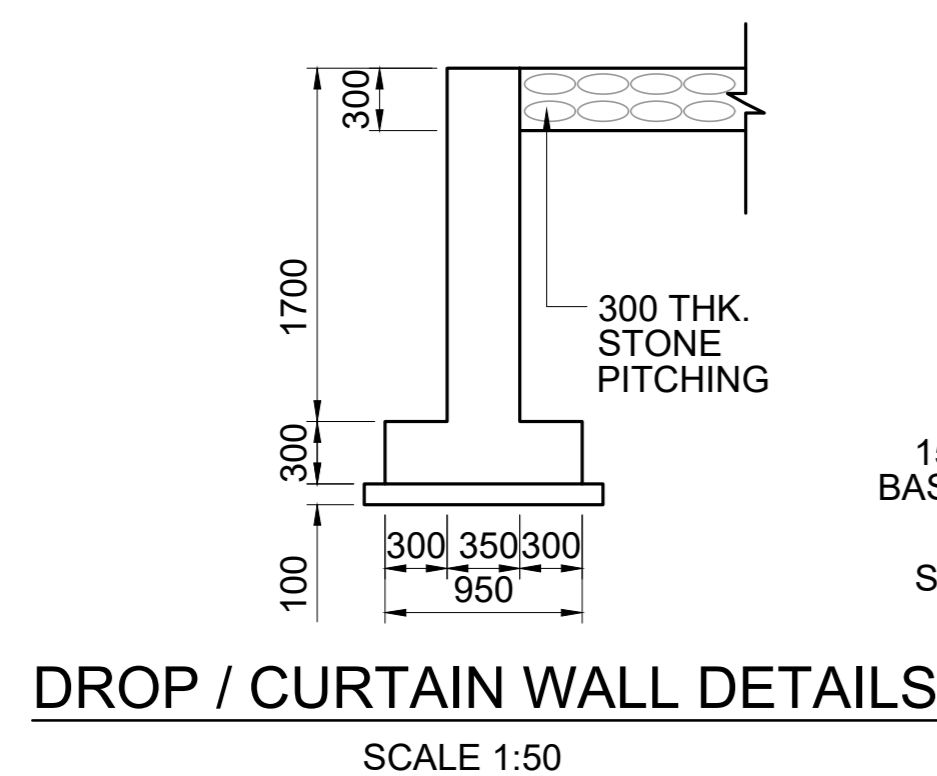
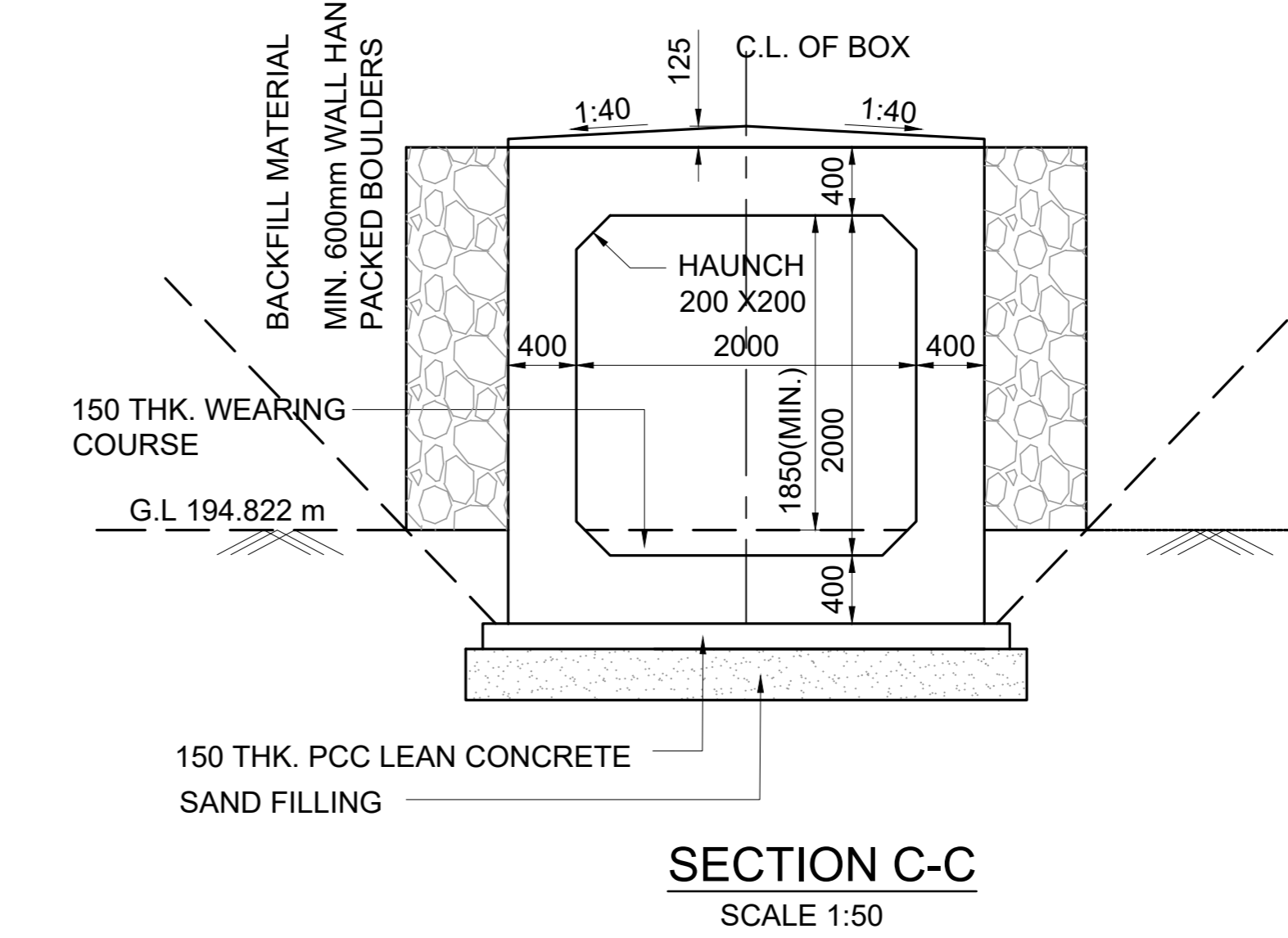
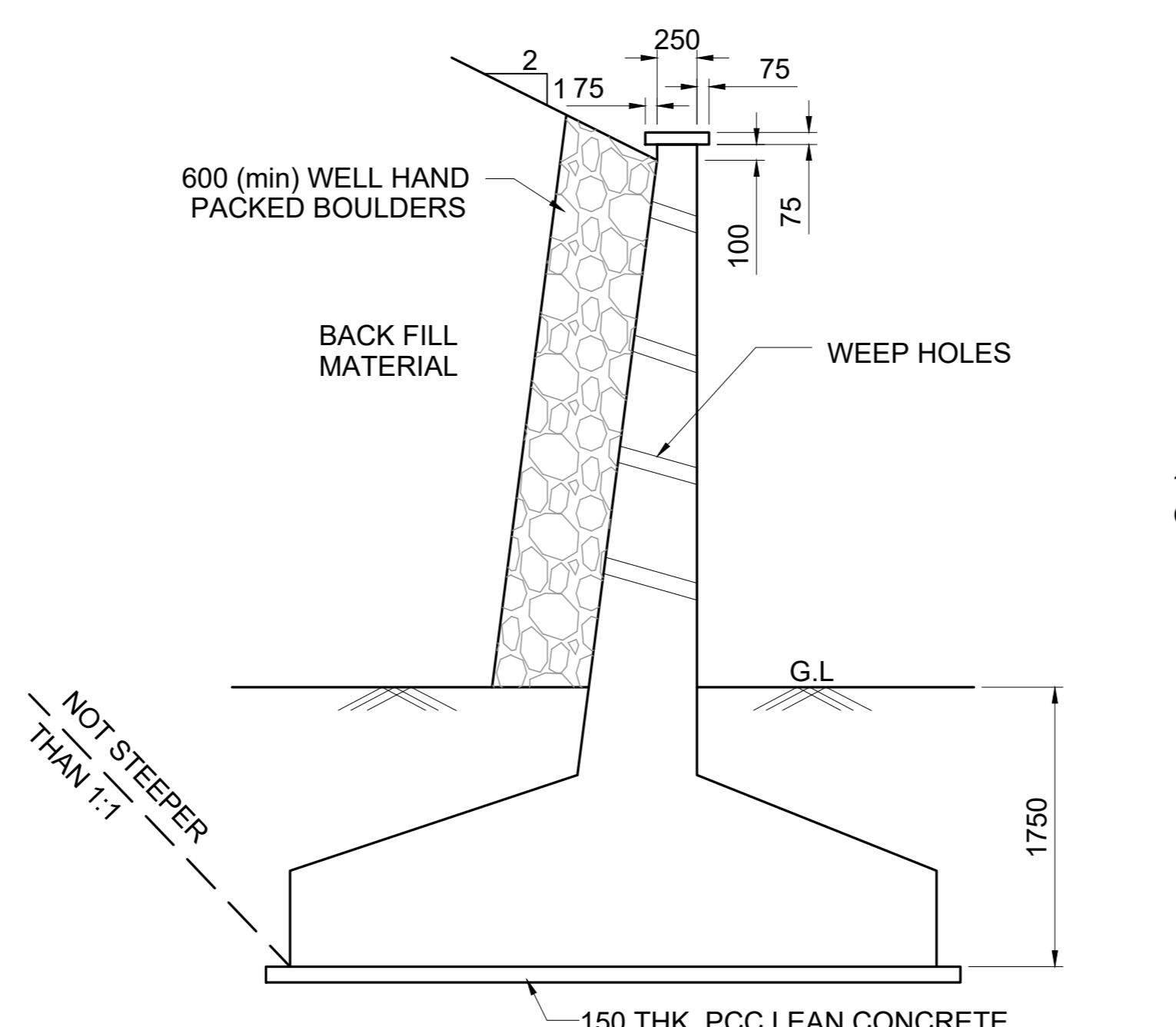
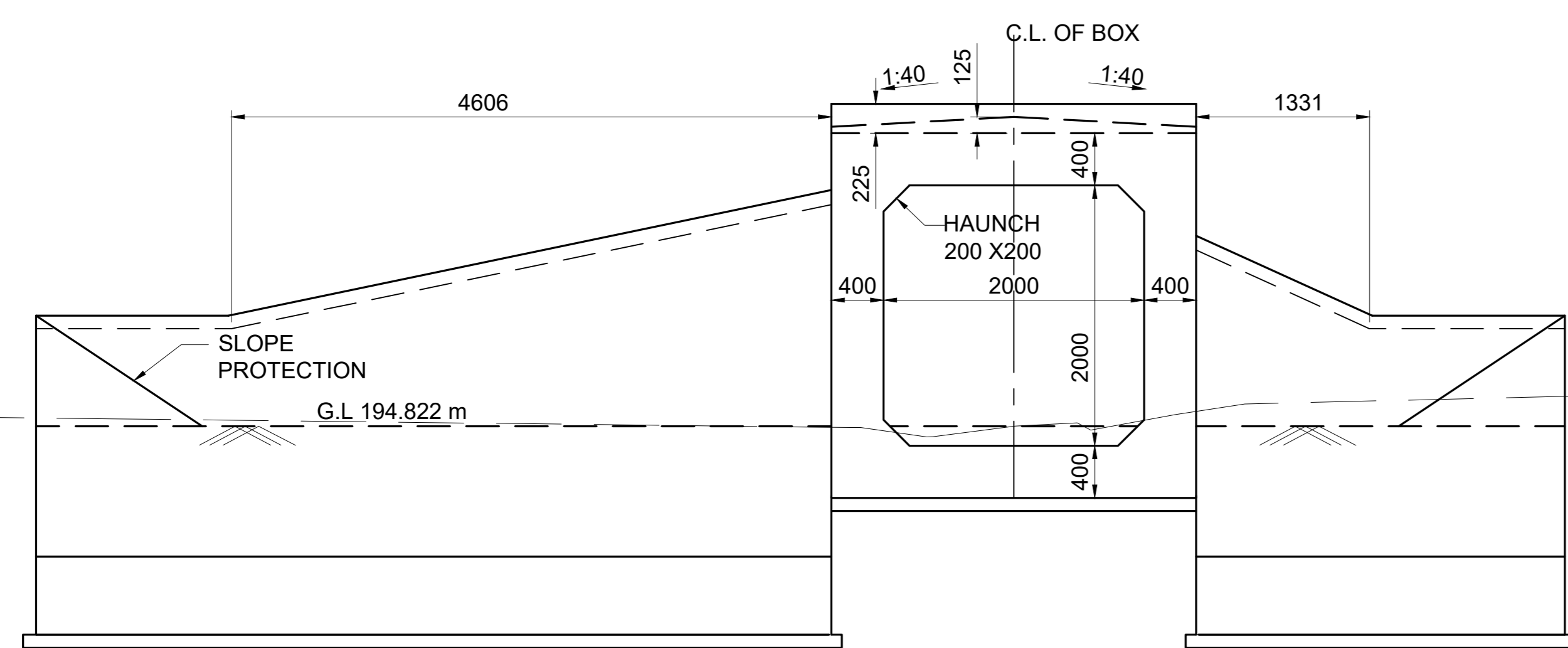
B) TECHNICAL NOTES :

- PROTECTION WORK ON SLOPE OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
- INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
- FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
- ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
- PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
- DIMENSION OF THE BOX MAY BE SUITABLY MODIFIED AS PER SITE REQUIREMENT HEIGHT OF BOX SHOWN INCLUDES MINIMUM REQUIRED CLEAR OPENING HEIGHT AND WEARING COARSE. OVERALL HEIGHT OF BOX OPENING MAY VARY AS PER SITE REQUIREMENT AND ACTUAL ROAD/GROUND PROFILE.
- DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - (i) IRS BRIDGE RULE
 - (ii) IRS CONCRETE BRIDGE CODE
 - (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
- SEISMIC ZONE- IV
- EXPOSURE CONDITION- MODERATE.
- DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
- THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE.
- ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFORMING TO IS-3117.
- REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786 K.G/SQM. CONFORMING TO IS-3117.
- FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
 - (i) ALL RCC WEARING COURSE(WC) =M:35/DETAILED DESIGN DRG.
 - (ii) LEVELING COURSE/LEAN CONCRETE =M:20/DETAILED DESIGN DRG.
- BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT REPORT AND CONFIRMED THROUGH FIELD TESTING.
- FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
- ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.



LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL

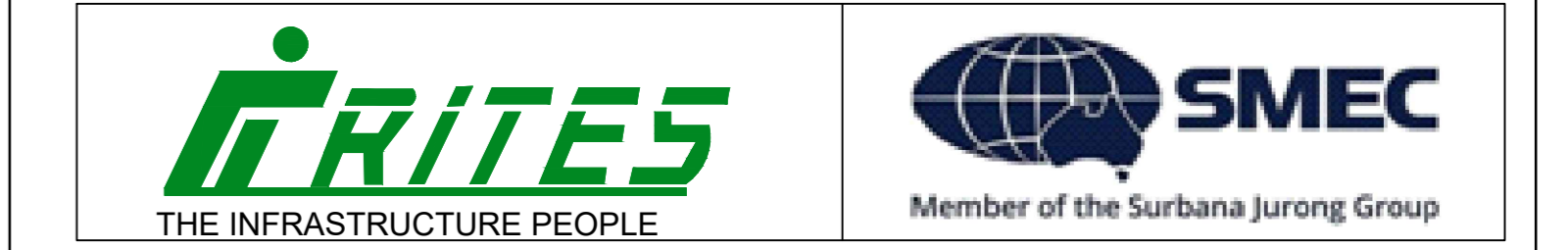


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

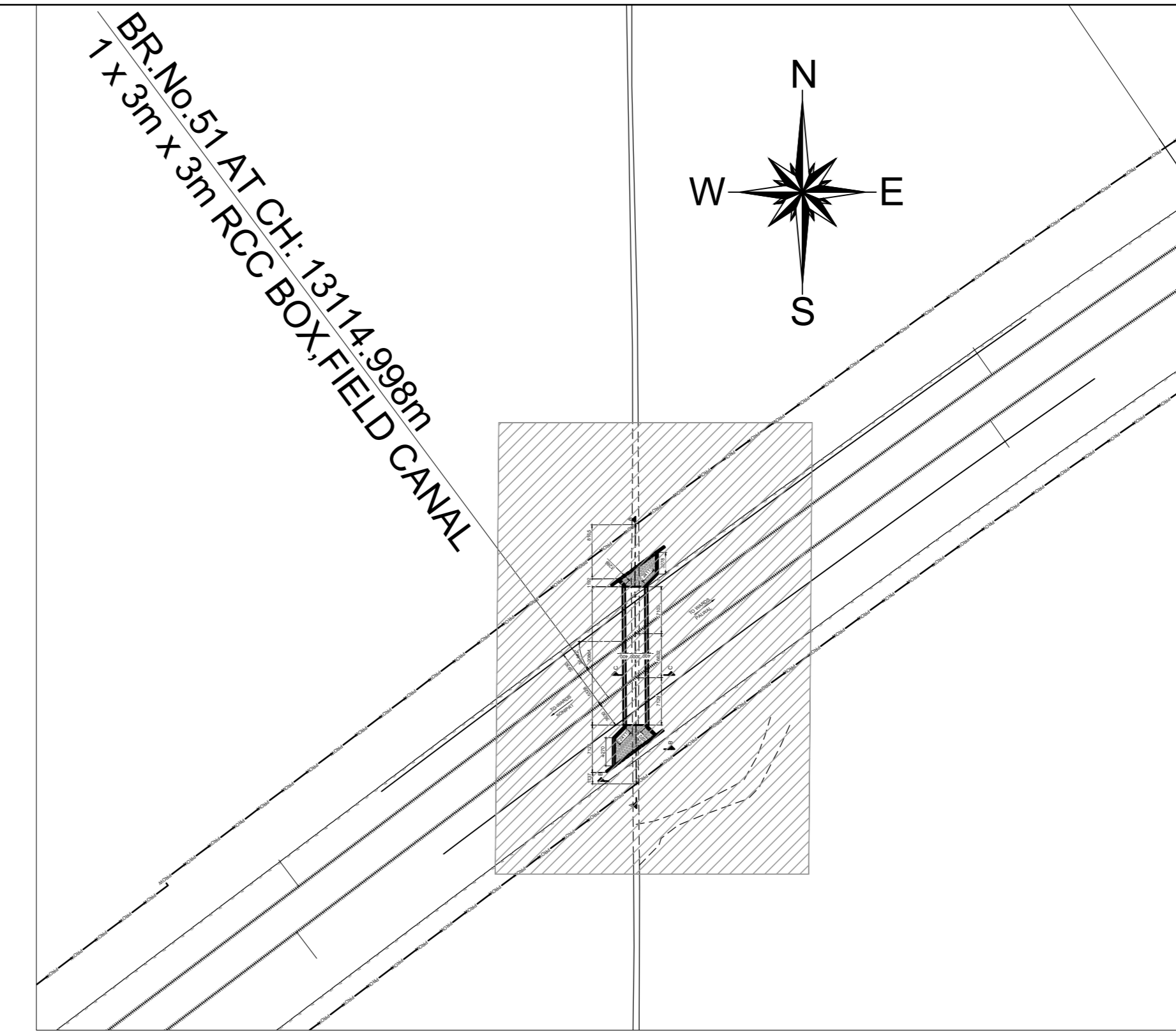
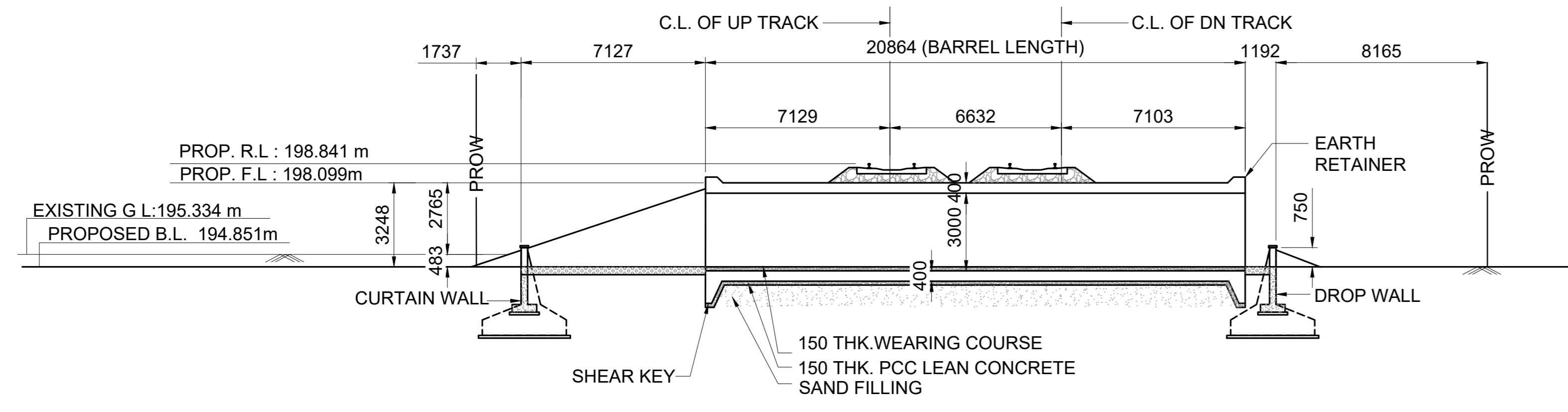
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



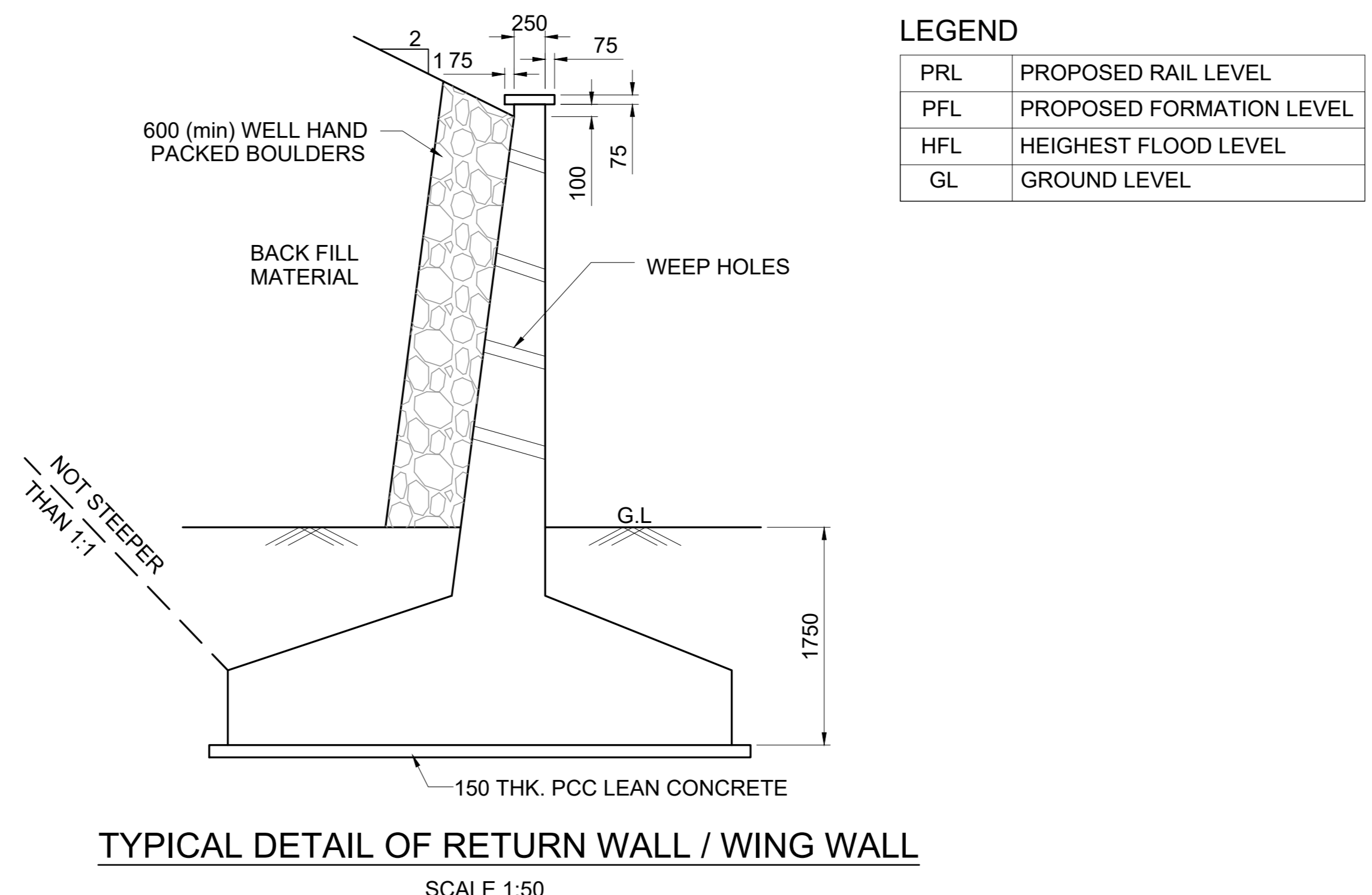
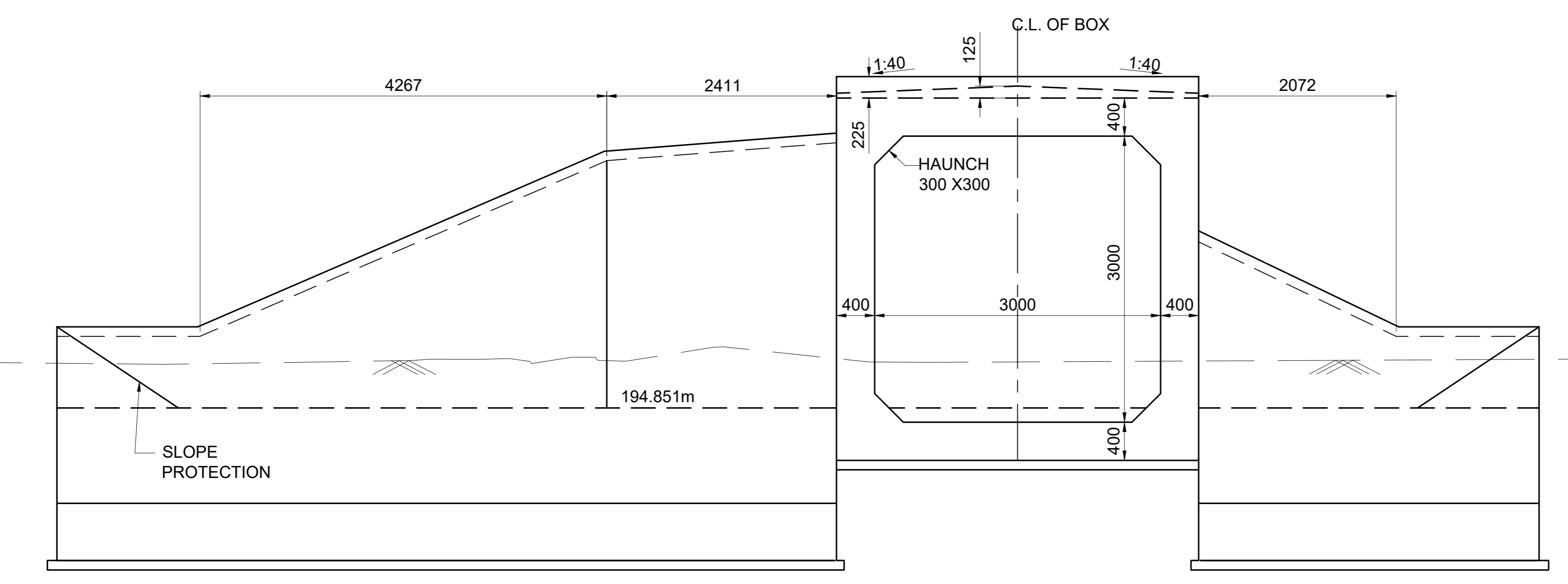
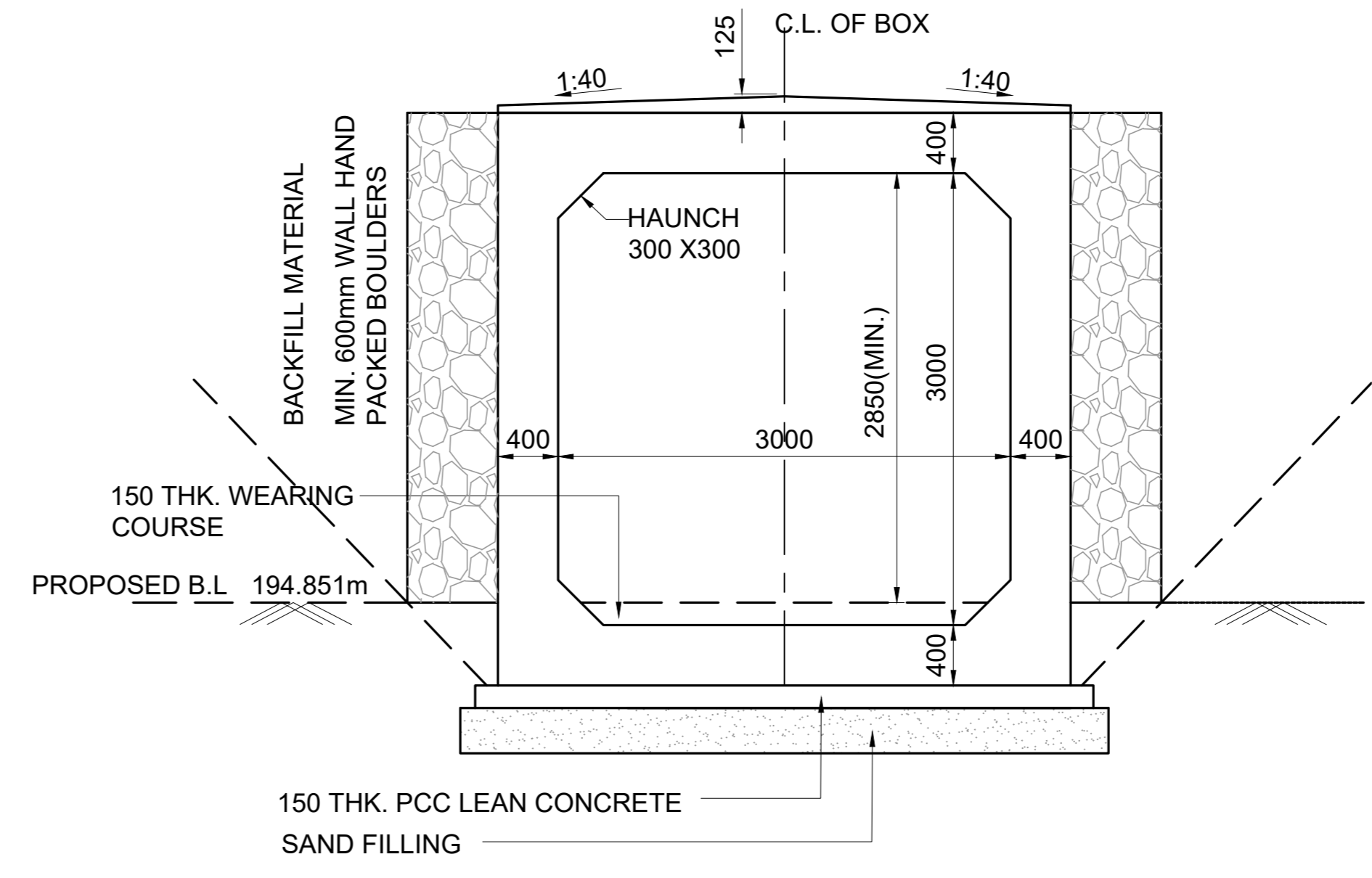
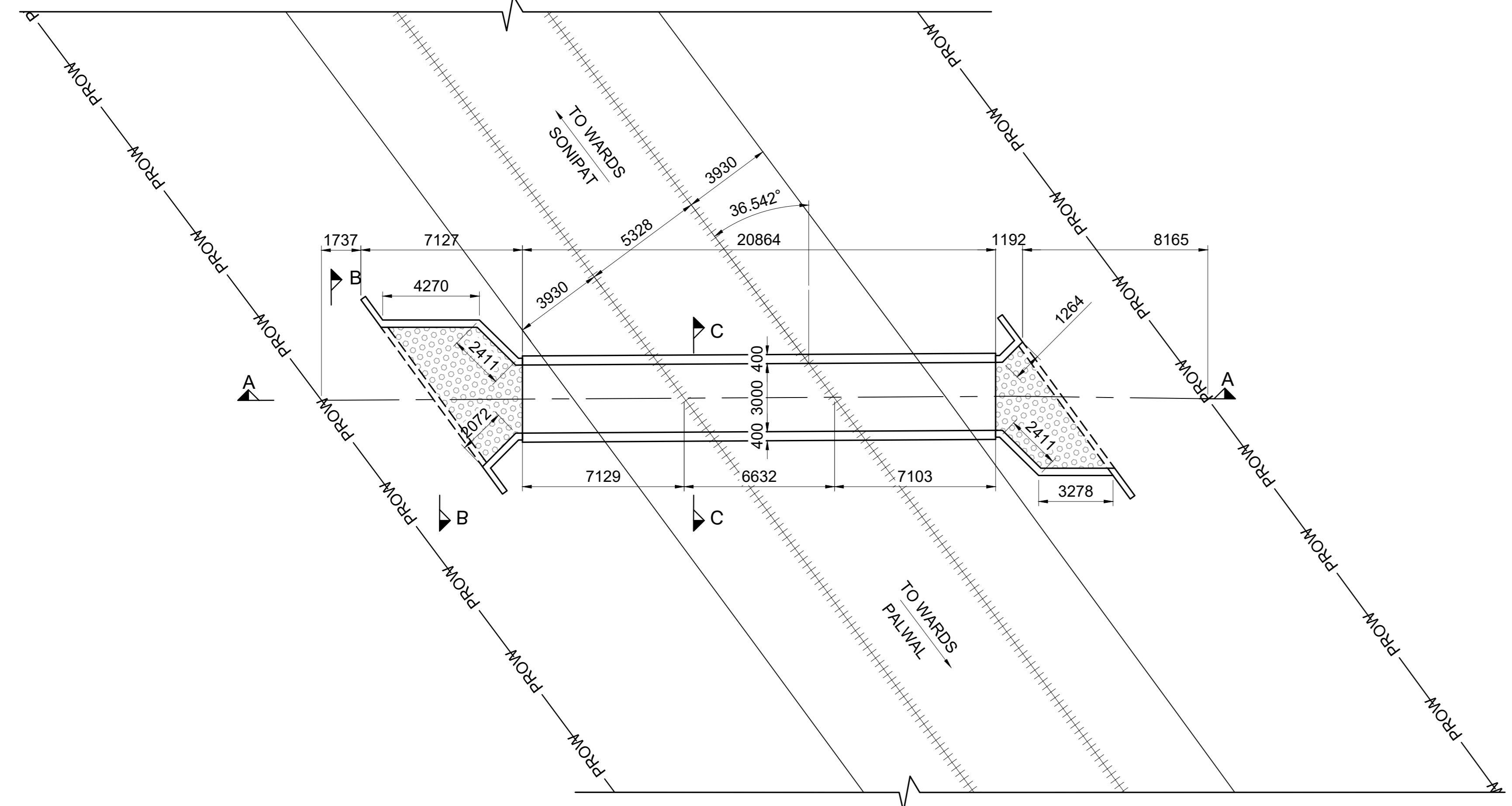
TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR BALANCING CULVERT BRIDGE NO. 050
SPAN 1.0X2.0X2.0 RCC BOX AT CH: 12645.715

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01050_A1
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022

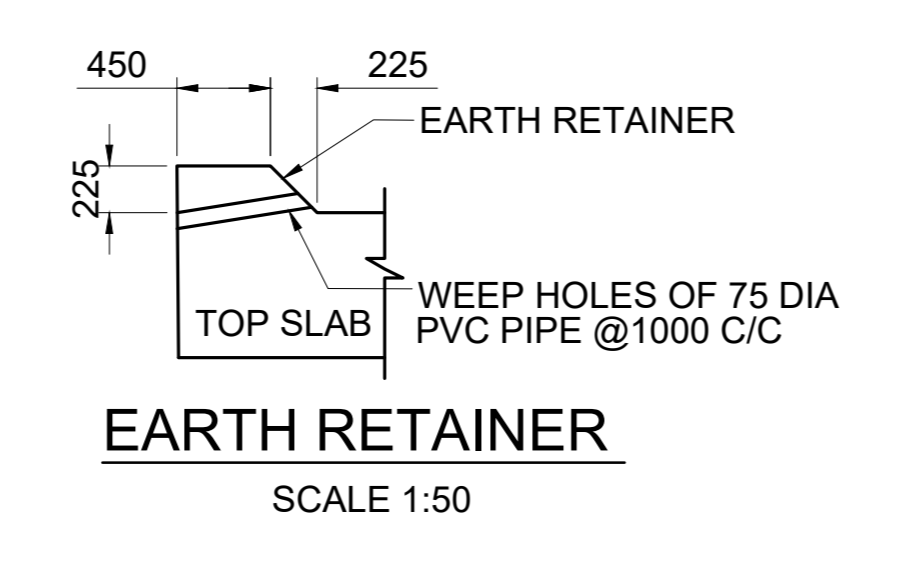
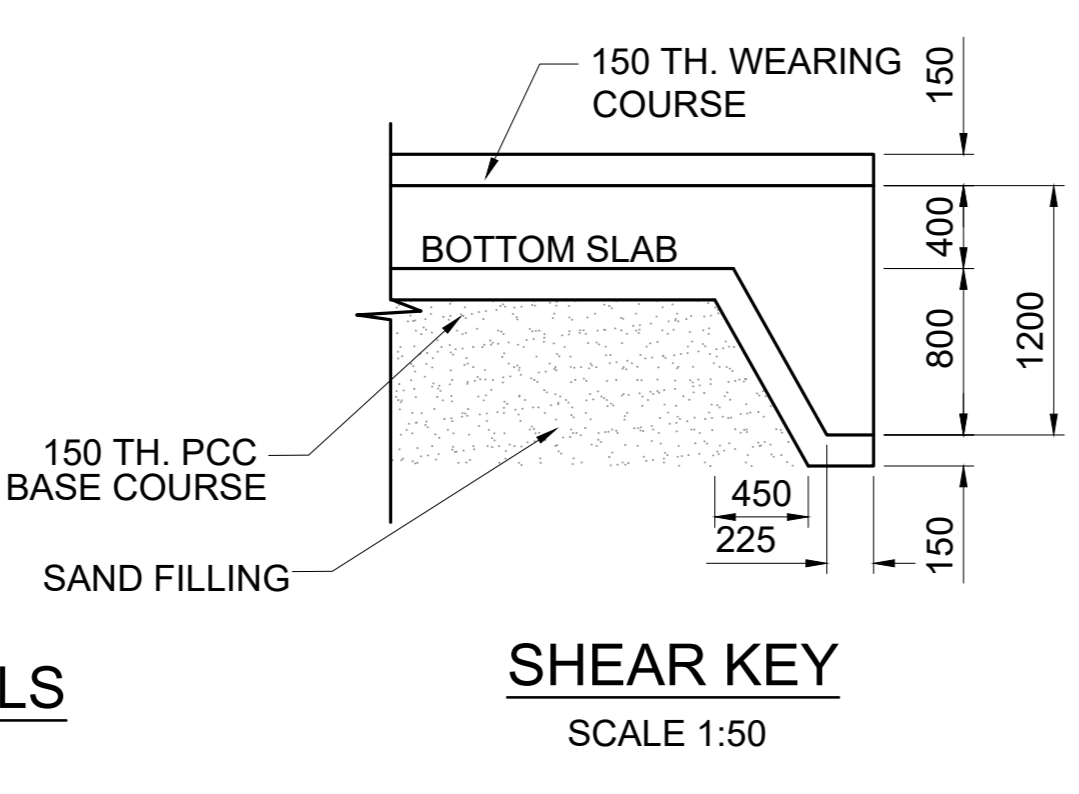
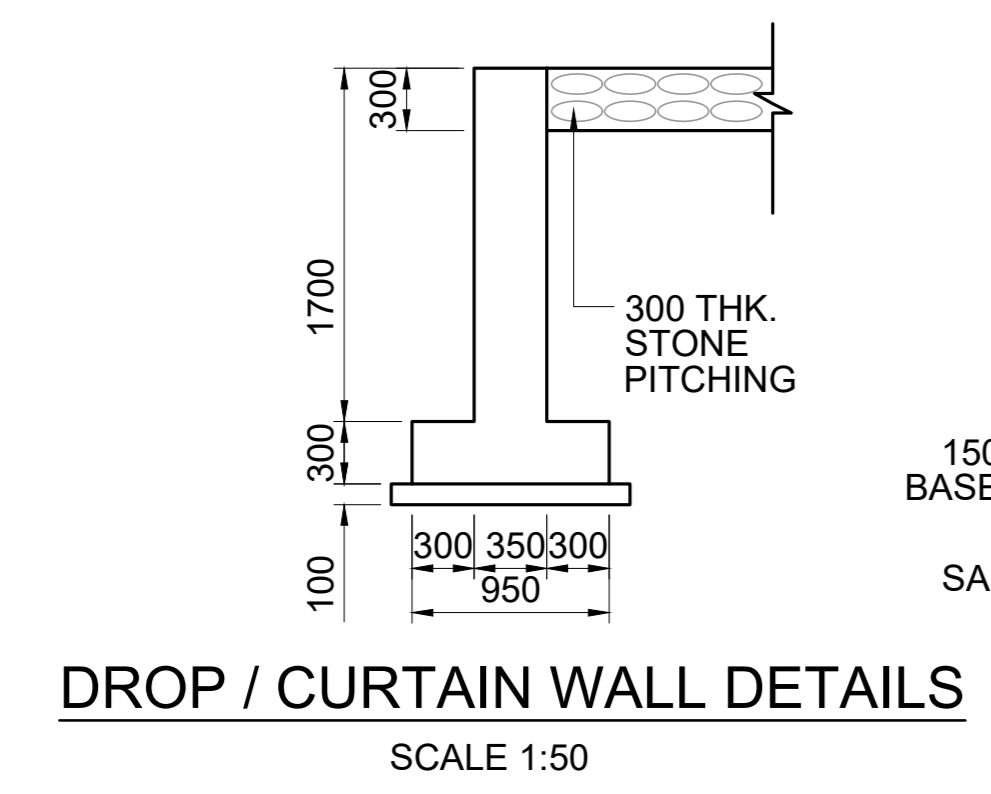


- NOTES :**
- A) GENERAL NOTES**
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 - THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
 - FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
 - BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
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 - ENGINEER IN CHARGE/SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
 - SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
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 - ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.
 - WING WALL SHALL FOLLOW CANAL PROFILE.
 - SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN THE EXISTING LINED CANAL/DRAIN AND THE BOX.



LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL

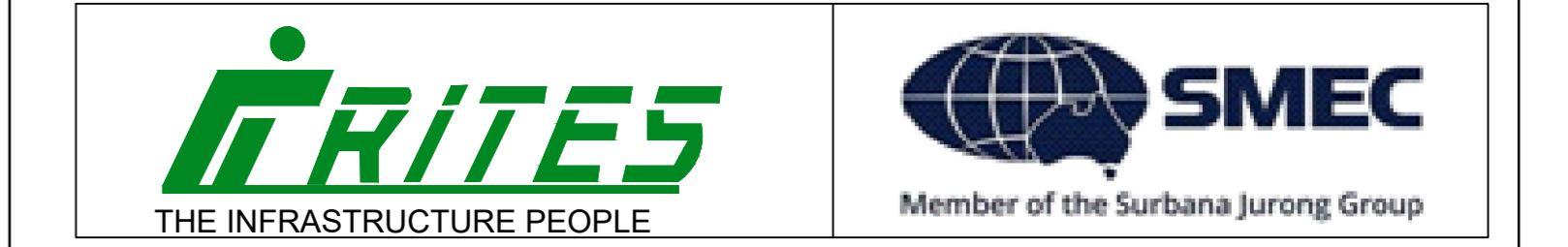


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>MS</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

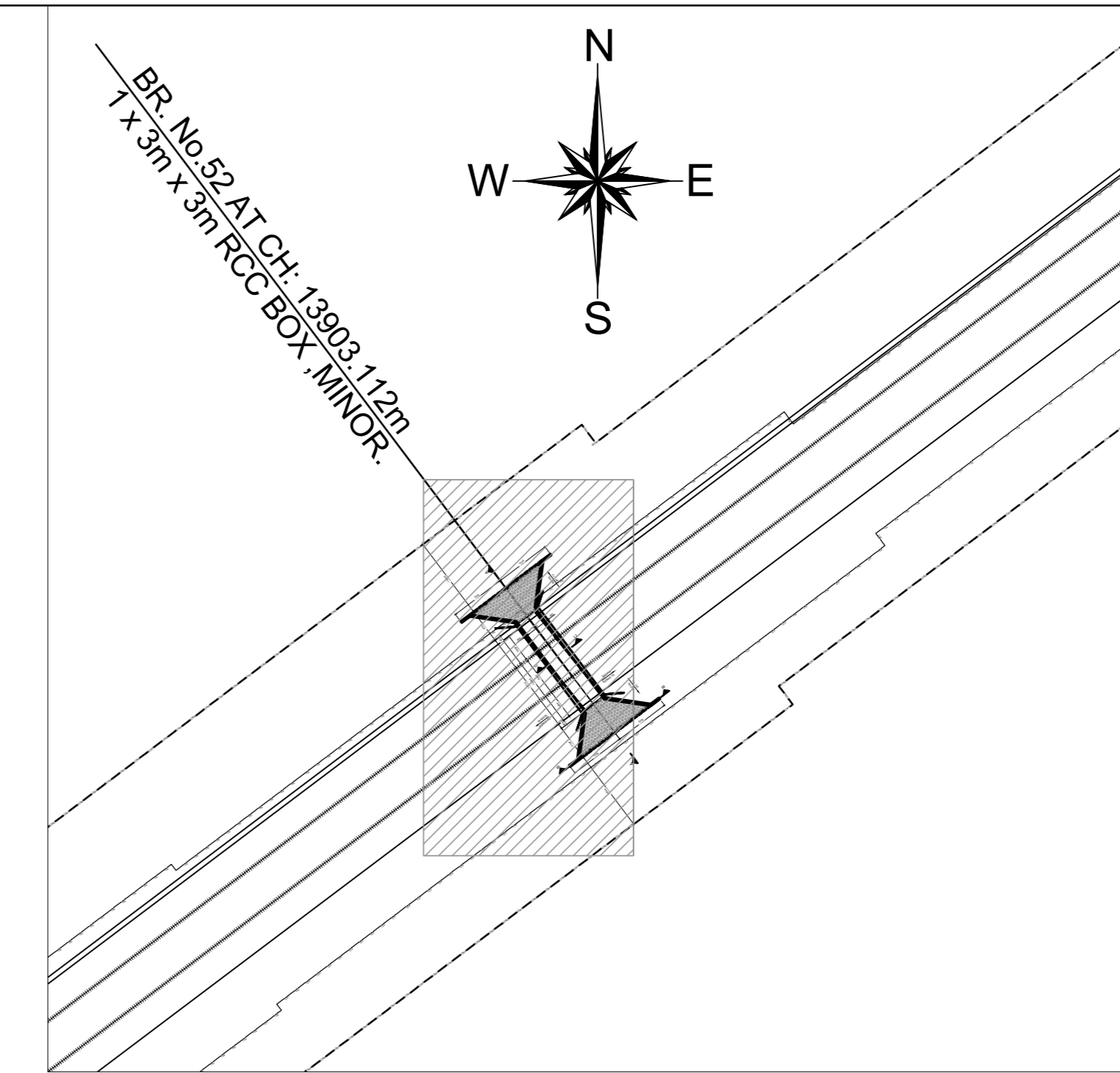
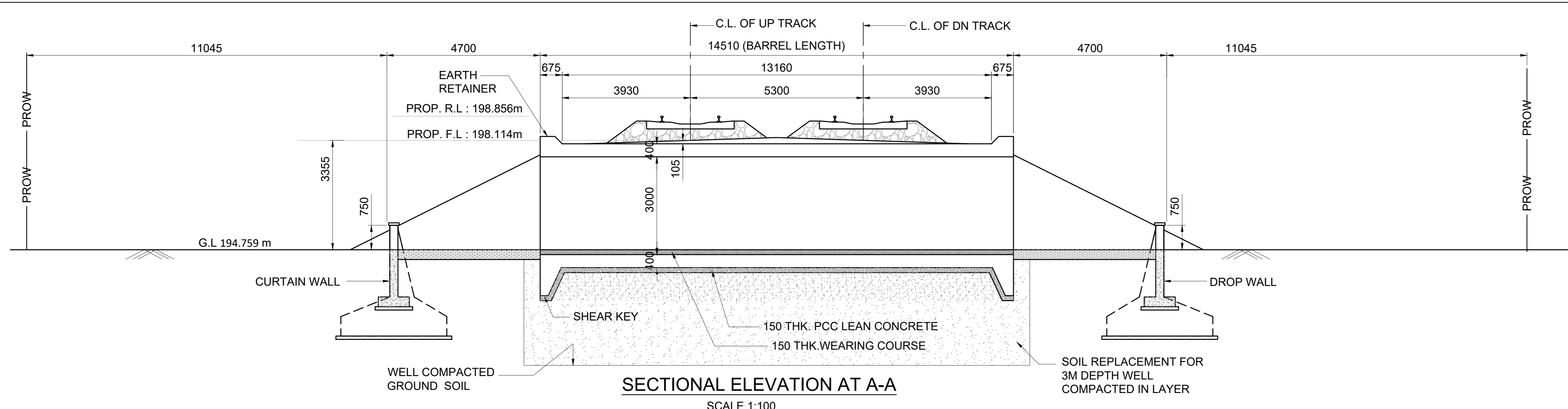
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
CANAL BRIDGE NO. 051 SPAN
1.0X3.0X3.0 RCC BOX AT CH: 13114.998

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01051_A1
SHEET NO. 1 OF 1

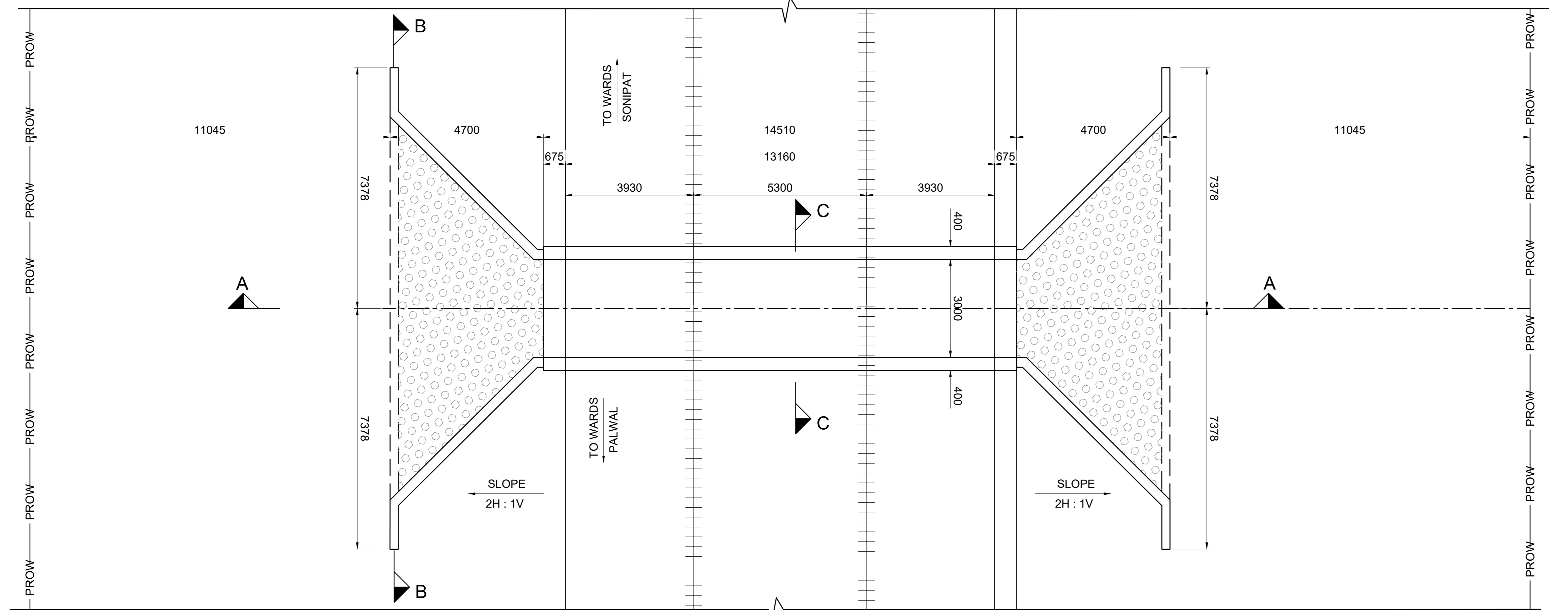
SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022



- NOTES :**
- A) GENERAL NOTES**
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 - DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
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 - REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786
 - FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE.

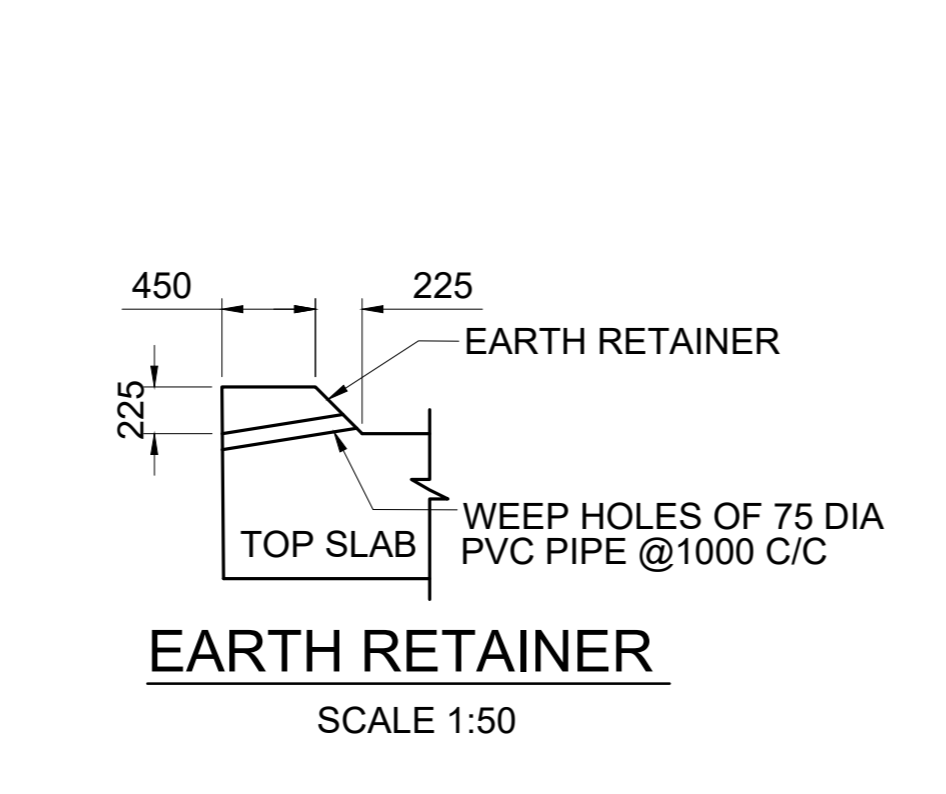
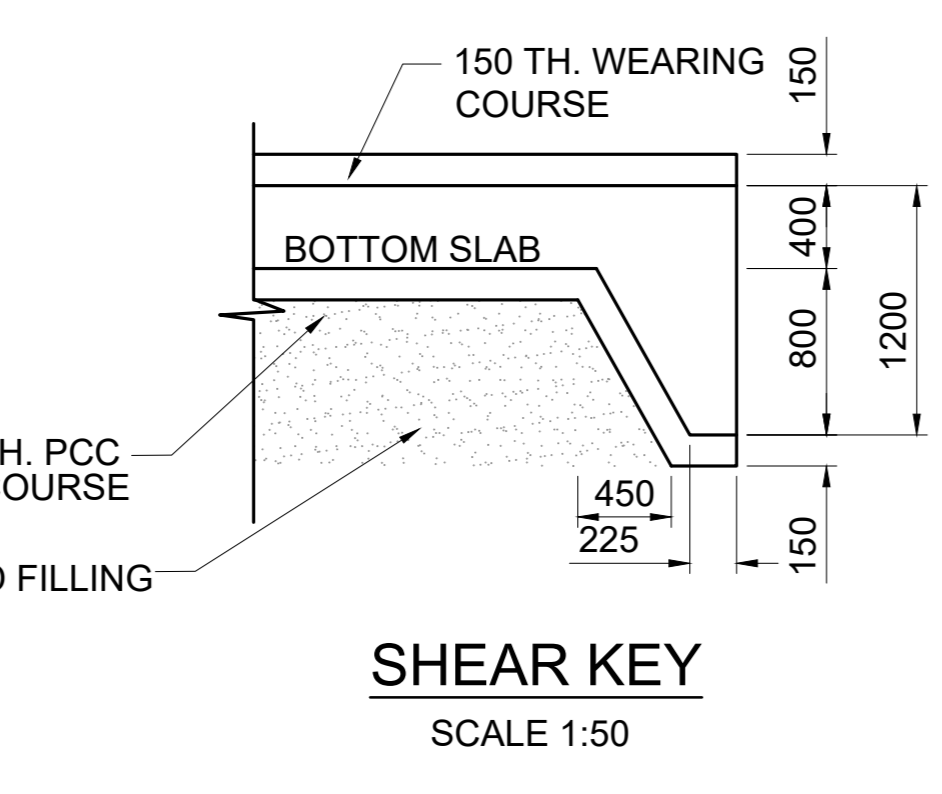
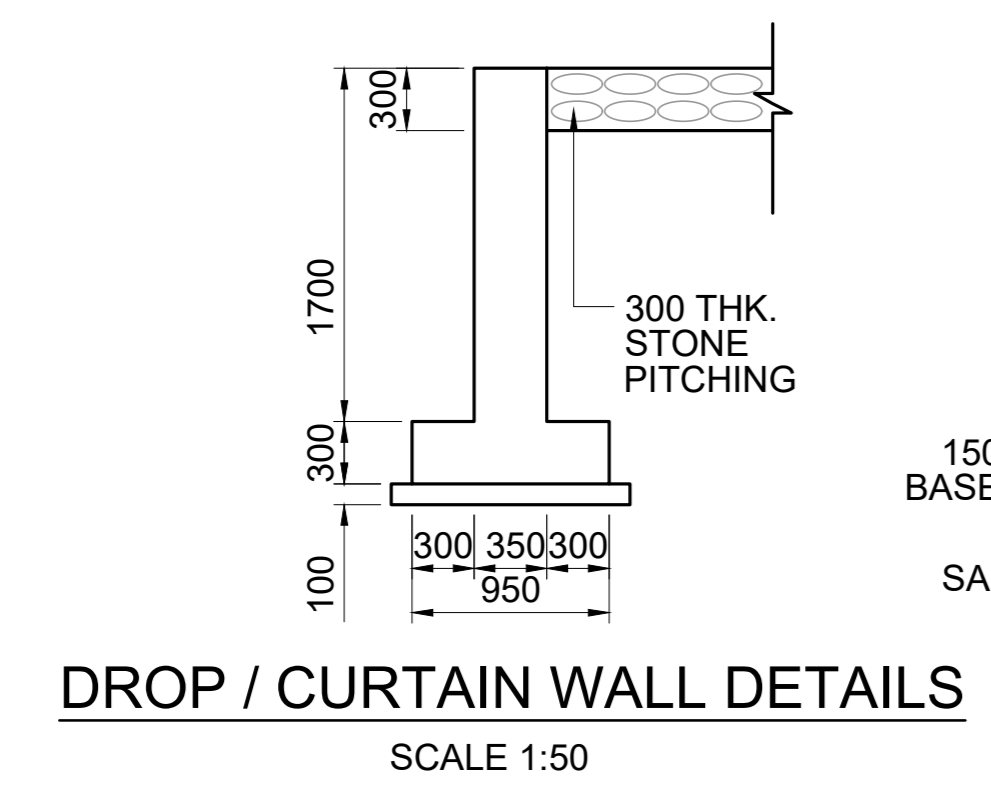
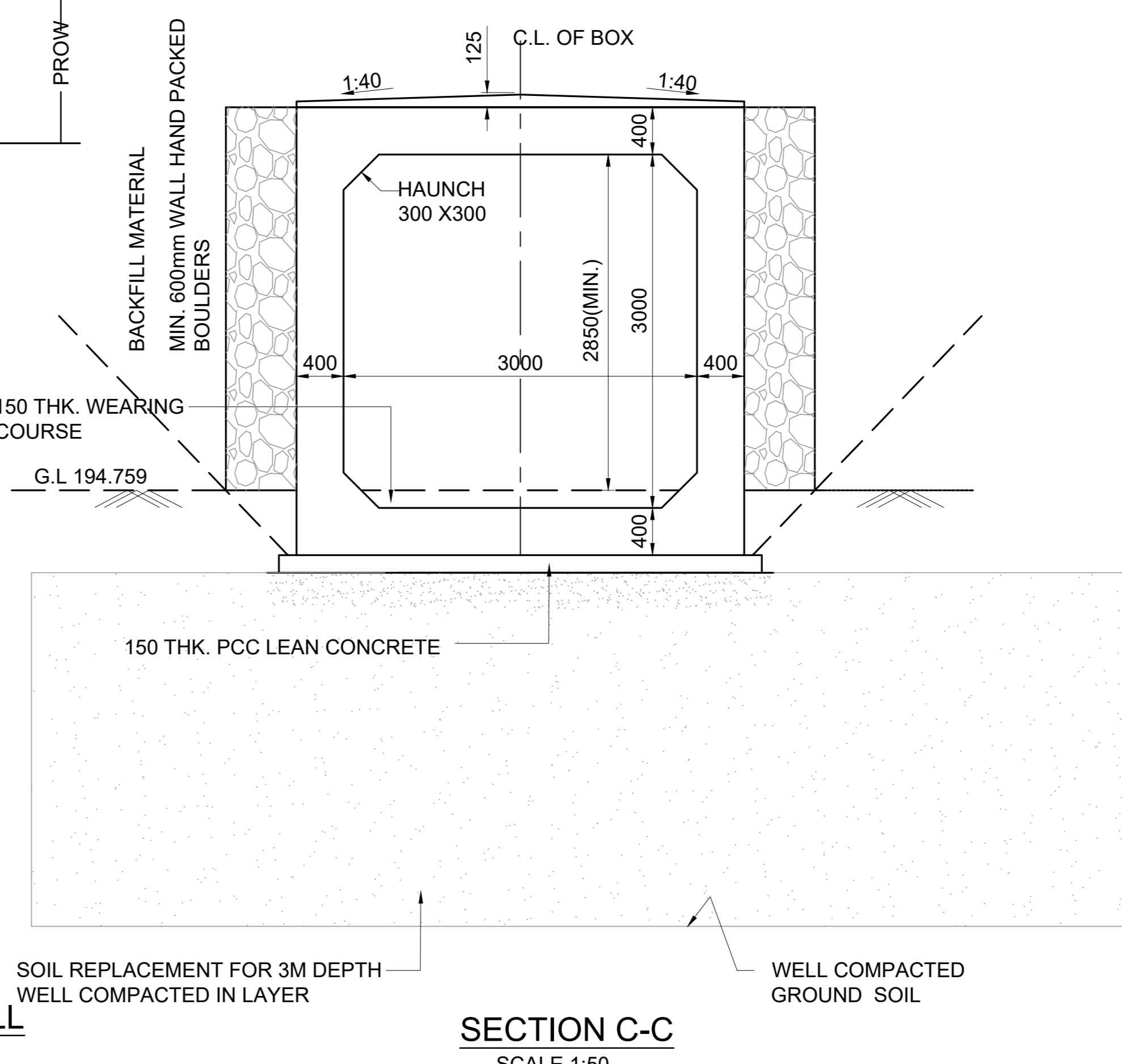
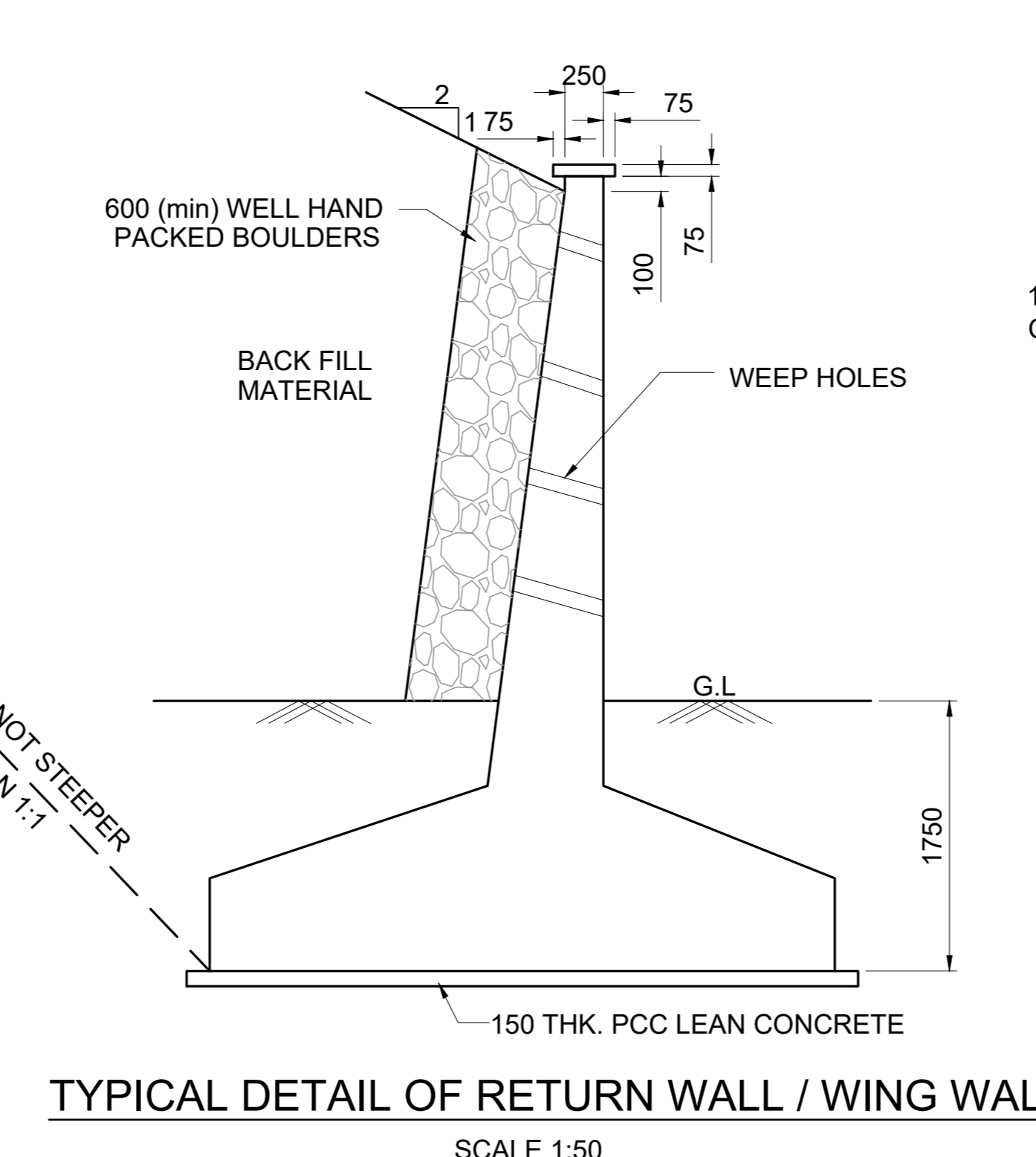
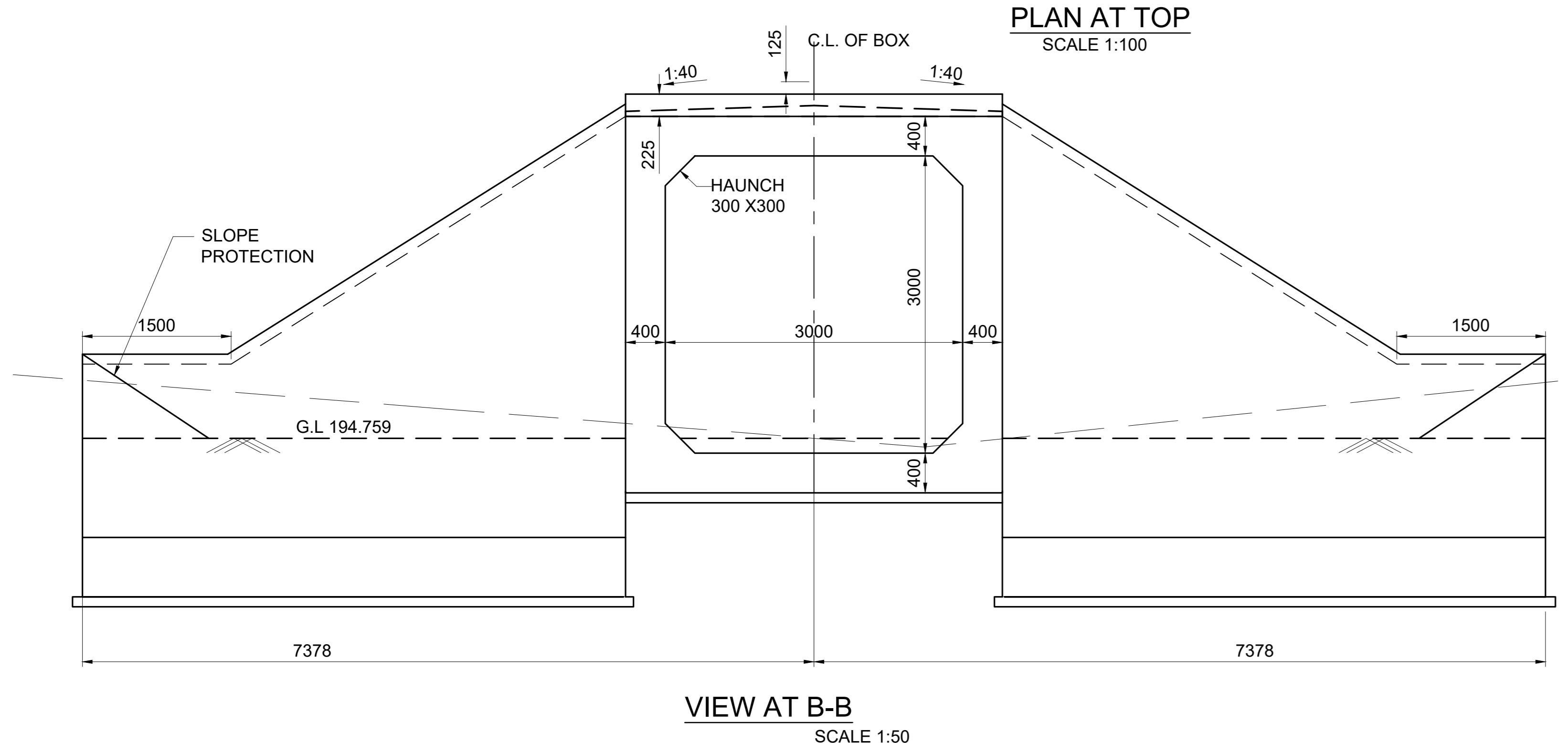
GRADE OF CONCRETE :

 - ALL RCC WEARING COURSE(WC) =M.35/DETAILED DESIGN DRG.
 - LEVELING COURSE/CLEAN CONCRETE =M.20/DETAILED DESIGN DRG.
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 - ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.



LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL



GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

PROJECT:
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CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
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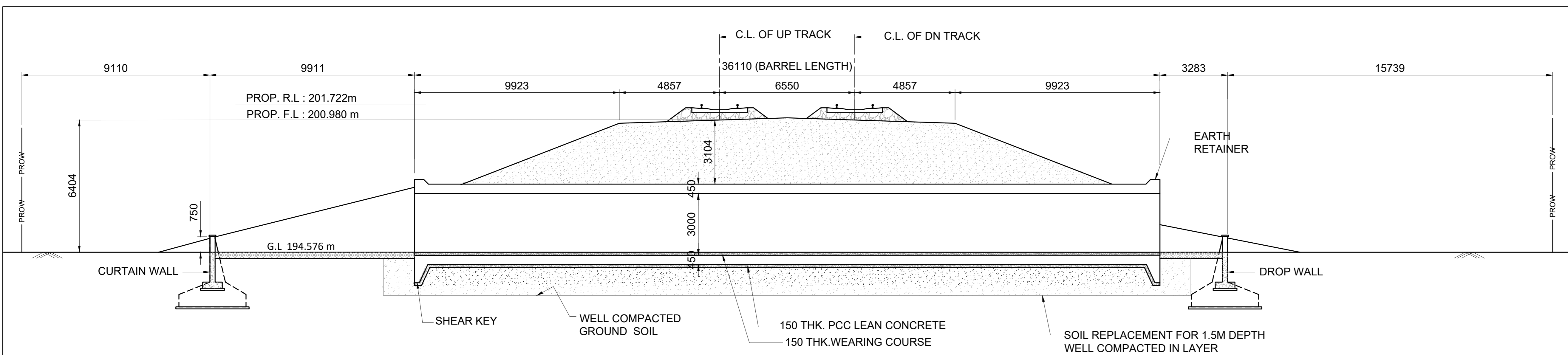
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR BALANCING CULVERT BRIDGE NO. 052
SPAN 1.0X3.0X3.0 RCC BOX AT CH: 13903.112

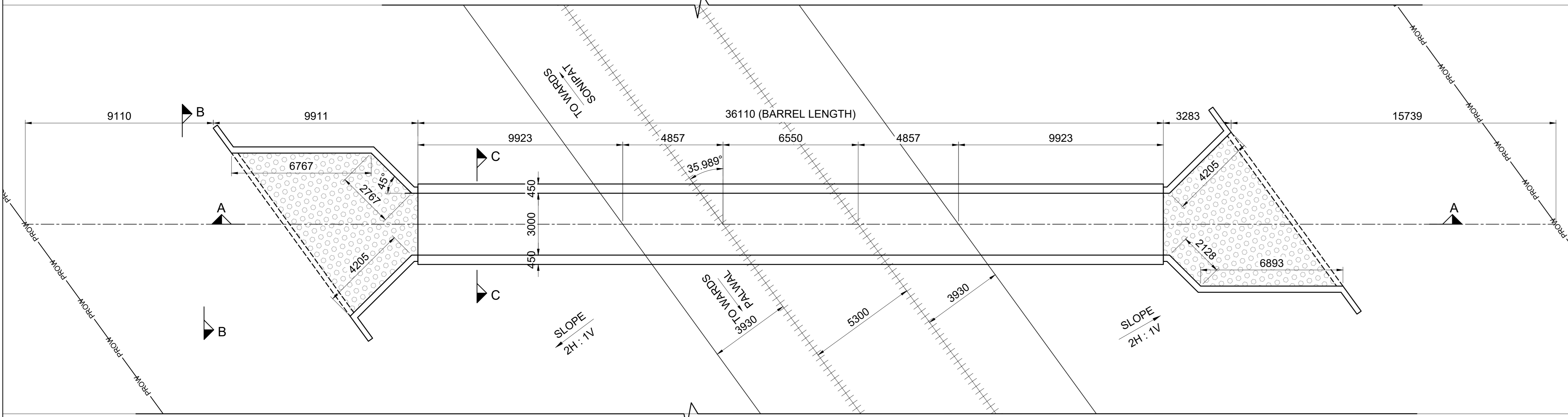
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01052_A1
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022



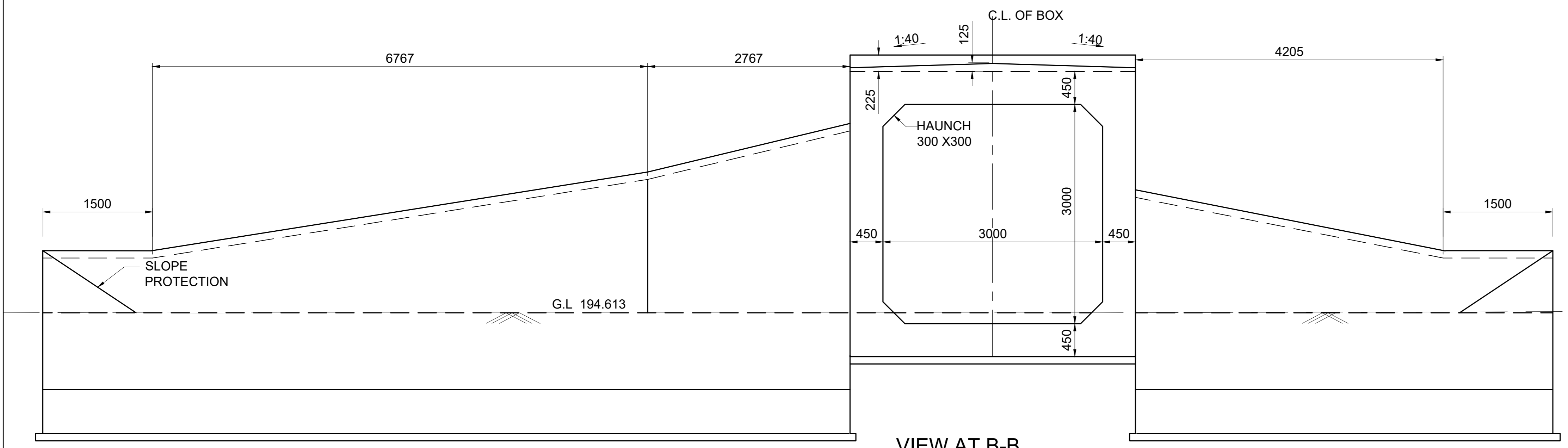
SECTIONAL ELEVATION AT A-A

SCALE 1:150



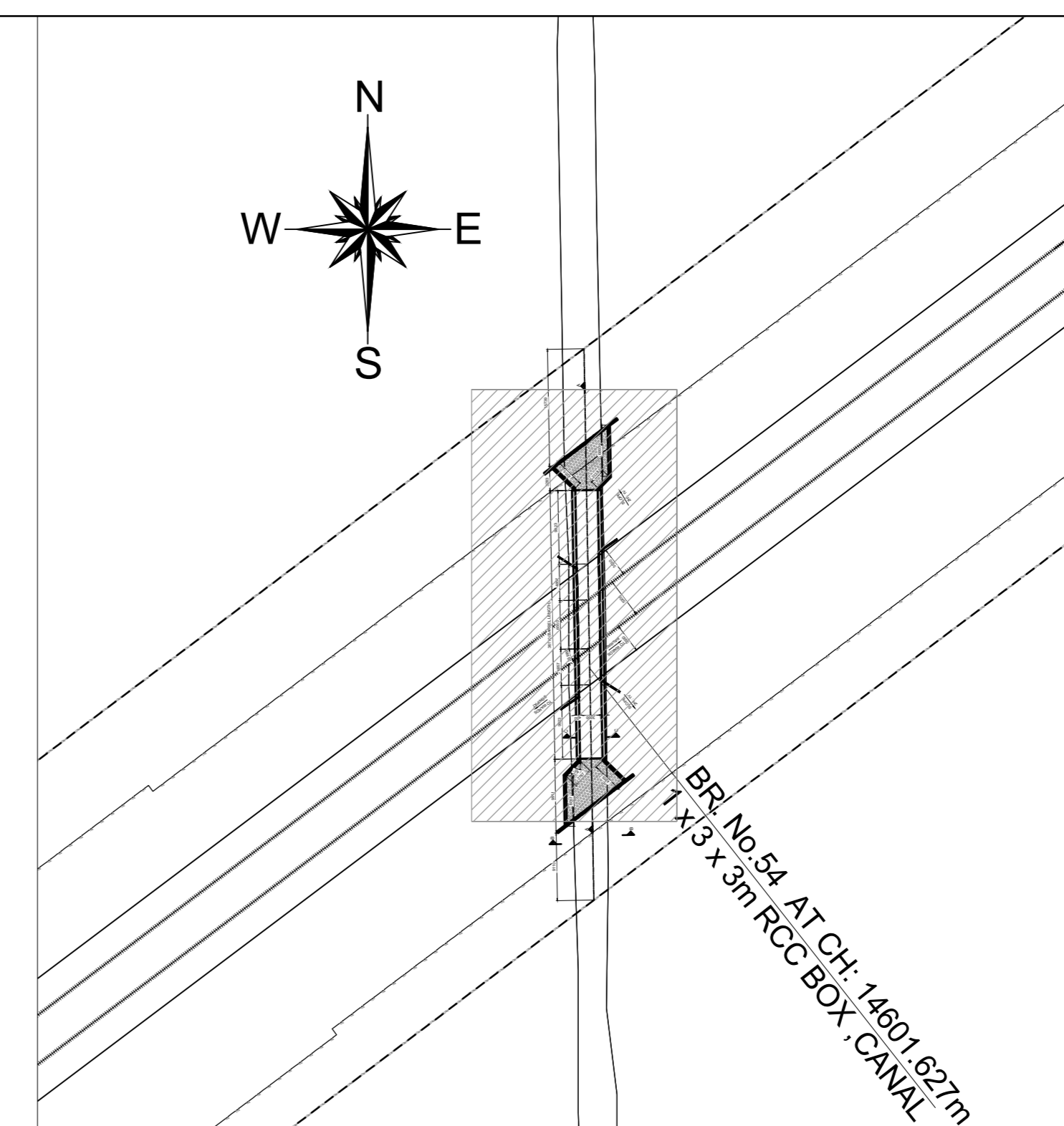
PLAN AT TOP

SCALE 1:180



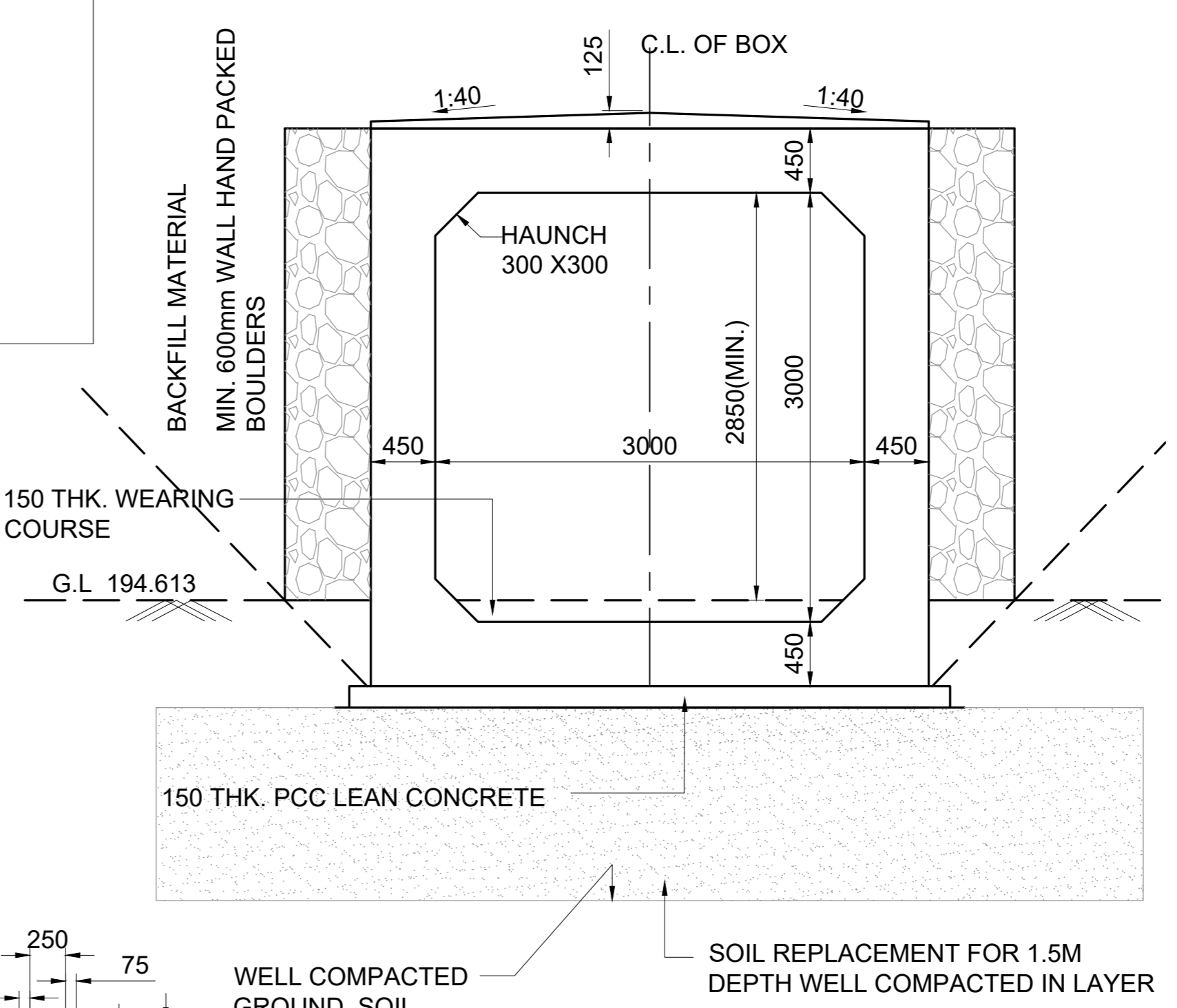
VIEW AT B-B

SCALE 1:50



KEY PLAN

(NOT TO SCALE)

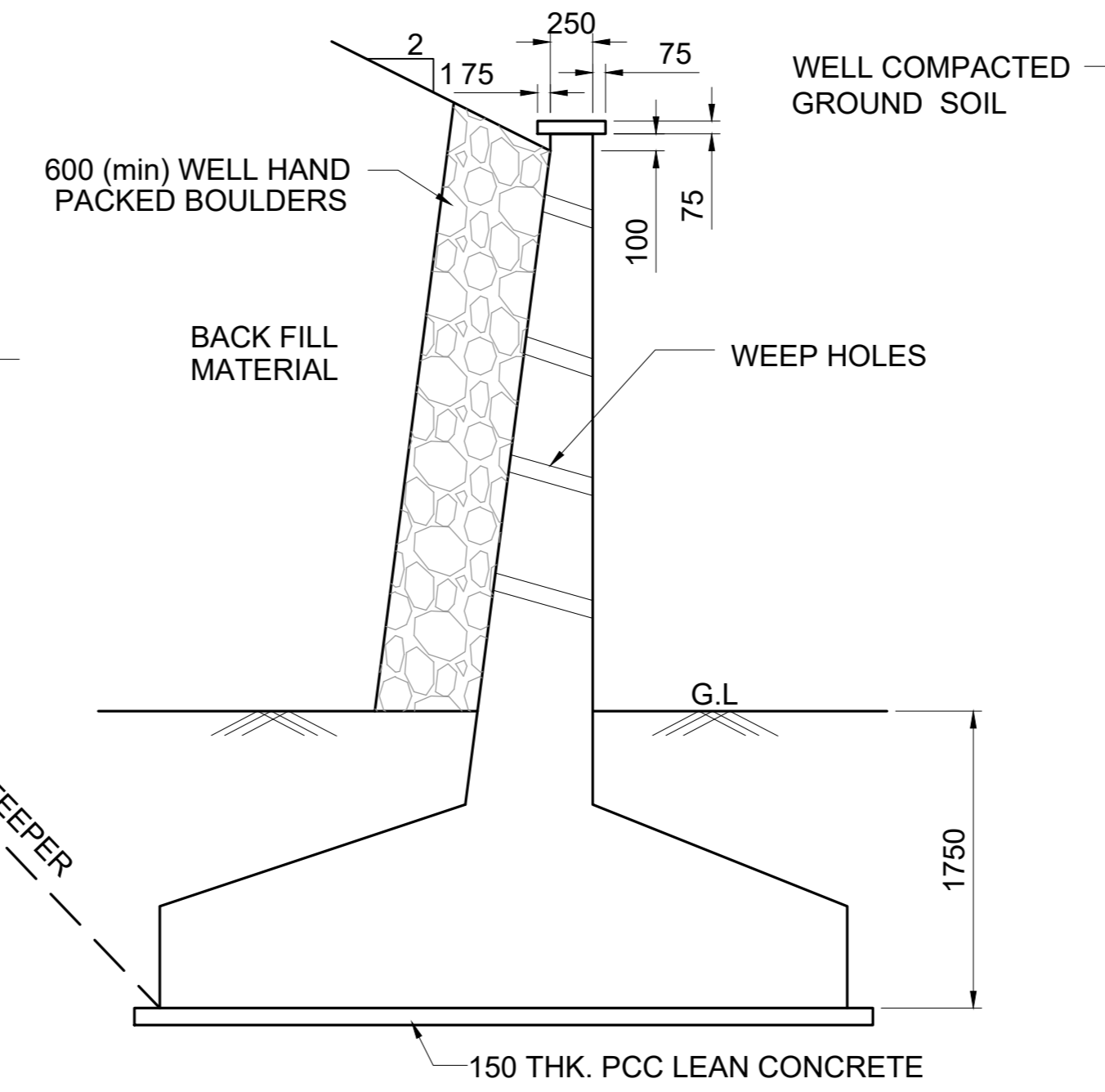


SECTION C-C

SCALE 1:50

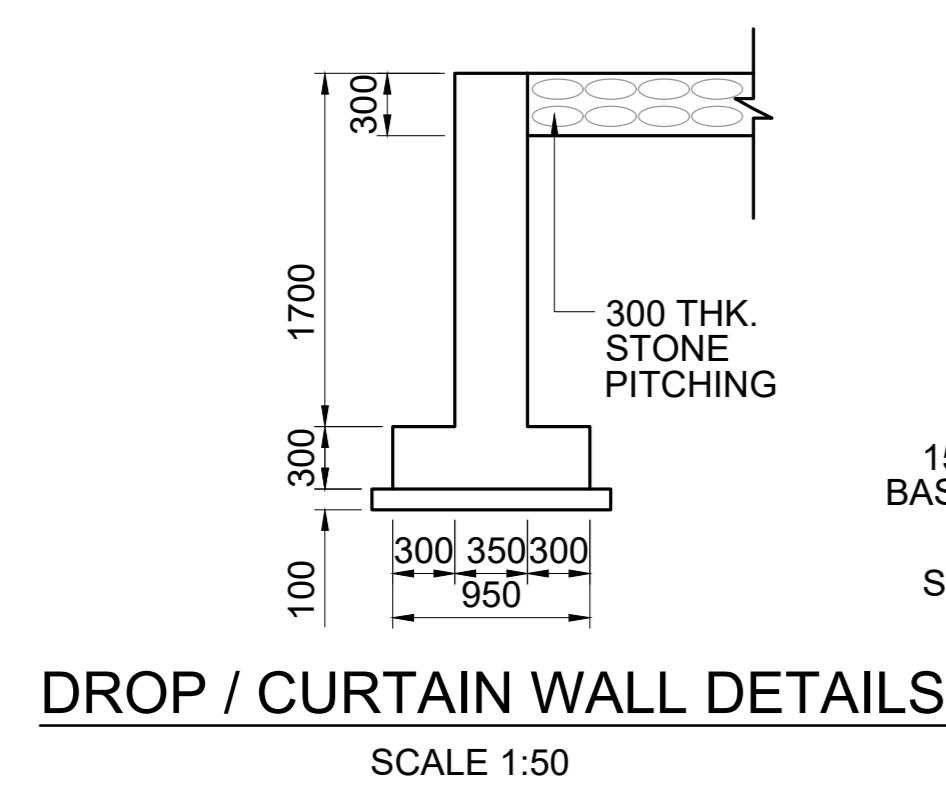
LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL



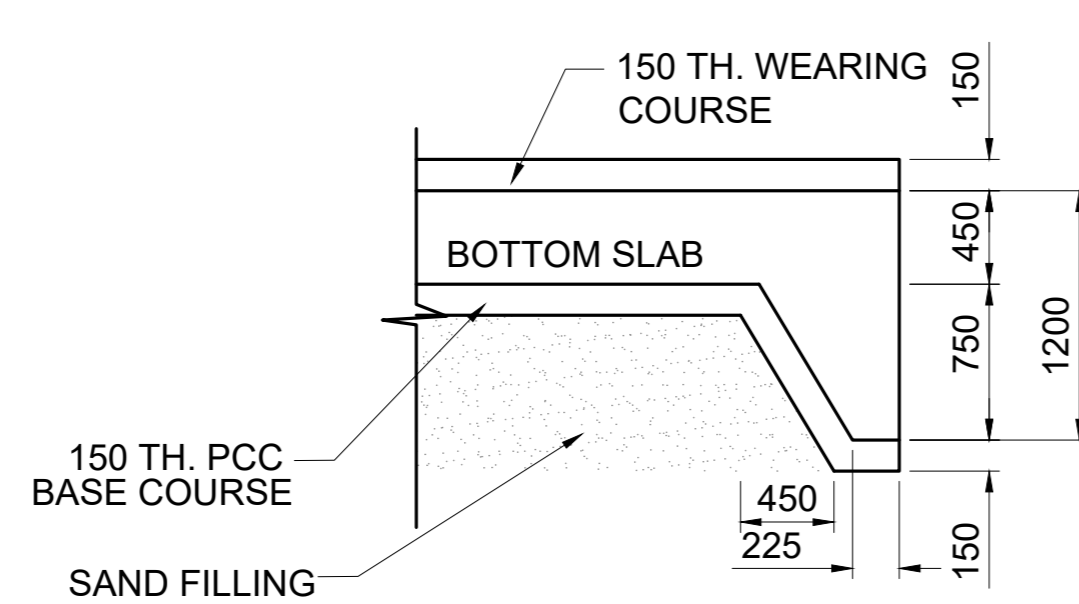
TYPICAL DETAIL OF RETURN WALL / WING WALL

SCALE 1:50



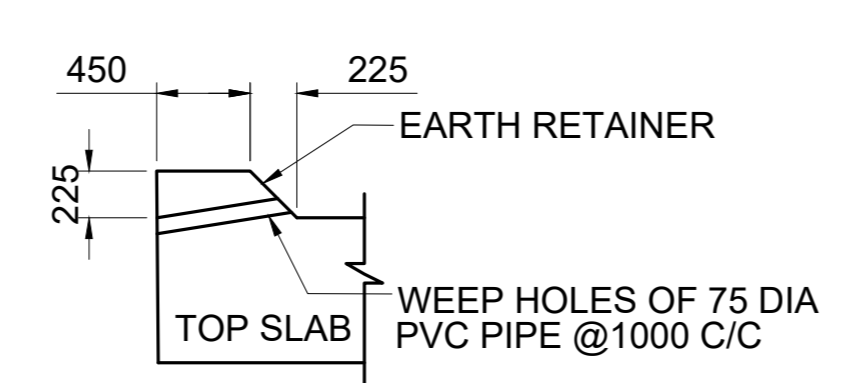
DROP / CURTAIN WALL DETAILS

SCALE 1:50



SHEAR KEY

SCALE 1:50



EARTH RETAINER

SCALE 1:50

NOTES :

A) GENERAL NOTES

1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
2. THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
3. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
4. BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
5. THE EXISTING DETAILS ARE AS PER SITE SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE EXECUTION.
6. ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
8. ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
9. THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
10. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
11. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.

B) TECHNICAL NOTES :

1. PROTECTION WORK ON SLOPE OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
2. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
3. FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
4. ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
5. PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
6. DIMENSION OF THE BOX MAY BE SUITABLY MODIFIED AS PER SITE REQUIREMENT. HEIGHT OF BOX SHOWN INCLUDES MINIMUM REQUIRED CLEAR OPENING HEIGHT AND WEARING COARSE. OVERALL HEIGHT OF BOX OPENING MAY VARY AS PER SITE REQUIREMENT AND ACTUAL ROAD/GROUND PROFILE.
7. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - (i) IRS BRIDGE RULE
 - (ii) IRS CONCRETE BRIDGE CODE
 - (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
8. SEISMIC ZONE- IV
9. EXPOSURE CONDITION- MODERATE.
10. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
11. THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE.
12. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFORMING TO IS-3117.
13. REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786
14. FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
 - (i) ALL RCC WEARING COURSE(WC) =M.35/DETAILED DESIGN DRG.
 - (ii) LEVELING COURSE/LEAN CONCRETE =M.20/DETAILED DESIGN DRG.
15. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT REPORT AND CONFIRMED THROUGH FIELD TESTING.
16. FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
17. ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.
18. WING WALL FOLLOW DRAIN PROFILE.
19. SMOOTH TRANSITION SHALL BE PROVIDED BETWEEN THE EXISTING LINED CANAL/DRAIN AND THE BOX.

PROJECT:

HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



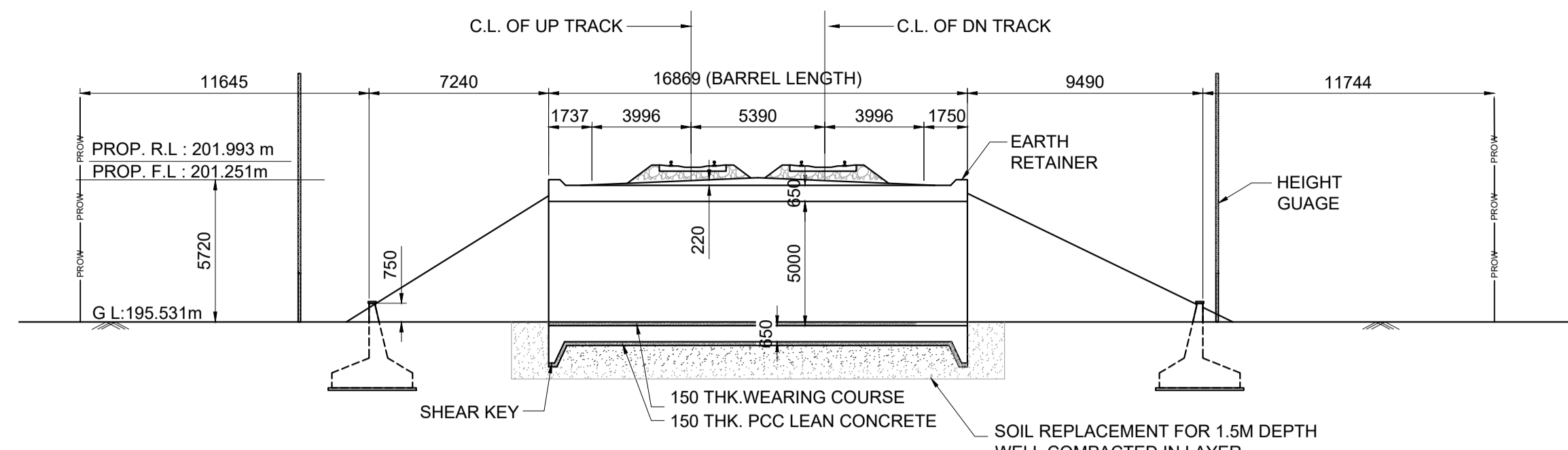
TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**

FOR CANAL BRIDGE NO. 054
1.0X3.0X3.0 RCC BOX AT CH: 14601.627

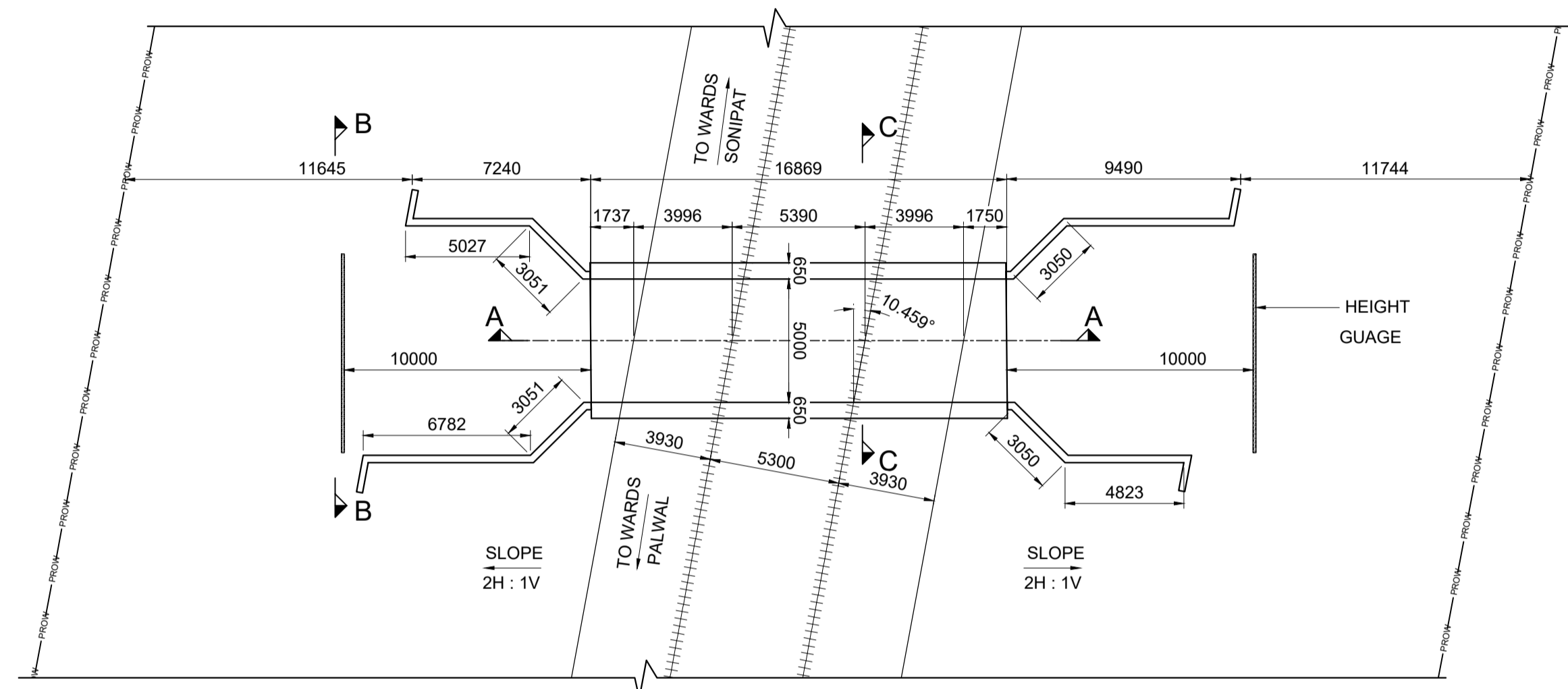
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01054_A1 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 07-11-2022 REVISED DATE 21-11-2022

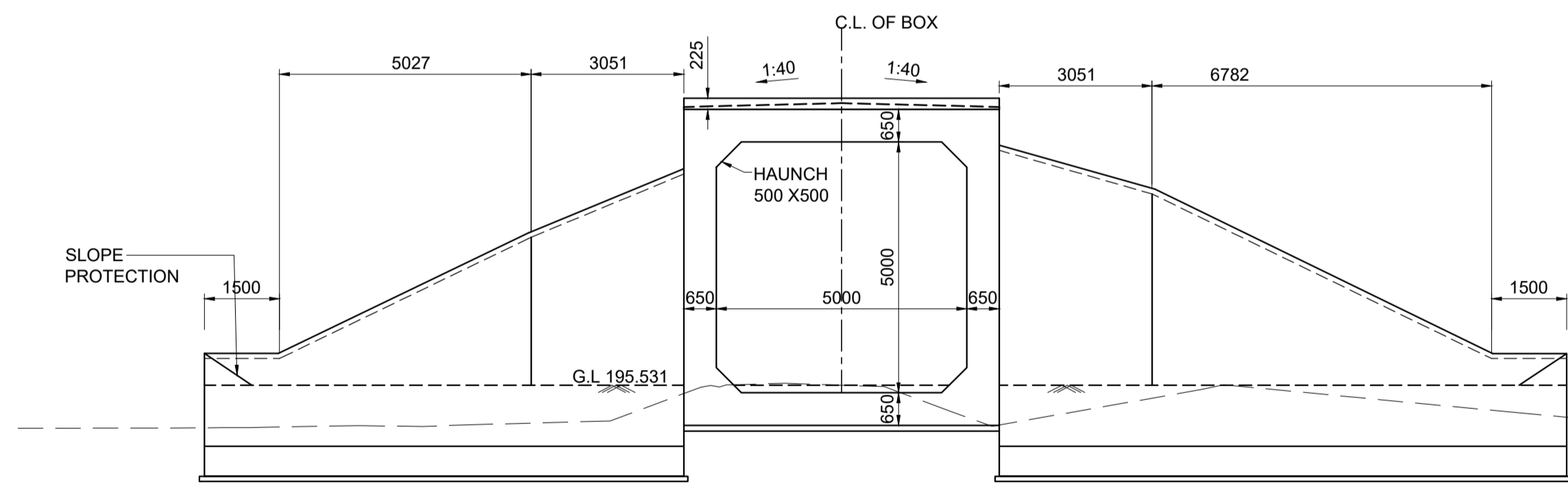
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>ChahateyRam</i>	SHIV OM DWIVEDI GM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>AS</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		



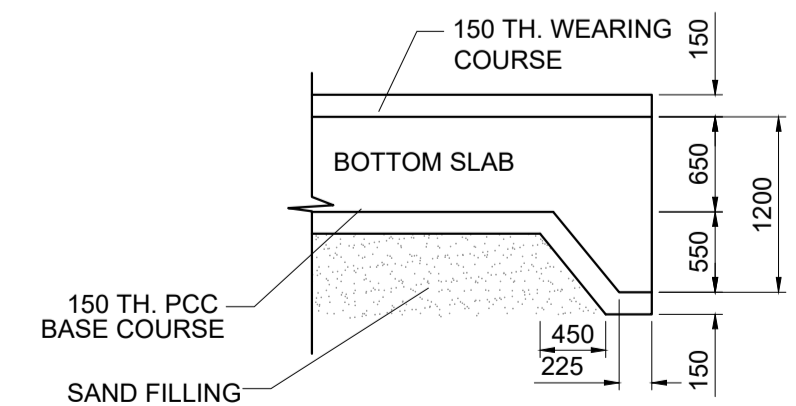
SECTIONAL ELEVATION AT A-A
SCALE 1:200



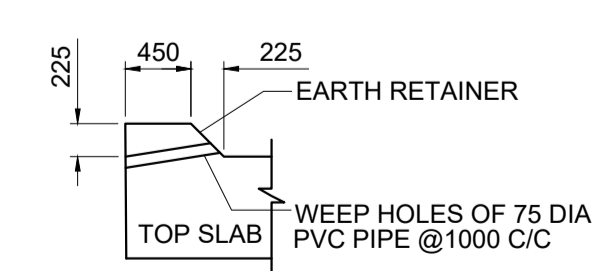
PLAN AT TOP
SCALE 1:200



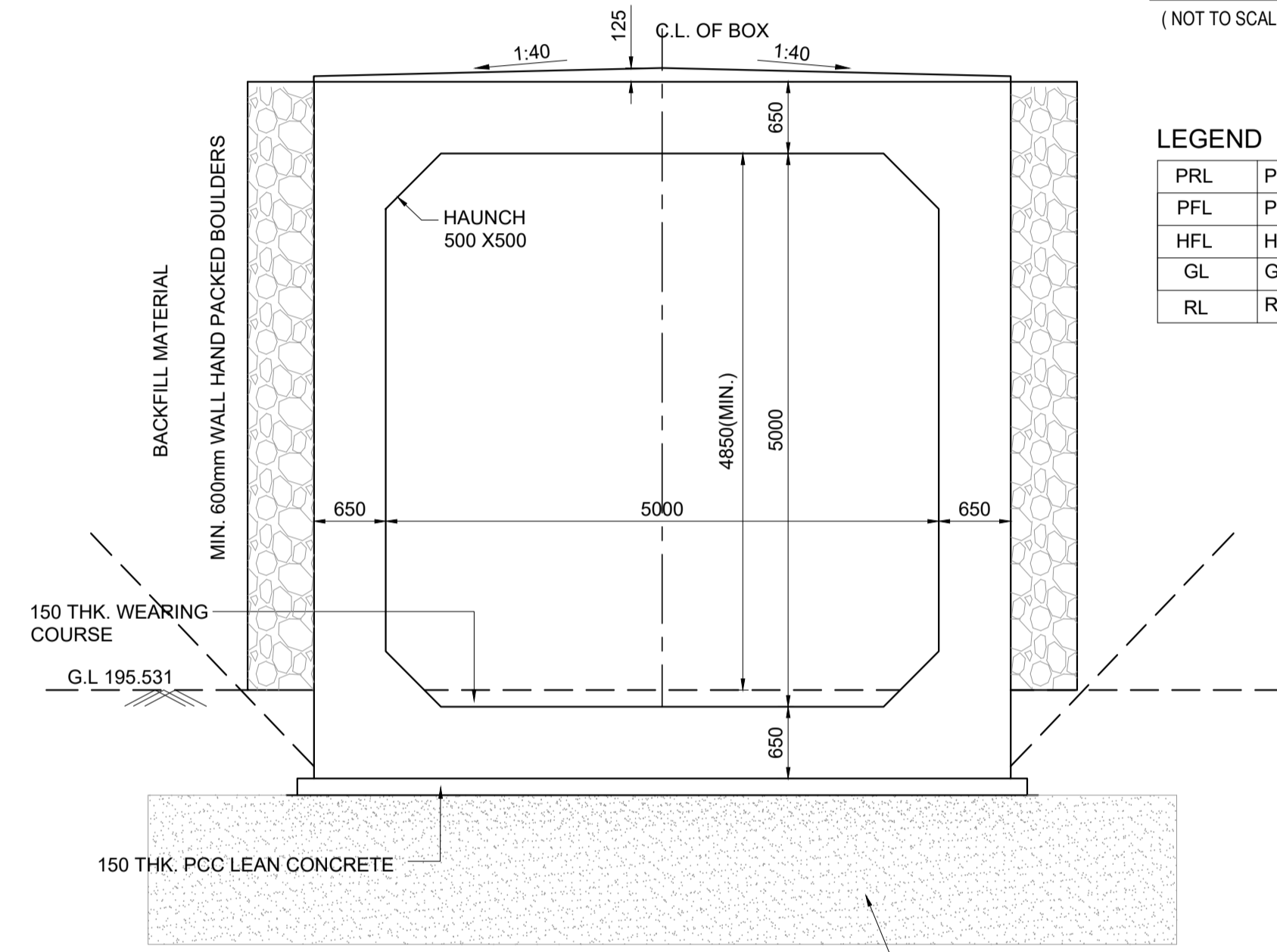
VIEW AT B-B
SCALE 1:100



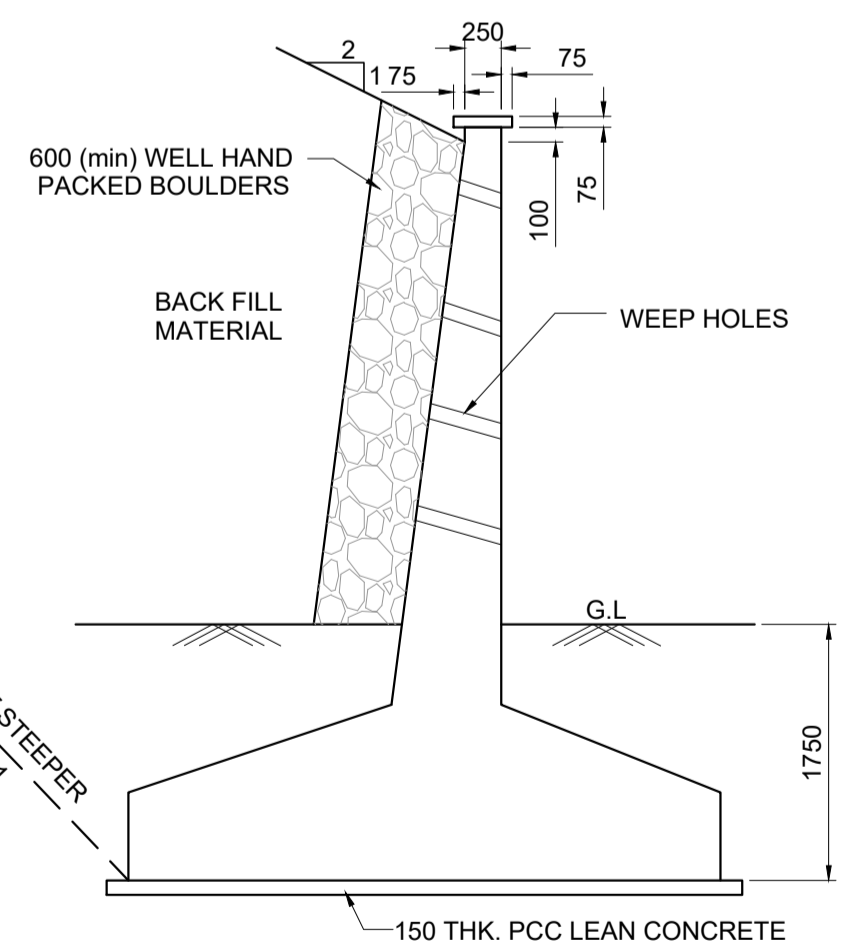
SHEAR KEY
SCALE 1:50



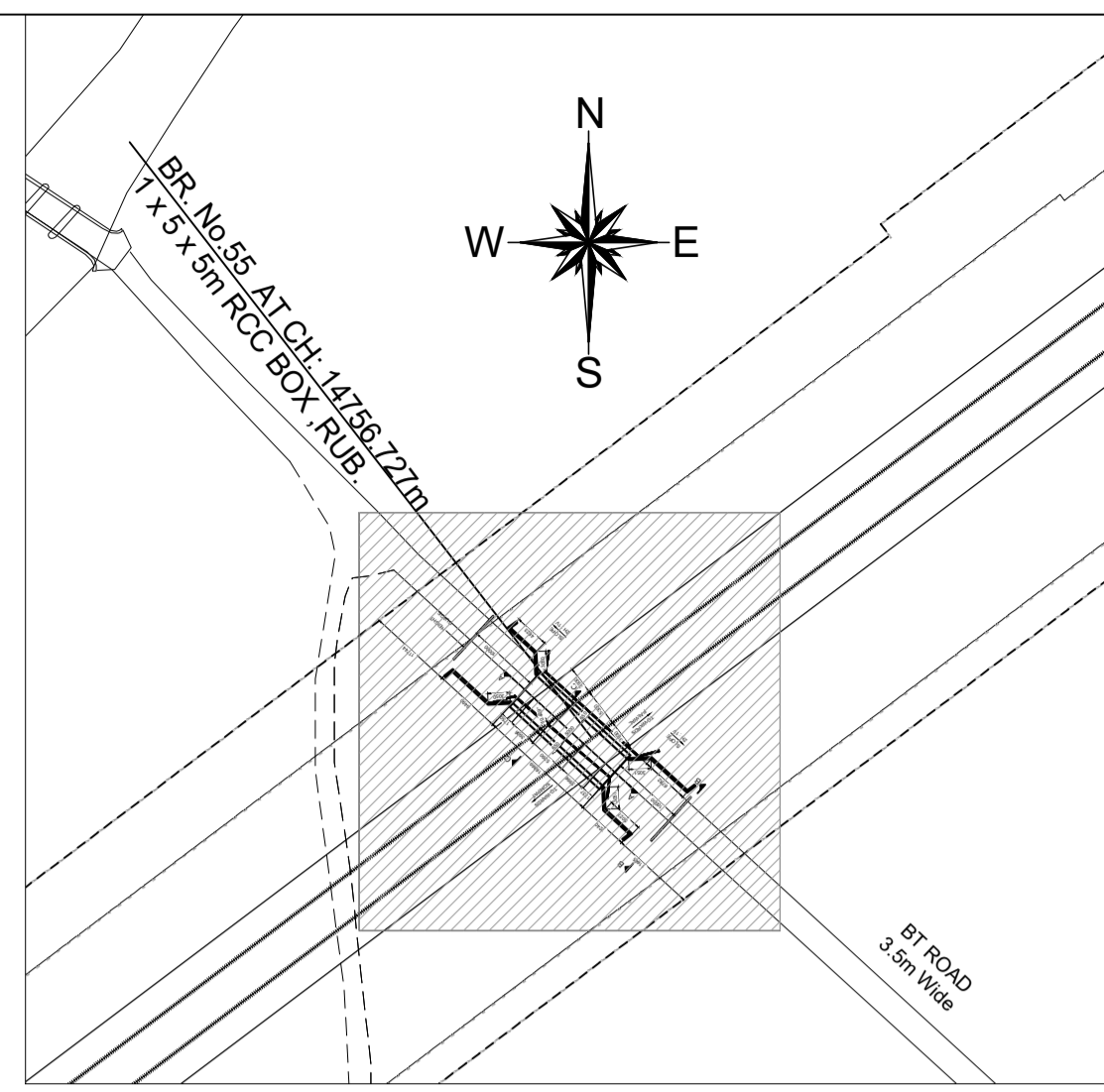
EARTH RETAINER
SCALE 1:50



SECTION C-C
SCALE 1:50



TYPICAL DETAIL OF RETURN WALL / WING WALL
SCALE 1:50



KEY PLAN
(NOT TO SCALE)

LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
RL	ROAD LEVEL

NOTES :

- A) GENERAL NOTES**
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
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 - SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
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 - THIS DRAWING IS THE PROPERTY OF HRIDC AND FOR EXCLUSIVE USE OF HORC.
 - DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
 - THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
- B) TECHNICAL NOTES :**
- PROTECTION WORK ON SLOPES OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
 - INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
 - FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
 - ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
 - PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
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(i) IRS BRIDGE RULE
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(iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
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 - EXPOSURE CONDITION- MODERATE.
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 - THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE.
 - ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM CONFORMING TO IS-3117.
 - REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786
 - FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
(i) ALL RCC/WEARING COURSE(WC) =M:35/DETAILED DESIGN DRG.
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 - BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT REPORT AND CONFIRMED THROUGH FIELD TESTING.
 - FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
 - HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
 - SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.
- IMPORTANT NOTE:**
TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL. HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING. OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY. THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

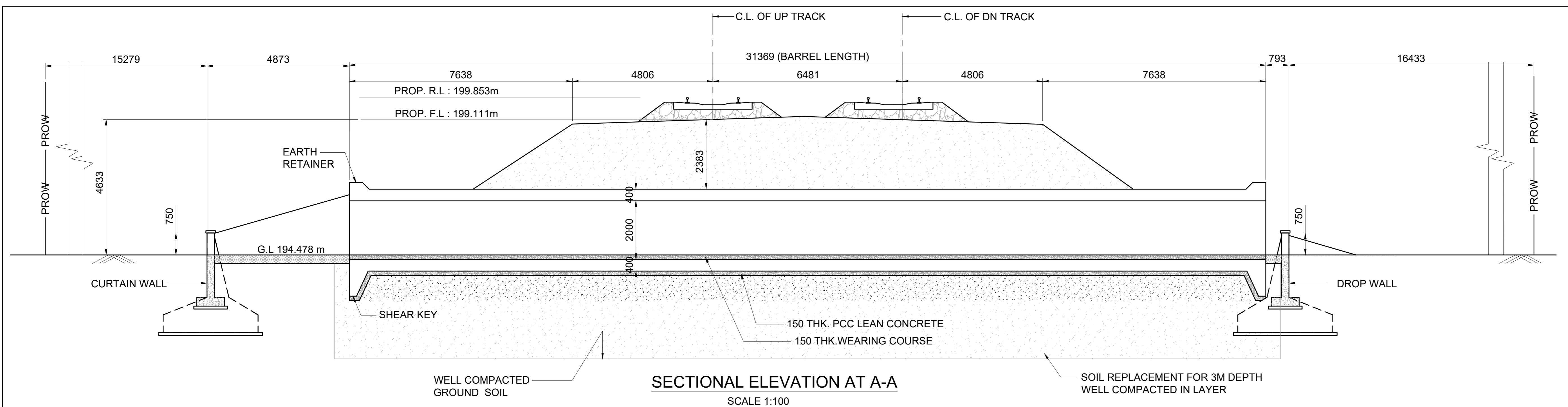
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR ROAD UNDER BRIDGE, BRIDGE NO. 055
SPAN 1x5.0x5.0 RCC BOX AT CH: 14756.727

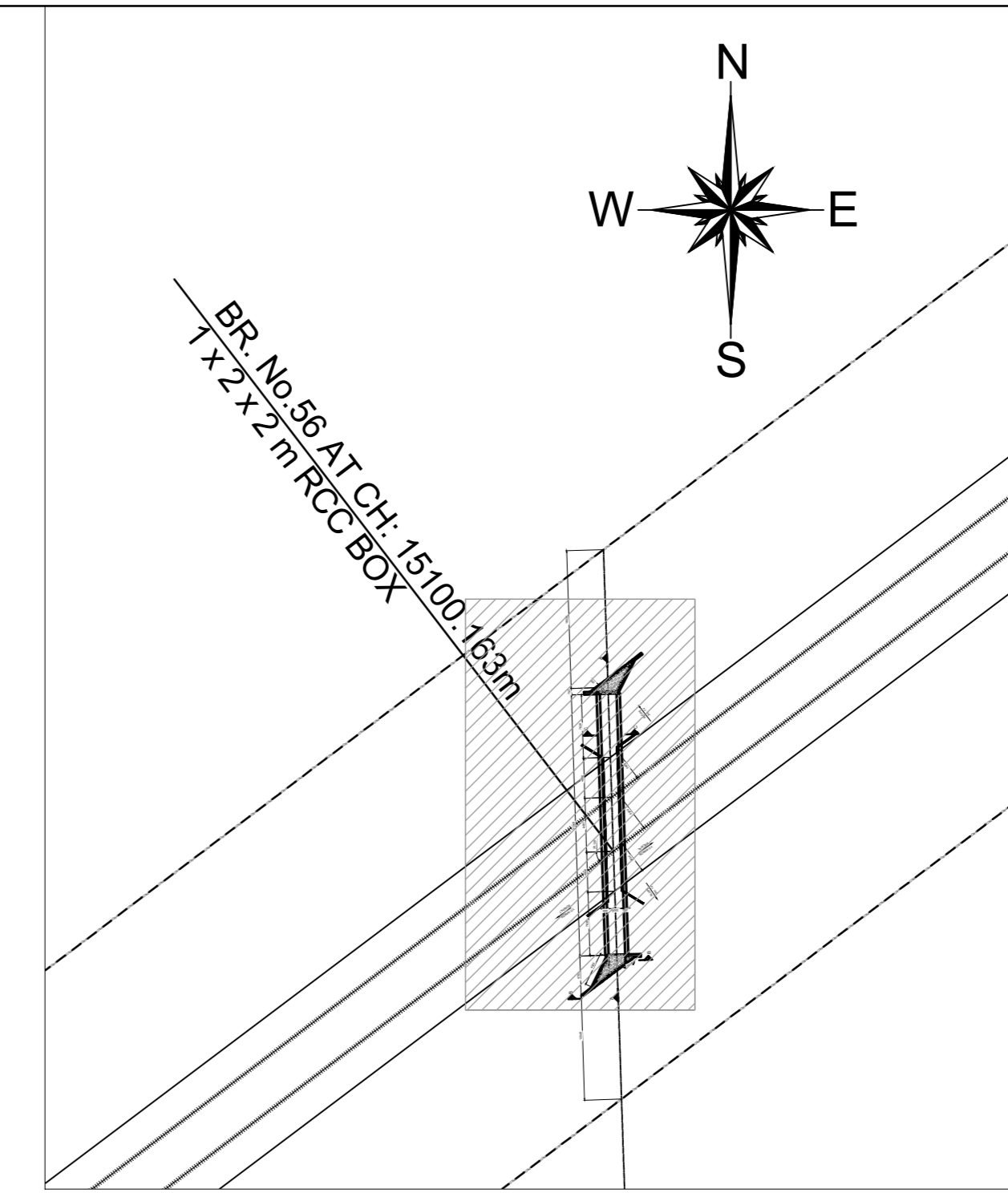
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01055_A1
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			



SECTIONAL ELEVATION AT A-A
SCALE 1:100

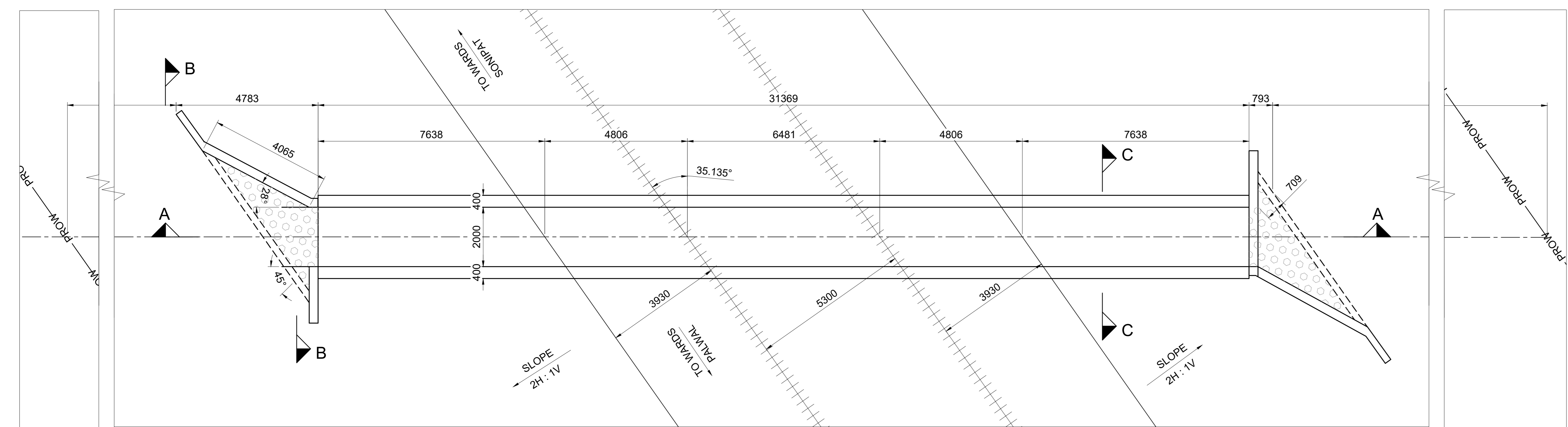


KEY PLAN
(NOT TO SCALE)

- NOTES :**
- A) GENERAL NOTES**
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GRADE OF CONCRETE :

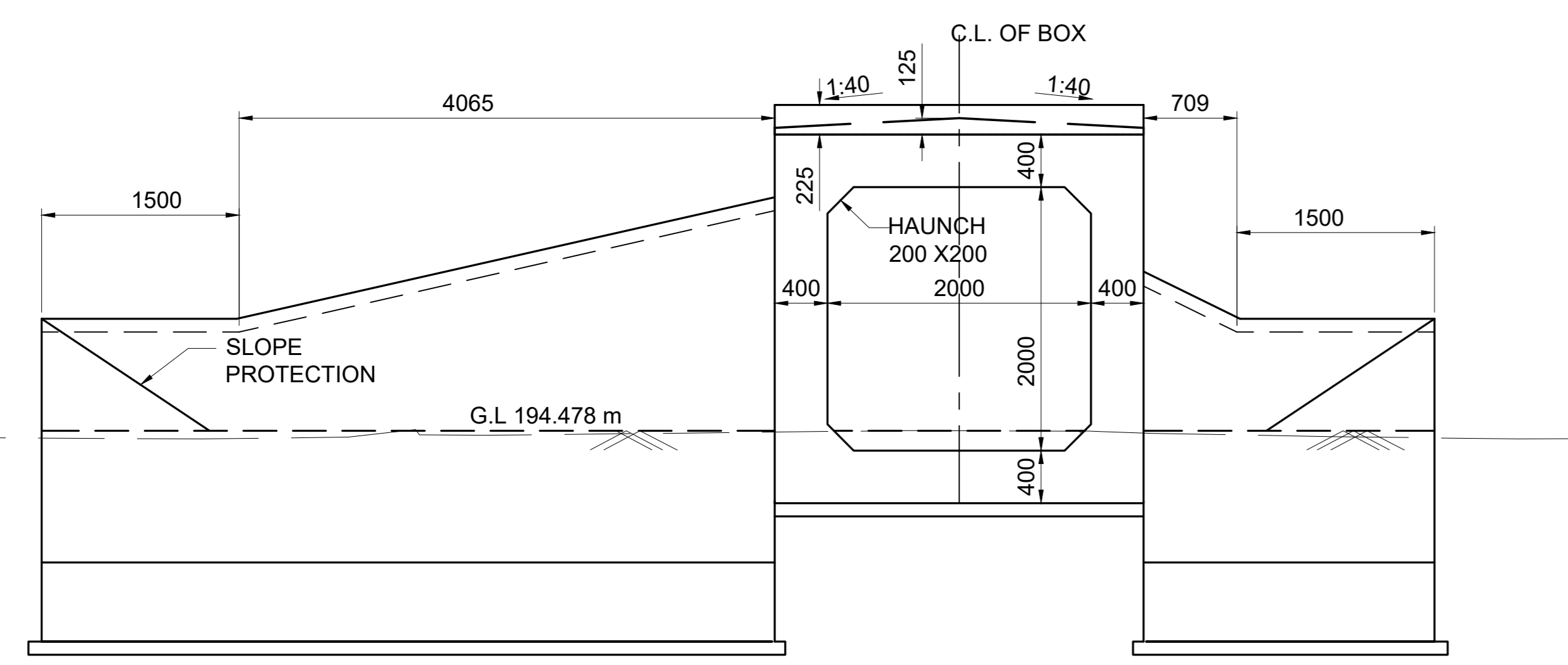
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 - LEVELING COURSE/LEAN CONCRETE =M:20/DETAILED DESIGN DRG.
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 - ADEQUATE SLOPE IN BOTTOM SLAB OF RCC BOX TOWARDS DIRECTION OF FLOW SHALL BE PROVIDED.



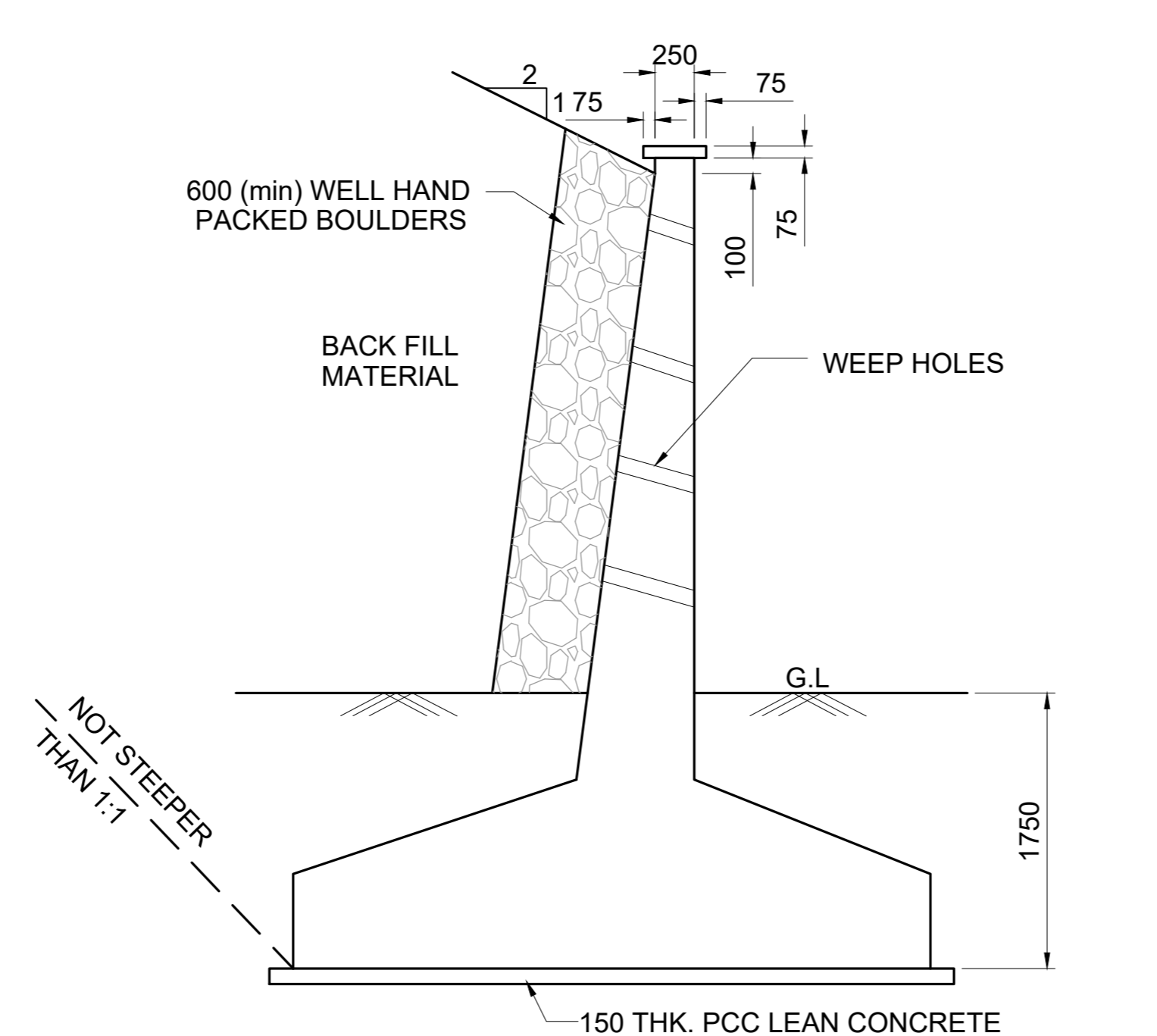
PLAN AT TOP
SCALE 1:100

LEGEND

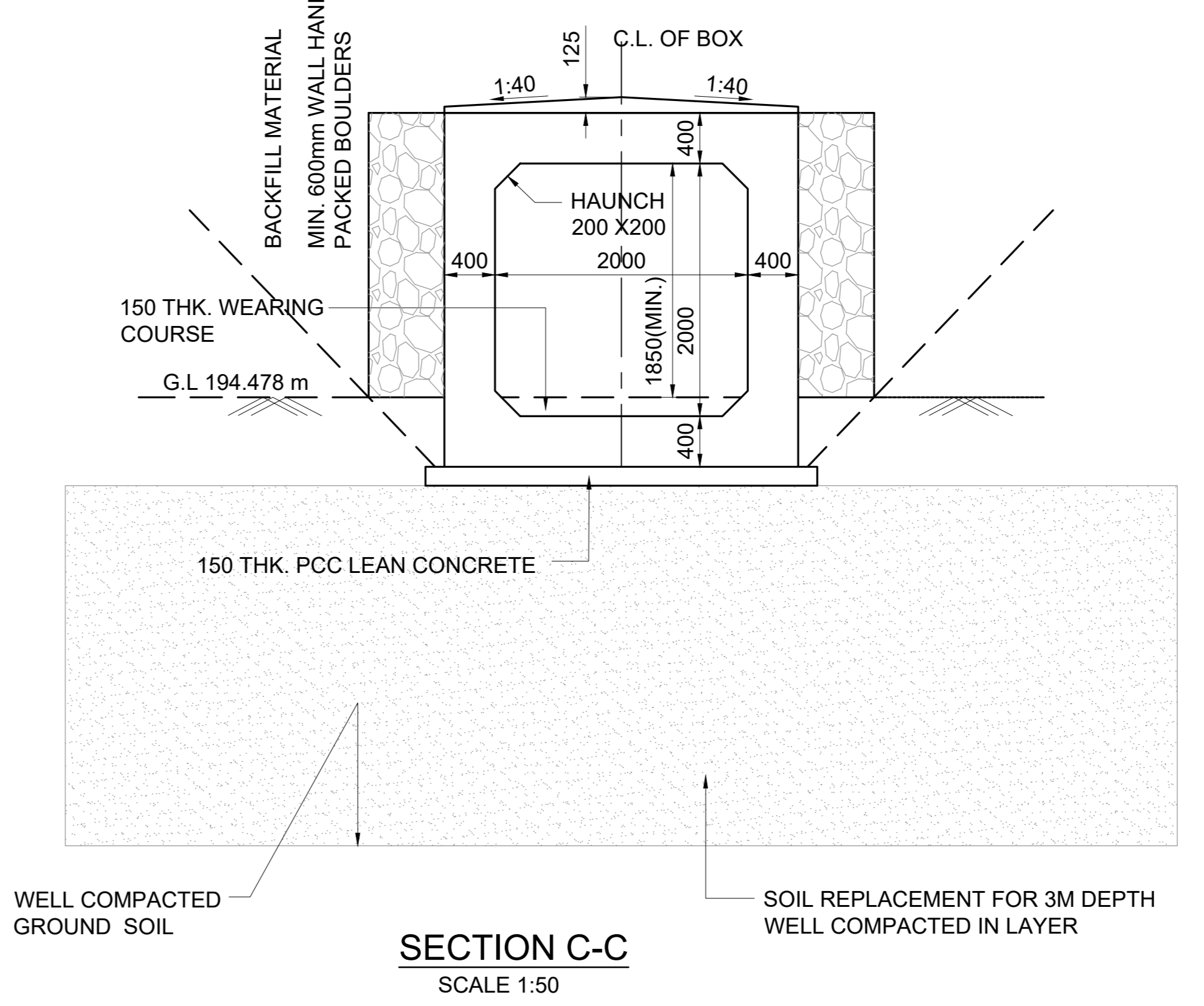
PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL



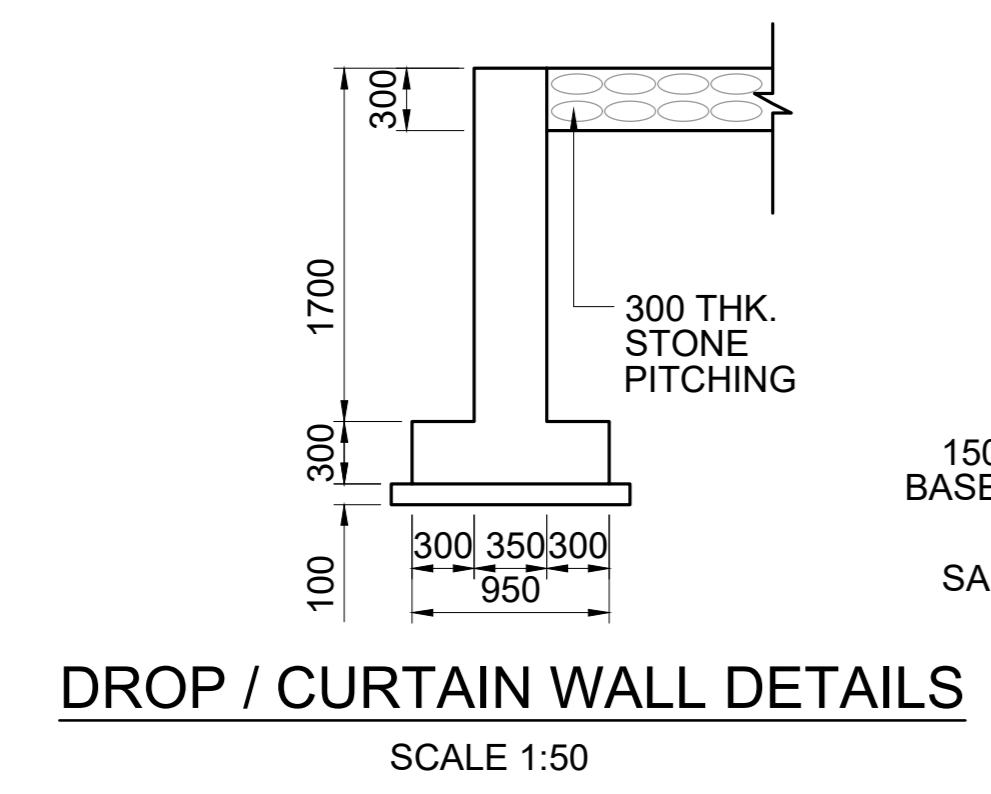
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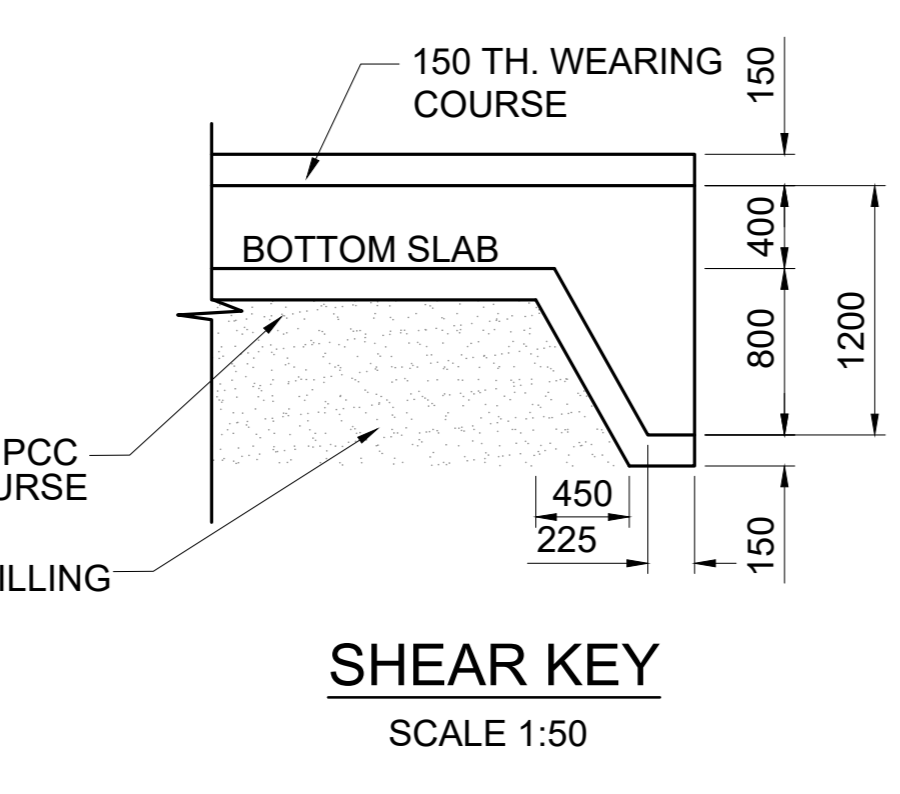
TYPICAL DETAIL OF RETURN WALL / WING WALL
SCALE 1:50



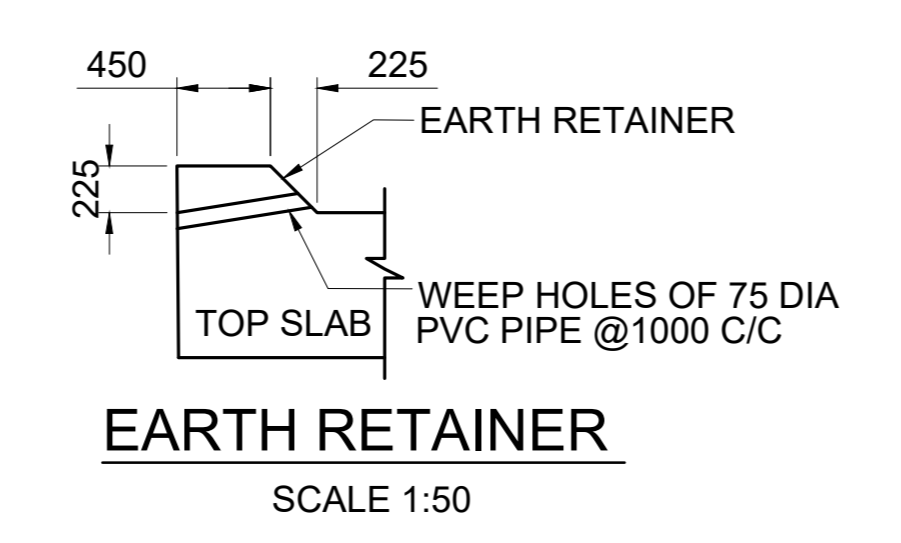
SECTION C-C
SCALE 1:50



DROP / CURTAIN WALL DETAILS
SCALE 1:50



SHEAR KEY
SCALE 1:50



EARTH RETAINER
SCALE 1:50

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
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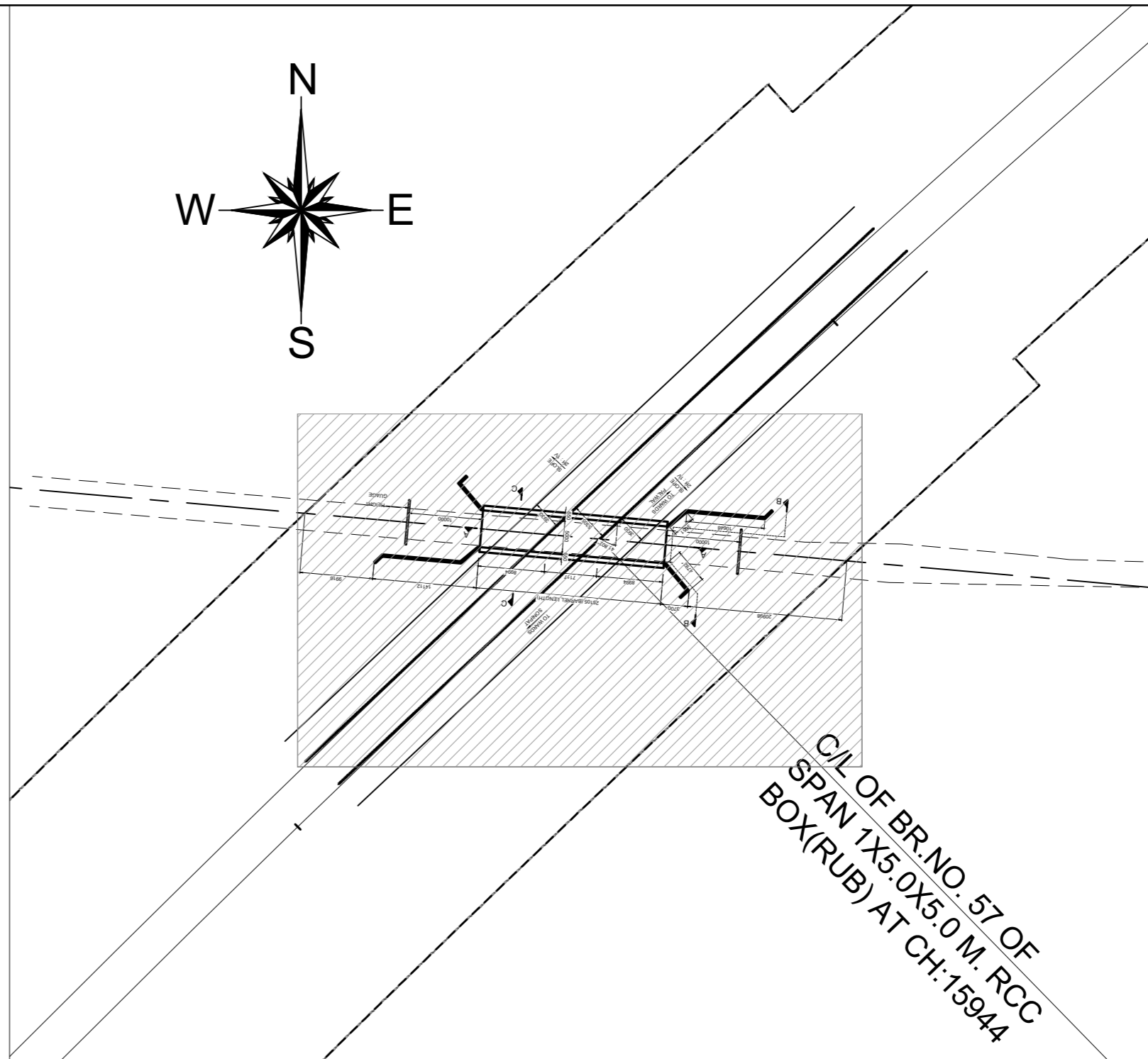
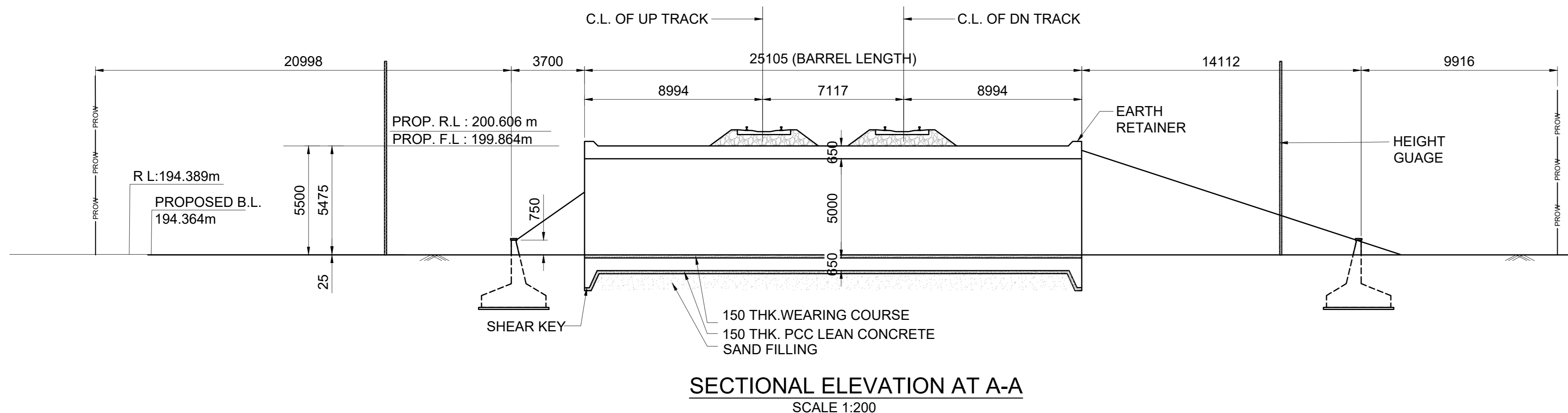
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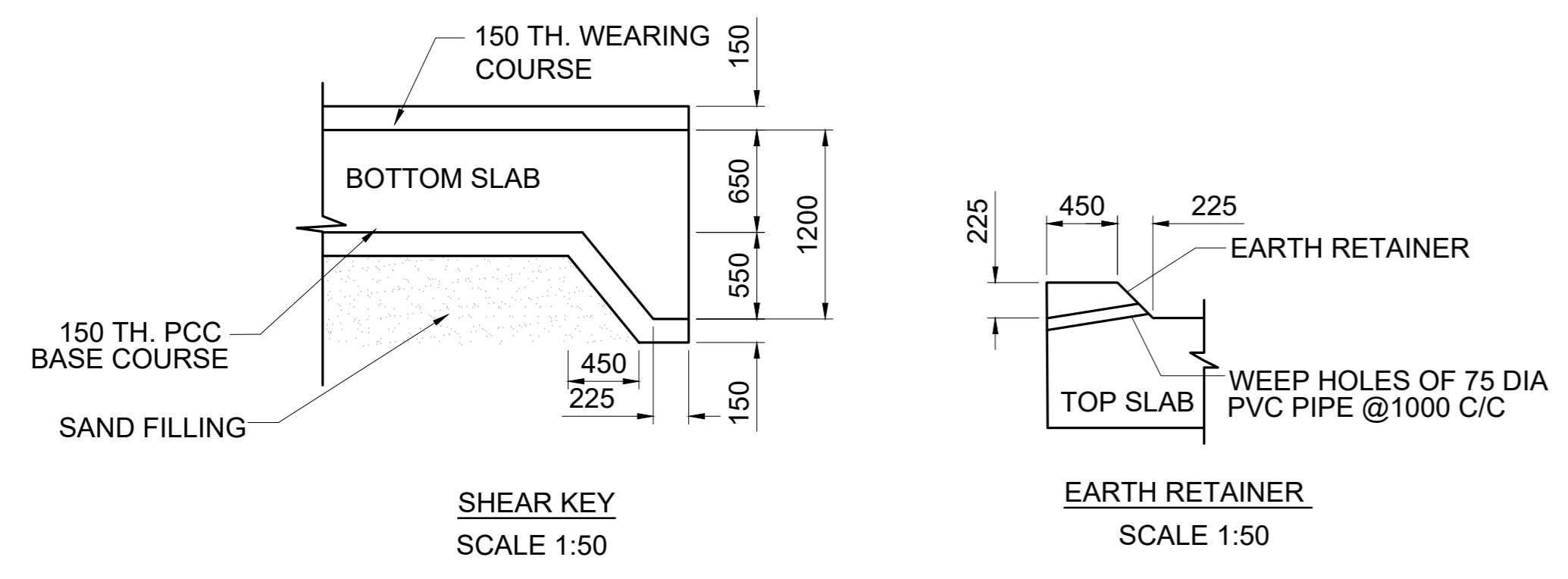
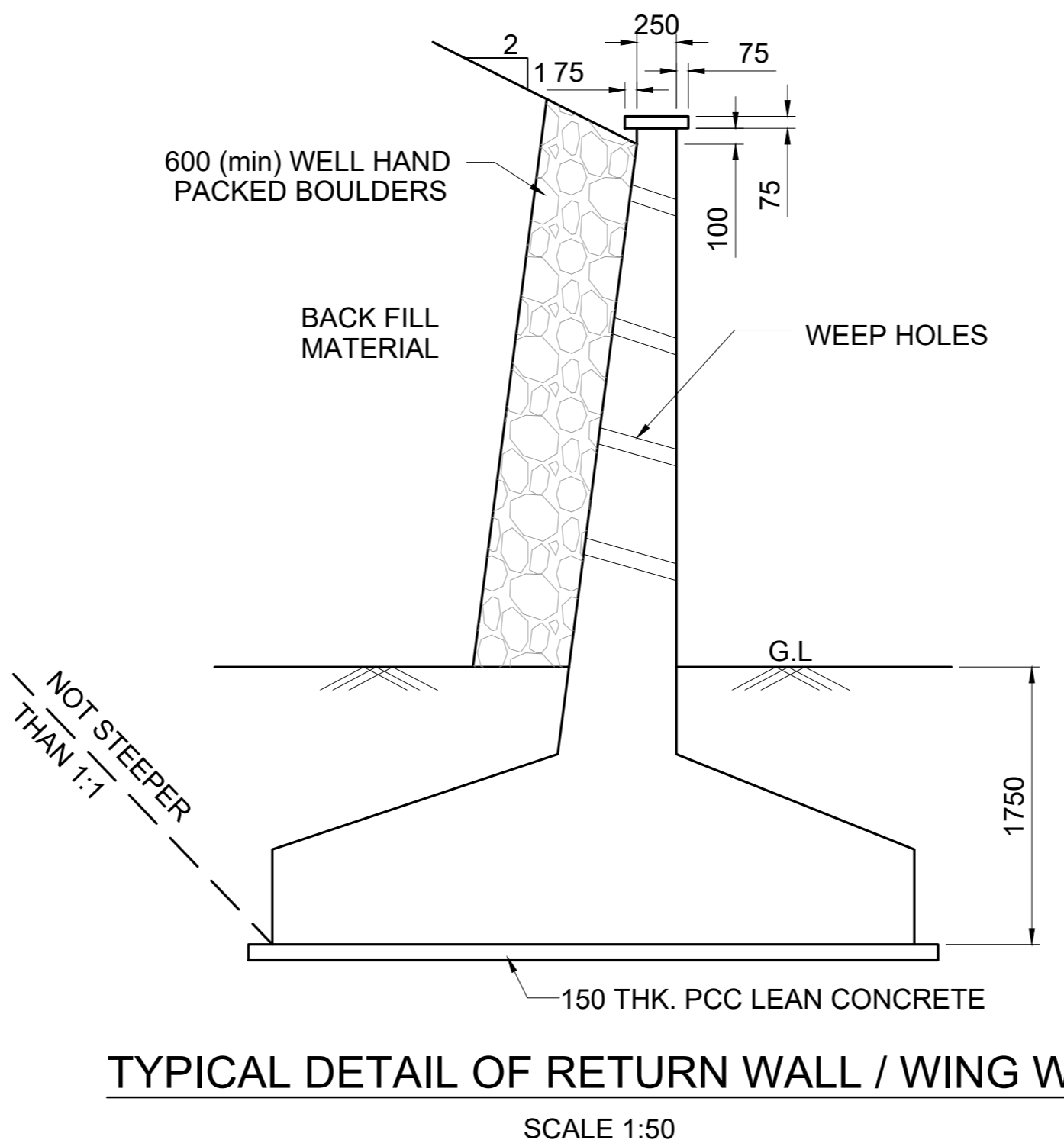
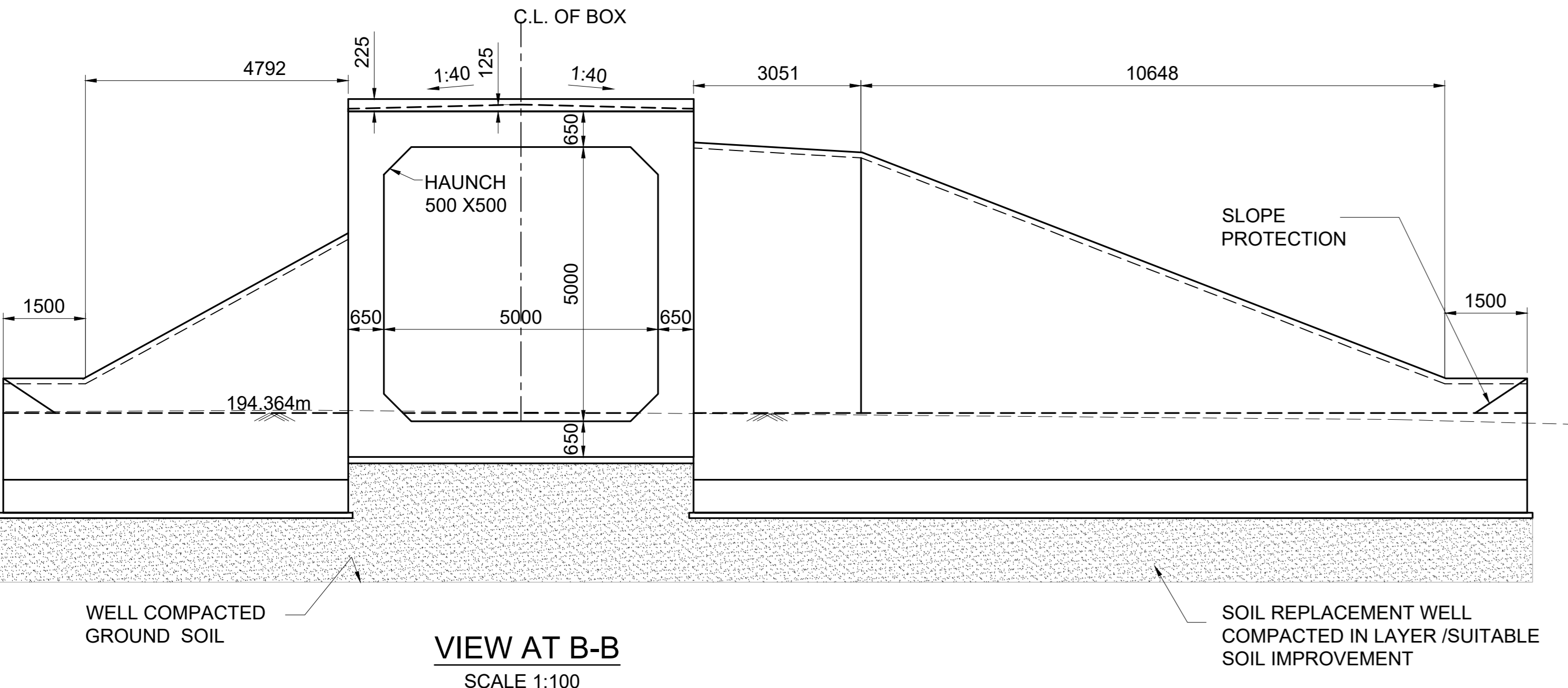
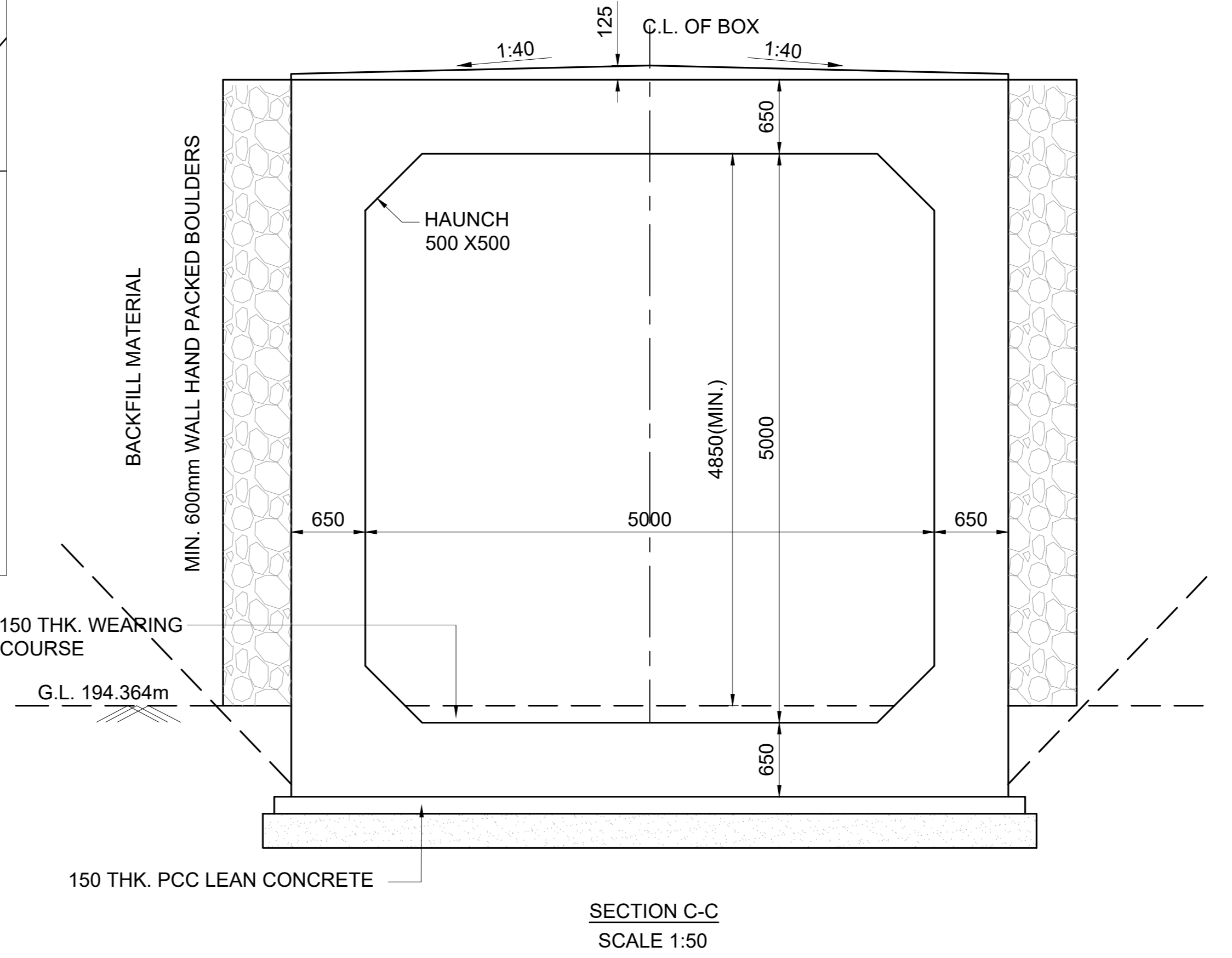
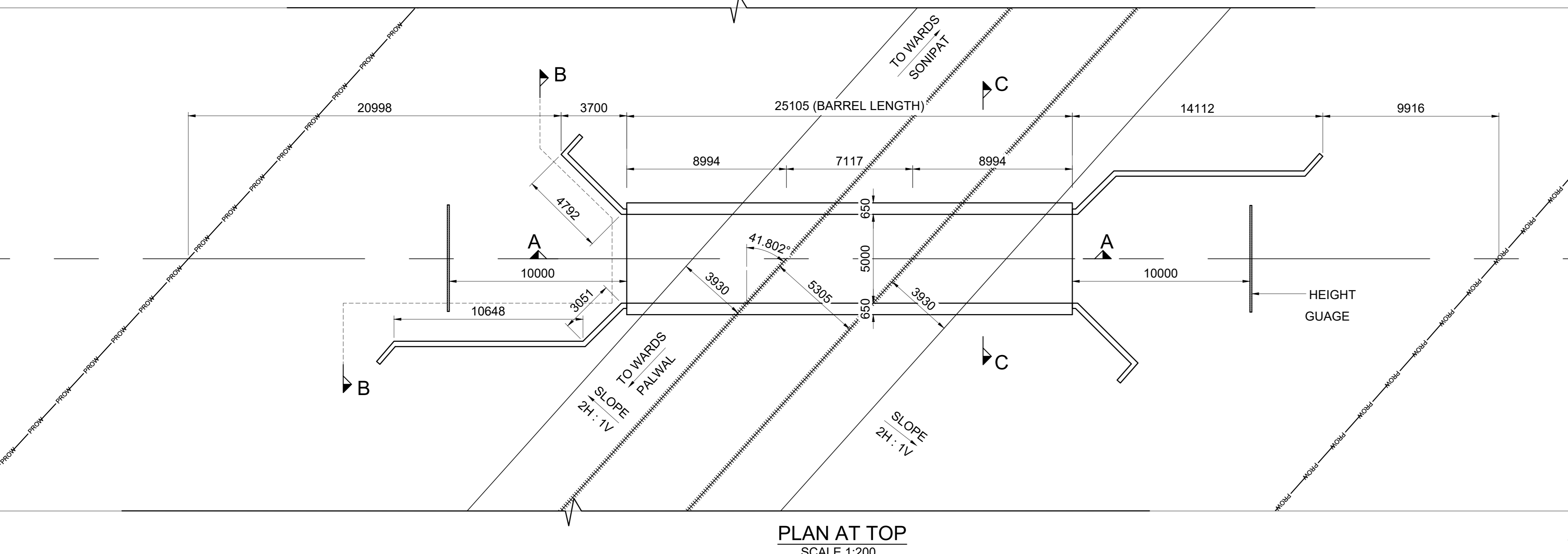
TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**
FOR BALANCING CULVERT BRIDGE NO. 056
SPAN 1.0X2.0X2.0 RCC BOX AT CH: 15100.163

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01056_A1 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 07-11-2022 **REVISED DATE** 21-11-2022



- NOTES :**
- A) GENERAL NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
 2. THE CHAINAGES SHOWN ARE RECKONED FROM C/I OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
 3. FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
 4. BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
 5. THE EXISTING DETAILS ARE AS PER SITE SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE EXECUTION.
 6. ENGINEER IN CHARGE/SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
 7. SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
 8. ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
 9. THIS DRAWING IS THE PROPERTY OF HRDC AND FOR EXCLUSIVE USE OF HORC.
 10. DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
 11. THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
- B) TECHNICAL NOTES :**
1. PROTECTION WORK ON SLOPES OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
 2. INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
 3. FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
 4. ALL CLEAN EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
 5. PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
 6. DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - (i) IRS BRIDGE RULE
 - (ii) IRS CONCRETE BRIDGE CODE
 - (iii) IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
 7. SEISMIC ZONE- IV
 8. EXPOSURE CONDITION- MODERATE.
 9. DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
 10. THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB- STRUCTURE AND FOUNDATION CODE.
 11. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM CONFORMING TO IS-3117.
 12. REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786
 13. FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
 - (i) ALL RCC/WEARING COURSE(WC) =M:35/DETAILED DESIGN DRG.
 - (ii) LEVELING COURSE/LEAN CONCRETE =M:20/DETAILED DESIGN DRG.
 14. BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. SUITABLE GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT & DESIGN REQUIREMENT AND CONFIRMED THROUGH FIELD TESTING.
 15. FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
 16. HEIGHT GAUGE SHALL BE PROVIDE AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
 17. SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS AS PER ANNEXURE 9/5 OF P WAY MANUAL.



LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
RL	ROAD LEVEL

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

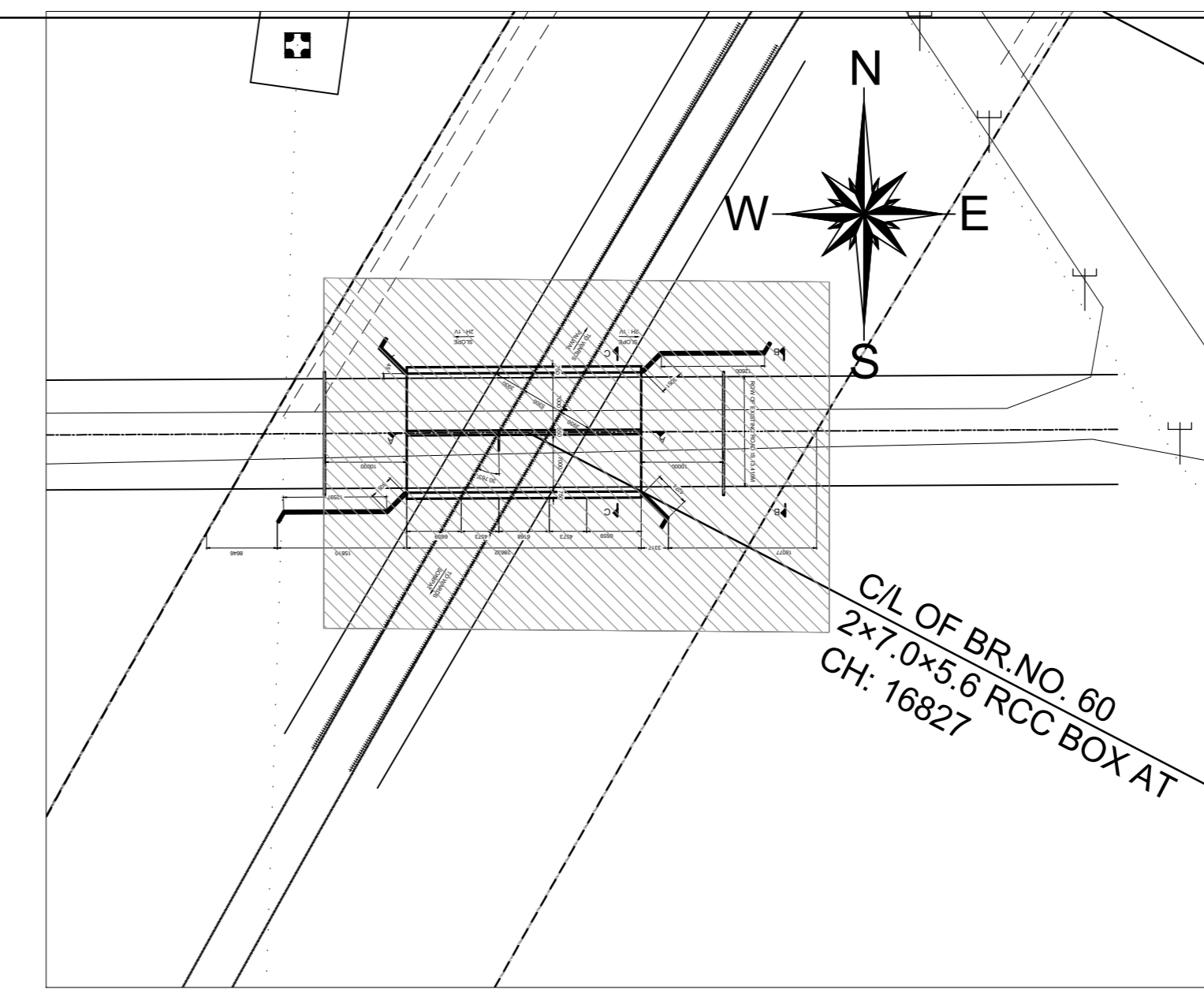
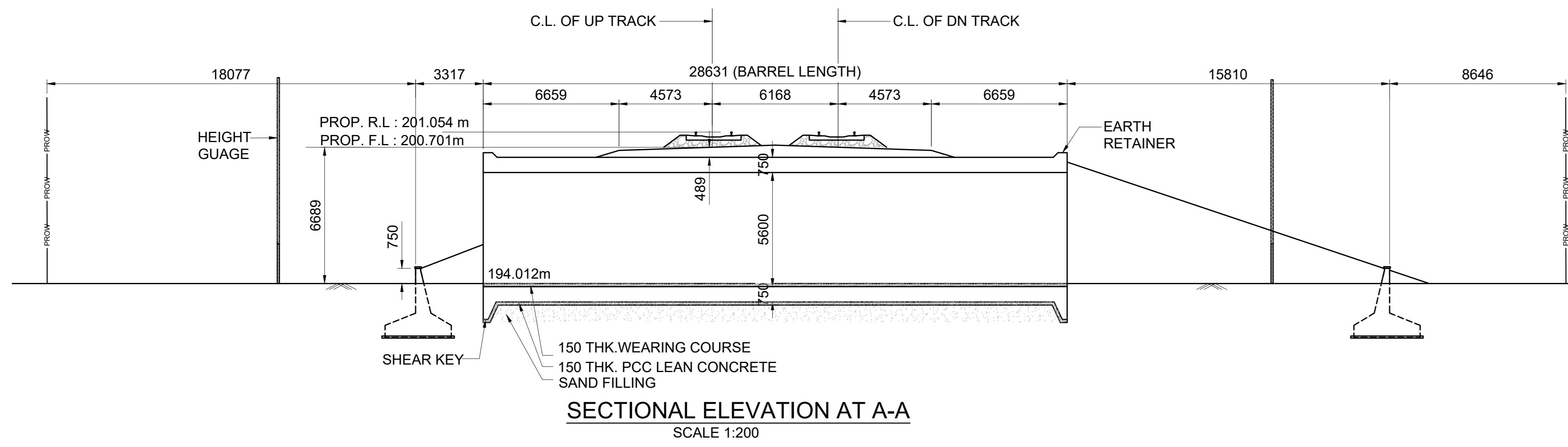


TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
FOR ROAD UNDER BRIDGE, BRIDGE NO. 057
SPAN 1x5.0x5.0 RCC BOX AT CH: 15944

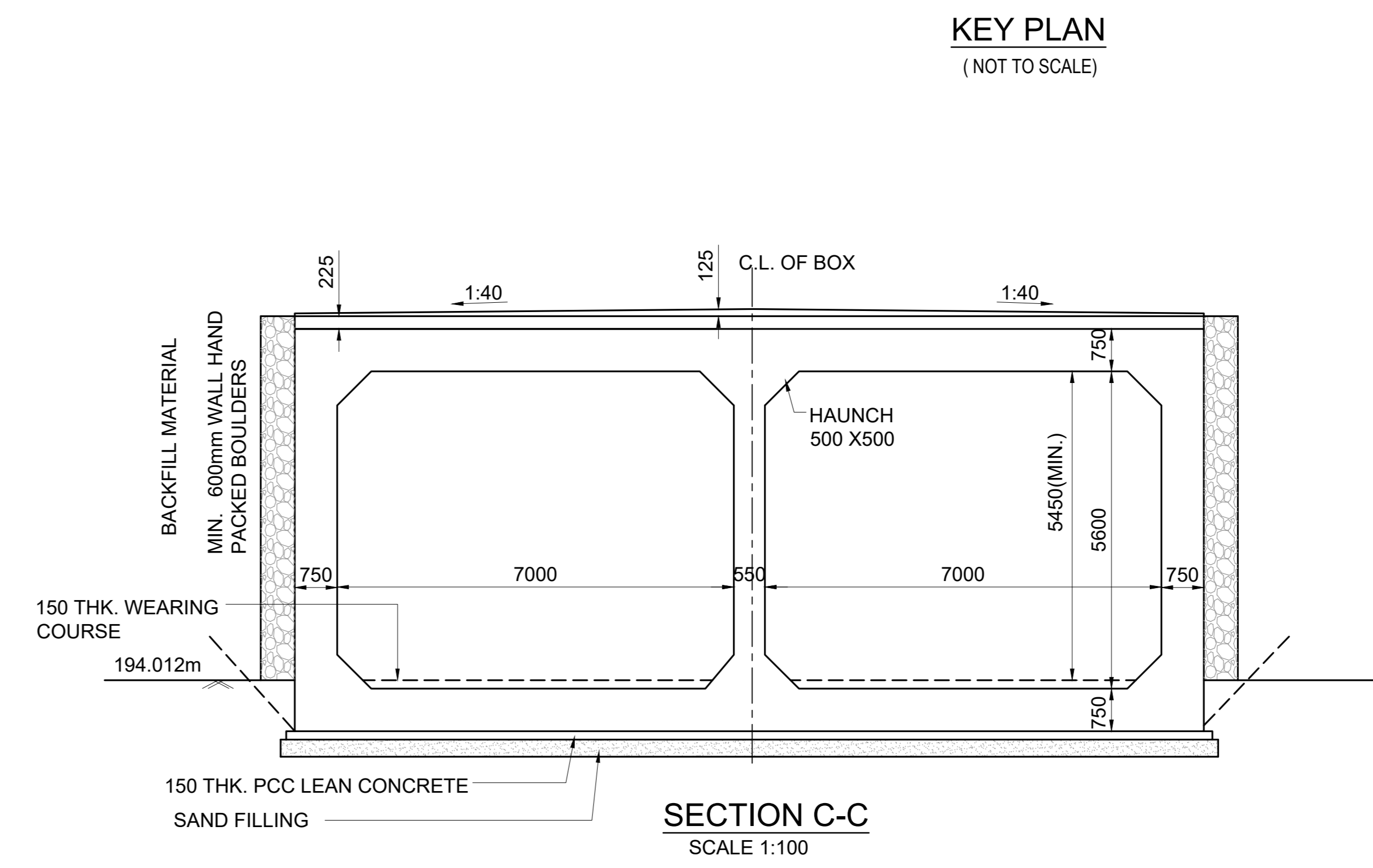
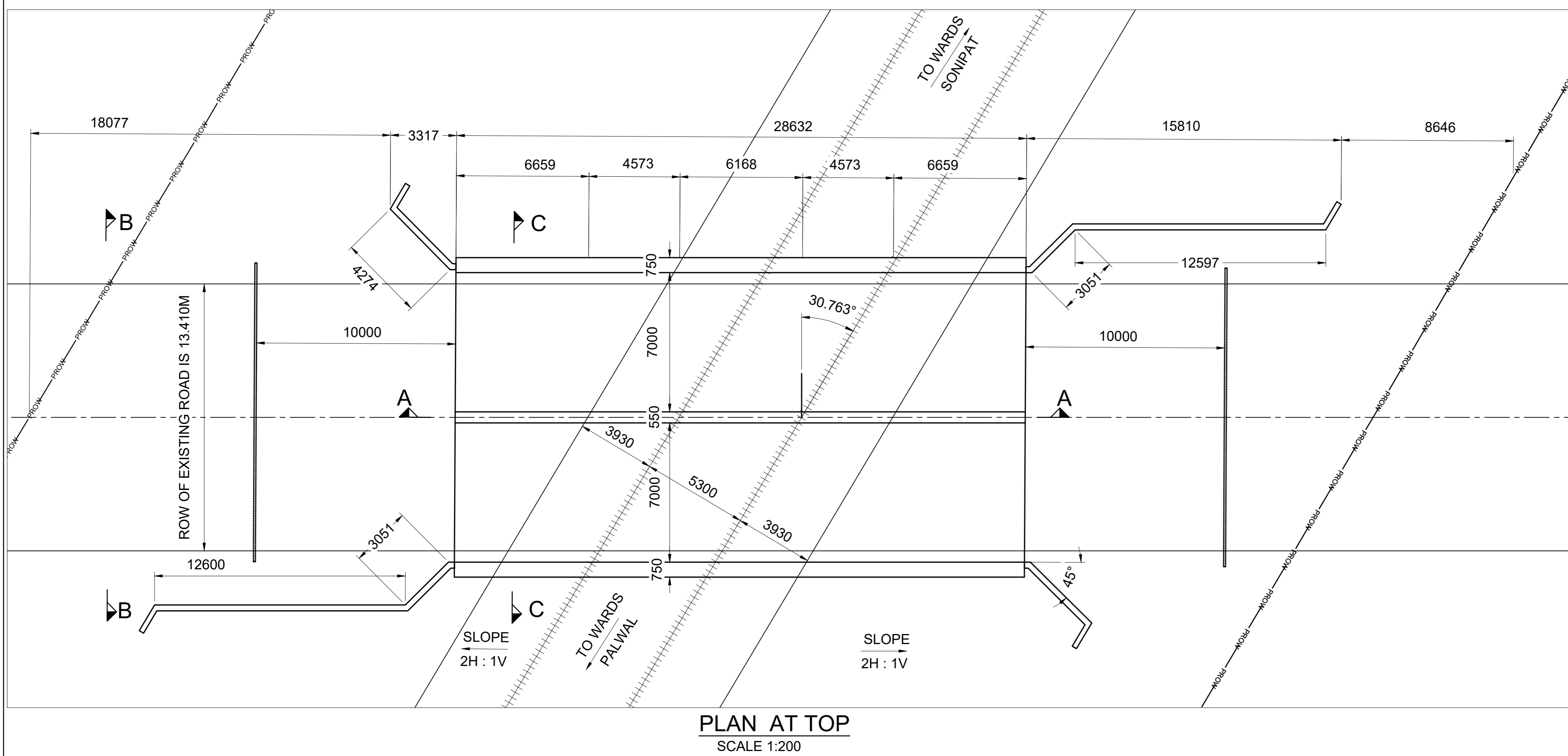
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01057_A1
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 21-11-2022

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>MS</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

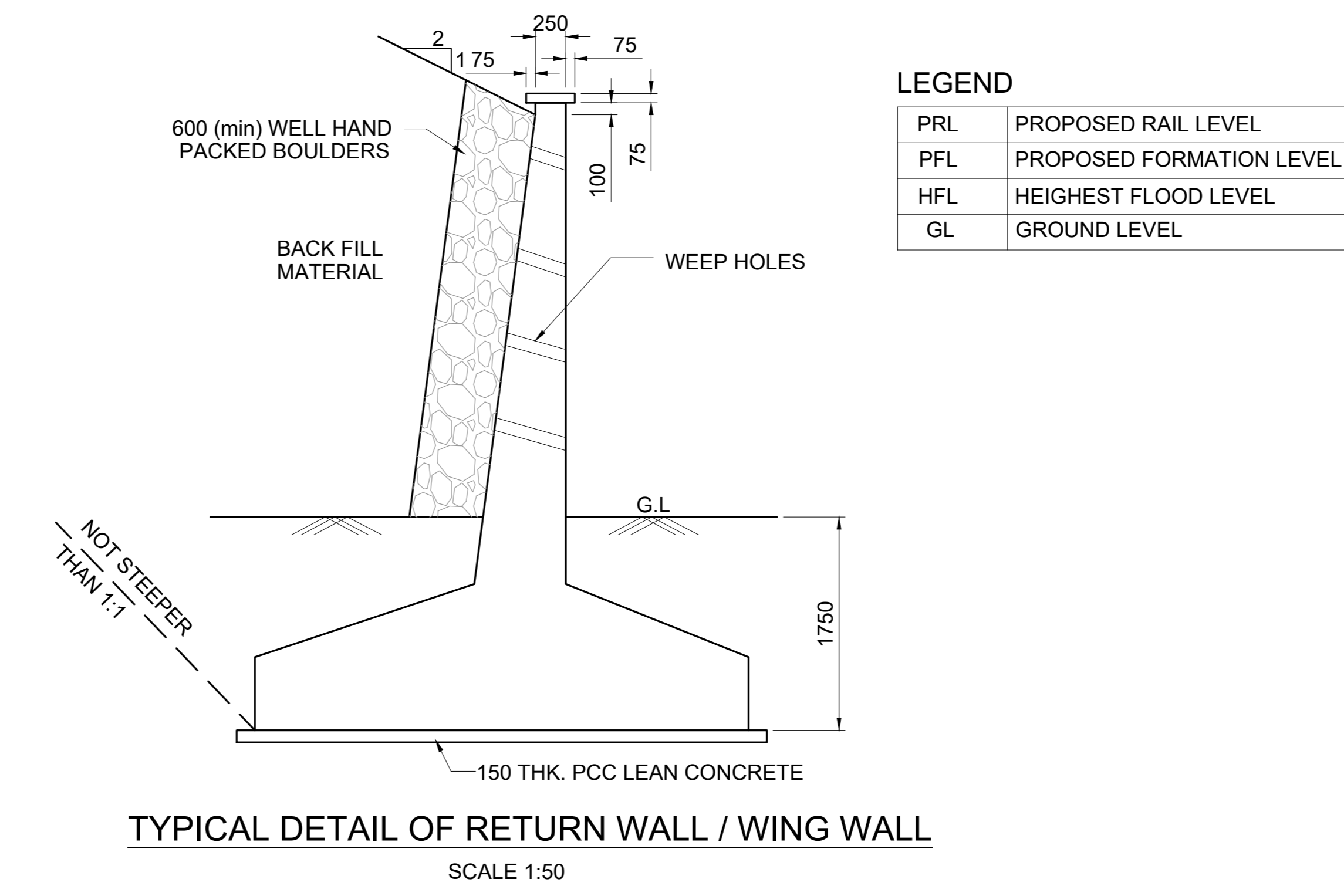
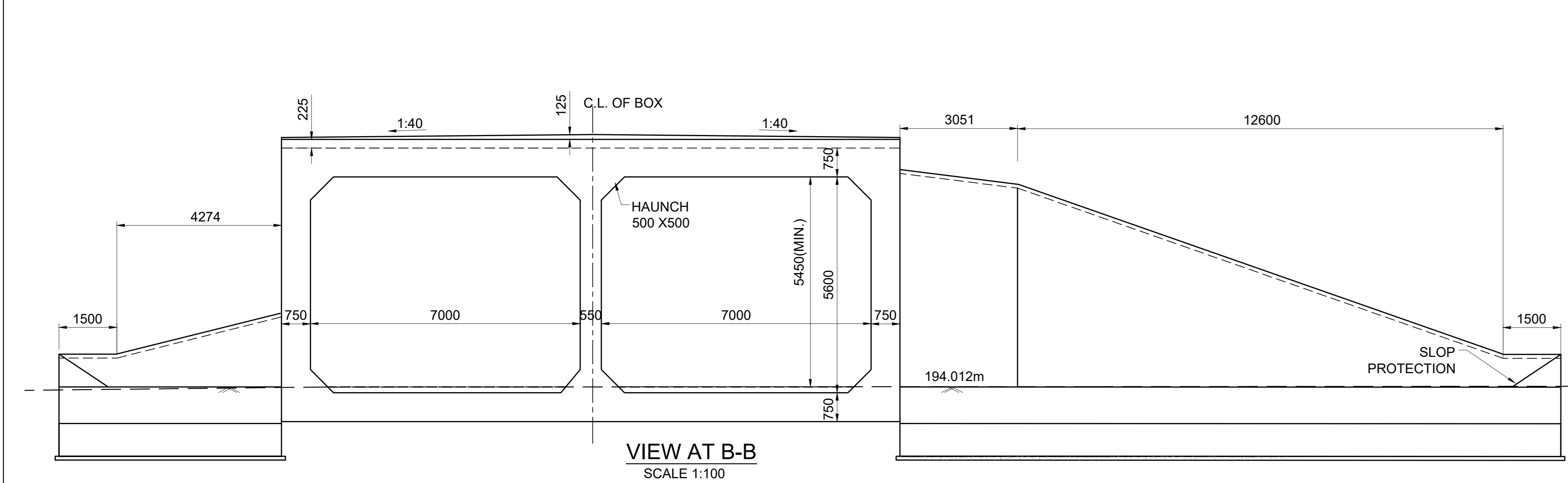


- NOTES :**
- A) GENERAL NOTES**
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER, UNLESS OTHERWISE MENTIONED.
 - THE CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00 M, WITH RESPECT TO UP MAIN LINE.
 - FOR RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
 - BOX BRIDGE IS TO BE DESIGNED FOR 32.5 T LOADING AS APPLICABLE.
 - THE EXISTING DETAILS ARE AS PER SITE SURVEY AND SHALL BE VERIFIED BY THE CONTRACTOR BEFORE EXECUTION.
 - ENGINEER IN CHARGE/ SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
 - SUITABLE BED SLOPE SHALL BE PROVIDED AND ADJUSTED AS PER SITE CONDITIONS.
 - ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
 - THIS DRAWING IS THE PROPERTY OF HRDC AND FOR EXCLUSIVE USE OF HORC.
 - DETAILED DESIGN DRAWING WILL BE PREPARED BASED ON THIS CONCEPTUAL APPROVED GAD.
 - THICKNESS OF STRUCTURAL MEMBERS ARE TENTATIVE AND WILL BE FINALISED AFTER DETAILED DESIGN.
- B) TECHNICAL NOTES :**
- PROTECTION WORK ON SLOPES OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRDC-SK-GEN-015.
 - INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
 - FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
 - ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
 - PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
 - DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - IRS BRIDGE RULE
 - IRS CONCRETE BRIDGE CODE
 - IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
 - SEISMIC ZONE- IV
 - EXPOSURE CONDITION- MODERATE.
 - DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
 - THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB-STRUCTURE AND FOUNDATION CODE.
 - ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFORMING TO IS-3117.
 - REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786.
 - FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
 - ALL RCC /WEARING COURSE(WC) =M:35/DETAILED DESIGN DRG.
 - LEVELING COURSE/LEAN CONCRETE =M:20/DETAILED DESIGN DRG.
 - BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT REPORT AND CONFIRMED THROUGH FIELD TESTING.
 - FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
 - HEIGHT GAUGE SHALL BE PROVIDED AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
 - SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.



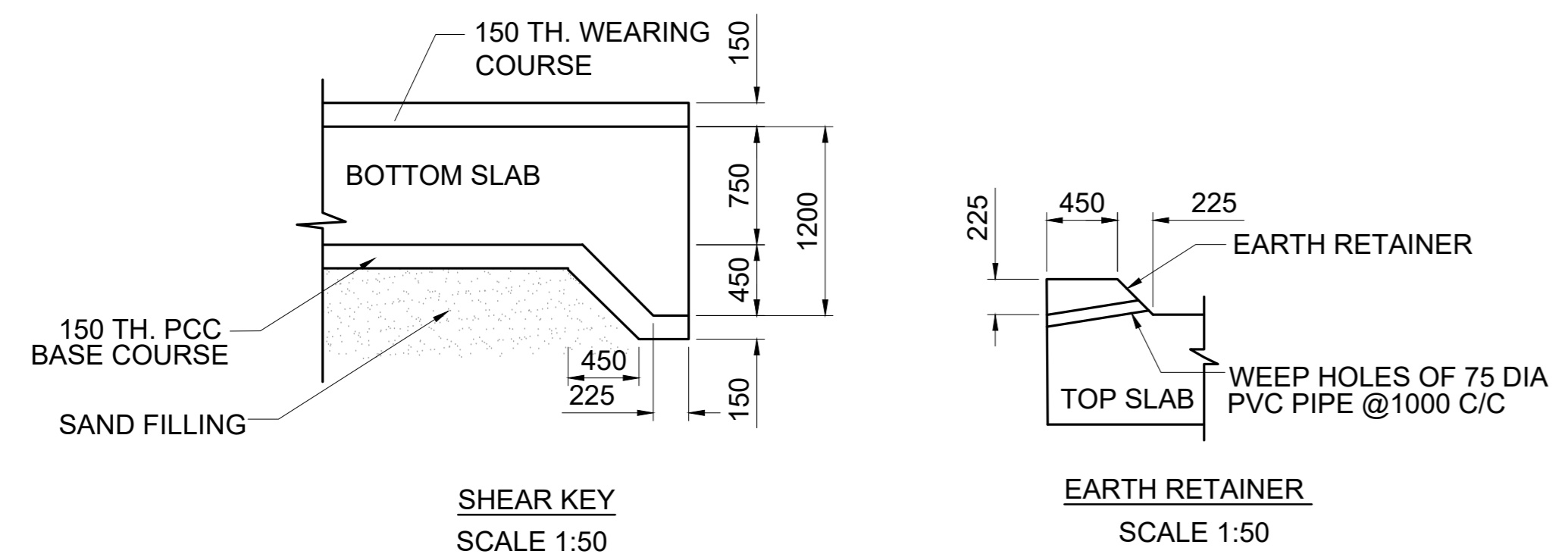
- PROTECTION WORK ON SLOPES OF BANK UP TO 15M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRDC-SK-GEN-015.
- INSPECTION STEPS SHALL BE PROVIDED AT DIAGONALLY OPPOSITE ENDS OF THE BOX AFTER PROTECTION WORK.
- FOR PROPER DRAINAGE OF WATER, 50mm PCC M-20 WITH SUITABLE SLOPE TO BE USED ON TOP OF BOX SLAB.
- ALL CLEAN/ EXPANSION JOINTS SHALL BE FILLED WITH THERMOCOL.
- PLACEMENT LEVEL OF BOX AS SHOWN IN THIS GAD IS INDICATIVE AND MAY BE SUITABLY LOWERED/ELEVATED BASED UPON THE REQUIREMENT OF CLEARANCE, DRAINAGE & NATURAL GROUND PROFILE.
- DESIGN CRITERIA SHALL BE BASED ON FOLLOWING IRS CODES
 - IRS BRIDGE RULE
 - IRS CONCRETE BRIDGE CODE
 - IRS BRIDGE SUB-STRUCTURE & FOUNDATION CODE
- SEISMIC ZONE- IV
- EXPOSURE CONDITION- MODERATE.
- DURING CONSTRUCTION, IF REQUIRED, ROAD CLOSURE TO BE OBTAINED FROM CONCERNED ROAD/CIVIL AUTHORITIES. DIVERSION OF ROAD IF ANY, REQUIRED IS TO BE DONE BY CONTRACTOR AT HIS COST.
- THE BACK FILL MATERIAL SHALL BE CONFORMING TO CLAUSE 7.5 OF IRS SUB-STRUCTURE AND FOUNDATION CODE.
- ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 K.G/SQM. CONFORMING TO IS-3117.
- REINFORCEMENT SHALL BE Fe 500D (TMT) CONFORMING TO IS 1786.
- FOR CONCRETE SPECIFICATION REFER IRS CONCRETE BRIDGE CODE. GRADE OF CONCRETE :
 - ALL RCC /WEARING COURSE(WC) =M:35/DETAILED DESIGN DRG.
 - LEVELING COURSE/LEAN CONCRETE =M:20/DETAILED DESIGN DRG.
- BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT REPORT AND CONFIRMED THROUGH FIELD TESTING.
- FOUNDATION LEVEL SHOWN IN DRAWING IS TENTATIVE. DETAILED DESIGN DRAWING SHALL BE FOLLOWED FOR FOUNDATION LEVEL DURING EXECUTION.
- HEIGHT GAUGE SHALL BE PROVIDED AS PER RDSO STANDARD DRAWING NO. RDSO/M0001.
- SPEED BREAKER SHOULD BE PROVIDED ON EITHER APPROACH OF RUB AT A DISTANCE OF 20M FROM THE BRIDGE COVERING FULL WIDTH OF THE ROAD INCLUDE BERMS.

IMPORTANT NOTE:
TOP OF BOTTOM SLAB OF RCC BOX SHALL NOT BE KEPT ABOVE THE NATURAL GROUND LEVEL HOWEVER, ROAD LEVEL AND VERTICAL CLEARANCE ABOVE ROAD LEVEL SHALL BE MAINTAINED AS SHOWN IN THE DRAWING. OVERALL HEIGHT OF THE BOX MAY NEED MODIFICATION ACCORDINGLY. THE HEIGHT OF RCC BOX SHALL BE PROVIDED KEEPING ABOVE PROVISION IN VIEW.



LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL



GC/HORC		HRDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju Solanki</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu Patial</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMCC International Pty. Ltd.

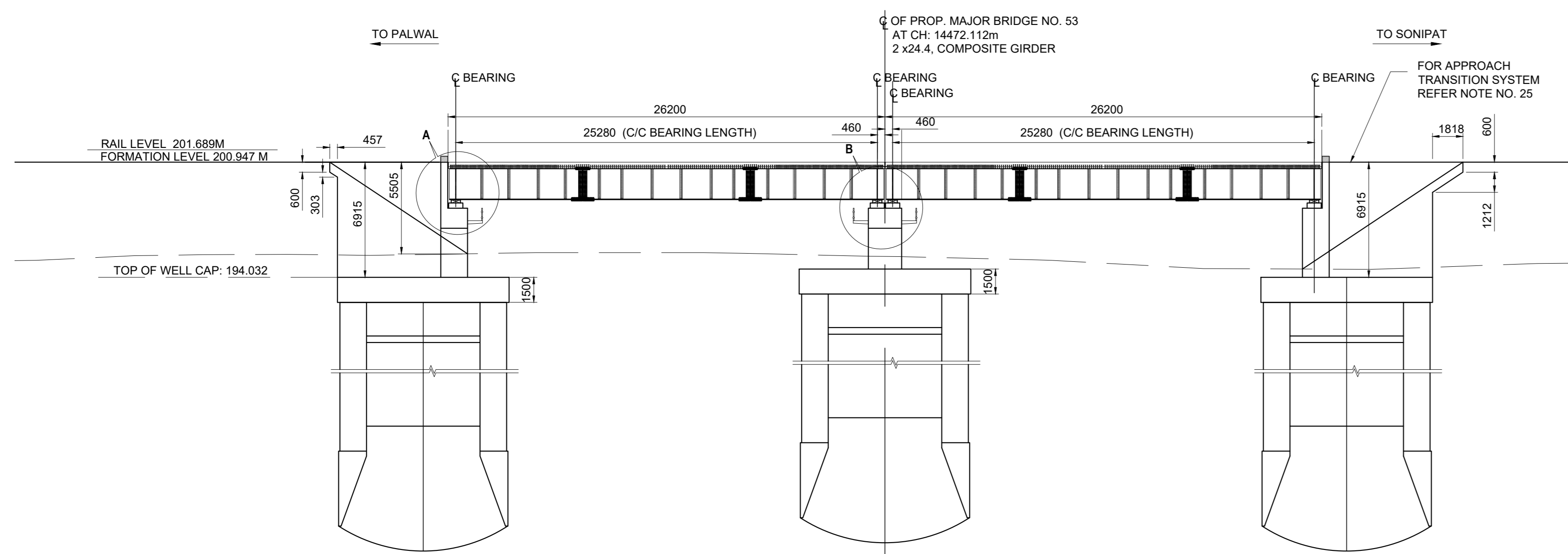
TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**
PROPOSED RUB NO. 060
SPAN 2x7.0x5.6 RCC BOX AT CH: 16827

DRG. NO. GC-HRDC-C4-DRW-BRD-GAD-01060_A2
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 10-01-2023

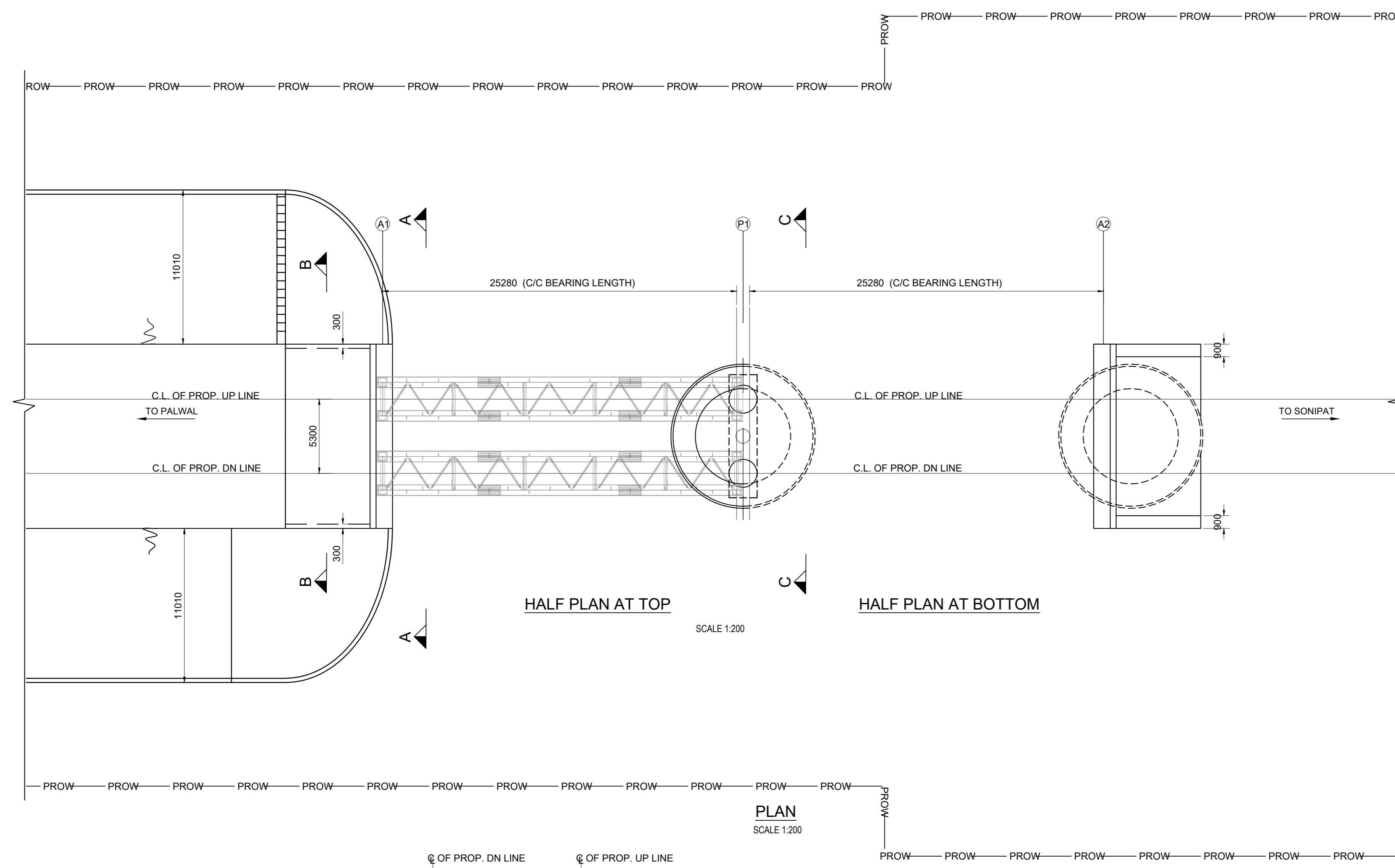
3. Bridges

3.2 Major Bridges



FORMATION LEVEL	200.947	200.947	200.947
GROUND LEVEL	195.402	195.520	194.915
CHAINAGE	14446.452	14472.112	14497.772

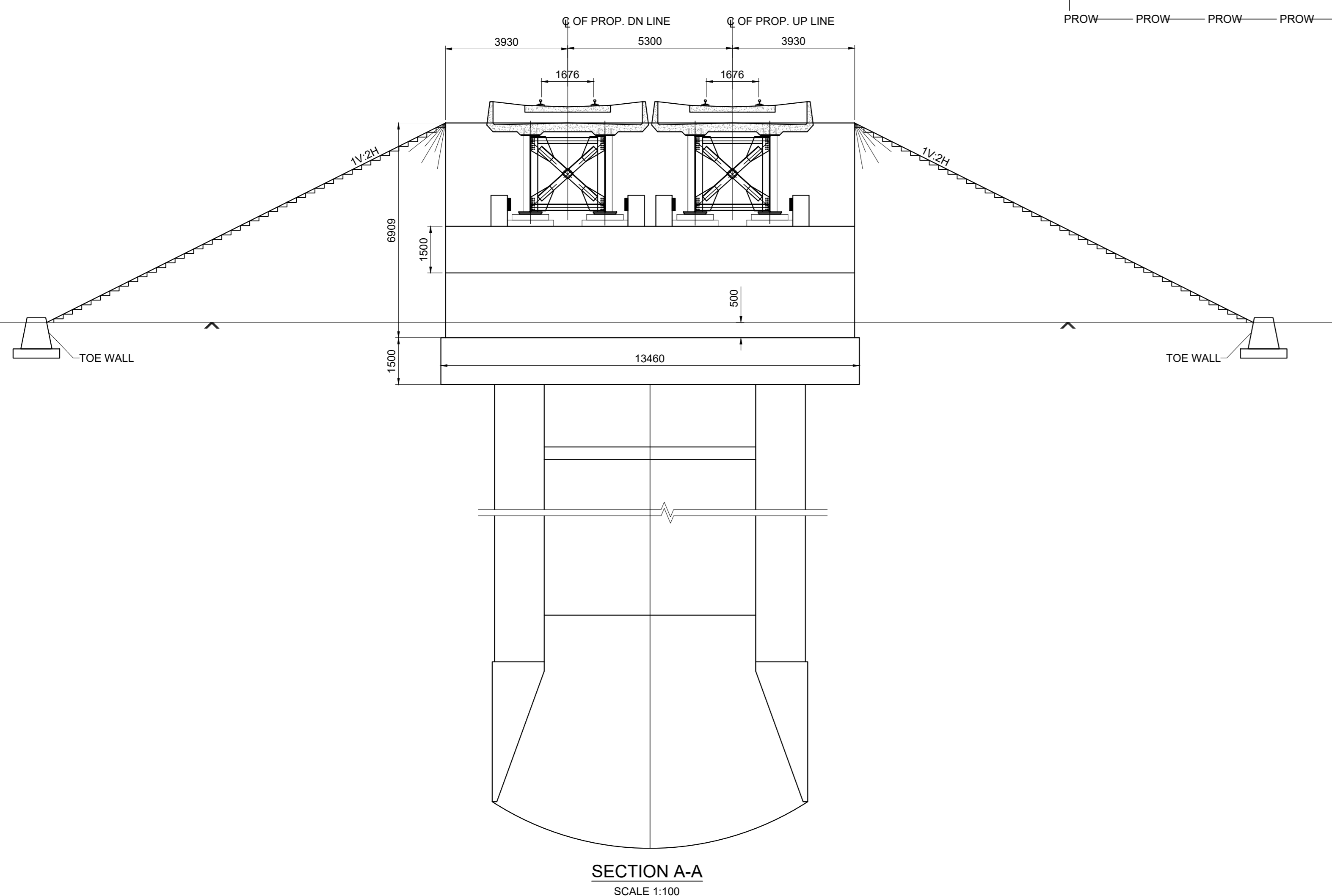
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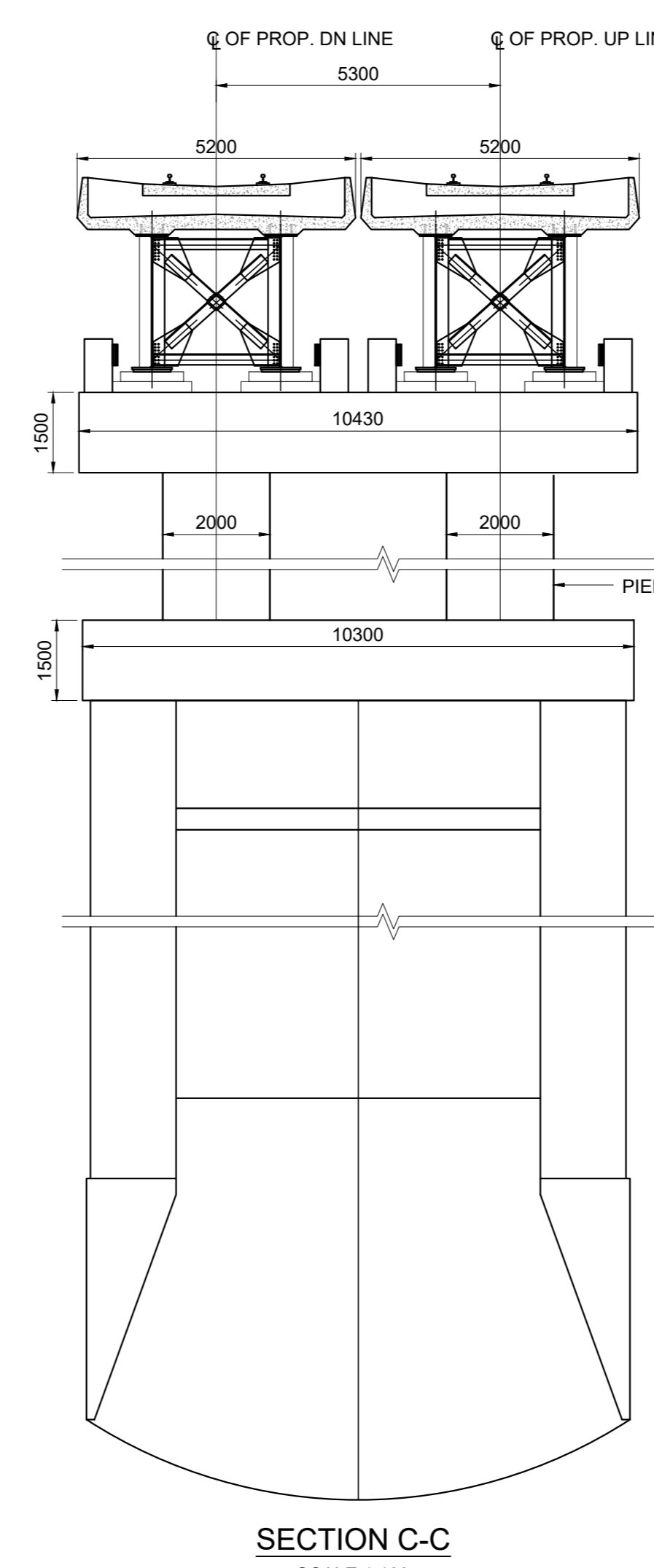
HALF PLAN AT TOP
SCALE 1:200

HALF PLAN AT BOTTOM
SCALE 1:200

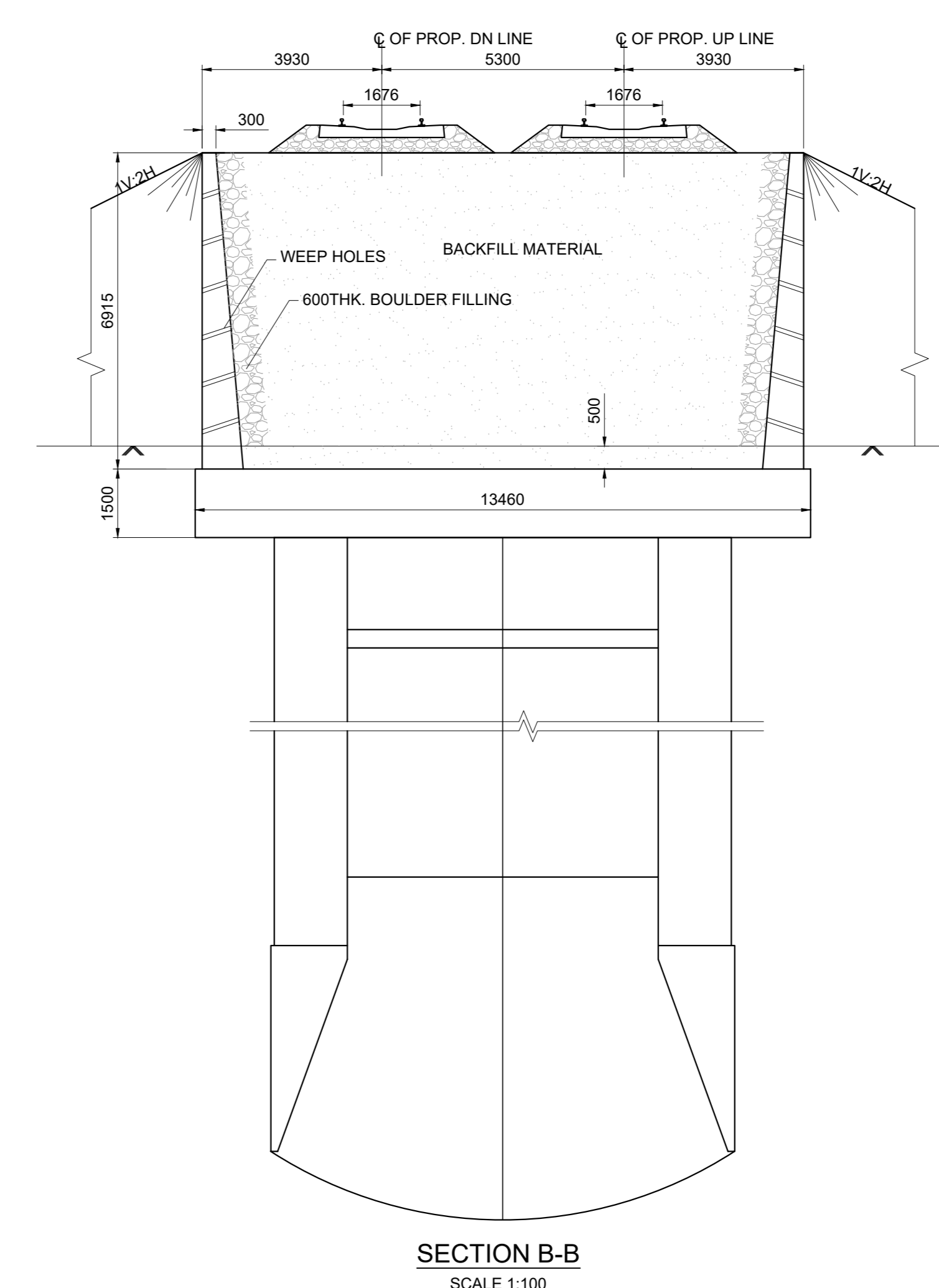
PLAN
SCALE 1:200



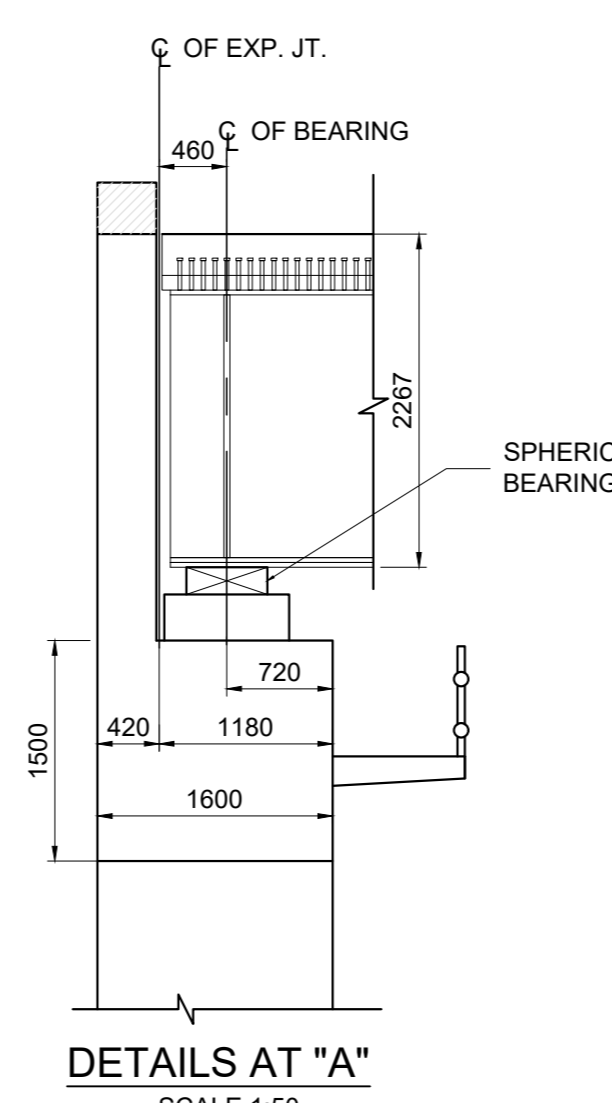
SECTION A-A
SCALE 1:100



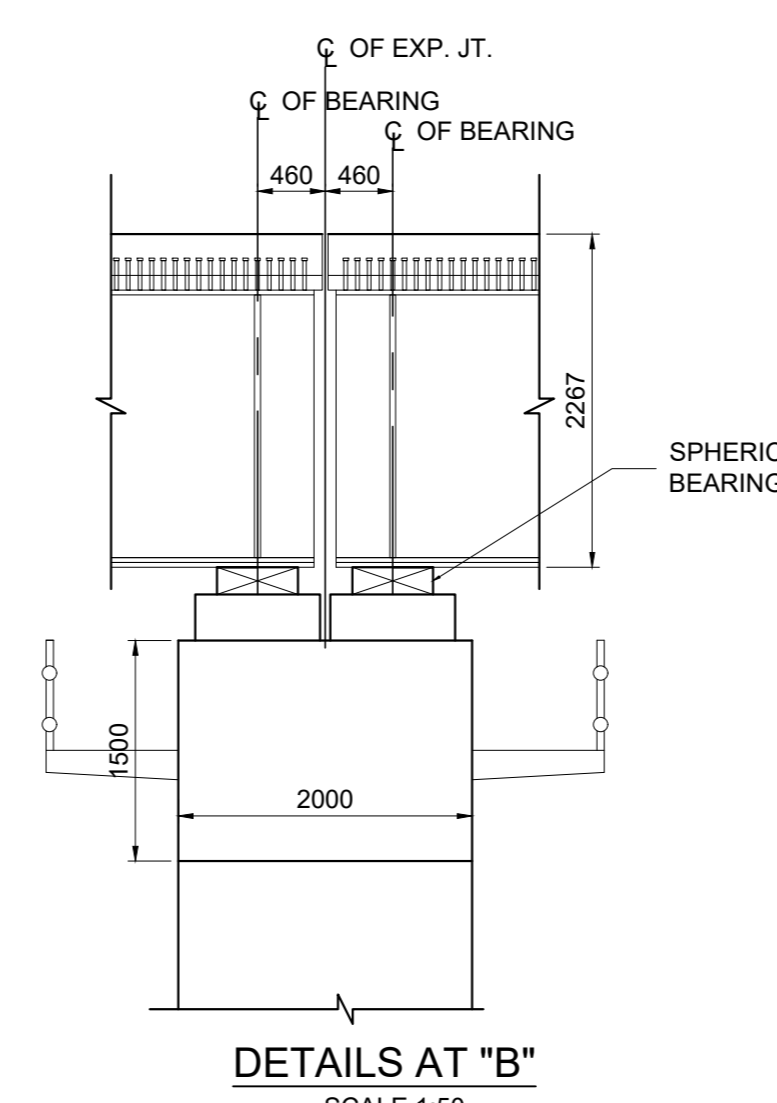
SECTION C-C
SCALE 1:100



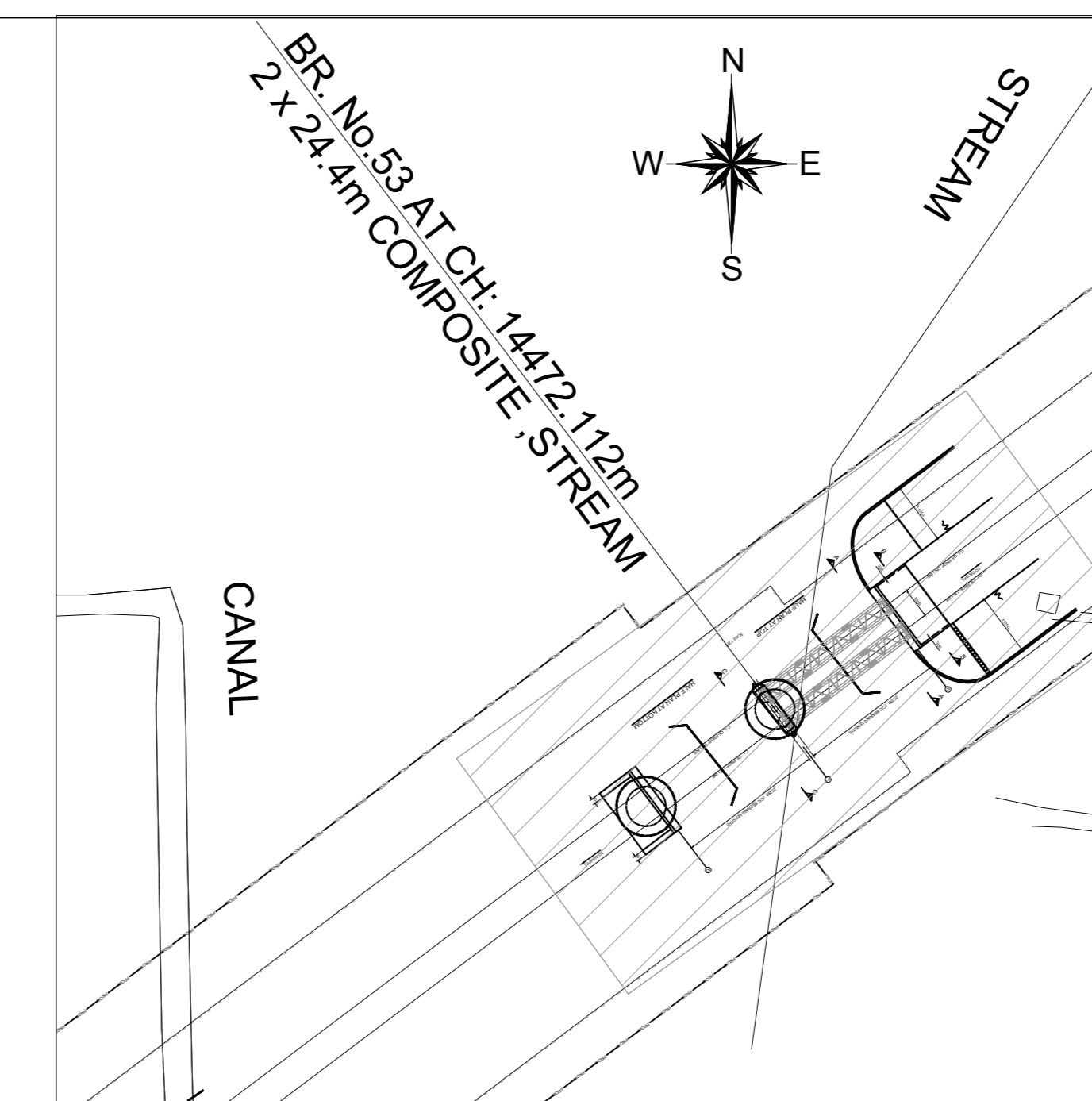
SECTION B-B
SCALE 1:100



DETAILS AT "A"
SCALE 1:50



DETAILS AT "B"
SCALE 1:50




KEY PLAN
(NOT TO SCALE)

- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METER
 - DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS TO BE FOLLOWED
 - DESIGN CRITERIA
 - IRS BRIDGE SUBSTRUCTURE AND FOUNDATION CODE 2013.
 - IRS CONCRETE BRIDGE CODE 2014.
 - IRS BRIDGE RULES 2014.
 - IS 2911 PART-1 SECTION-2
 - EXPOSURE CONDITION - MODERATE.
 - SEISMIC ZONE - IV
 - STANDARD OF LOADING - SUPER STRUCTURE-25T (RDSO STANDARD CG) & SUB STRUCTURE-32-ST-2008 LOADING
 - THE STRUCTURAL DIMENSIONS SHOWN IS TENTATIVE AND MAY CHANGE DURING DETAILED DESIGN.
 - ALL RCC AND CC WORKS SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION LAID DOWN IN IRS CONCRETE BRIDGE CODE.
 - THE GRADE OF CONCRETE
 - FOR ABUTMENT DIRT & RETURN WALL WEARING COURSE(WC)-----M35
 - FOR FOUNDATION-----M35
 - FOR LEVELING COURSE-----M20
 - ALL CONCRETE WORK SHALL BE MECHANICALLY MIXED AND VIBRATED.
 - MIX DESIGN SHALL BE APPROVED BY ENGINEER - IN CHARGE.
 - HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe-5000 CONFORMING TO IS: 1786-2008 SHALL BE USED AS REINFORCEMENT.
 - BED LEVEL & ROAD LEVEL, FORMATION LEVEL AND RAIL LEVEL & ALIGNMENT SHALL BE VERIFIED BY THE ENGINEER AT SITE BEFORE EXECUTION OF WORK.
 - ANGLE OF INTERNAL FRICTION OF BACK FILL SHALL NOT BE LESS THAN 35.
 - PROTECTION WORK ON SLOPES OF BANK UP TO 30M BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
 - BACK FILL BEHIND RETURN WALL/WING WALL SHALL BE AS PER CL. 7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE 2013. BOULDER FILLING & BOULDER PACKING BEHIND RETURN WALL/WING WALL TO BE DONE AS PER IRS FOUNDATION & SUBSTRUCTURE CODE CL. 7.5.2. ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 KG/SQM CONFORMING TO IS-317.
 - CURING SHALL BE DONE AS PER CLAUSE NO 8.4 OF IRS CONCRETE BRIDGE CODE.
 - SAFETY & PROTECTION OF THE PROPOSED WORK IS TO BE ENSURED BY THE CONTRACTOR AS PER PARA 826 OF IRPMM WITH UPDATED CORRECTION SLIPS OF 2011-12.
 - THE SPECIFICATIONS FOR THE COMPOSITE GIRDER SHALL BE IN ACCORDANCE WITH RDSO DRG NO'S : RDSO B-11751/R1 TO 11751/8.
 - CONCRETING SHALL BE DONE IN ACCORDANCE WITH IRS CONCRETE BRIDGE CODE WITH 20MM MAXIMUM SIZE AGGREGATE.
 - ALL DIMENSIONS AND LEVELS SHOULD BE VERIFIED AT SITE BEFORE EXECUTION.
 - BRIDGE DETAILS LIKE : DL, INSPECTION STEPS PAINTINGS ETC SHOULD BE FOLLOWED AS PER BRIDGE MANUAL DURING CONSTRUCTION.
 - THIS DRAWING IS PROPERTY OF HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (HRIDC) AND EXCLUSIVE USE OF HRIDC.
 - ARRANGEMENT FOR PATHWAY SHALL BE PROVIDED AS PER RDSO DWG. NO. CBS-0046 (FOR CG).
 - SEISMIC ARRESTOR SHALL BE PROVIDED ON THE PIER/ABUTMENT CAP.
 - TRANSITION SYSTEM TO BE ADOPTED ON BRIDGE APPROACHES SHALL BE AS PER RDSO REPORT NO. GE-R-50/TRANSITION SYSTEM ON APPROACHES OF BRIDGES). FOR DETAILS REFER SKETCH NO. GC-HRIDC-SK-GEN-019.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.**


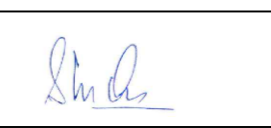
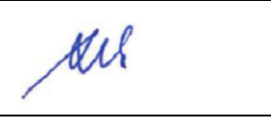
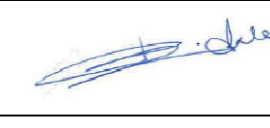
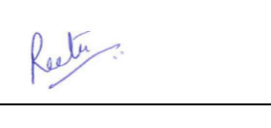
CONSULTANT:
 **GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR**
RITES Limited in consortium with SMEC International Pty. Ltd.

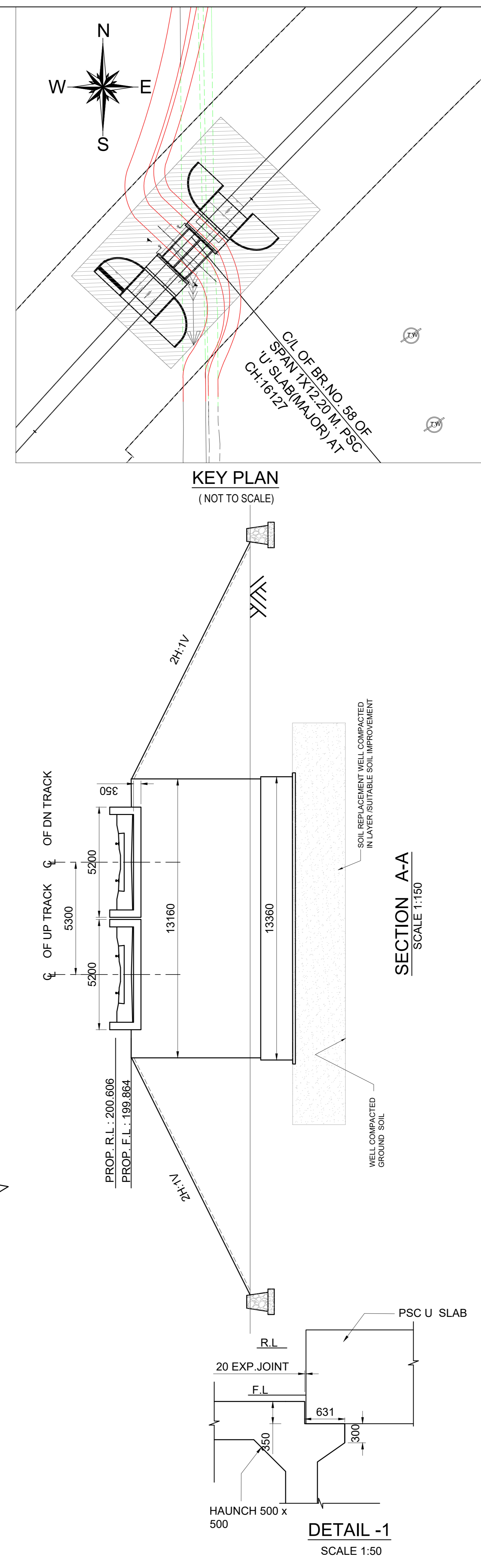
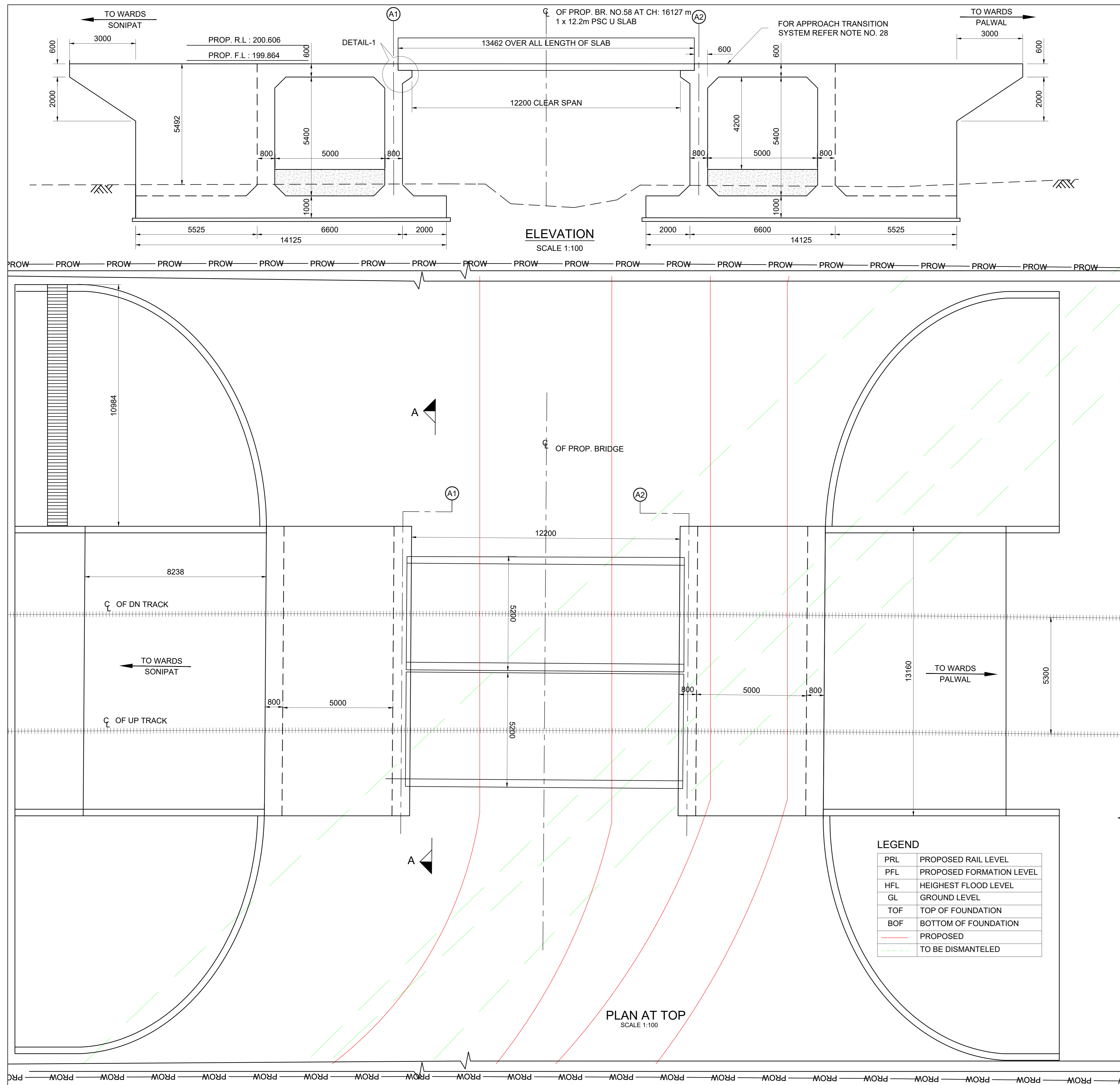


TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**
FOR STREAM BRIDGE NO.53
2x24.4 CG AT CH: 14472.112m

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01053_A2 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 07-11-2022 REVISED DATE 10-01-2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			



- NOTES:**
- ALL DIMENSIONS ARE IN MILLIMETERS AND LEVELS ARE IN METER DIMENSIONS ARE NOT TO BE SCALED ONLY WRITTEN DIMENSIONS TO BE FOLLOWED
 - DESIGN CRITERIA
 - IRS BRIDGE SUBSTRUCTURE AND FOUNDATION CODE 2013.
 - IRS CONCRETE BRIDGE CODE 2014.
 - IRS BRIDGE RULES 2014.
 - IS 2911 PART-1 SECTION-2.
 - EXPOSURE CONDITION - MODERATE.
 - SEISMIC ZONE - IV
 - STANDARD OF LOADING - SUPER STRUCTURE-25T (RDSO STANDARD) & SUB STRUCTURE-32.5T-2008 LOADING.
 - THE STRUCTURAL DIMENSIONS AND SIZES ARE INDICATIVE AND THESE MAY VARY DURING DETAIL DESIGN.
 - SIZE & TYPE OF FOUNDATION SHOWN IS TENTATIVE AND MAY CHANGE DURING DETAILED DESIGN.
 - ALL RCC AND CC WORKS SHALL BE DONE IN ACCORDANCE WITH SPECIFICATION LAID DOWN IN IRS CONCRETE BRIDGE CODE.
 - THE GRADE OF CONCRETE
 - FOR ABUTMENT, DIRT & RETURN WALL WEARING COURSE(WC)---M35
 - FOR FOUNDATION
 - FOR LEVELING COURSE
 - ALL CONCRETE WORK SHALL BE MECHANICALLY MIXED AND VIBRATED.
 - MIX DESIGN SHALL BE APPROVED BY ENGINEER - IN CHARGE.
 - HIGH YIELD STRENGTH DEFORMED BARS OF GRADE Fe-500D CONFORMING TO IS: 1786-2008 SHALL BE USED AS REINFORCEMENT.
 - BED LEVEL & ROAD LEVEL, FORMATION LEVEL AND RAIL LEVEL & ALIGNMENT SHALL BE VERIFIED BY THE ENGINEER AT SITE BEFORE EXECUTION OF WORK.
 - ANGLE OF INTERNAL FRICTION OF BACK FILL SHALL NOT BE LESS THAN 35.
 - PROTECTION WORK ON SLOPES OF BANK UP TO 30M, BOTH SIDES ON APPROACHES OF BRIDGE SHALL BE DONE AS PER SKETCH NO. GC-HRIDC-SK-GEN-015.
 - BOULDER FILLING & BOULDER PACKING BEHIND RETURN WALL/WING WALL TO BE DONE AS PER IRS FOUNDATION & SUBSTRUCTURE CODE CL.7.5.2.
 - BACK FILL BEHIND RETURN WALL/WING WALL SHALL BE AS PER CL.7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE 2013.
 - 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORZ. AND 1000 MM C/C VERTICALLY ABOVE LOWEST WATER LEVEL IN RETURN WALL AS PER IRS SUB STRUCTURE CODE CLAUSE 7.6.
 - ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464 KG/SQM. CONFORMING TO IS-3117.
 - CURING SHALL BE DONE AS PER CLAUSE NO 8.4 OF IRS CONCRETE BRIDGE CODE.
 - SAFETY & PROTECTION OF THE PROPOSED WORK IS TO BE ENSURED BY THE CONTRACTOR AS PER PARA 826 OF IRPWW WITH UPDATED CORRECTION SLIPS OF 2011-12.
 - THE SPECIFICATIONS FOR THE PSC U SLAB SHALL BE IN ACCORDANCE WITH RDSO DRG. NO'S : RDSO 10281, 10281/1 AND 10281/2.
 - CONCRETING SHALL BE DONE IN ACCORDANCE WITH IRS CONCRETE BRIDGE CODE WITH 20MM MAXIMUM SIZE AGGREGATE.
 - ALL DIMENSIONS AND LEVELS SHOULD BE VERIFIED AT SITE BEFORE EXECUTION.
 - BRIDGE DETAILS LIKE , DL, INSPECTION STEPS PAINTINGS ETC SHOULD BE FOLLOWED AS PER BRIDGE MANUAL DURING CONSTRUCTION.
 - THIS DRAWING IS PROPERTY OF HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (HRIDC) AND EXCLUSIVE USE OF HRIDC.
 - FOR TOE WALL DETAILS REFER SEPARATE SKETCH NO. GC-HRIDC-SK-GEN-014.
 - BEARING CAPACITY OF SOIL SHALL BE ENSURED AS PER DETAILED DESIGN REQUIREMENT. SUITABLE GROUND IMPROVEMENT SHALL BE CARRIED OUT AS PER GT & DESIGN REQUIREMENT AND CONFIRMED THROUGH FIELD TESTING.
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PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

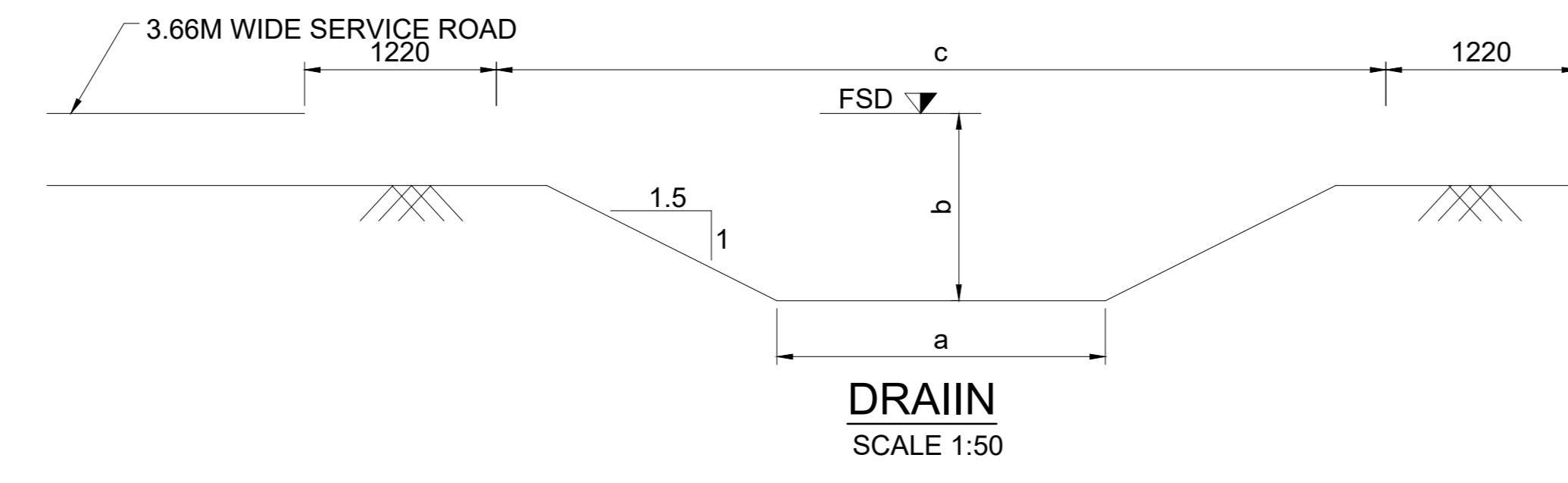
CLIENT:
HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.

SMEC
 Member of the Surbana Jurong Group

HYDRAULIC DATA OF DISTRIBUTARY

1	NAME OF MINOR	INDRI DISTRIBUTARY
2	RD	2650/16127
3	FREE BOARD	0.45
4	DISCHARGE	45.02 Cusec
5	BED WIDTH	a 2.088
6	F.S.D	b 1.19
7	SIDE SLOPE	1.5:1
8	TOP WIDTH	c 5.65
9	SHAPE	



GC/HORC

NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>ChahateyRam</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>AS</i>
REETU PATIAL CDE/ CIVIL	<i>RE</i>

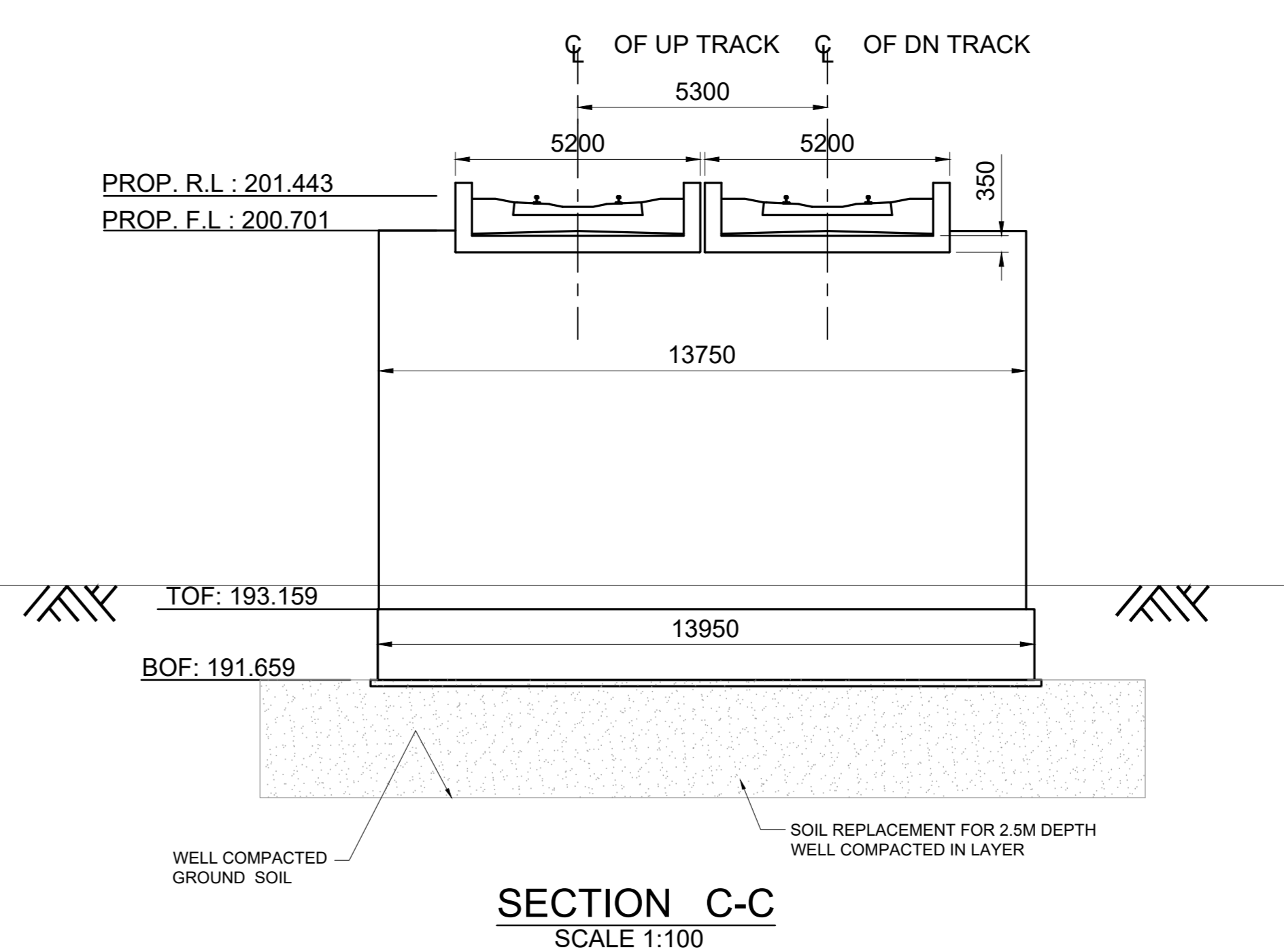
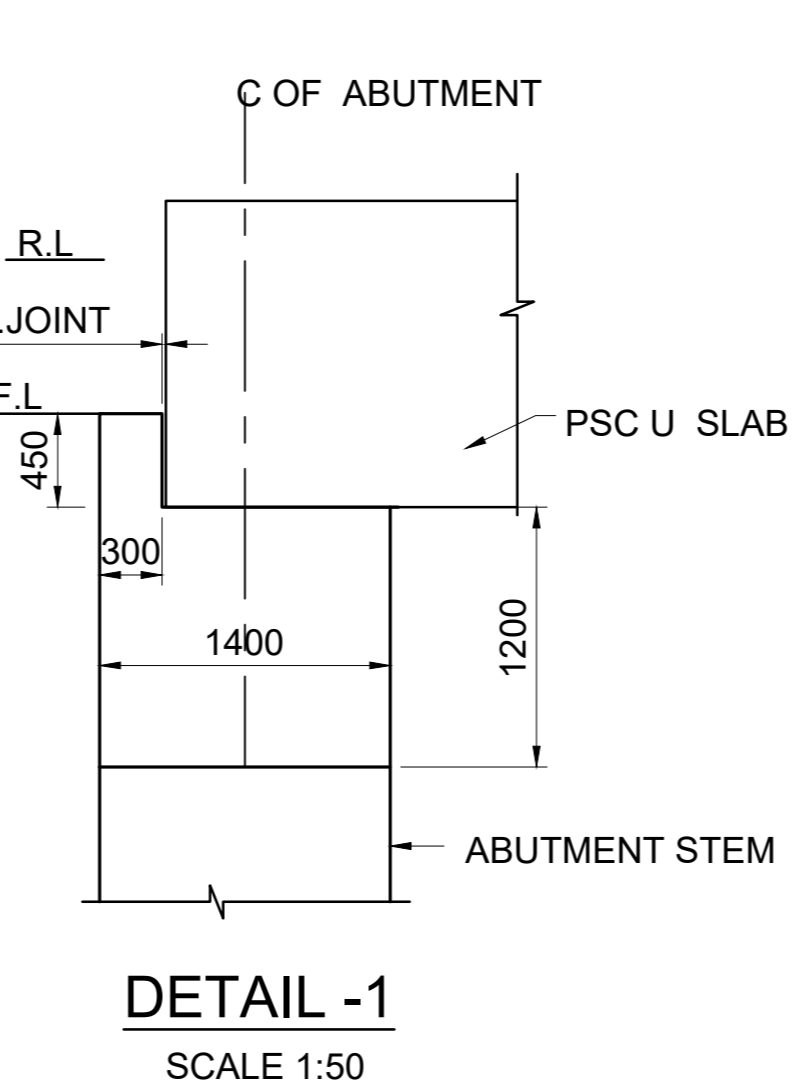
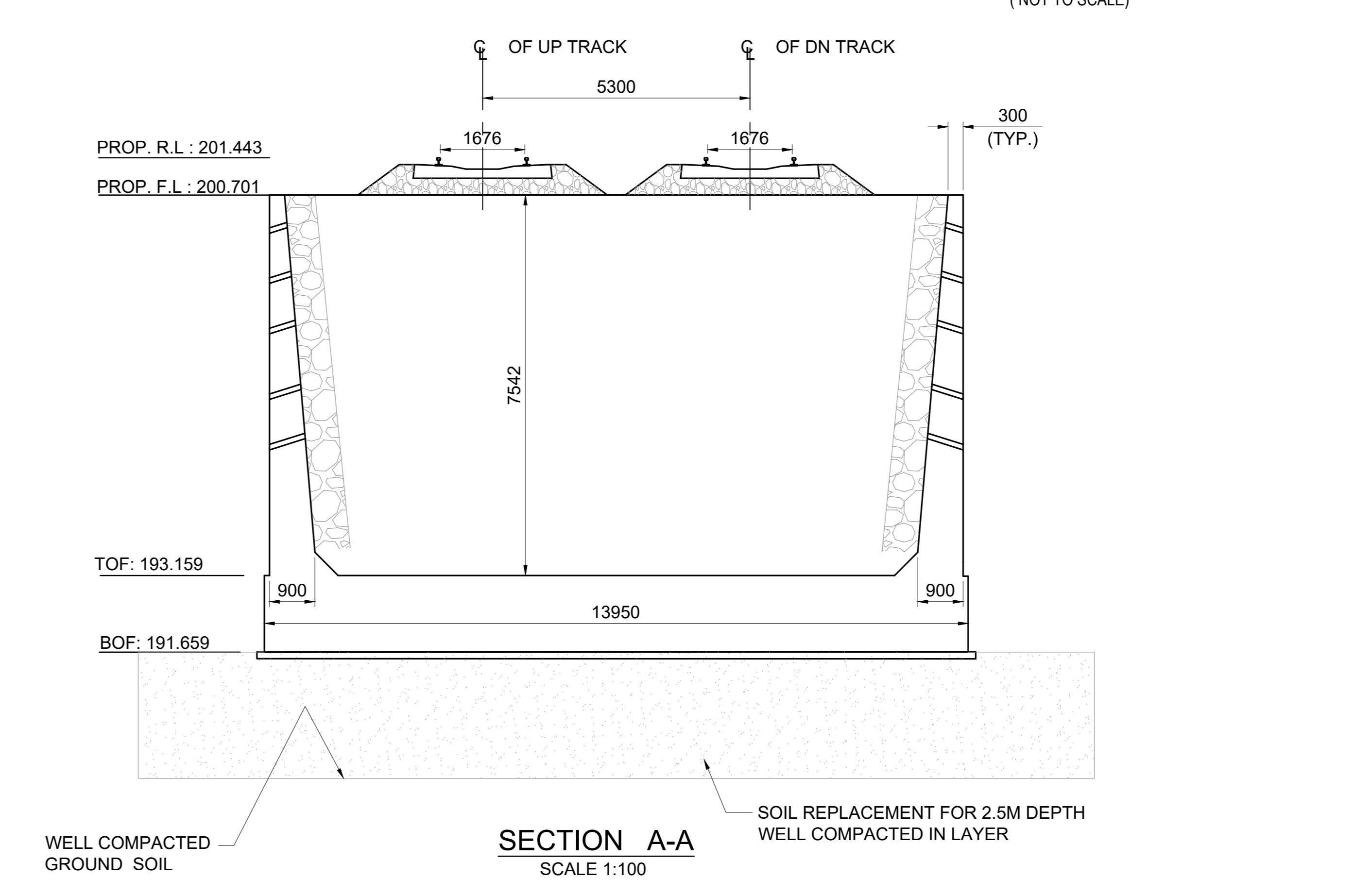
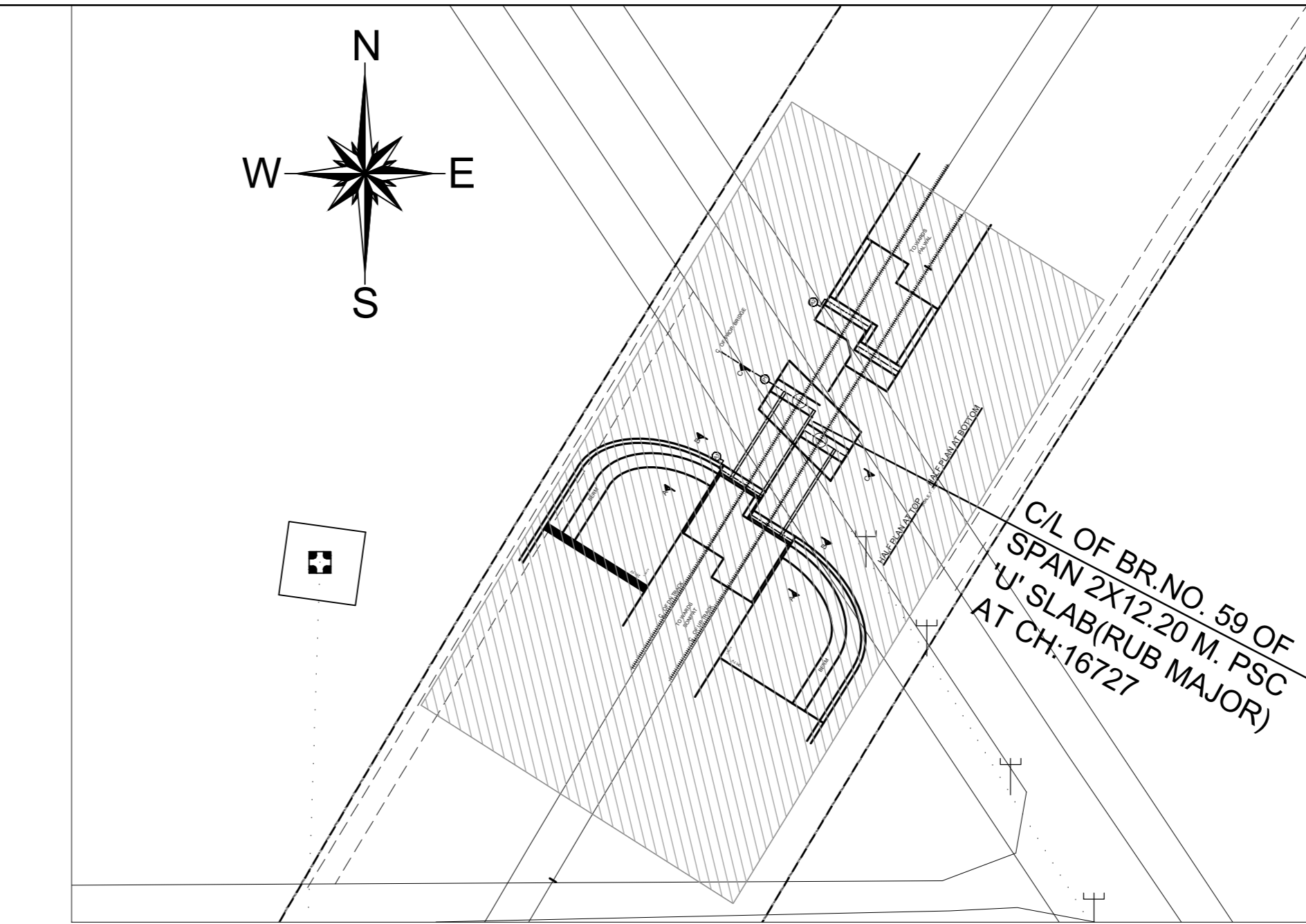
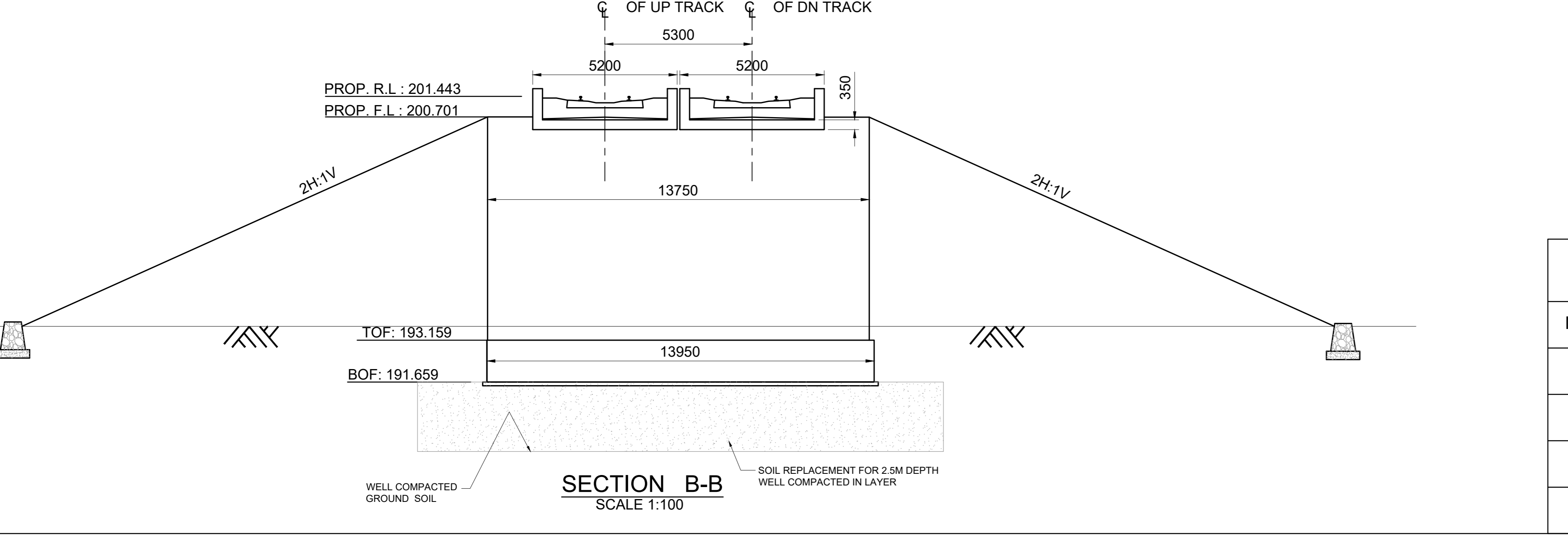
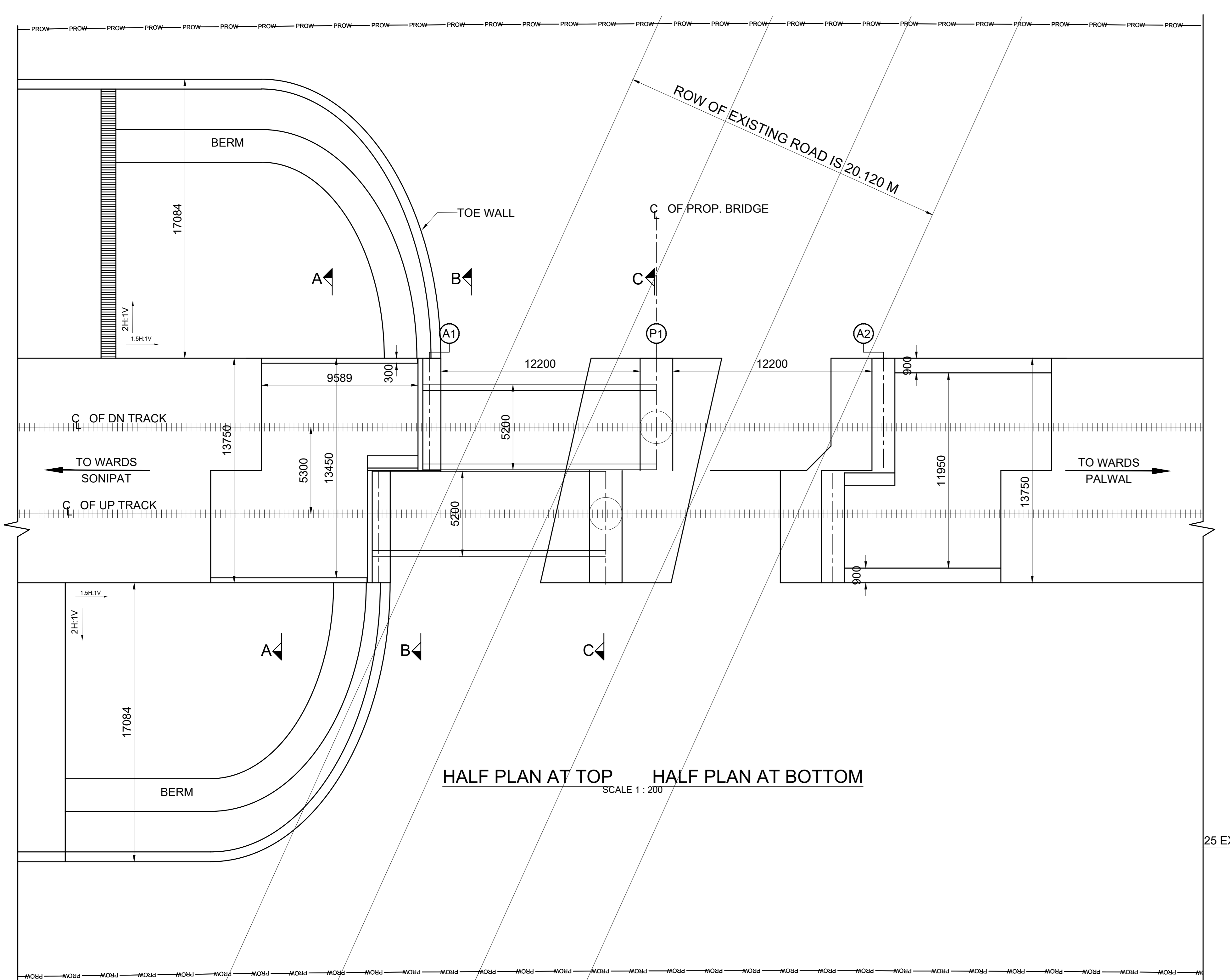
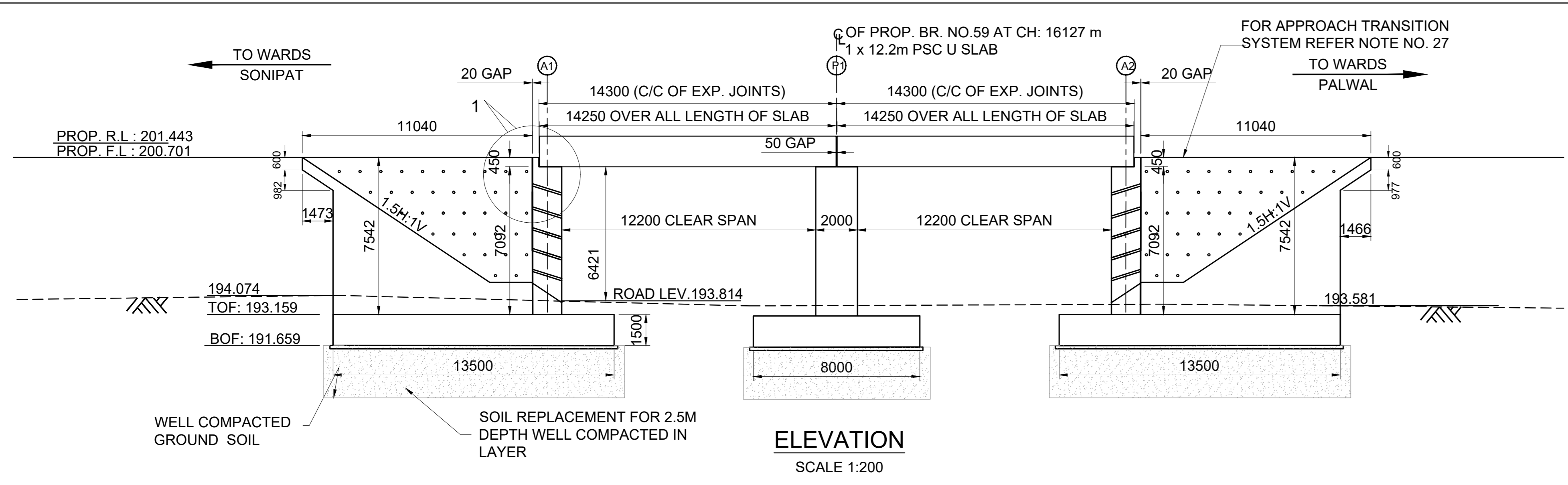
HRIDC

NAME / DESIGNATION	SIGN
SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>

TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**
 FOR CANAL BR.NO. 058
 1 x 5 x 5.4m + 1 x 12.2m + 1 x 5 x 5.4m PSC U SLAB CH: 16127

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01058_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 07-11-2022 **REVISED DATE** 10-01-2023



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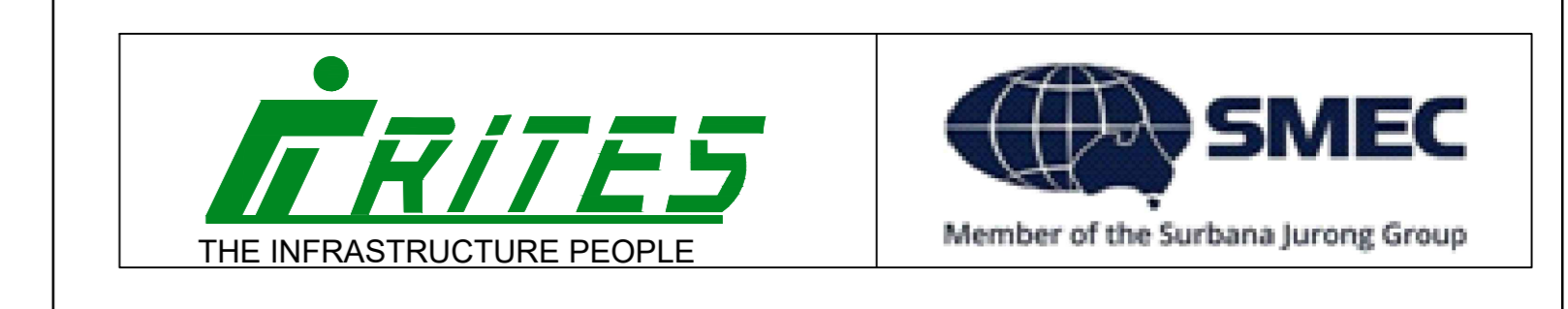
LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
TOF	TOP OF FOUNDATION
BOF	BOTTOM OF FOUNDATION

PROJECT:
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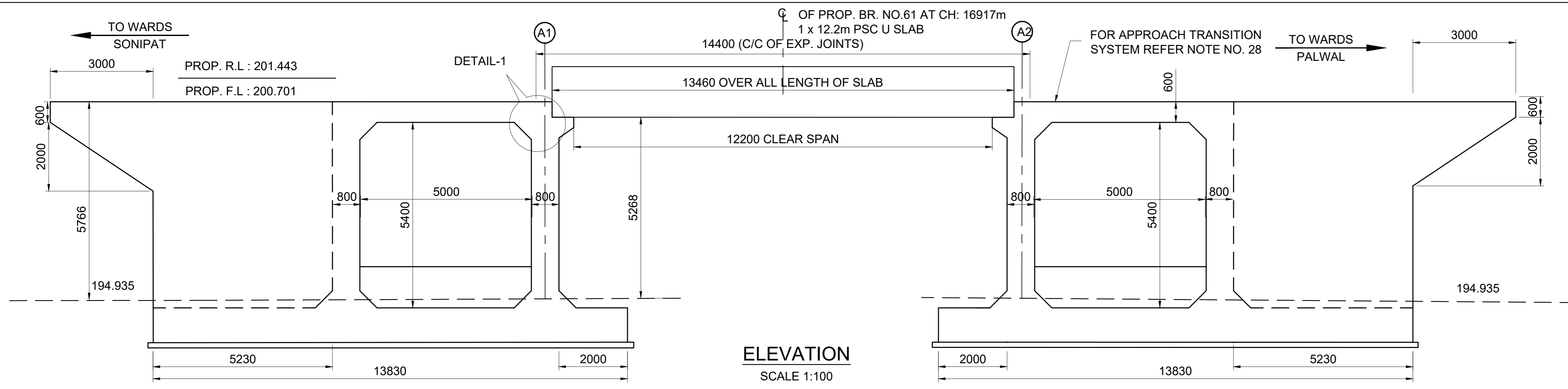


TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
PROPOSED RUB NO. 059
2 x 12.2m PSC U SLAB CH: 16727

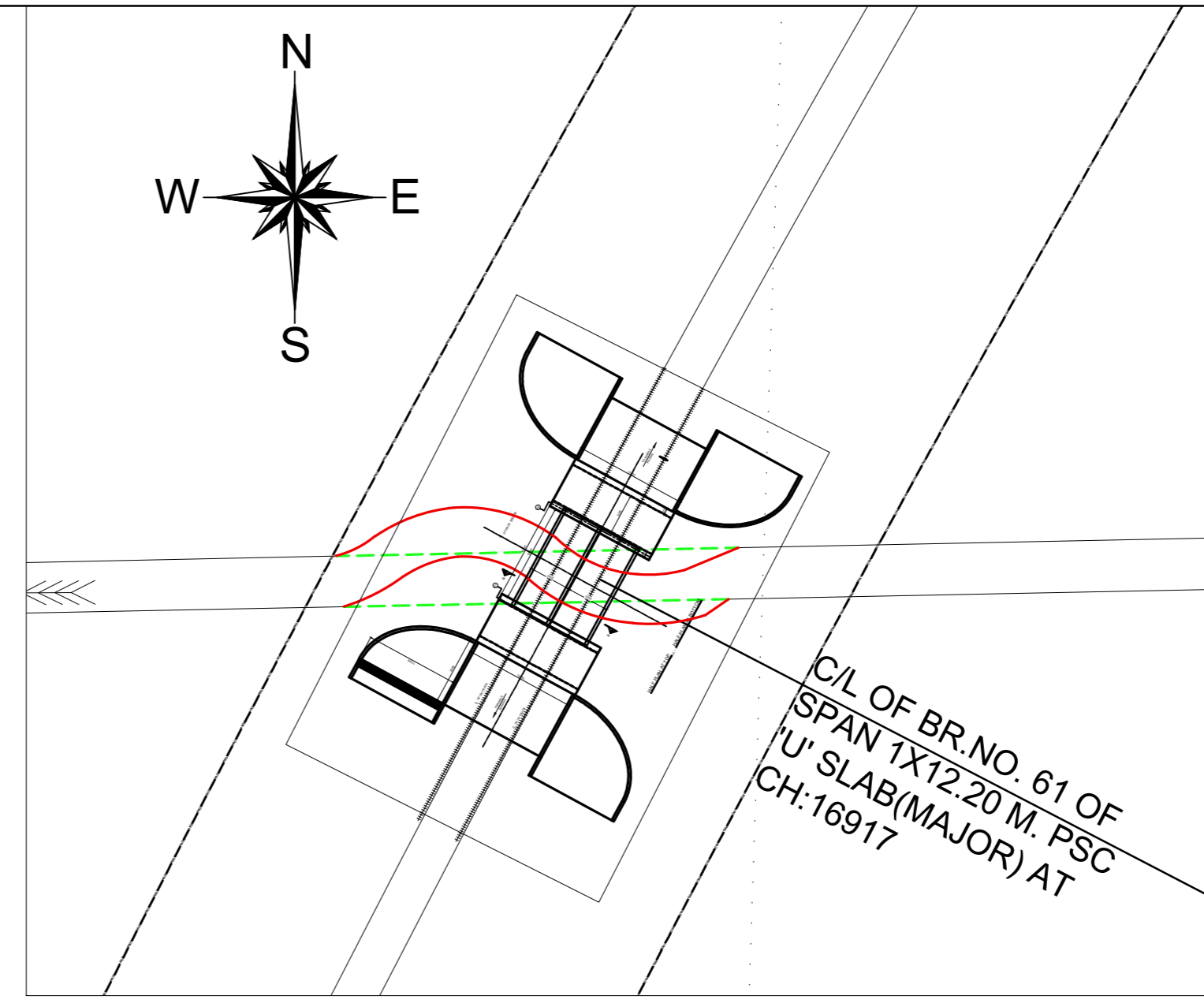
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01059_A2
SHEET NO. 1 OF 1

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 10-01-2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			



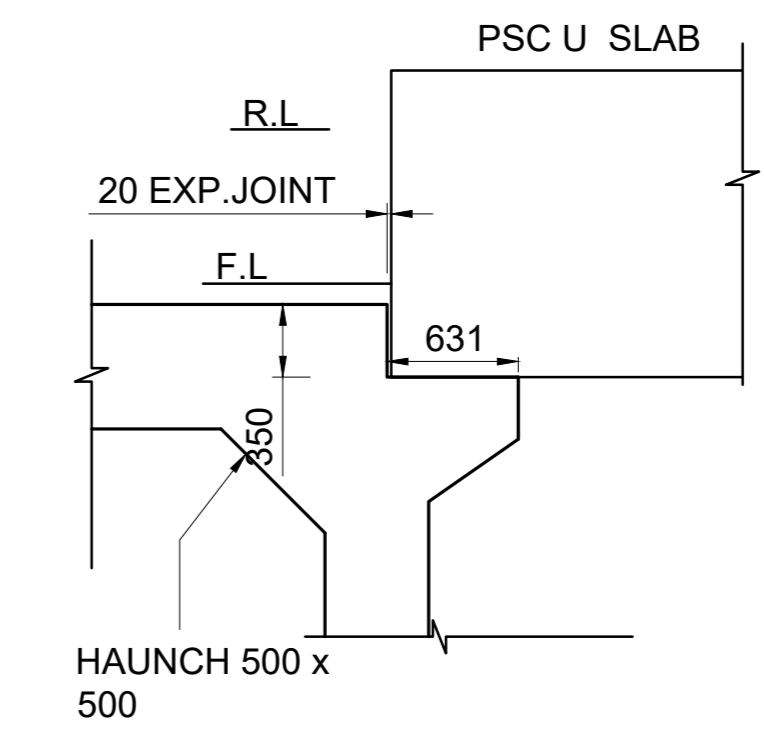
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SCALE 1:100



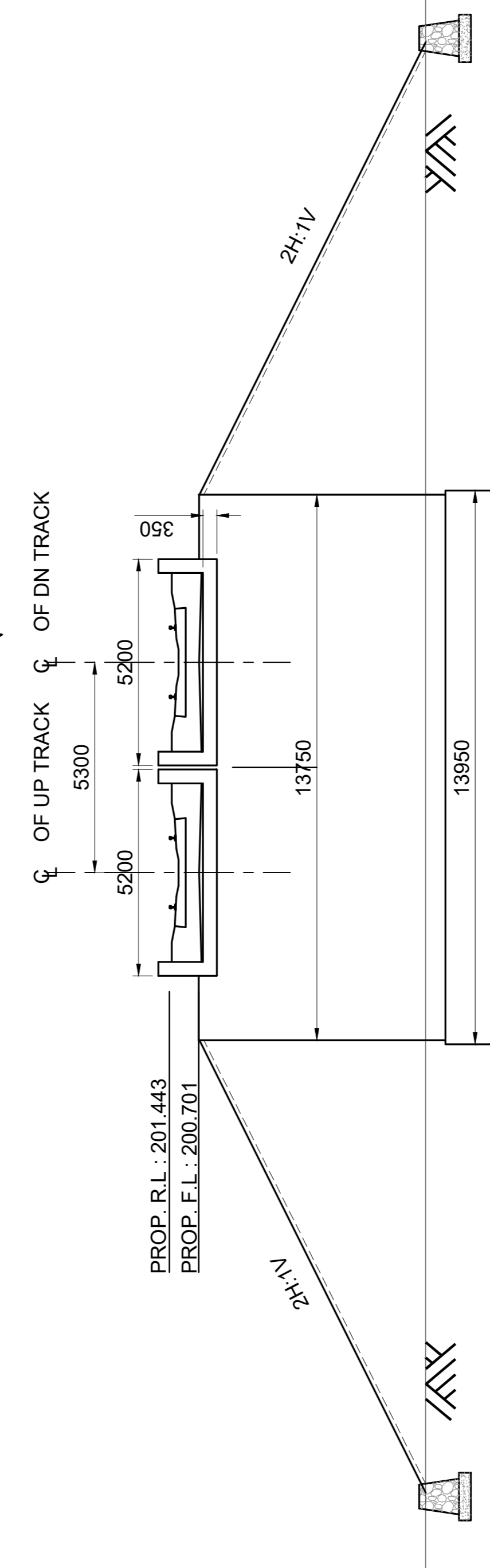
KEY PLAN
(NOT TO SCALE)

LEGEND

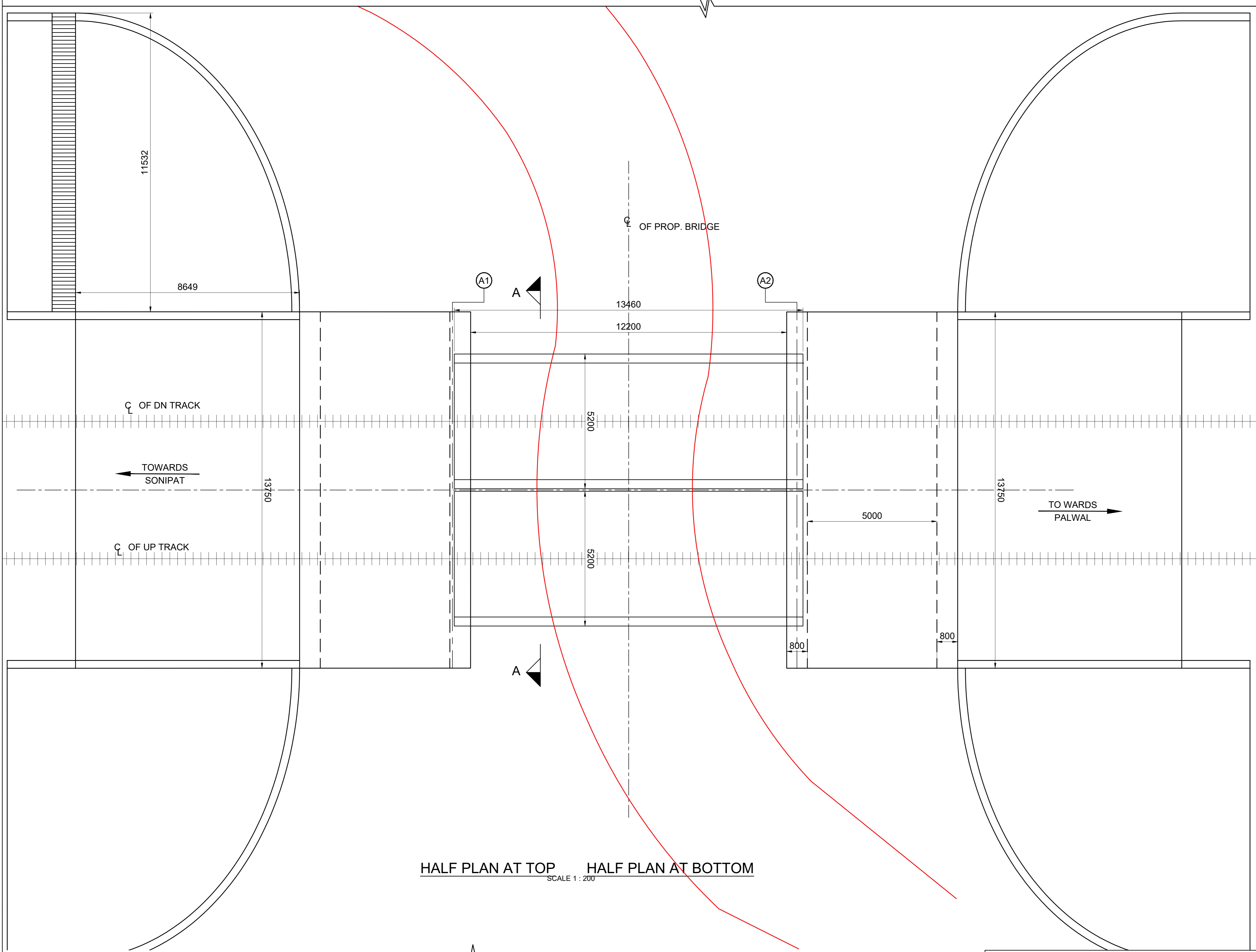
PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
TOF	TOP OF FOUNDATION
BOF	BOTTOM OF FOUNDATION
---	PROPOSED
---	TO BE DISMANTELED



DETAIL -1
SCALE 1:50



SECTION A-A
SCALE 1:150



HALF PLAN AT TOP HALF PLAN AT BOTTOM
SCALE 1:200

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CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group

TITLE:- **CONCEPTUAL GENERAL ARRANGEMENT DRAWING**
PROPOSED CANAL BR. NO. 061
1x5x5.4+1x12.2+1x5x5.4m PSC U SLAB CH: 16917

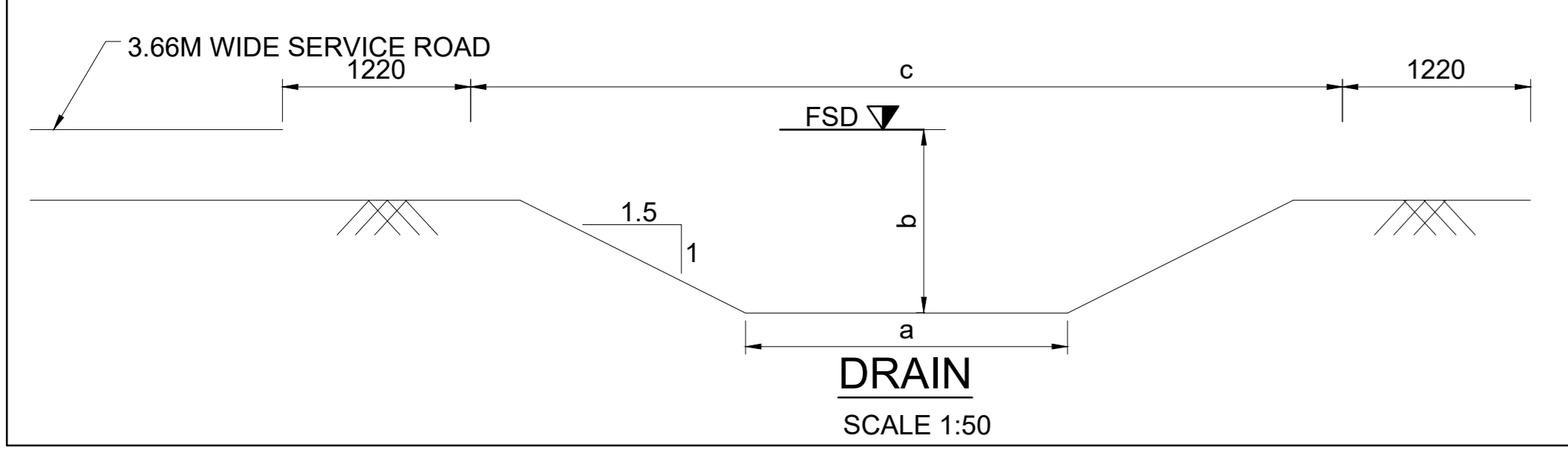
DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01061_A2 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 07-11-2022 REVISED DATE 10-01-2023

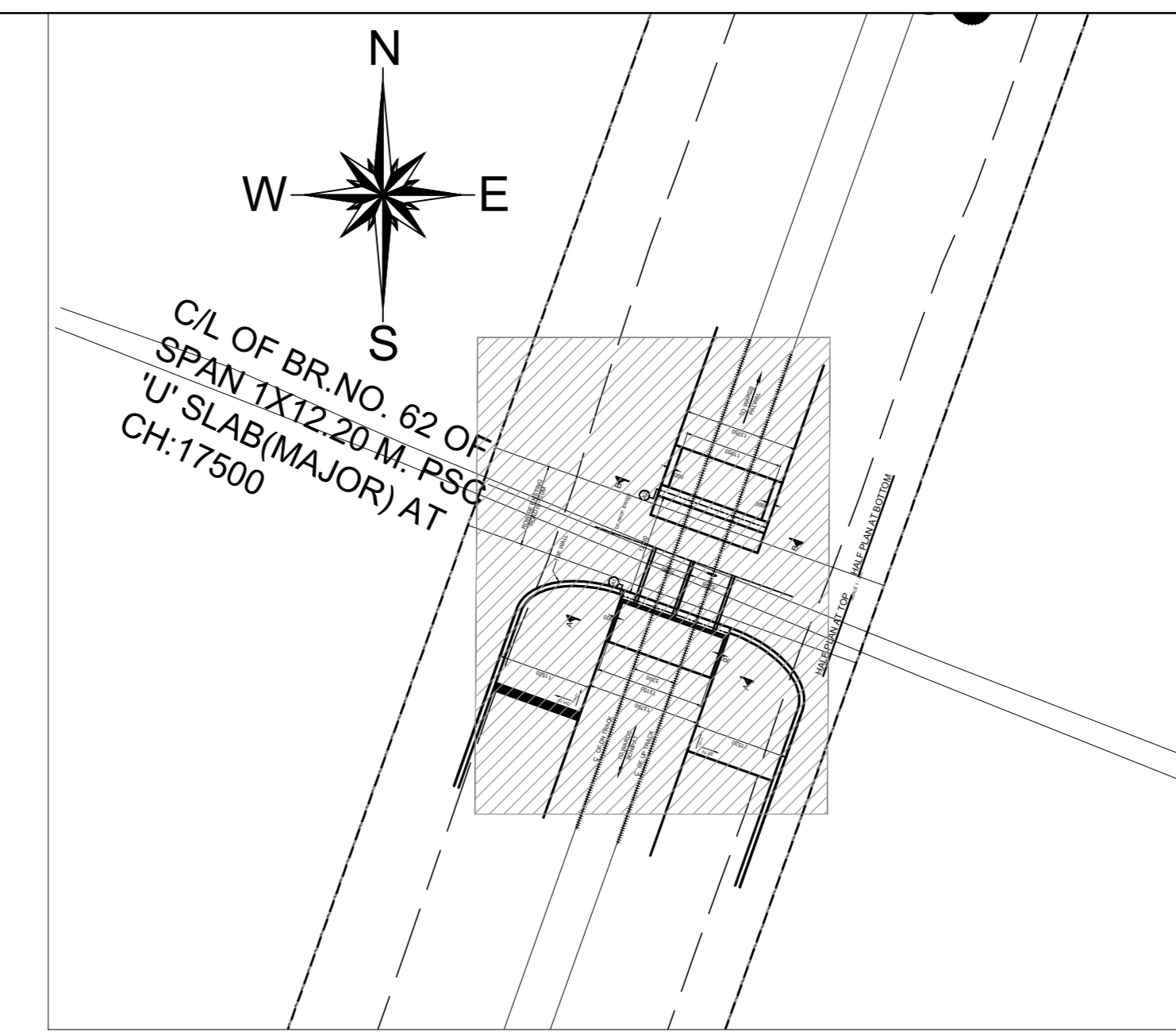
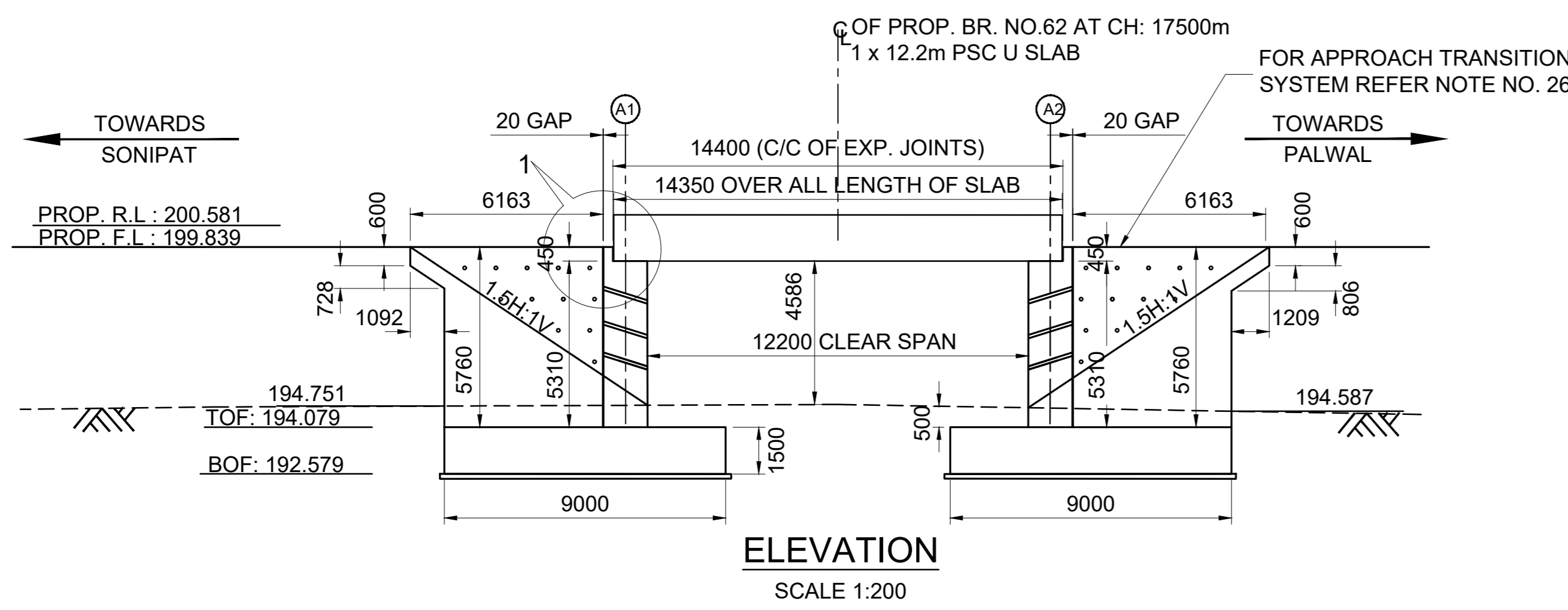
HYDRAULIC DATA OF DRAIN

1	NAME OF MINOR	BHIRAOTI MINOR
2	RD	6050/16917
3	FREE BOARD	0.45
4	DISCHARGE	45.02 Cusec
5	BED WIDTH	a 2.088
6	F.S.D	b 1.19
7	SIDE SLOPE	1.5:1
8	TOP WIDTH	c 5.65
9	SHAPE	

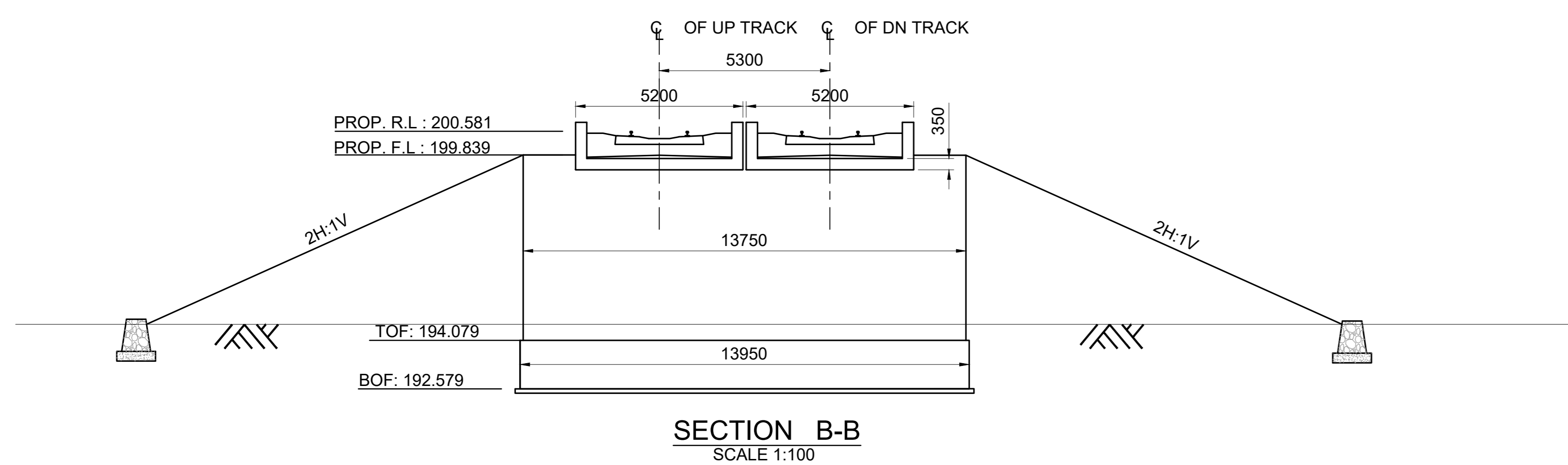
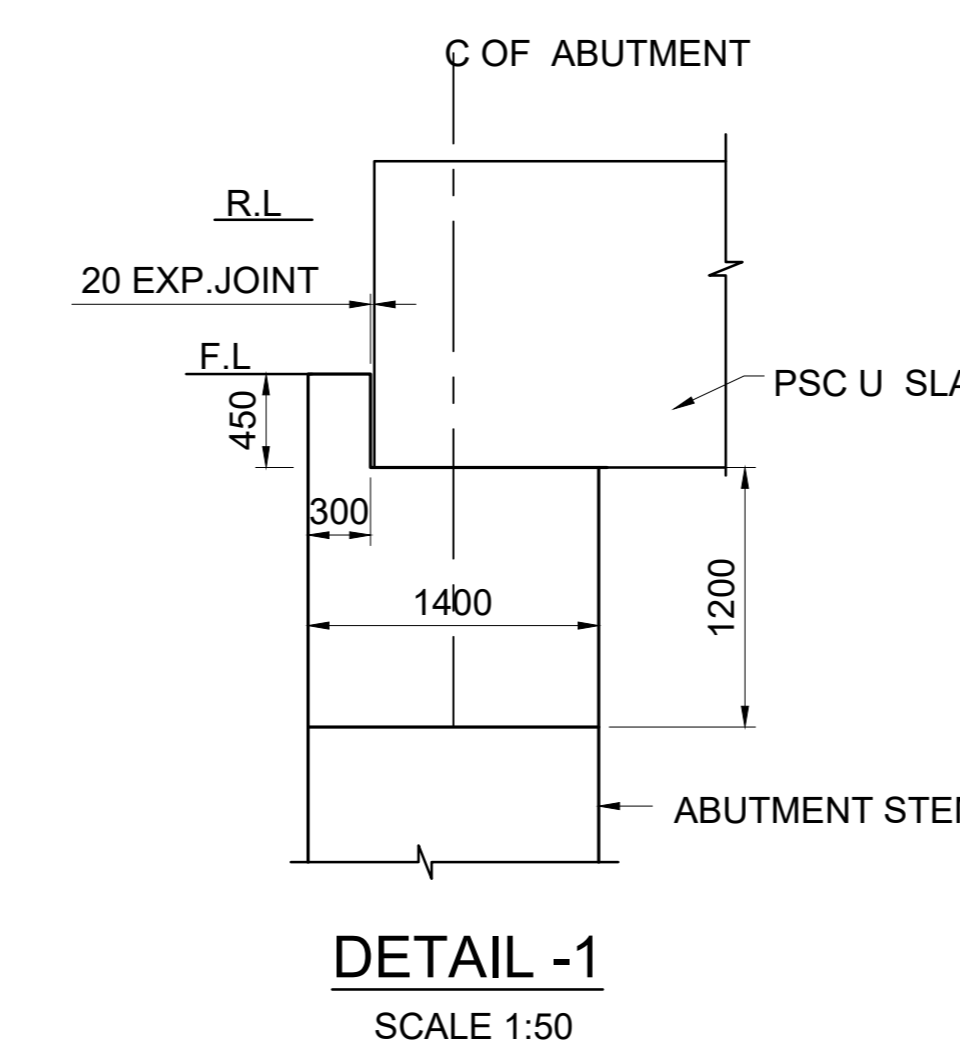
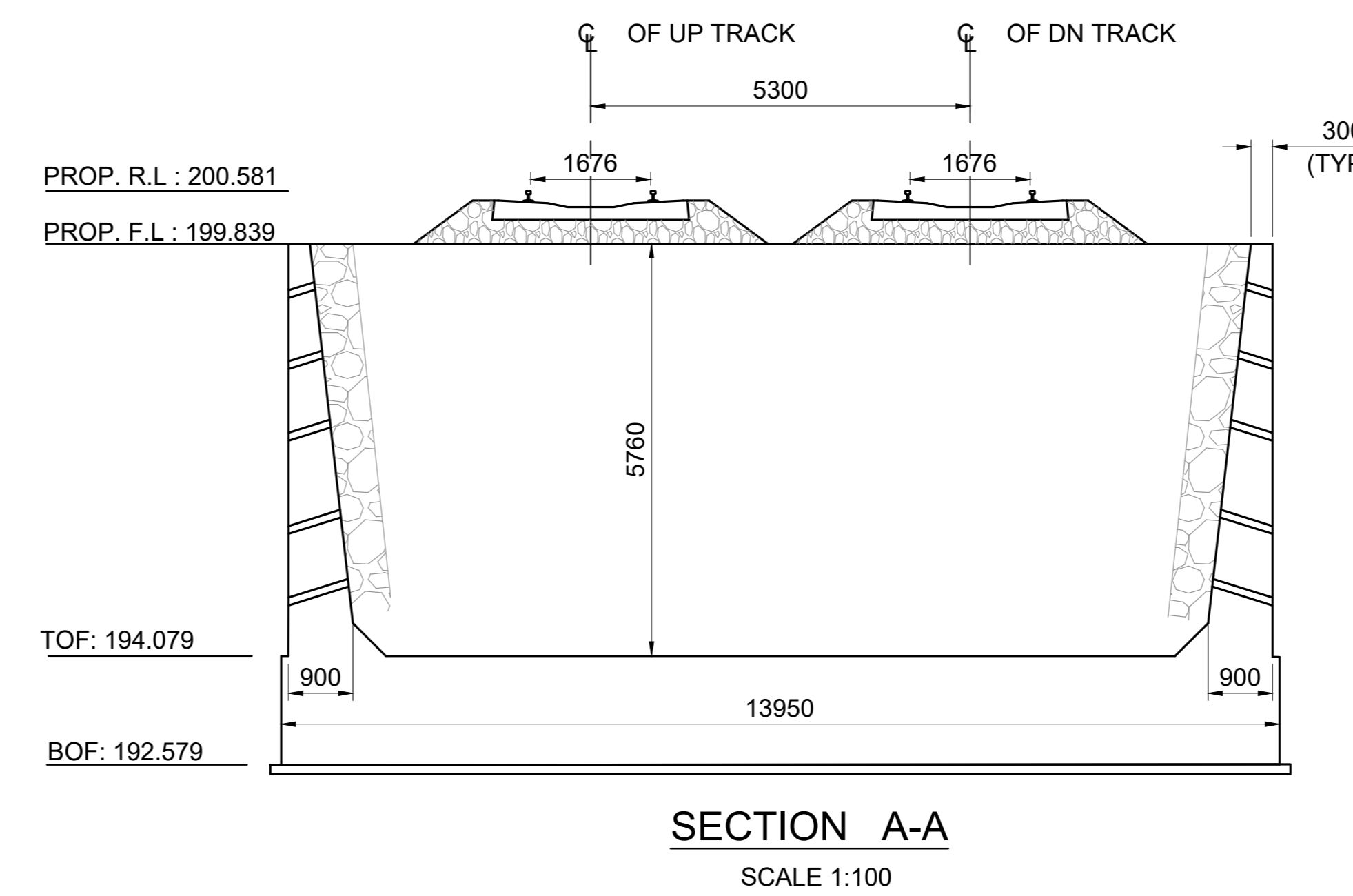
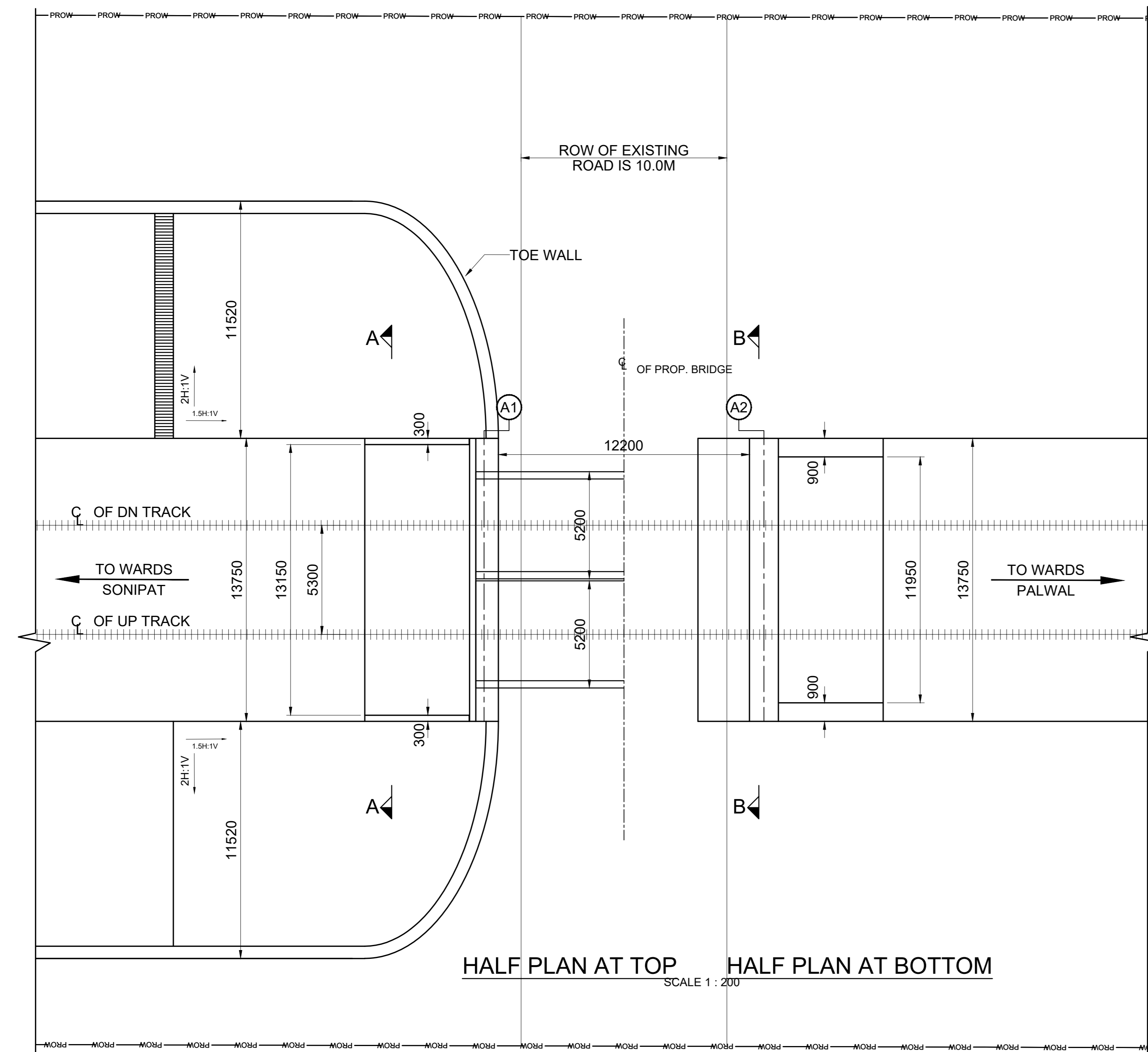
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>MS</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		



DRAIN
SCALE 1:50



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 - BACK FILL BEHIND RETURN WALL/WING WALL SHALL BE AS PER CL.7.5 OF IRS BRIDGE SUBSTRUCTURE & FOUNDATION CODE 2013.
 - 75mm DIA WEEP HOLES TO BE PROVIDED @1000 C/C HORZ. AND 1000 MM C/C VERTICALLY ABOVE LOWEST WATER LEVEL IN RETURN WALL AS PER IRS SUB STRUCTURE CODE CLAUSE 7.6.
 - ALL RCC SURFACES COMING IN CONTACT WITH SOIL SHOULD BE PAINTED WITH BITUMEN OR COAL TAR OF APPROVED QUALITY @ 1.464KG/SQM. CONFORMING TO IS-3117.
 - CURING SHALL BE DONE AS PER CLAUSE NO 8.4 OF IRS CONCRETE BRIDGE CODE.
 - SAFETY & PROTECTION OF THE PROPOSED WORK IS TO BE ENSURED BY THE CONTRACTOR AS PER PARA 826 OF IRPMM WITH UPDATED CORRECTION SLIPS OF 2011-12.
 - THE SPECIFICATIONS FOR THE PSC U SLAB SHALL BE IN ACCORDANCE WITH RDSO DRG. NO'S : RDSO 10281.10281/1 AND 10281/2.
 - CONCRETING SHALL BE DONE IN ACCORDANCE WITH IRS CONCRETE BRIDGE CODE WITH 20MM MAXIMUM SIZE AGGREGATE.
 - ALL DIMENSIONS AND LEVELS SHOULD BE VERIFIED AT SITE BEFORE EXECUTION.
 - BRIDGE DETAILS LIKE, DL, INSPECTION STEPS PAINTINGS ETC SHOULD BE FOLLOWED AS PER BRIDGE MANUAL DURING CONSTRUCTION.
 - THIS DRAWING IS PROPERTY OF HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED (HRIDC) AND EXCLUSIVE USE OF HRIDC.
 - FOR TOE WALL DETAILS REFER SEPARATE SKETCH NO. GC-HRIDC-SK-GEN-014.
 - TRANSITION SYSTEM TO BE ADOPTED ON BRIDGE APPROACHES SHALL BE AS PER RDSO REPORT NO. GE-R-50 (TRANSITION SYSTEM ON APPROACHES OF BRIDGES). FOR DETAILS REFER SKETCH NO. GC-HRIDC-SK-GEN-019.



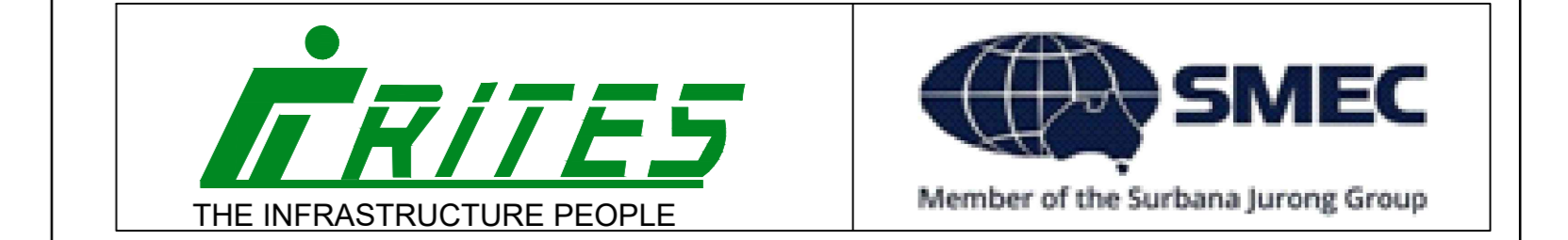
LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HIGHEST FLOOD LEVEL
GL	GROUND LEVEL
TOF	TOP OF FOUNDATION
BOF	BOTTOM OF FOUNDATION

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



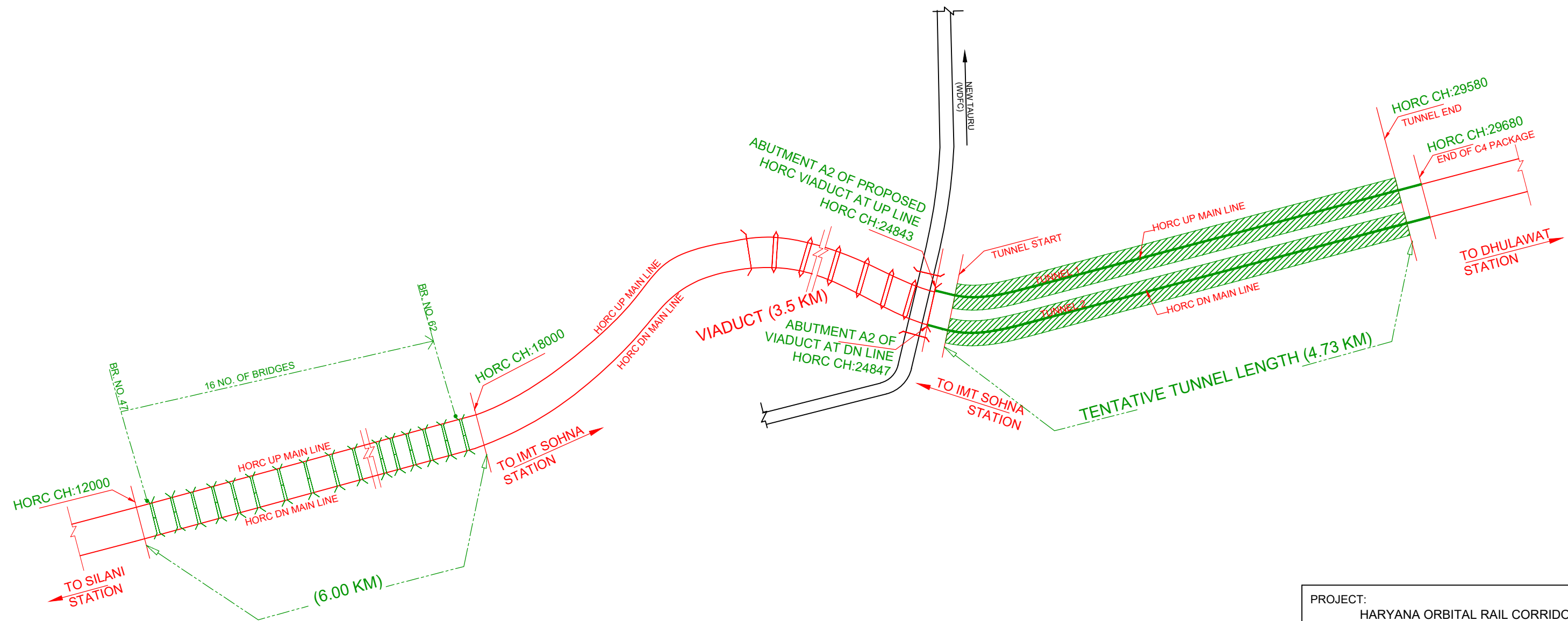
TITLE:- CONCEPTUAL GENERAL ARRANGEMENT DRAWING
PROPOSED RUB NO. 062
1 x 12.2m PSC U SLAB CH: 17500

DRG. NO. GC-HRIDC-C4-DRW-BRD-GAD-01062_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 07-11-2022 **REVISED DATE** 10-01-2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			

4. Miscellaneous Drawings (Conceptual Plans)




NOTES:

- JURISDICTION OF C4 PACKAGE SHOWN IN GREEN COLOUR.
- CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00m, WITH RESPECT TO UP MAIN LINE.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**

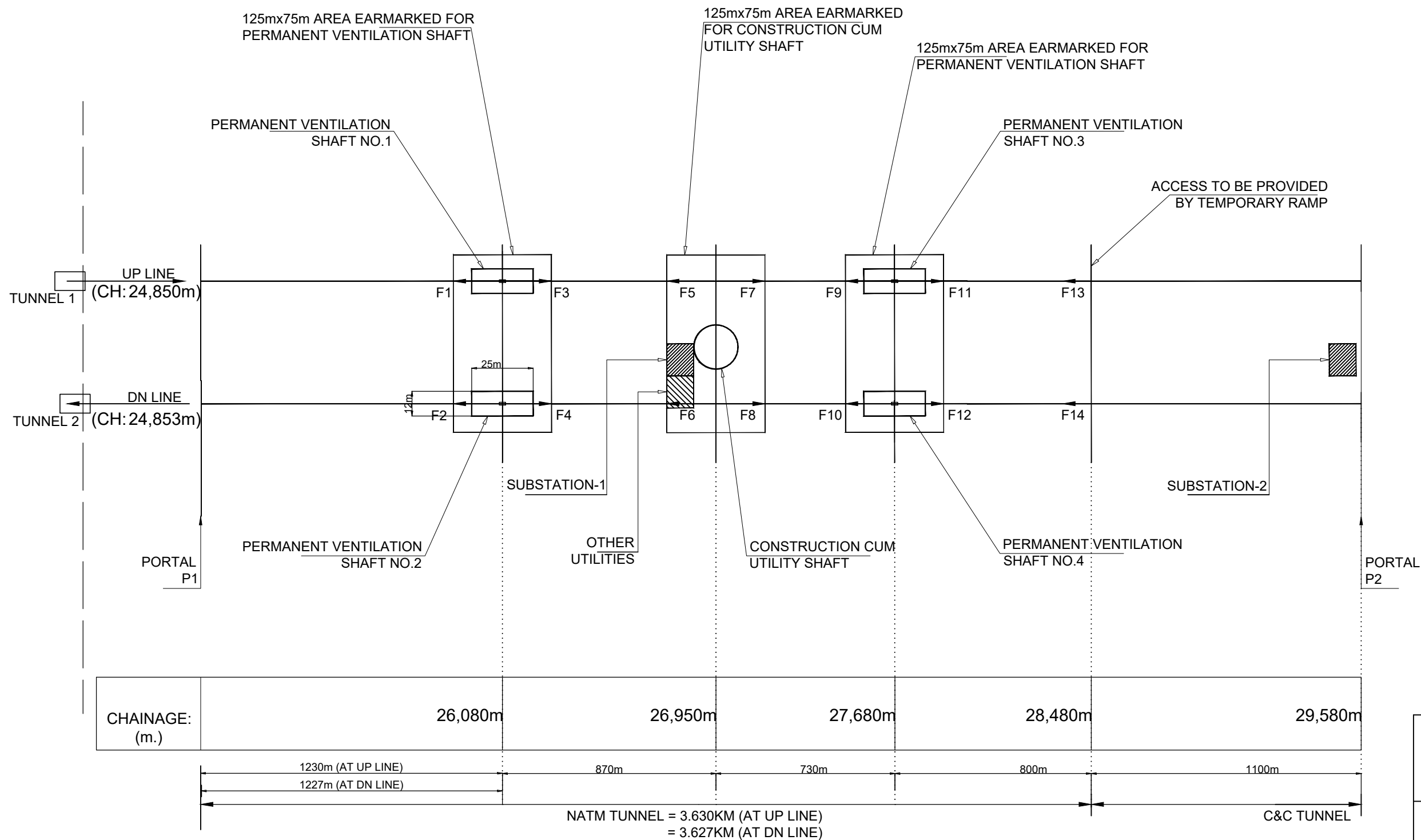
CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- JURISDICTIONAL SKETCH OF C-4 PACKAGE


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>ASD</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

SKETCH NO. GC-HRIDC-C4-SK-CIVIL-001_A1	SHEET NO.
SCALE : AS SHOWN	ISSUE DATE 07-11-2022
	REVISED DATE 09.01.2023



PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAO TI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**

CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.








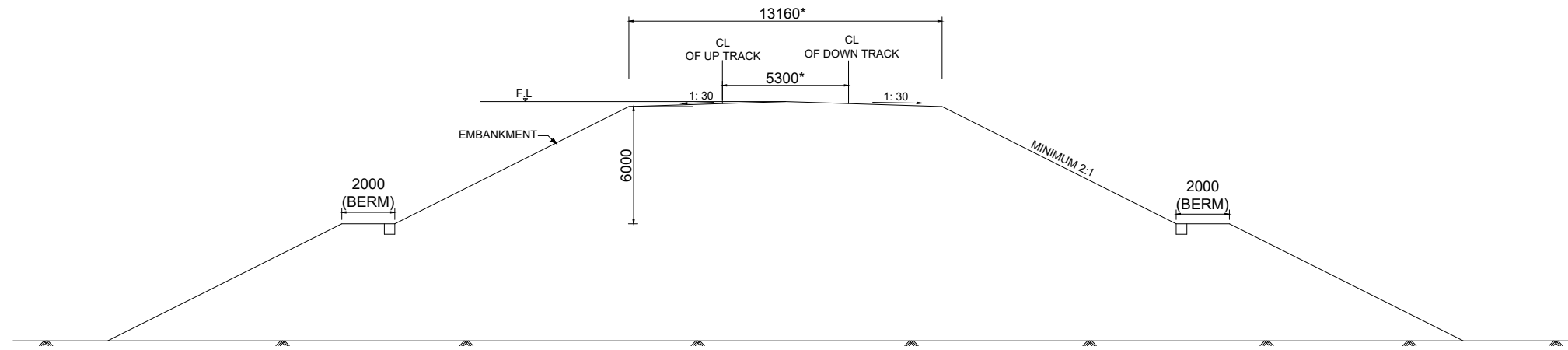
TITLE:- SCHEMATIC DIAGRAM OF HRC TUNNEL

SKETCH NO. GC-HRIDC-C4-SK-TUNNEL-001_A1 **SHEET NO.**

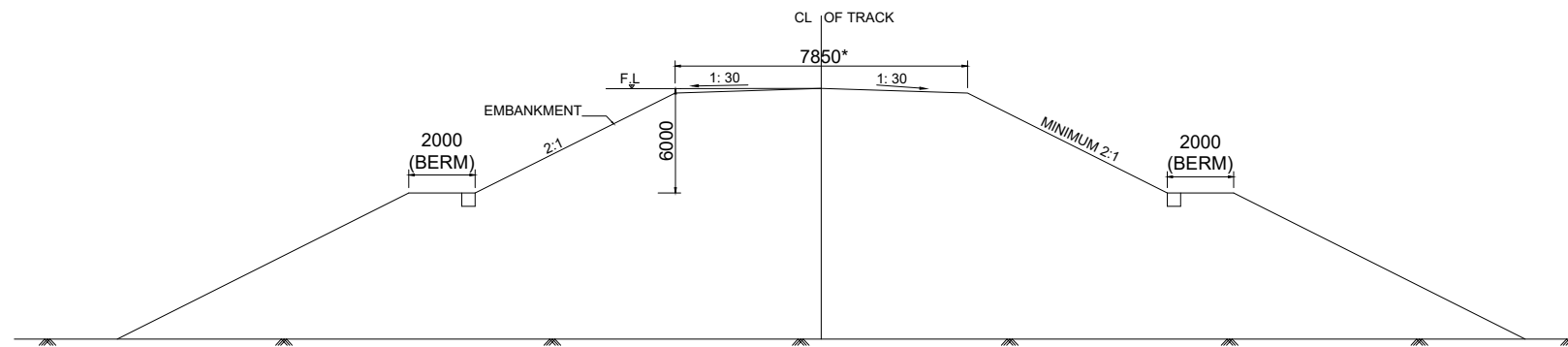
SCALE : AS SHOWN **ISSUE DATE:** 07-11-2022 **REVISED DATE:** 09.01.2023

- NOTES:**
- F1 - F14 ARE THE WORKING FACES OF NATM TUNNEL.
 - CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00m, WITH RESPECT TO UP MAIN LINE.

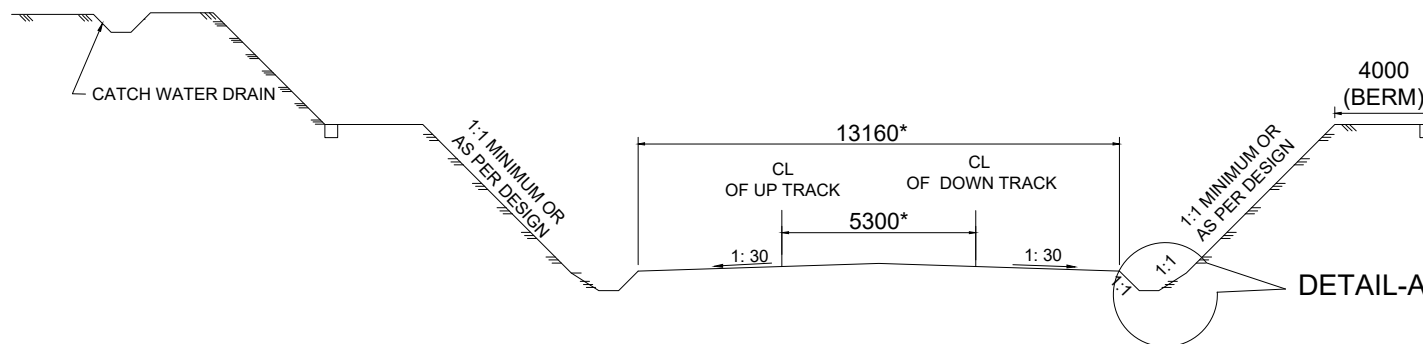
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			



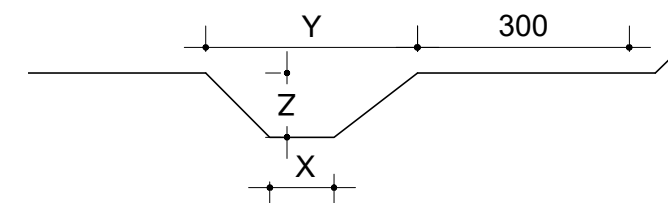
TYPICAL CROSS-SECTION OF EMBANKMENT
(FOR DOUBLE TRACK)



TYPICAL CROSS-SECTION OF EMBANKMENT
(FOR SINGLE TRACK)



TYPICAL CROSS-SECTION OF CUTTING
(FOR DOUBLE TRACK)




DETAIL-A

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. DEPTH OF BALLAST CUSHION SHOULD BE PROVIDED AS PER PARA 212(2) OF IRPWM.
 4. CROSS SLOPE OF 1 IN 30 SHALL BE PROVIDED.
 5. MINIMUM FORMATION WIDTH OF 13160 MM SHALL BE ENSURED FOR NEW WORKS IN BOTH EMBANKMENT AND IN CUTTING (EXCLUDING SIDE DRAIN)
 6. * FORMATION WIDTH SHALL BE INCREASED BASED ON CURVE & SUPER ELEVATION AS PER IRSOD.
 7. X, Y, Z DIMENSIONS SHALL BE AS PER DESIGN.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED






CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

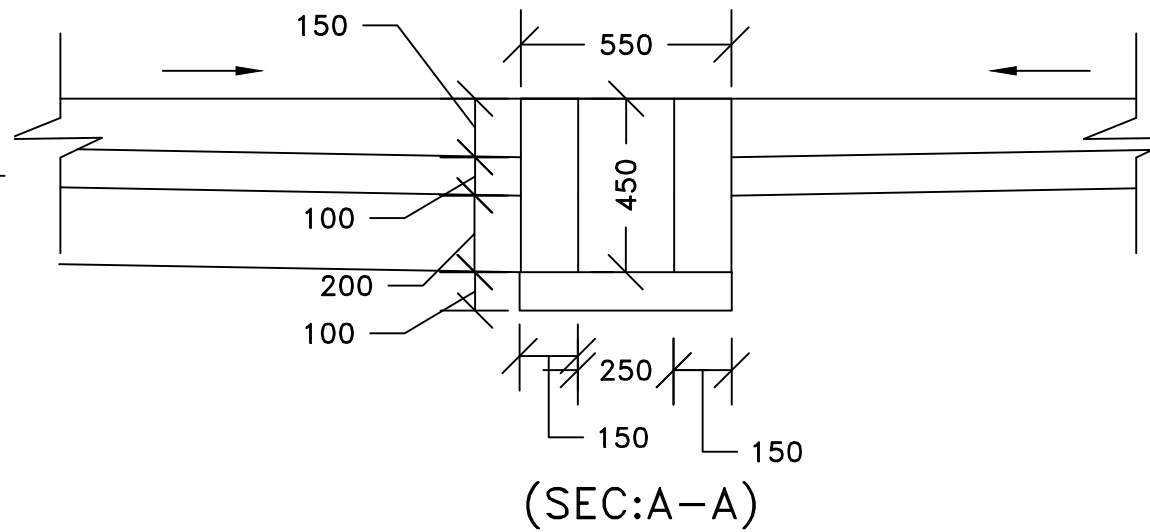
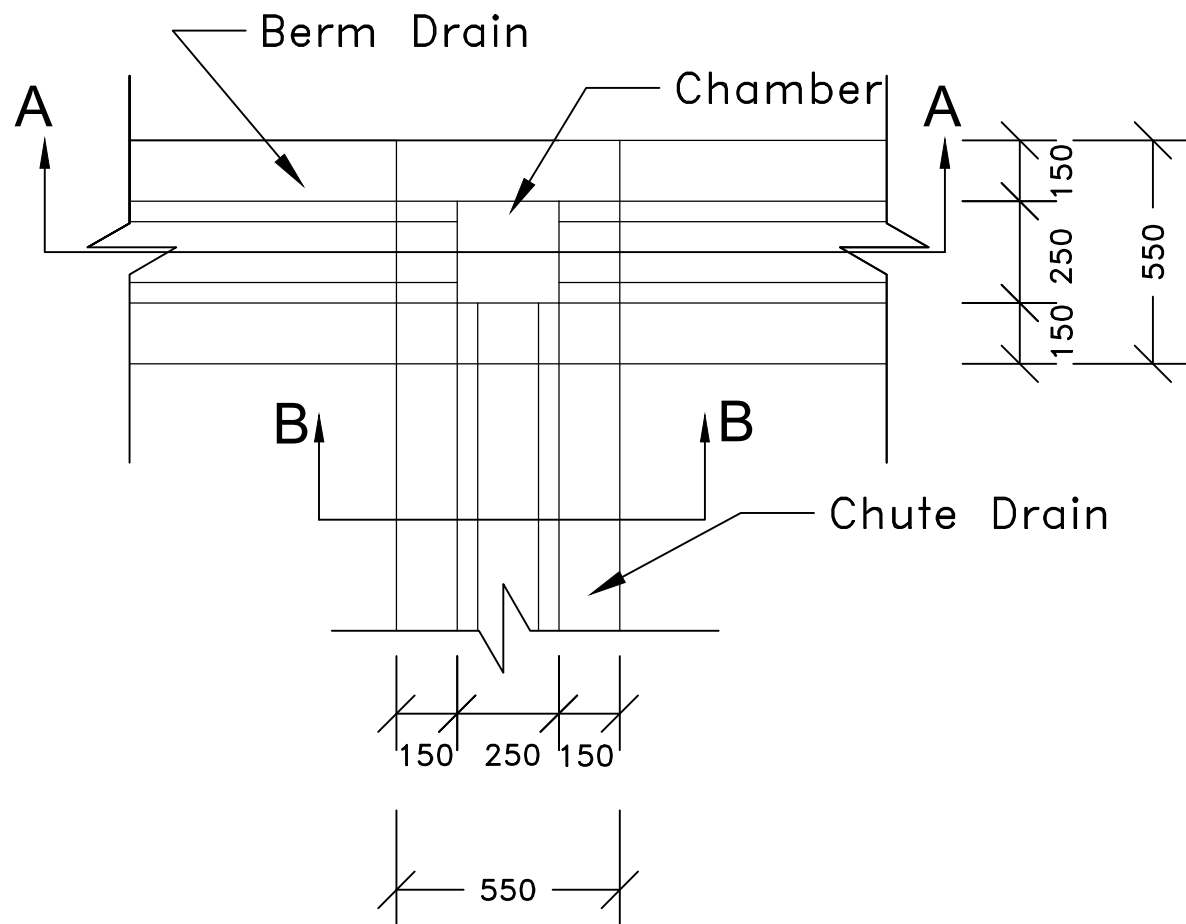
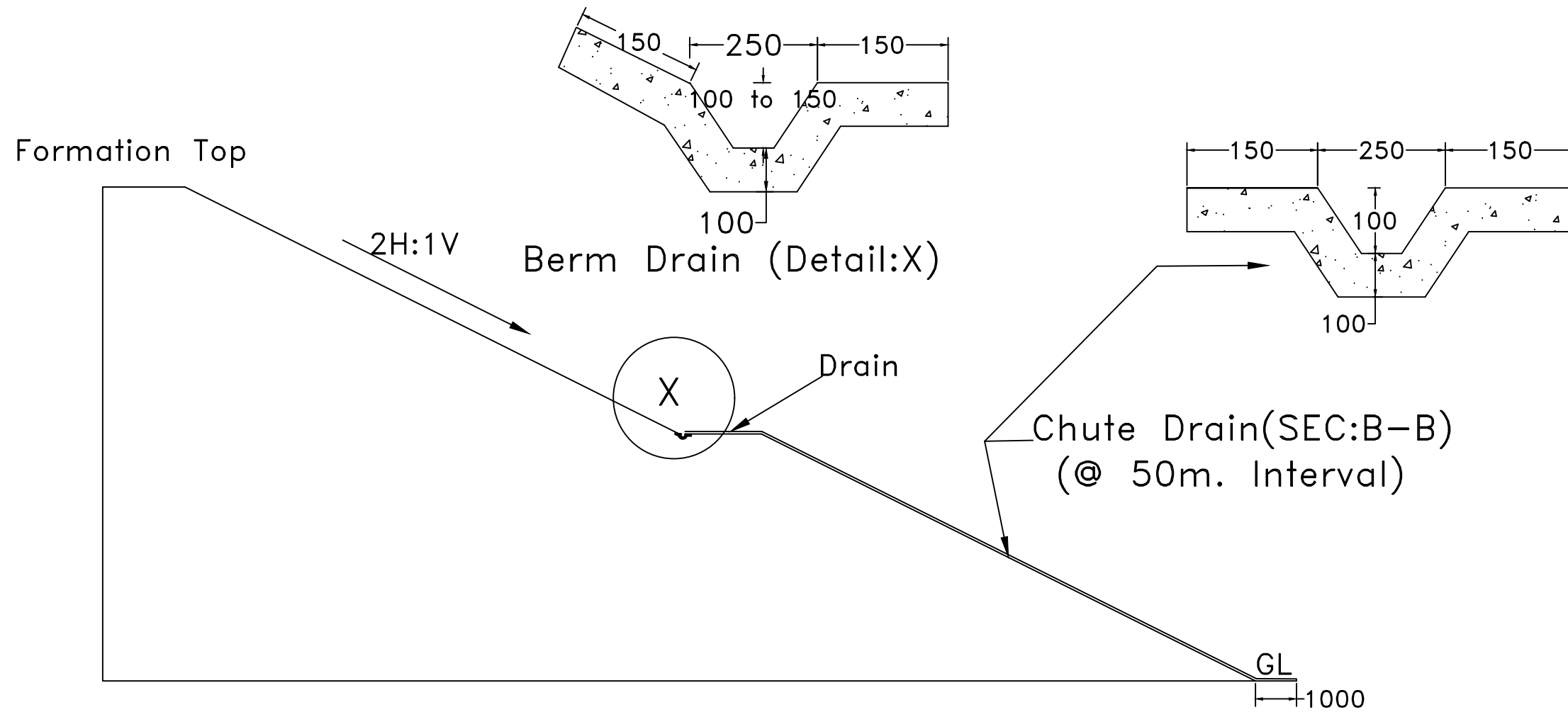


TITLE:- CONCEPTUAL PLAN
TYPICAL EMBANKMENT/CUTTING PROFILE

DRG. NO. GC-HRIDC-SK-GEN-001_A2 SHEET NO.

SCALE : AS SHOWN
ISSUE DATE 07-11-2022
REVISED DATE 09.01.2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			



- Note:-
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. ALL CAST IN-SITU CONCRETE SHALL BE M25.
 4. IN CASE OF PRECAST RCC DRAINS GRADE OF CONCRETE SHALL BE AS PER DESIGN.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- CONCEPTUAL PLAN
DRAINS FOR EMBANKMENT

SKETCH NO. GC-HRIDC-SK-GEN-008_A2 SHEET NO.

SCALE : AS SHOWN

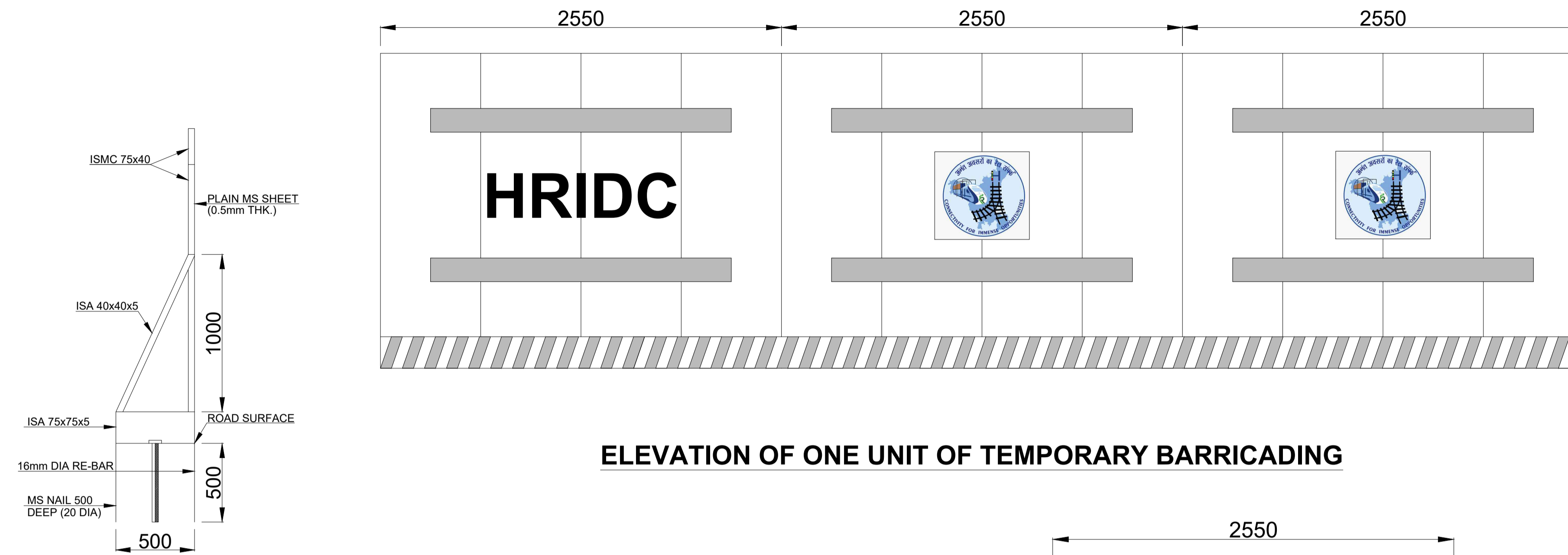
ISSUE DATE: 07-11-2022

REVISED DATE: 09.01.2023

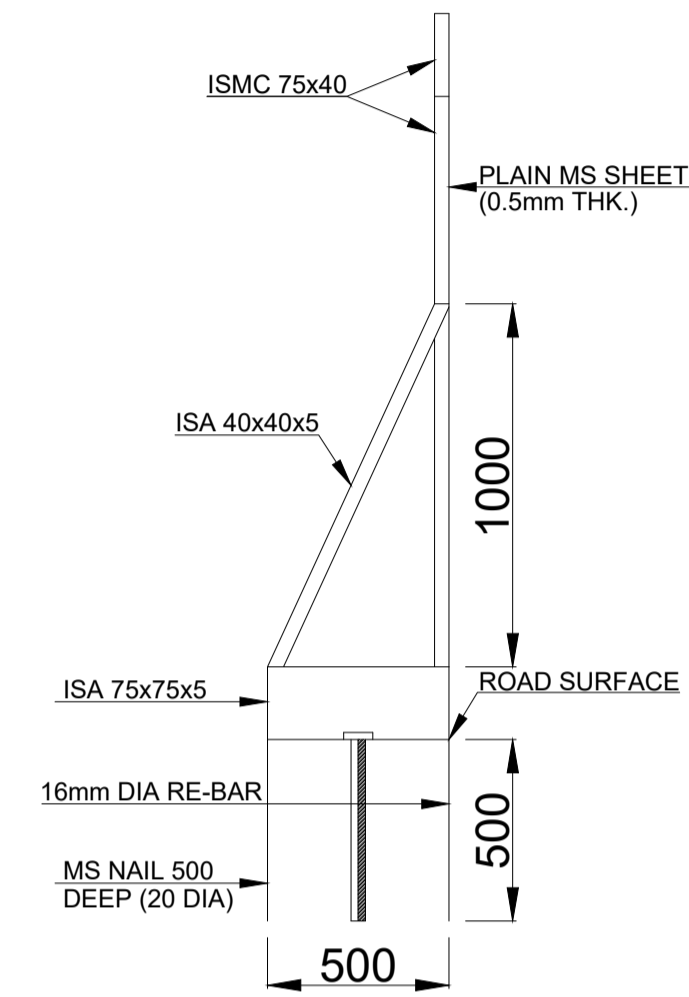
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Shd</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

NOTES:

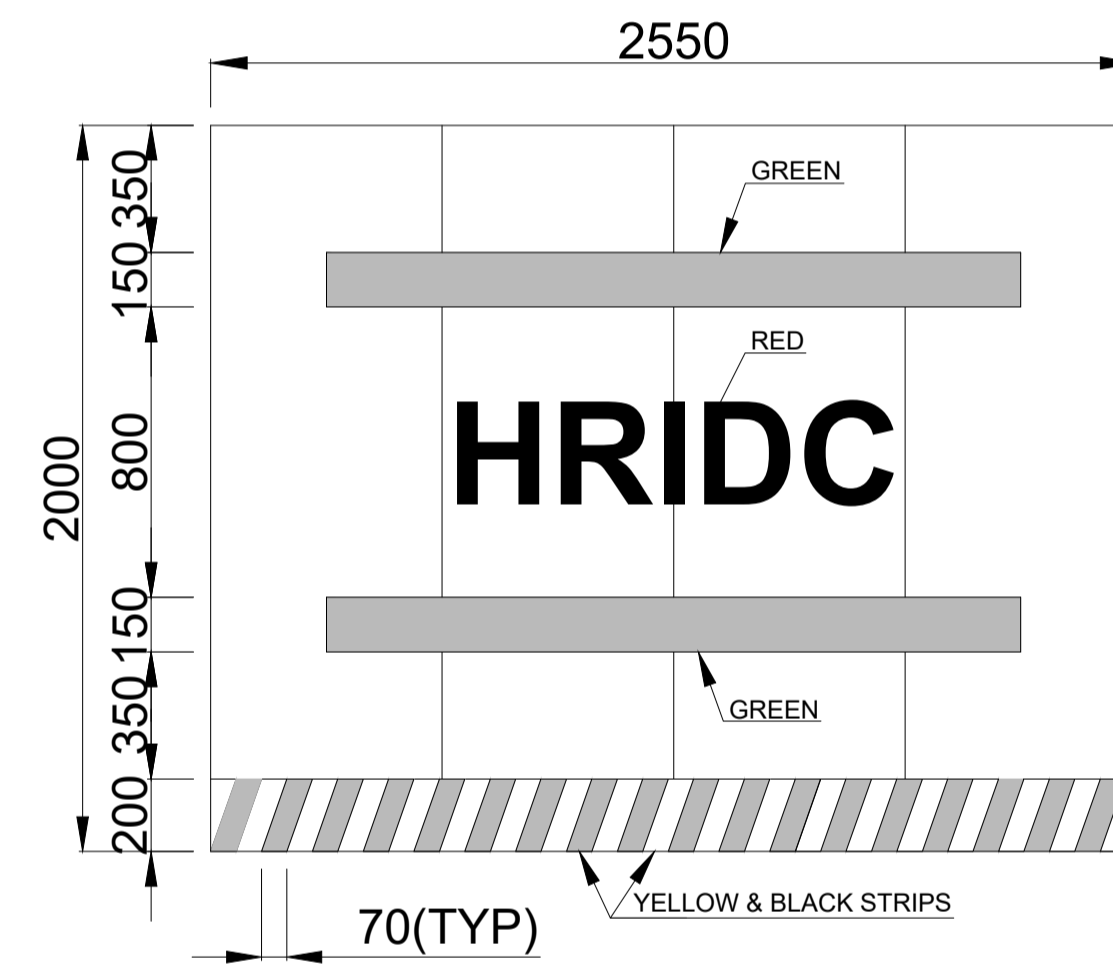
1. ALL DIMENSIONS SHOWN ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED.
2. THIS BARRICADING SHALL BE USED AT LOCATION OF ROAD AND PEDESTRIAN TRAFFIC.



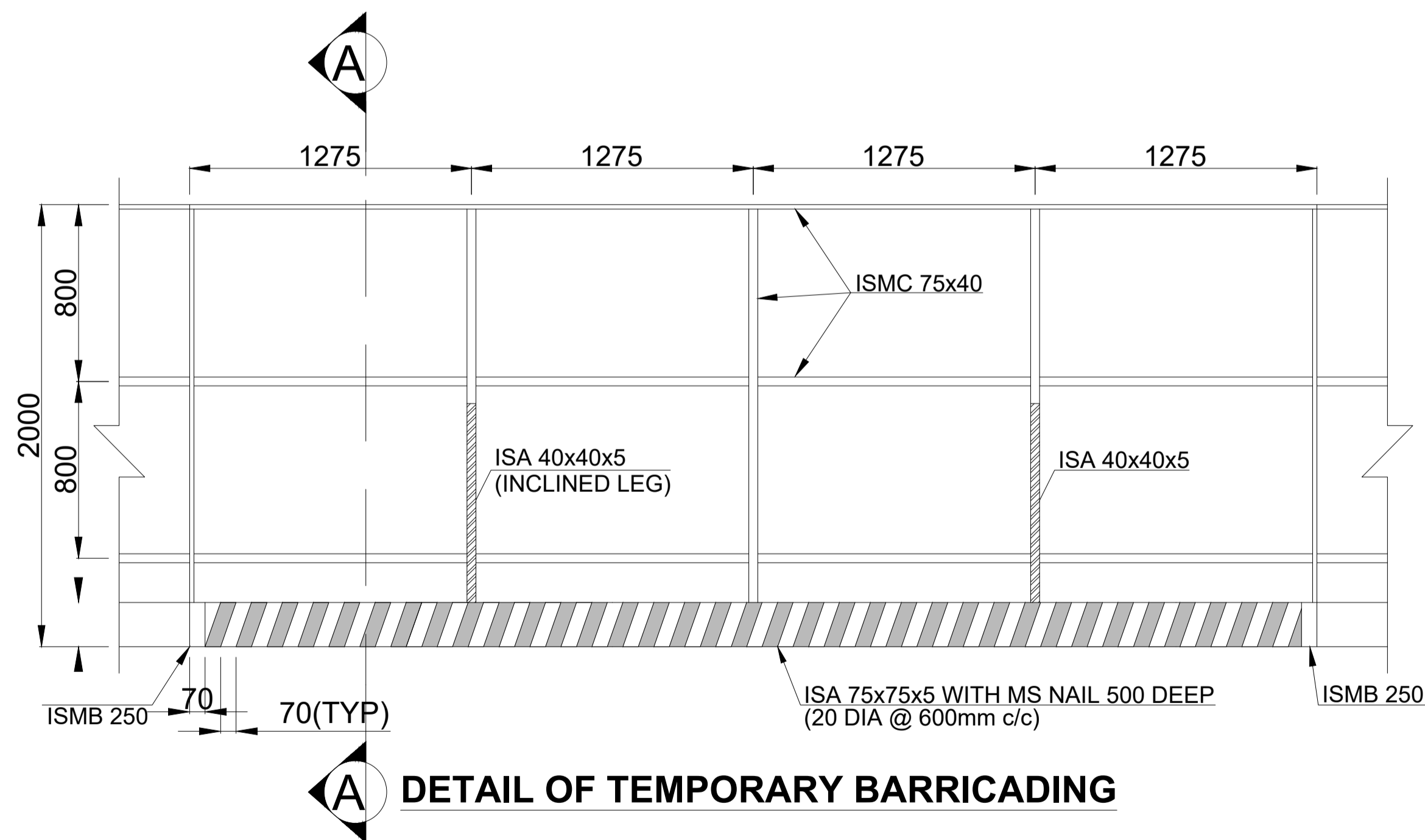
ELEVATION OF ONE UNIT OF TEMPORARY BARRICADING



SECTION A-A



ELEVATION OF ONE SET OF TEMPORARY BARRICADING



DETAIL OF TEMPORARY BARRICADING

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
 AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
 NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED.**

CONSULTANT:
 **GENERAL CONSULTANT FOR
 HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- **CONCEPTUAL PLAN
 STEEL BARRICADE**

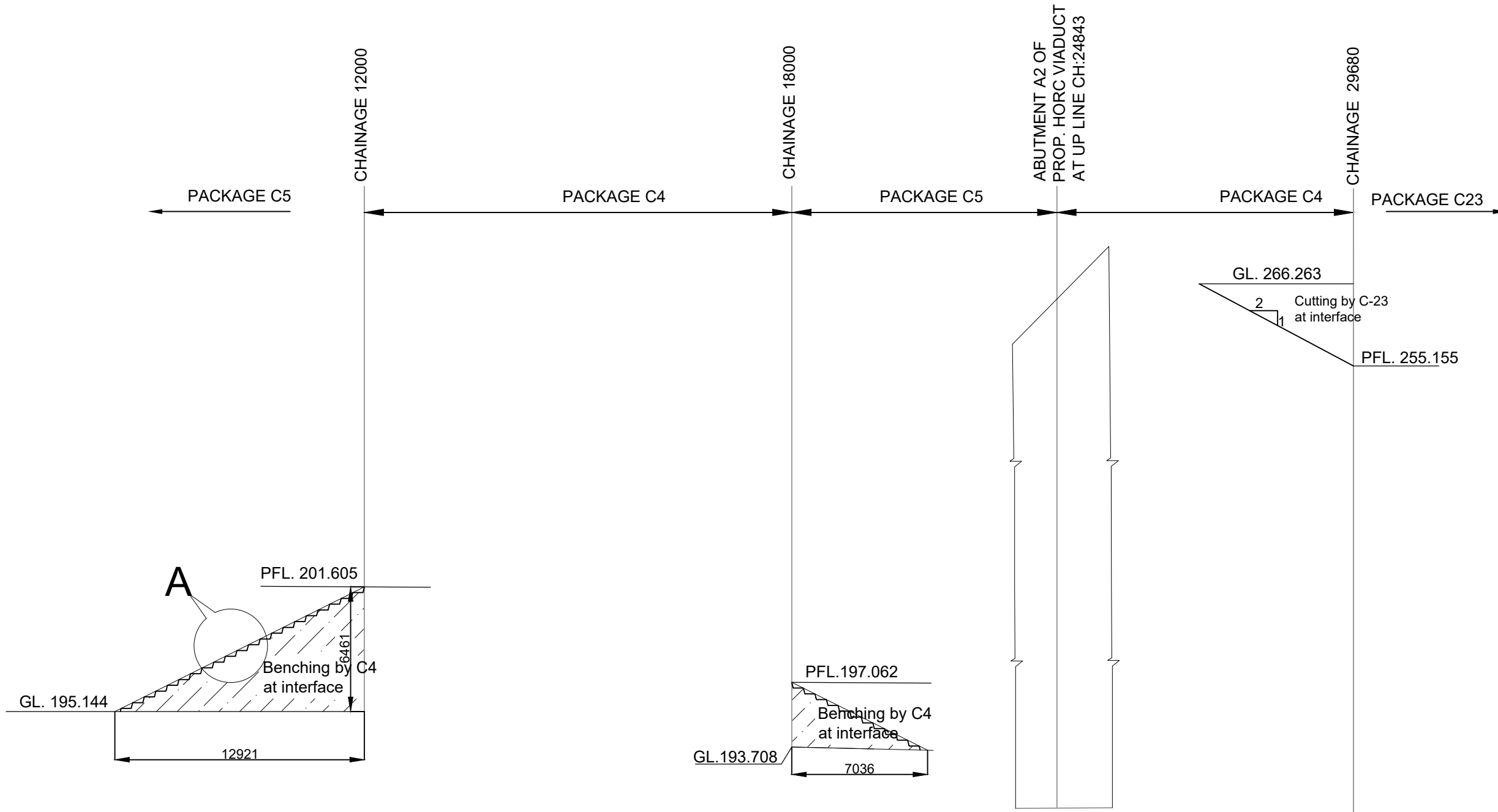
DRG. NO. **GC-HRIDC-SK-GEN-009** SHEET NO.

SCALE : **AS SHOWN** ISSUE DATE REVISED DATE

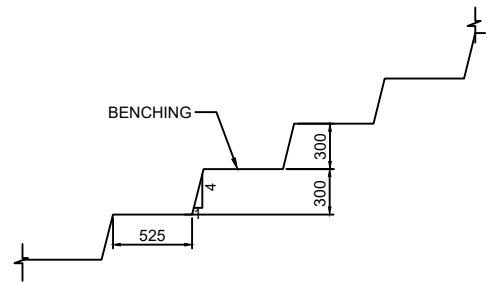
GC/HORC		HRIDC	
NAME / DEGINATION	SIGN	NAME / DEGINATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	UMA.M.RAO DGM/C-1	<i>Uma M Rao</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS AND ALL LEVELS ARE IN METER.
2. CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00m, WITH RESPECT TO UP MAIN LINE.
3. FOR OTHER DETAILS REFER RDSO SPECIFICATION NO. RDSO/2020/GE:IRS-004 SEPTEMBER 2020 "COMPREHENSIVE GUIDELINES AND SPECIFICATIONS FOR RAILWAY FORMATION".





SECTIONAL ELEVATION



DETAIL -A

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**






CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

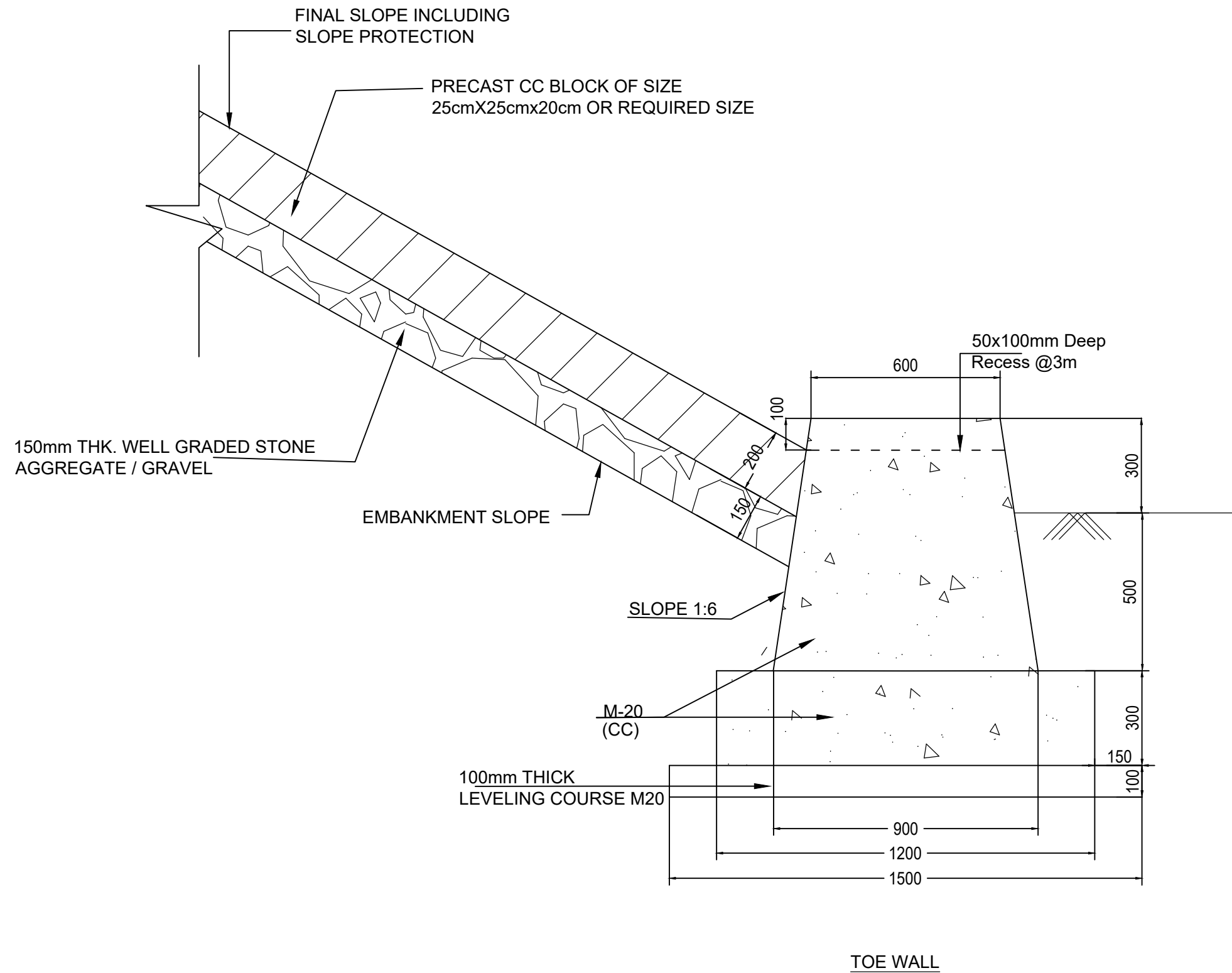


TITLE:-
CONCEPTUAL PLAN
INTERFACING LOCATION BANK BENCHING

SKETCH NO. GC-HRIDC-C4-SK-012_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE:** 21.11.2022 **REVISED DATE:** 10.01.2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			




NOTES:-

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. M-20 GRADE CONCRETE SHALL BE USED FOR TOE WALL.
4. 25MM EXPANSION GAP SHALL BE PROVIDED AT 30m (MAX.) OF LENGTH OF WALL.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**






CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

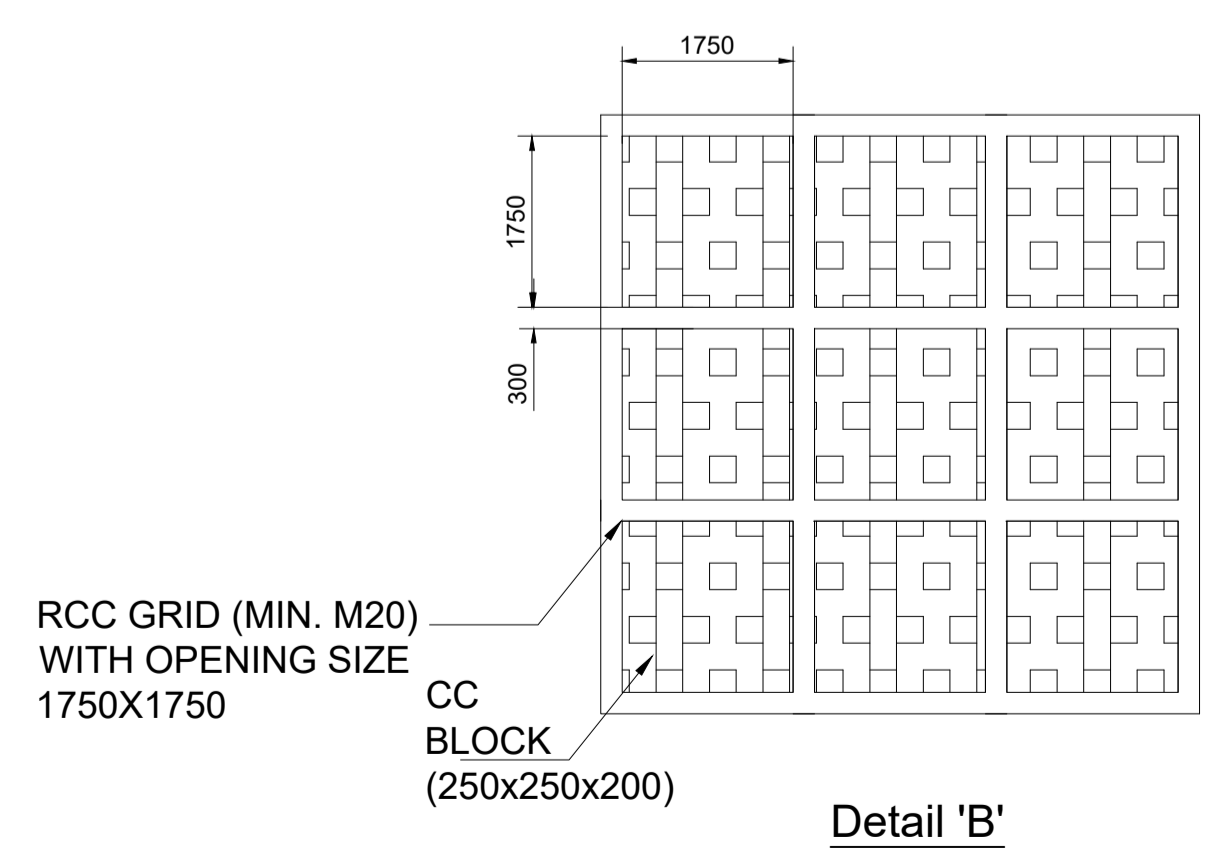
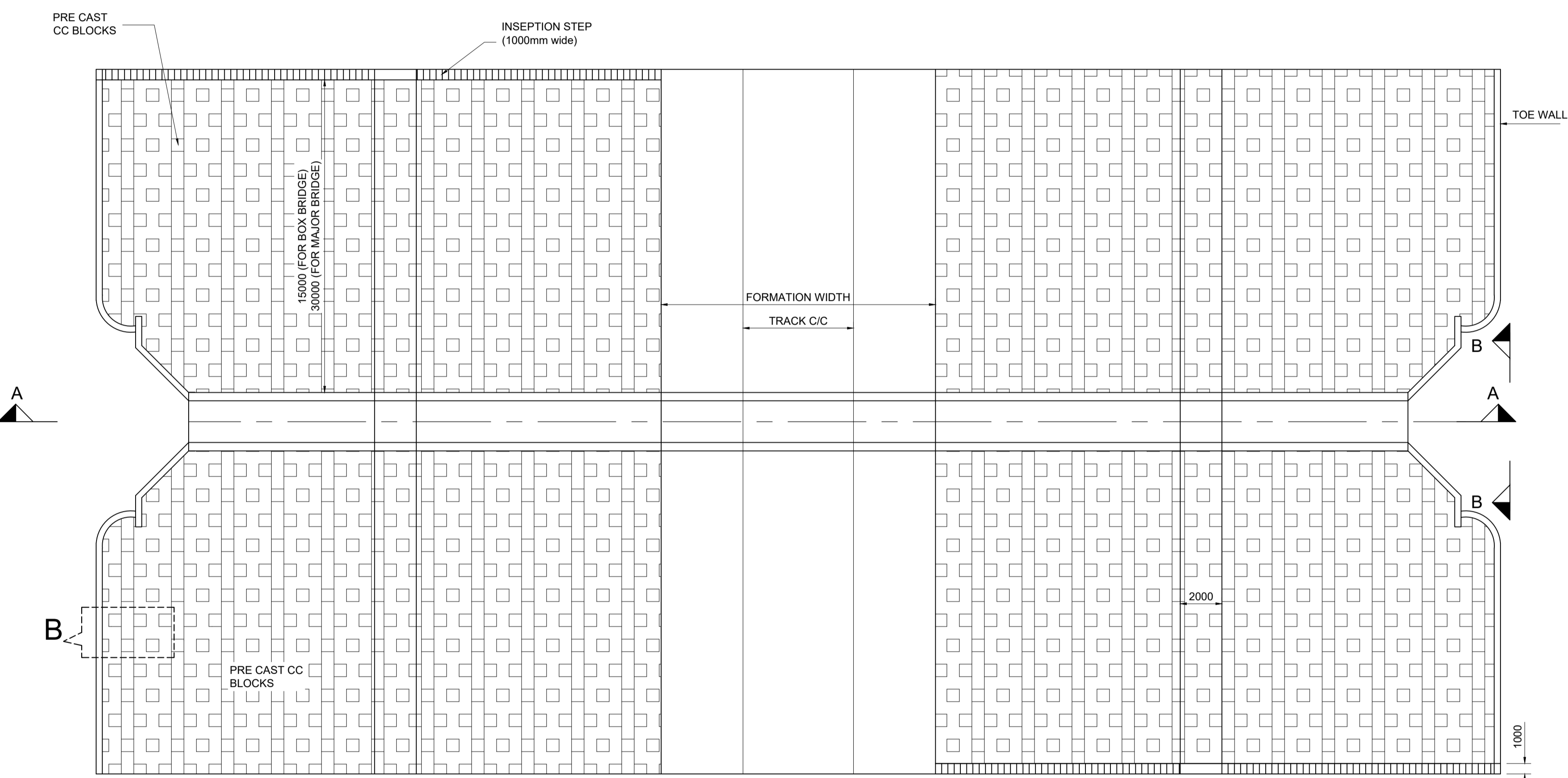
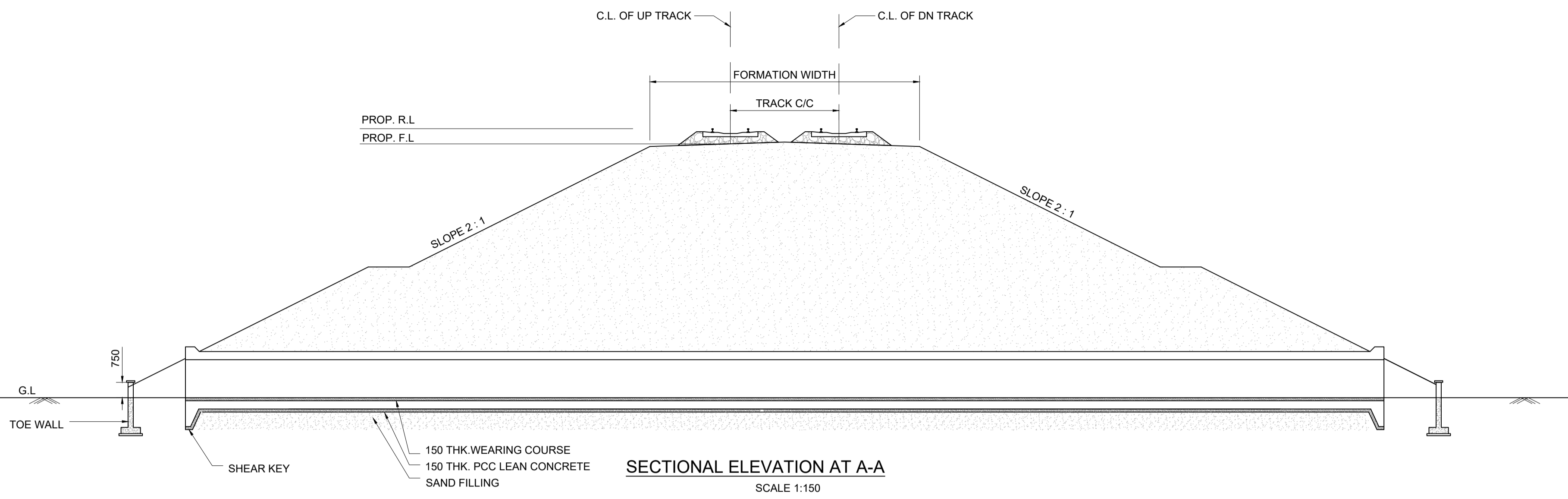
 
 THE INFRASTRUCTURE PEOPLE Member of the Surbana Jurong Group

TITLE:-
 CONCEPTUAL PLAN
 CC TOE WALL

DRG. NO. GC-HRIDC-SK-GEN-014_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 28.12.2022 **REVISED DATE** 09.01.2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			



NOTES :

1. ALL DIMENSIONS ARE IN MILLIMETERS, UNLESS OTHERWISE MENTIONED.
2. PROTECTION WORK WITH PRECAST CC BLOCK ON BOTH SIDES OF BRIDGES SHALL BE DONE FOR 15m LENGTH AND 30m LENGTH FOR MINOR BRIDGES & MAJOR BRIDGES RESPECTIVELY.
3. THIS DRAWING IS VALID FOR SINGLE/MULTIPLE NO. OF TRACKS. TRACKS SHOWN IN DRAWING ARE SYMBOLIC PRESENTATION ONLY.

LEGEND

PRL	PROPOSED RAIL LEVEL
PFL	PROPOSED FORMATION LEVEL
HFL	HEIGHTEST FLOOD LEVEL
GL	GROUND LEVEL

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- CONCEPTUAL PLAN
TYPICAL DETAILS OF PROTECTION WORK

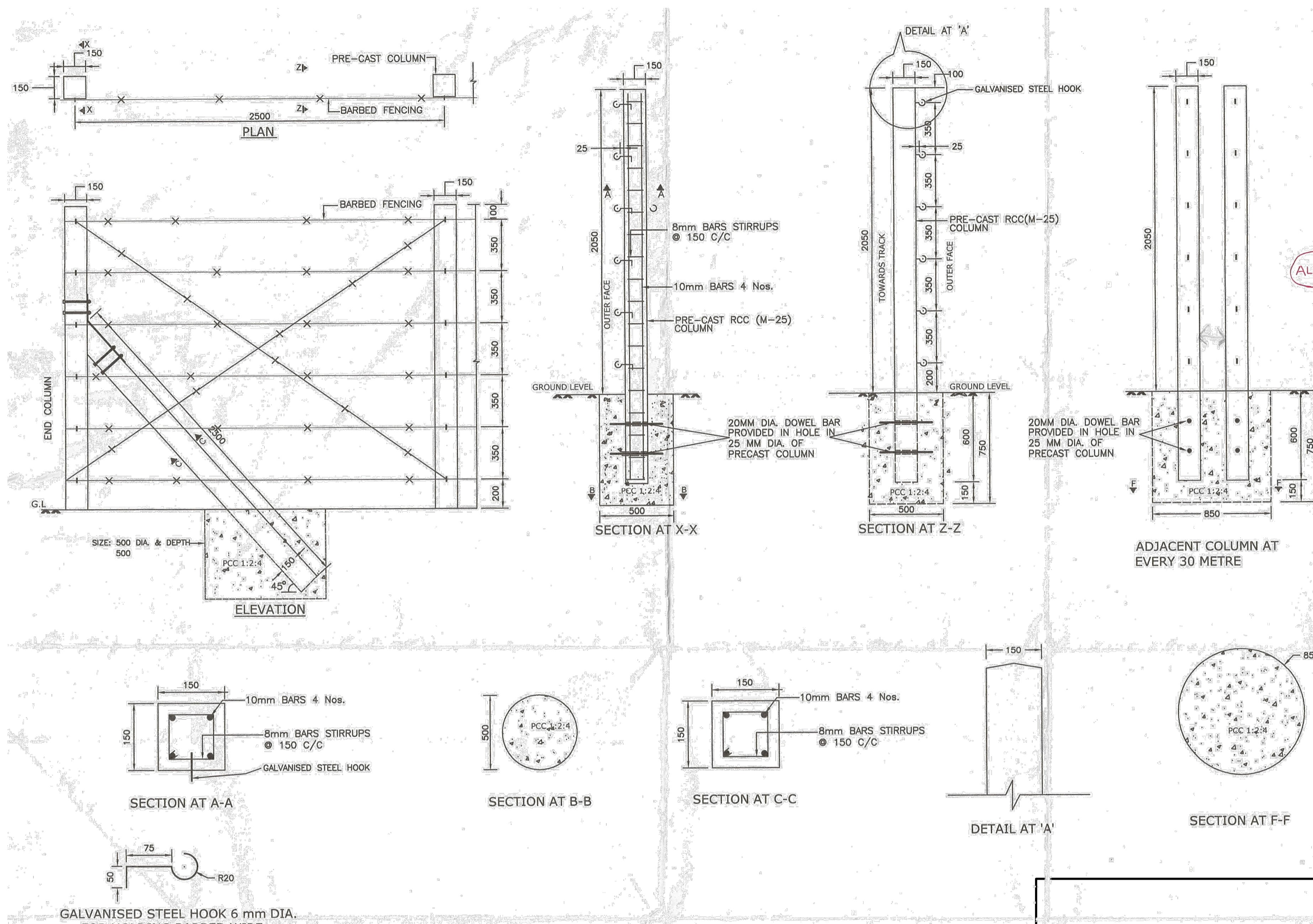
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			

DRG. NO. GC-HRIDC-SK-GEN-015_A1 **SHEET NO.**

SCALE : AS SHOWN **ISSUE DATE** 28.12.2022

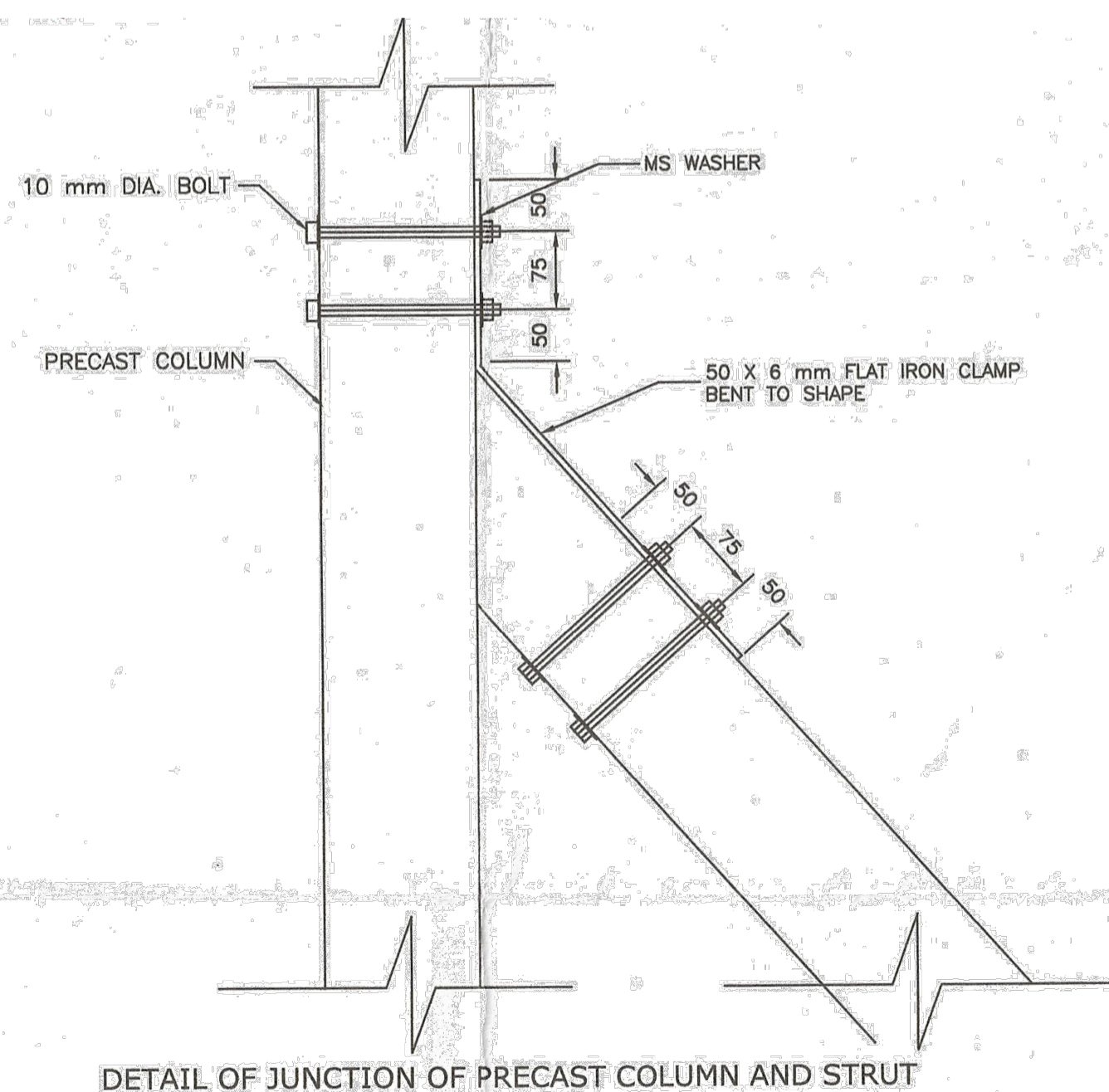
Notes:

1. THIS DRAWING IS BASED ON RDSO DRAWING NO. RDSO/WKS/2019/2.
2. GRADE OF CONCRETE M25.



NOTES:


1. ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE SPECIFIED.
2. BARBED FENCING SHALL BE MADE OF G.I. BARBED WIRES CONFIRMING TO IS: 278. THE WEIGHT OF G.I. BARBED WIRE SHALL BE AS PER SOR.
3. THE G.I. BARBED WIRES SHALL BE FIXED TO THE COLUMNS WITH HOOKS MADE OF 6 mm DIA. GALVANIZED STEEL. ANOTHER END OF GALVANIZED STEEL HOOK SHALL BE PLACED BEHIND STIRRUPS AND TIED WITH STIRRUPS AS PER DRAWING TO PROVIDE STRENGTH.
4. FOR ERECTION OF WIRE FENCING, RECOMMENDATIONS GIVEN IN IS:4996-1984 SHALL BE FOLLOWED. FENCING WIRE SHALL BE TIED TO GALVANIZED STEEL HOOKS WITH SHORT PIECE OF LIGHT WIRE.
5. M-25 GRADE CONCRETE SHALL BE USED IN PRECAST COLUMN/ STRUT. COLUMN/ STRUT SHALL BE CAST AT CENTRALIZED DEPOT UNDER CONTROLLED CONDITION AS PER IS :456-2000.
6. TMT BARS OF GRADE FE 415/ 500 OF SPECIFIED DIA. SHALL BE USED. TMT BAR SHALL BE CONFIRMING TO IS:1786 (LATEST).
7. ZONAL RAILWAY MAY PAINT THEIR INITIALS (SUCH AS NR, SER etc.) ON COLUMN AND STRUT.
8. STRUT OR BRACE SHALL BE FIXED WITH END RCC COLUMN BY SUITABLE ARRANGEMENT AS DETAILED IN DRAWING. 50 X 6 mm MS FLAT SHALL BE USED TO CONNECT STRUT/BRACE TO RCC COLUMN. 10 mm DIA. MS BOLT BLACK HEXAGONAL HEAD ROUND NECK WITH HEXAGONAL NUTS AND TWO WASHER SHALL BE USED. AFTER TIGHTING NUT, END OF BOLT SHALL BE HAMMERED TO MAKE ANTITHEFT.
9. SUPPORTING STRUT SHALL BE PROVIDED AT FIRST / END COLUMN OR CHANGE OF DIRECTION.
10. 1:20 SLOPE SHALL BE PROVIDED ON TOP OF COLUMN AT THE TIME OF CASTING.
11. AT EVERY 30 METRE TWO COLUMN SHALL BE GROUTED SIDE BY SIDE.
12. IN UNDULATING AREA, COLUMN SHALL BE PLACED ACCORDINGLY SO THAT BARBED WIRE ARE ALIGNED HORIZONTAL. VERTICALITY OF COLUMN SHALL BE CHECKED DURING ERECTION.
13. FOUNDATION SHALL BE DUG USING AUGAR/ MECHANICAL BORING EARTH SHALL BE RAMMED PROPERLY AND 50 MM SAND SHALL BE PLACED BEFORE FOUNDATION CASTING. FOUNDATION SHALL BE CURED PROPERLY.
14. THIS CATTLE FENCE SHALL BE PROVIDED AT RAILWAY BOUNDARY.



→ IS: 456 (LATEST) SHALL BE FOLLOWED IN ALL R.C.C & P.C.C. WORKS.

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**

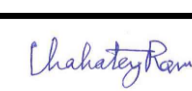
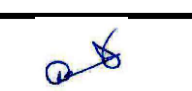



CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

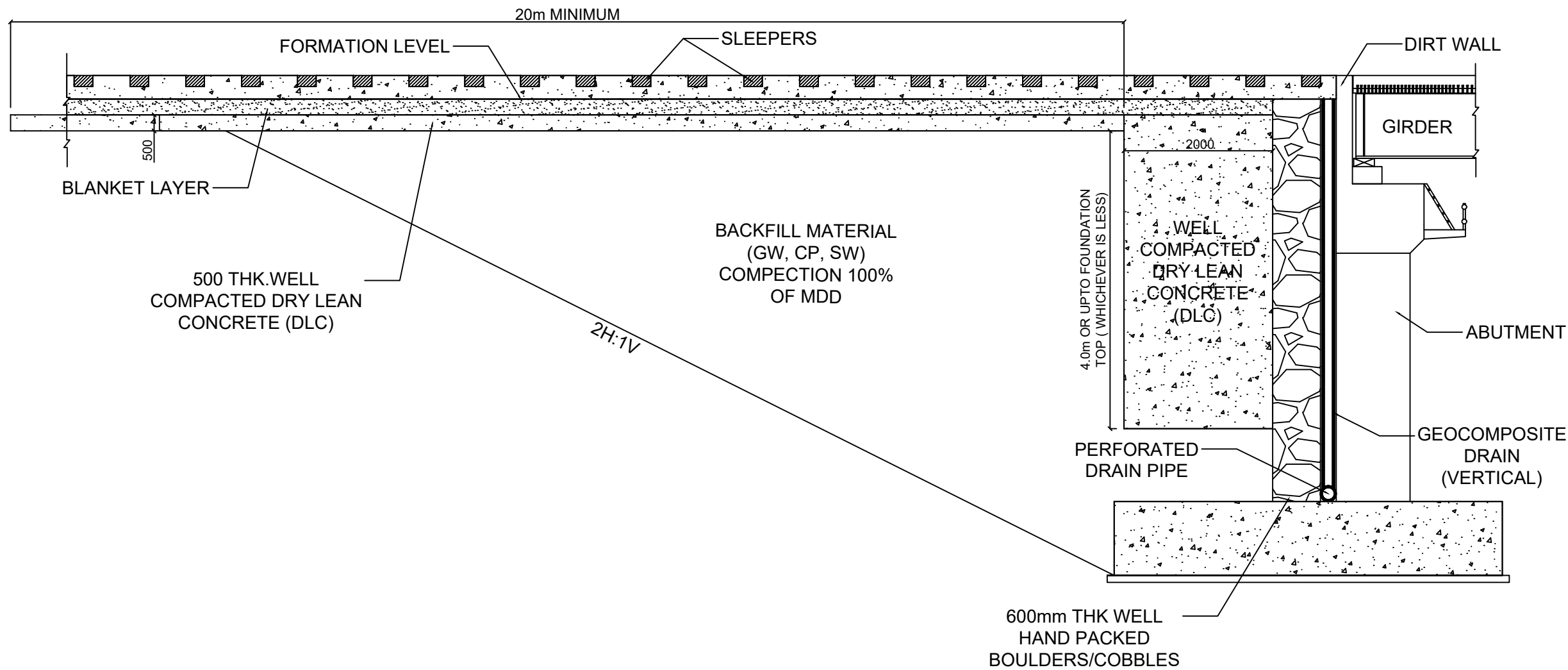
 

TITLE:- CONCEPTUAL PLAN BARBED WIRE FENCING

DRG. NO. GC-HRIDC-SK-GEN-016_A1 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 28.12.2022

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			




TRANSITION SYSTEM ON APPROACHES OF MAJOR BRIDGES

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. THIS DRAWING IS PREPARED BASED UPON REFER RDSO REPORT NO. GE:R-50 DATED JULY-2021 FOR DETAILS THIS REPORT SHALL BE FOLLOWED.
4. GEO-COMPOSITE DRAINS TO BE USED BEHIND BRIDGE ABUTMENT SHALL BE AS PER RDSO/2018/GE:IRS-006, MARCH-2019 AND COMPREHENSIVE GUIDELINE AND SPECIFICATIONS FOR RAILWAY FORMATION.
5. PROVISION IN RETURN WALL SHALL BE KEPT TO TAKE OUT THE DISCHARGE FROM PERFORATED DRAIN PIPE.
6. THIS DRAWING SHALL BE USED FOR MAJOR BRIDGE APPROACHES (DEFINITION OF MAJOR BRIDGE SHALL BE AS PER IRBM).

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**






CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

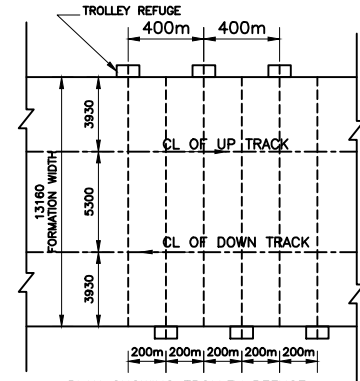
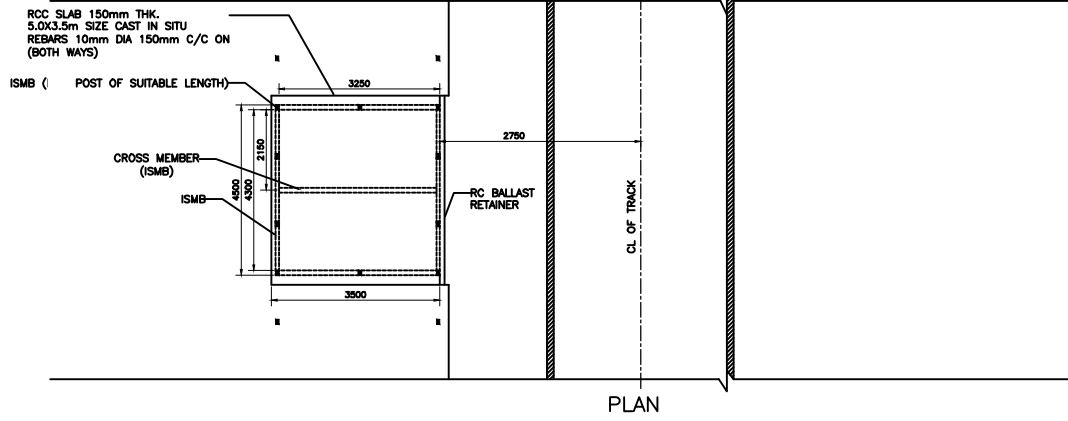
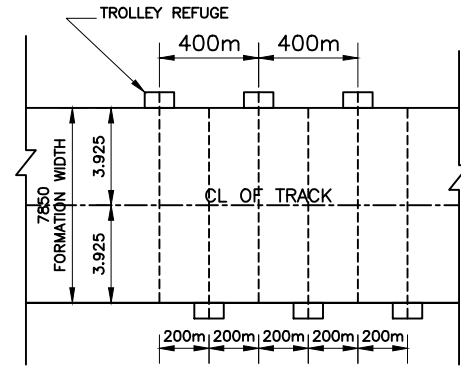
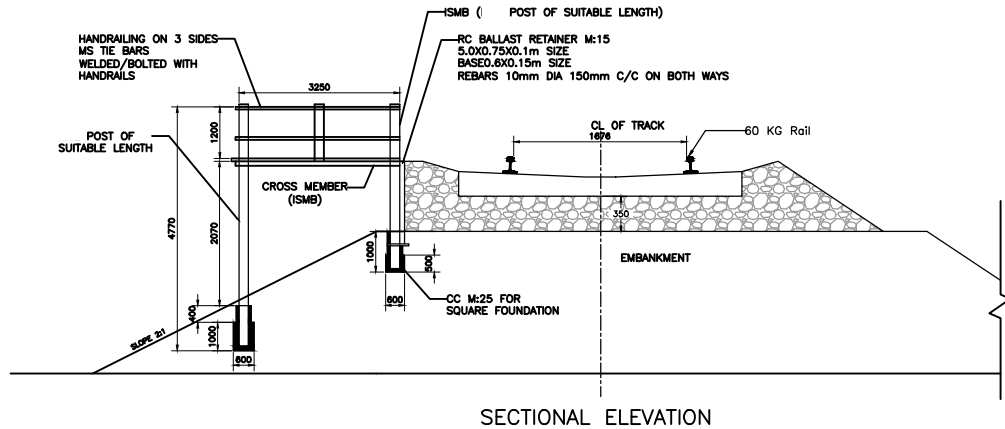
 
 THE INFRASTRUCTURE PEOPLE Member of the Surlana Jurong Group

TITLE:-
 CONCEPTUAL PLAN FOR TRANSITION SYSTEM OF MAJOR BRIDGE APPROACHES

DRG. NO. GC-HRIDC-SK-GEN-019_A1 **SHEET NO.** 1 OF 1


SCALE : AS SHOWN **ISSUE DATE** 28.12.2022 **REVISED DATE** 09.01.2023


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			








NOTES:
 1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT STATED.
 2. DO NOT SCALE THE DRAWING FOLLOW ONLY WRITTEN DIMENSIONS.

PROJECT:
 HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONPAT BYPASSING DELHI
 AREA BY LINKING ASAOJI-PATLI-SULTANPUR-ASAJDAH BY
 NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED

CONSULTANT:
 GENERAL CONSULTANT FOR
 HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.

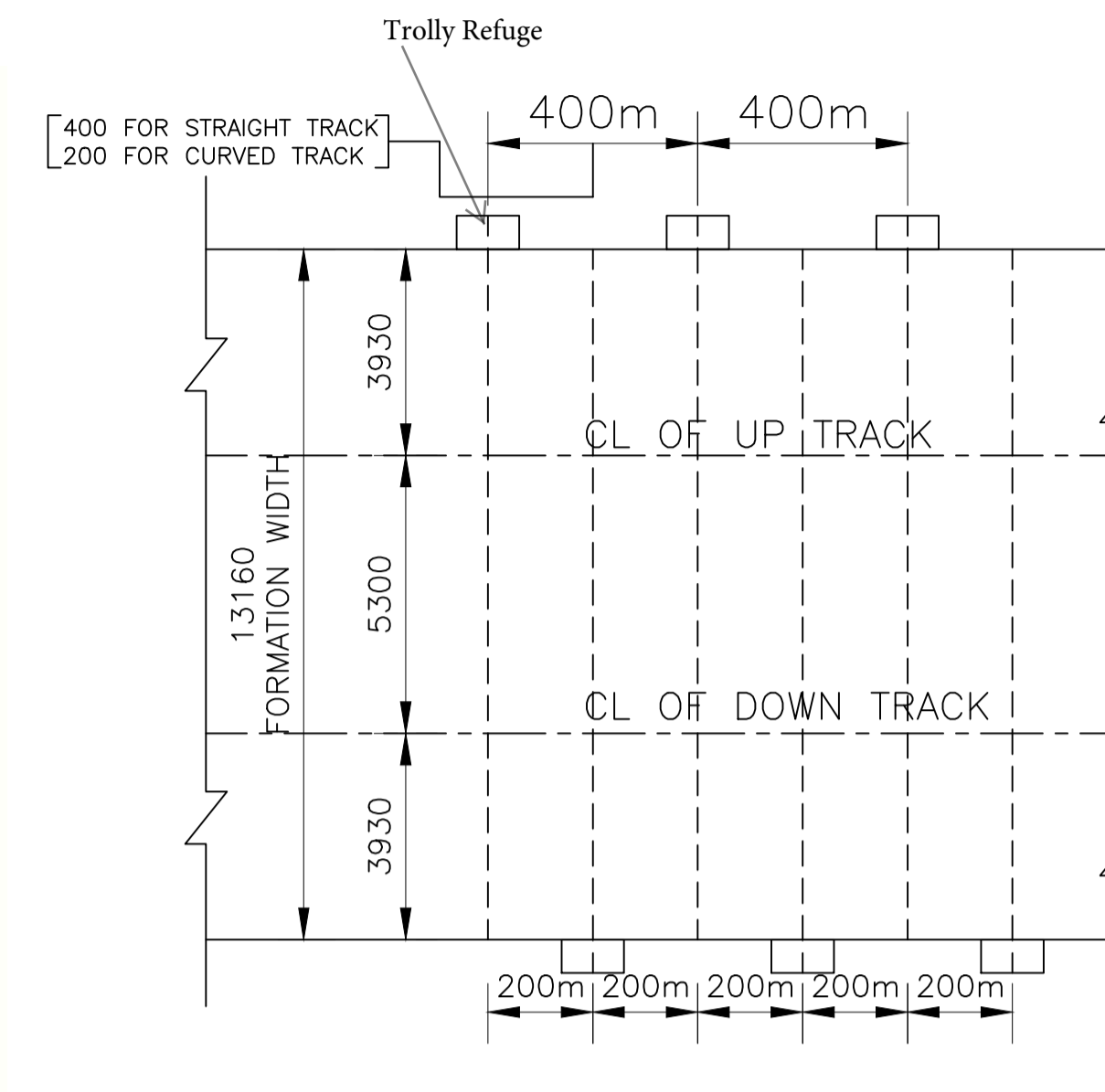
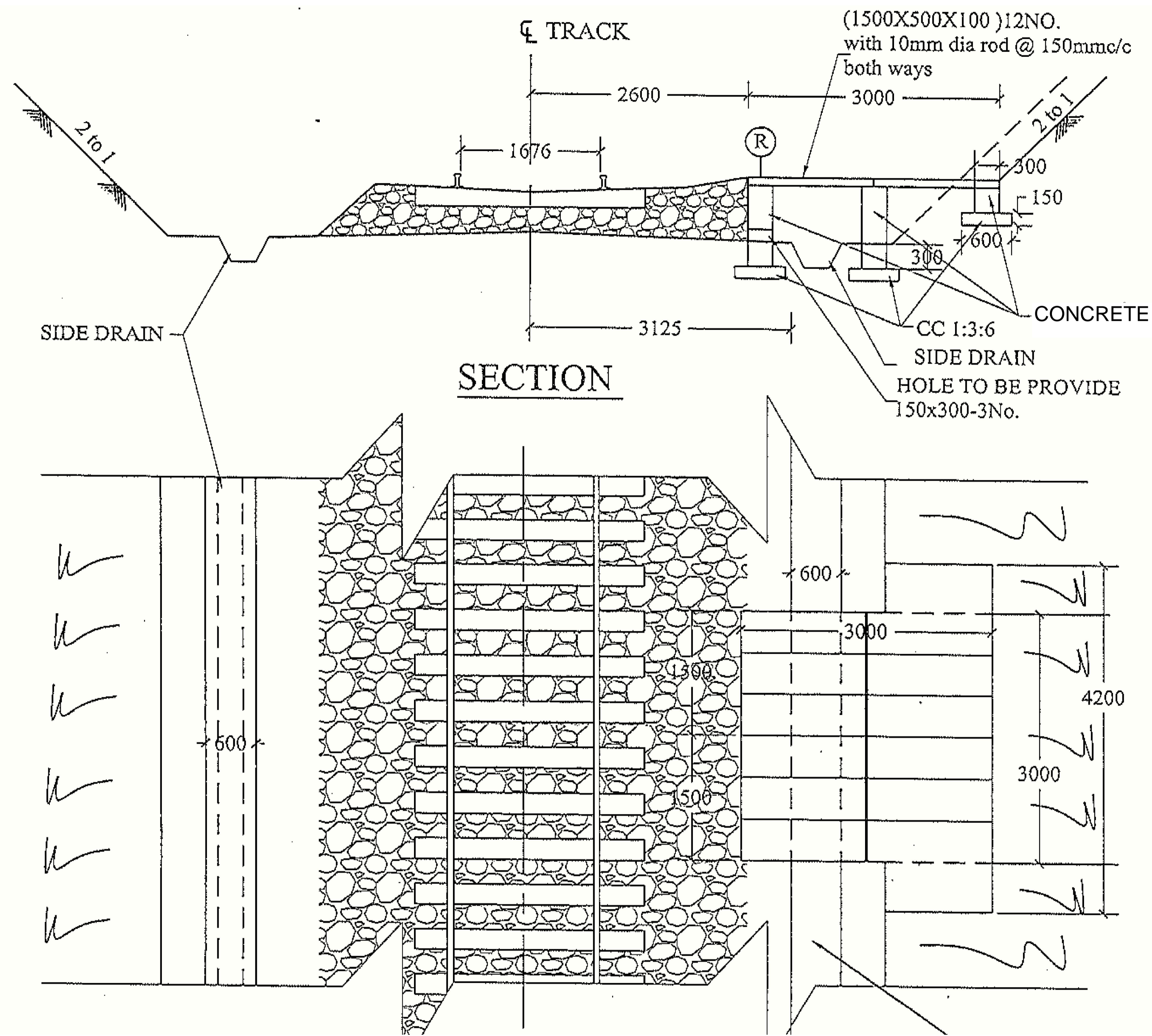


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DIR/CIVIL		RAJU SOLANKI DG/MC-SOUTH	
RETU PARTIAL CDE/ CIVIL			

TITLE:-
 CONCEPTUAL PLAN FOR
 TROLLEY REFUGE IN EMBANKMENT

DRG. NO. GC-HRIDC-SK-GEN-022 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 28.12.2022




- NOTES:
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT STATED.
 - DO NOT SCALE THE DRAWING FOLLOW ONLY WRITTEN DIMENSIONS.
 - RCC PRECAST SLAB M35 (1500X500X100)

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
 AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
 NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:

**HARYANA RAIL INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED.**

CONSULTANT:

**GENERAL CONSULTANT FOR
 HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

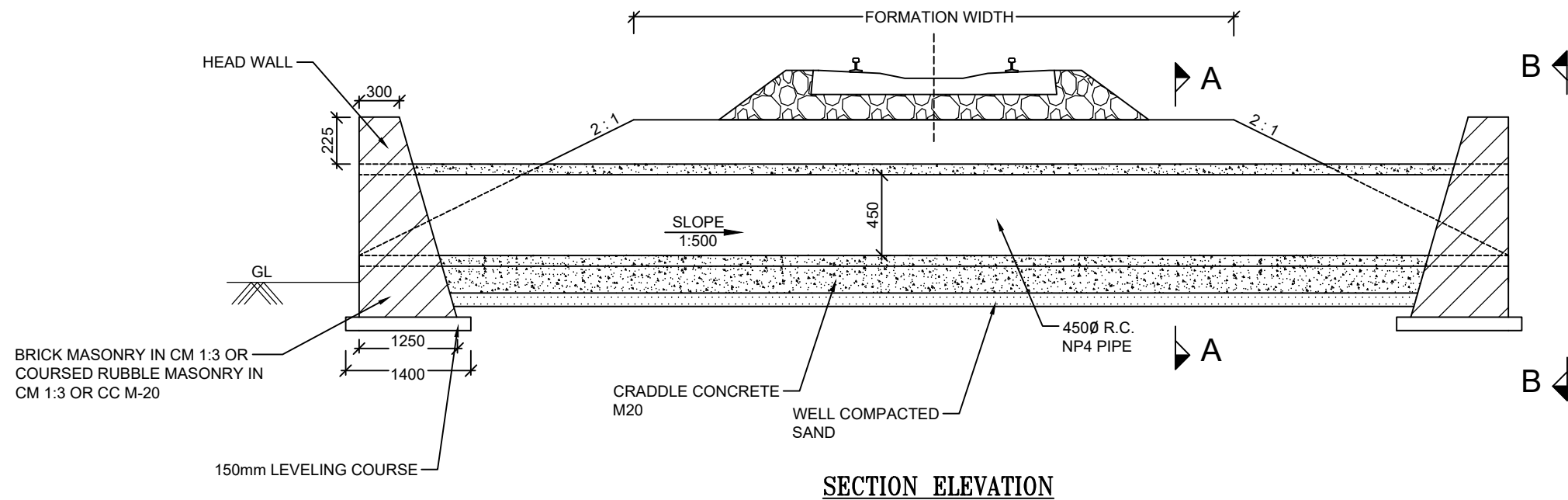


GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	R. R. KUMAR GM/ IP&P	<i>R.R. Kumar</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir Agrawal</i>	RAJU SOLANKI DGM/C-SOUTH	<i>Raju Solanki</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu Patial</i>		

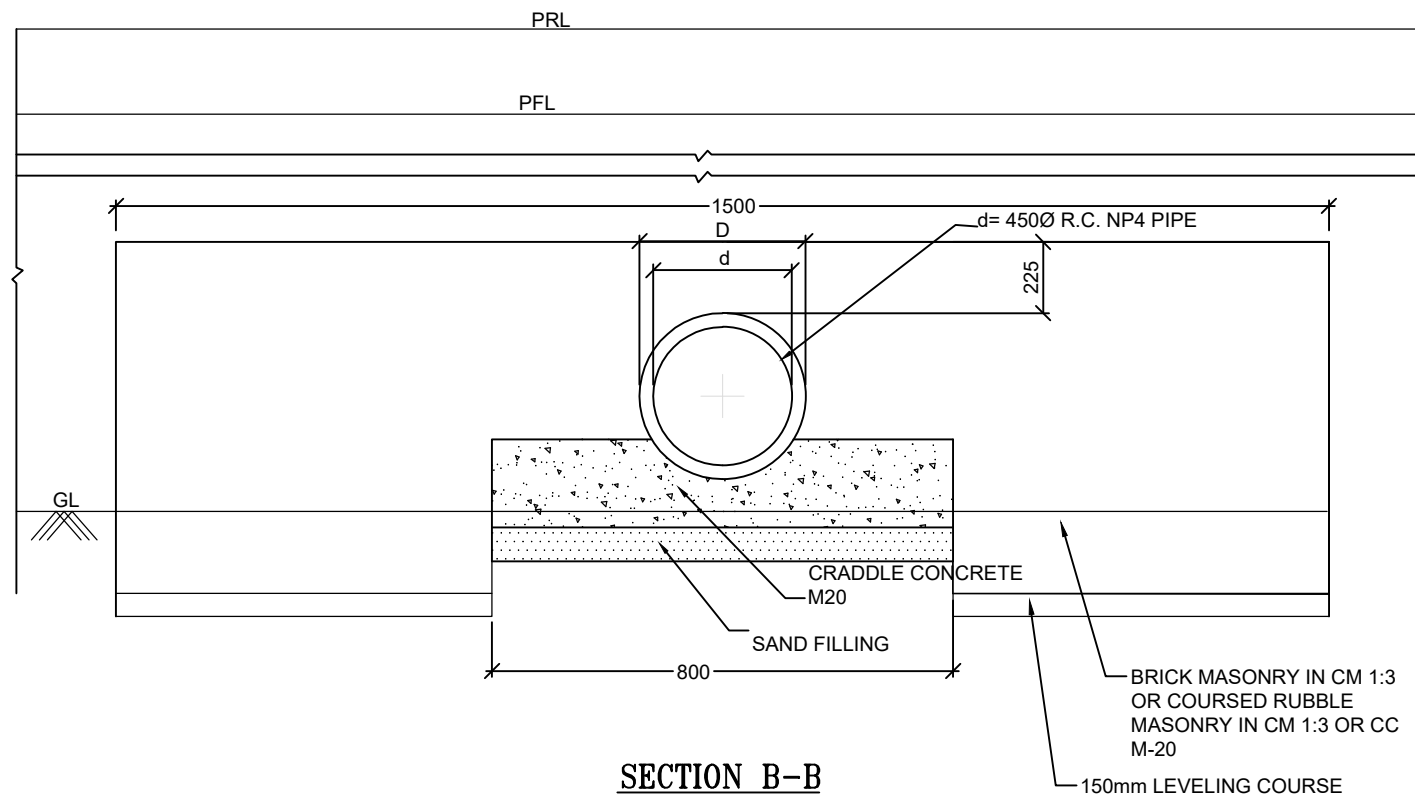
TITLE:-
 CONCEPTUAL PLAN FOR
 TROLLEY REFUGE IN CUTTING

DRG. NO. GC-HRIDC-SK-GEN-023 SHEET NO. 1 OF 1

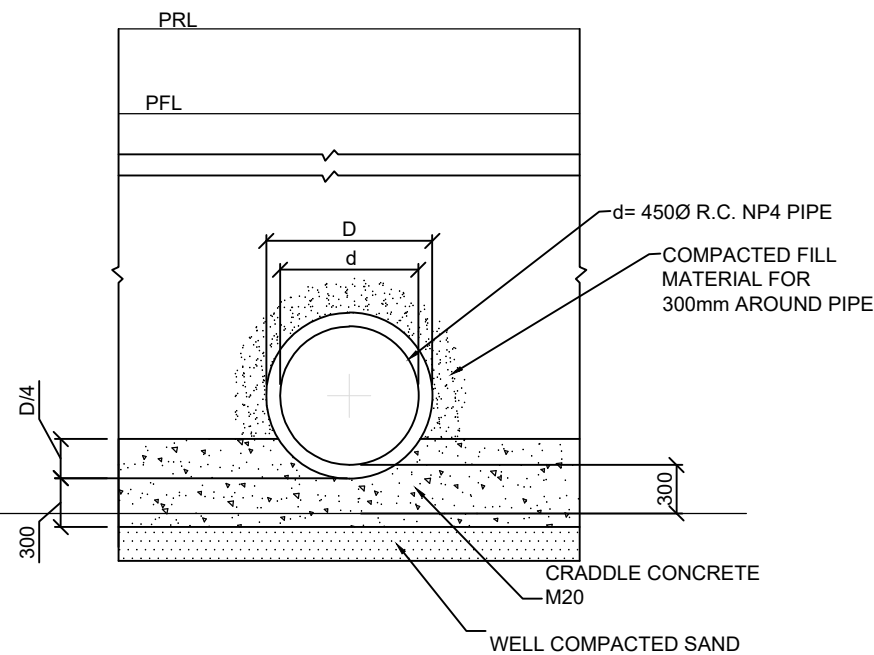
SCALE : AS SHOWN ISSUE DATE 28.12.2022



SECTION ELEVATION




SECTION B-B




SECTION A-A

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
 2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
 3. LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
 4. LONGITUDINAL SLOPE OF PIPE SHALL BE MINIMUM 1 IN 500.
 5. BEDDING CONDITION BELOW NP-04 PIPE SHALL BE AS PER IS:783.






PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**

CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:-
 CONCEPTUAL SKETCH FOR NP4 PIPE OF 450mm DIA

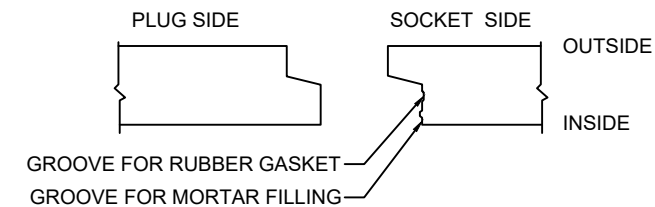
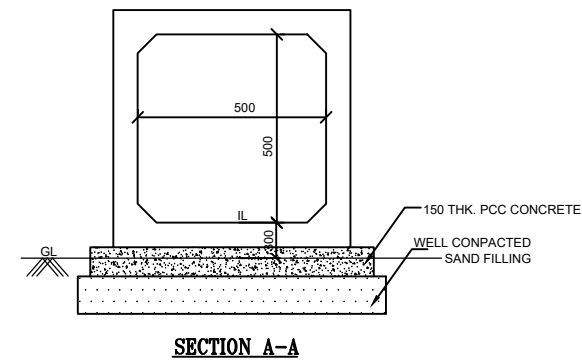
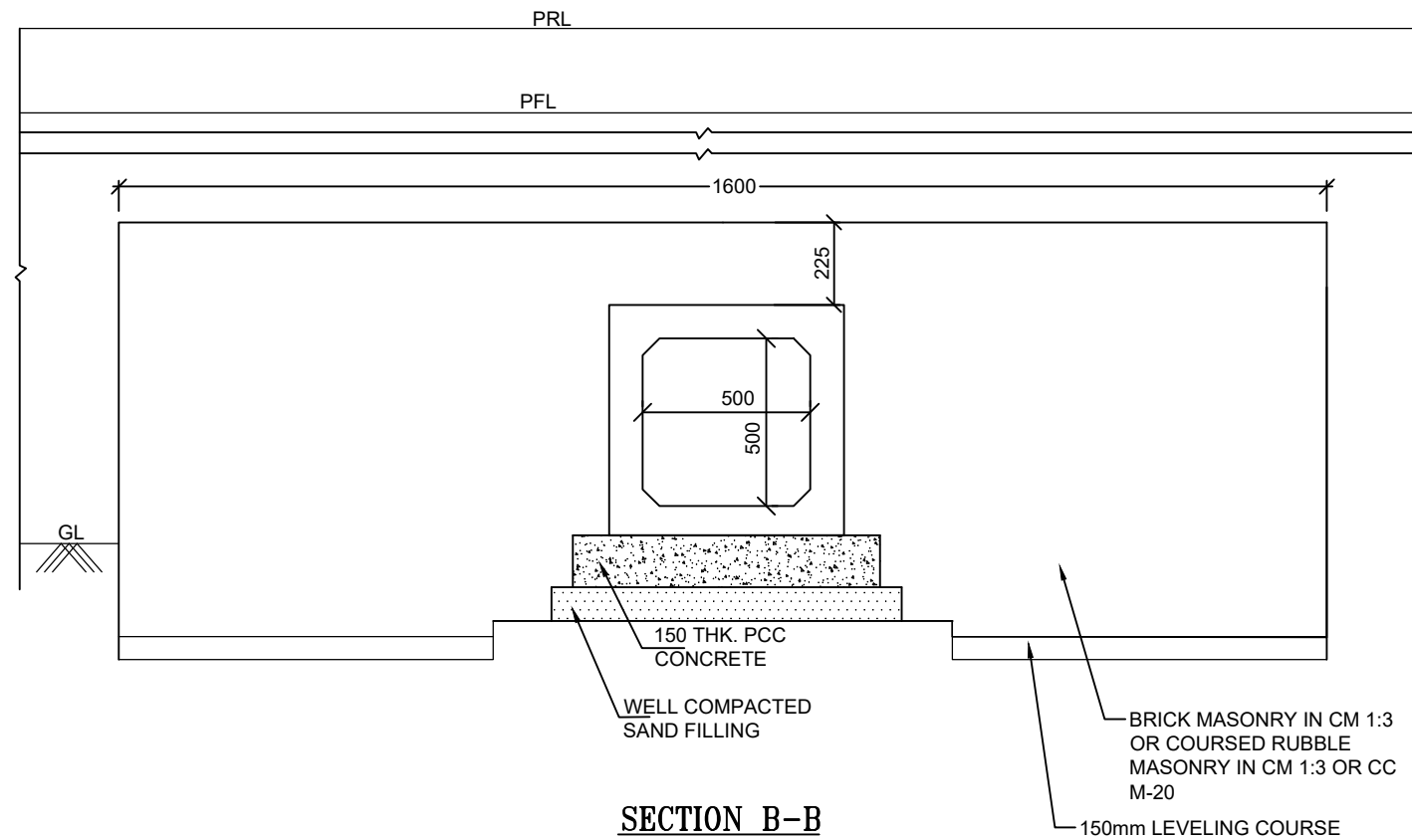
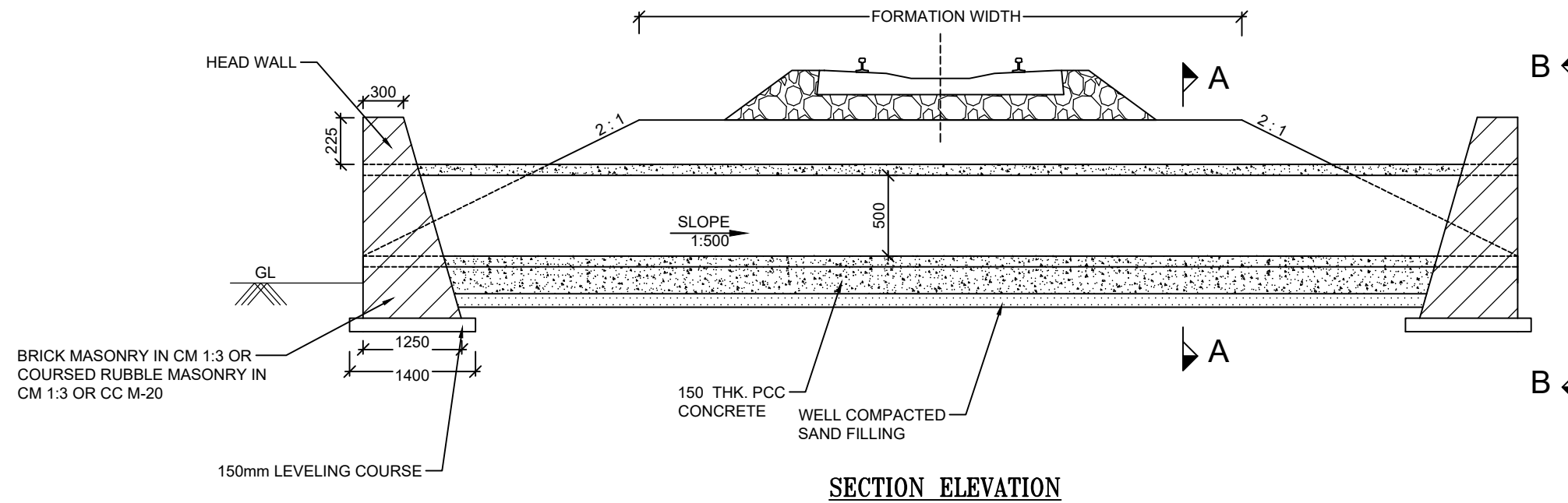
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			

DRG. NO. GC-HRIDC-SK-GEN-028_A1 SHEET NO. 1 OF 1

SCALE : AS SHOWN ISSUE DATE 28.12.2022 REVISED DATE 10.01.2023

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. LOOSE/UNSUITABLE SOIL BELOW CULVERTS SHALL BE REPLACED WITH SUITABLE GRANULAR MATERIAL.
4. STRUCTURE IS TO BE DESIGNED FOR 32.5T LOADING AND AVAILABLE FILL AS APPLICABLE.
5. PRECAST BOX SEGMENTS SHALL BE OF MINIMUM 2m LENGTH, JOINED TOGETHER WITH PLUG & SOCKET JOINTS OVER THE BARREL LENGTH.
6. INVERT LEVEL (IL) OF BOX SHALL BE 300mm ABOVE THE GROUND LEVEL.
7. 150mm THICK PCC SHALL BE DONE OVER THE WELL COMPACTED SAND FILLING OR WELL COMPACTED GROUND.




- PLUG & SOCKET JOINTS
- SEALING MATERIAL - RUBBER GASKET

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	R. R. KUMAR GM/ IP&P	<i>R.R. Kumar</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/C-SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
 AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
 NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED.**

CONSULTANT:
 **GENERAL CONSULTANT FOR
 HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

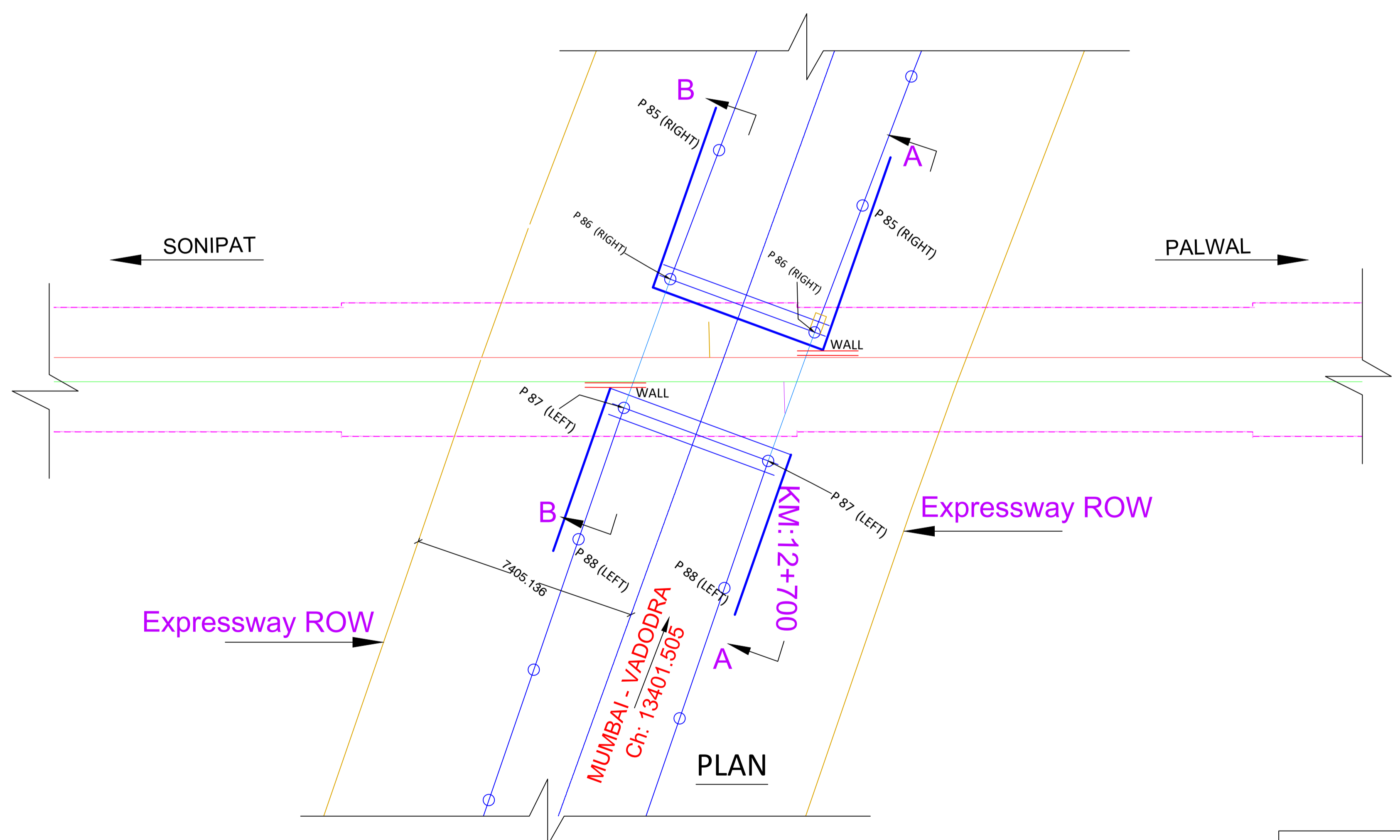
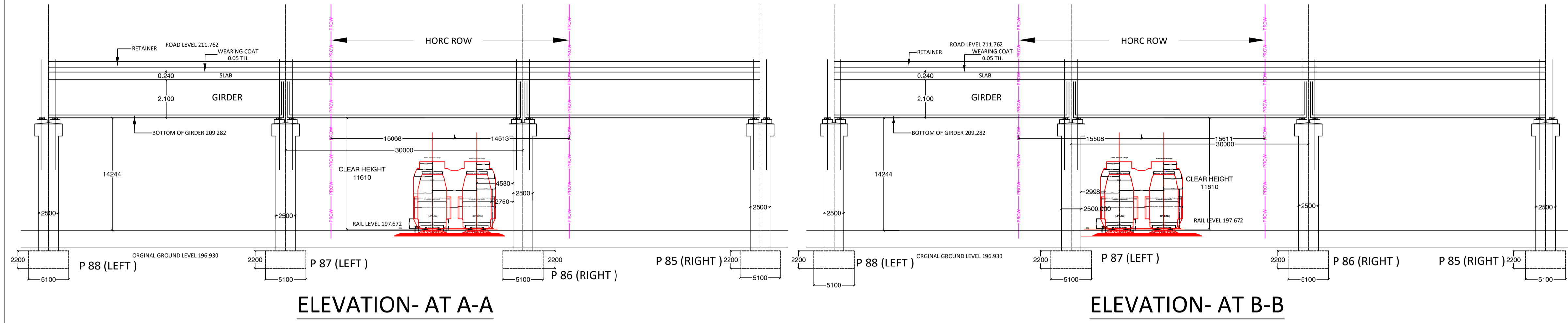


TITLE:-
 CONCEPTUAL SKETCH FOR
 BOX CULVERT 500 X 500 MM SIZE

DRG. NO. GC-HRIDC-SK-GEN-029_A1 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 28.12.2022 **REVISED DATE** 10.01.2023

- NOTES:
1. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT LEVELS WHICH ARE IN METER.
 2. FOR HORC RAIL LEVELS, FORMATION LEVEL, GRADES ETC. REFER L-SECTION.
 3. ENGINEER IN CHARGE/SITE ENGINEER SHOULD VERIFY THE RAIL LEVEL, FORMATION LEVEL, BED LEVEL & TRACK CENTER AT SITE BEFORE COMMENCEMENT OF WORK.
 4. ENGINEER IN CHARGE/SITE ENGINEER SHALL ENSURE THE SAFETY OF TRACK/ROAD AT ALL THE TIME AND SHALL TAKE NECESSARY PRECAUTION TO PREVENT DAMAGE OF S&T CABLE /OFC DURING EXECUTION OF WORK CONCERNED DEPT. SUCH AS BSNL/AIRTEL/SSE/SIG/ADSTE ETC. SHALL BE INFORMED WELL IN ADVANCE BEFORE EXECUTION OF WORK.
 5. STRUCTURAL ARRANGEMENT UNDER THE PROPOSED TRACK SHALL BE ON PLANNED AND DESIGNED TO AVOID LOAD TRANSFER TO ANY OF THE STRUCTURE OF ELEVATED ROAD CUM ROB OF DELHI- VADODARA EXPRESSWAY.
 6. ADEQUATE PRECAUTION SHALL BE TAKEN TO AVOID ANY KIND OF DAMAGE TO THE EXISTING STRUCTURE.
 7. CONTRACTOR SHALL PLANT TREES EQUAL TO NUMBER OF TREES AFFECTED DURING CONSTRUCTION.
 8. CONTRACTOR SHALL RESTORE THE DRAIN AFFECTED DUE TO LAYING OF RAIL CROSSING BY PROVIDING PROPER OUTLET AT NEAREST CROSS DRAINAGE STRUCTURE TO THE SATISFACTION OF NHAI.




CHAINAGE HORC	13401.505
TOP OF ROAD	211.762
BOTTOM OF EXISTING GIRDER	209.282
HORC RAIL LEVEL	197.672
AVAILABLE VERTICAL CLEARANCE	11.61
BOTTOM OF GIRDER TO RAIL LEVEL	11.610
REQUIRED VERTICAL CLEARANCE	8.50

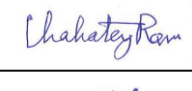
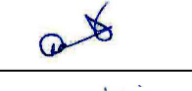
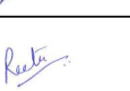

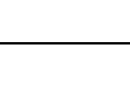
PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:

HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:

GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



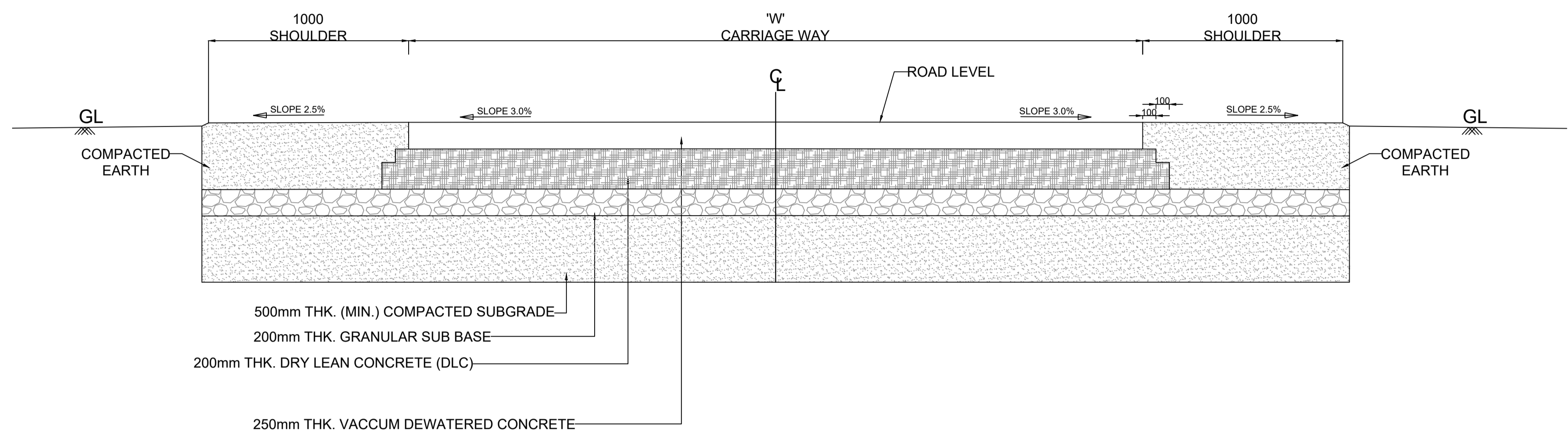
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		R. R. KUMAR GM/ IP&P	
SUDHIR AGRAWAL DPD/CIVIL		RAJU SOLANKI DGM/C-SOUTH	
REETU PATIAL CDE/ CIVIL			

TITLE:-
 CONCEPTUAL GENERAL ARRANGEMENT DRAWING
 CROSSING OF HORC RAIL LINE BELOW VADODARA EXPRESSWAY

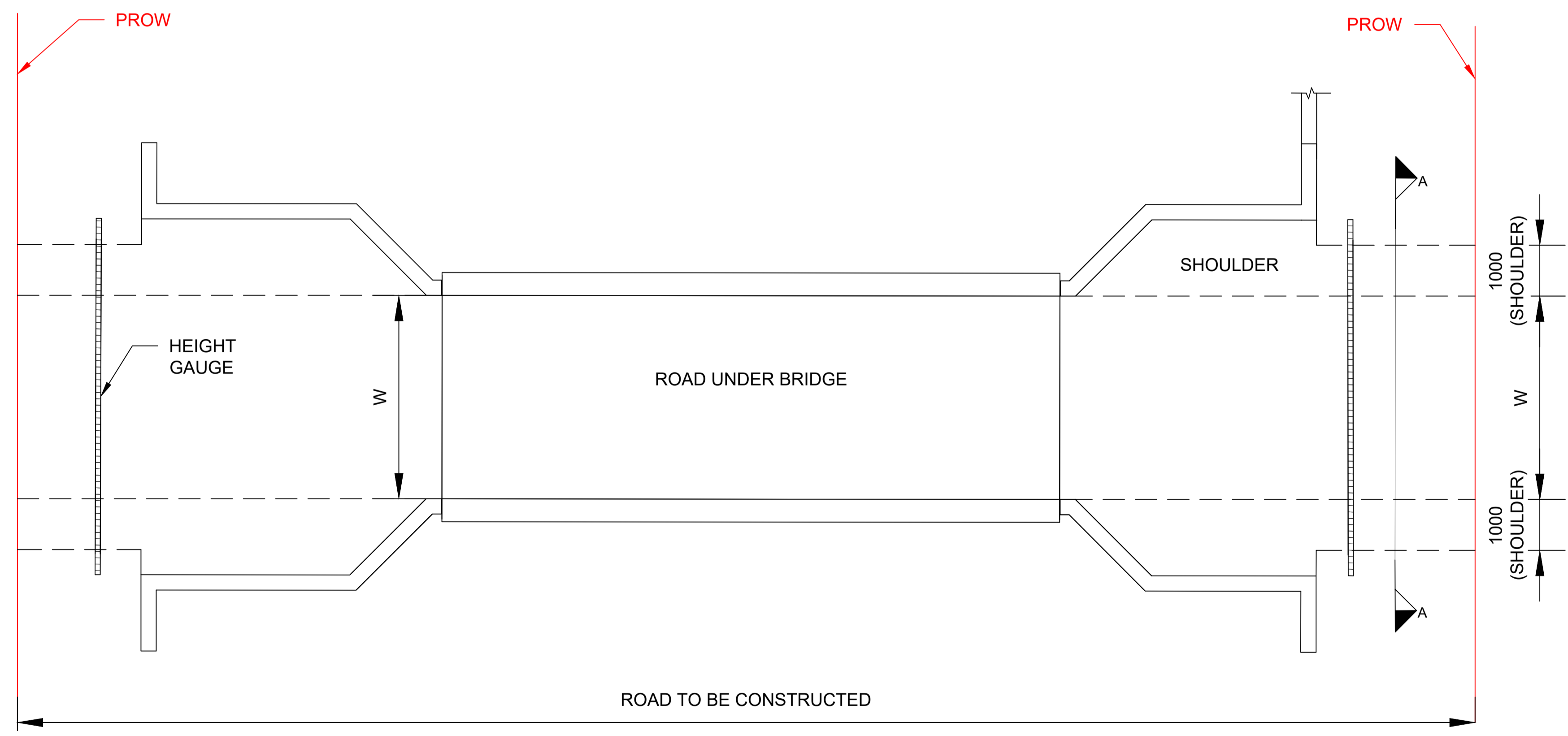
DRG. NO. GC-HRIDC-SK-GEN-030_A0 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 28.12.2022

- NOTES:
1. ALL DIMENSION ARE IN MILLIMETERS EXPECT LEVELS WHICH ARE IN METERS. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSION ARE TO BE FOLLOWED.
 2. ROAD SHALL BE CONSTRUCTED AS PER MORTH STANDARDS.
 3. ROAD SHALL BE CONSTRUCTED UPTO ROW OF RUB




TYPICAL CROSS-SECTION OF ROAD



PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**

CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.

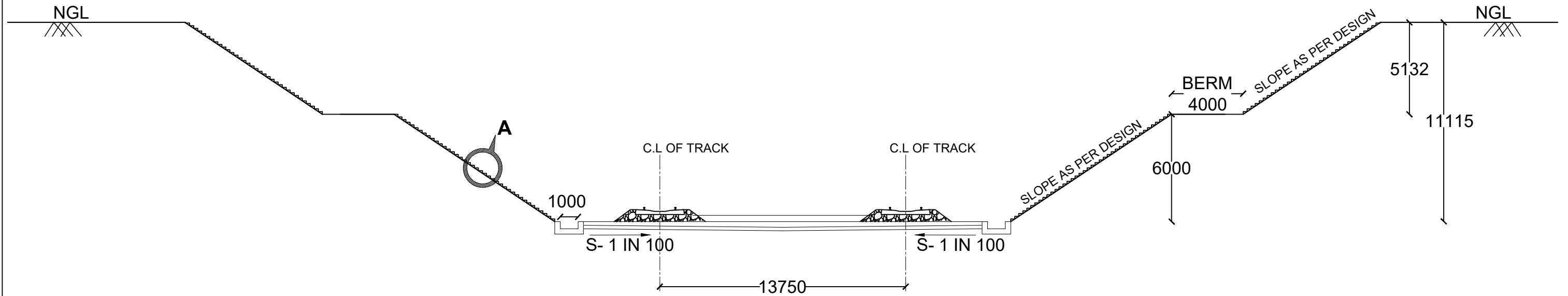


TITLE:- **TYPICAL SKETCH FOR APPROACH ROAD OF RUBs**

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>ChahateyRam</i>	R. R. KUMAR GM/ IP&P	<i>RRK</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>AS</i>	RAJU SOLANKI DGM/C-SOUTH	<i>RS</i>
REETU PATIAL CDE/ CIVIL	<i>RP</i>		

DRG. NO. **GC-HRIDC-SK-GEN-031_A0** SHEET NO. **1 OF 1**

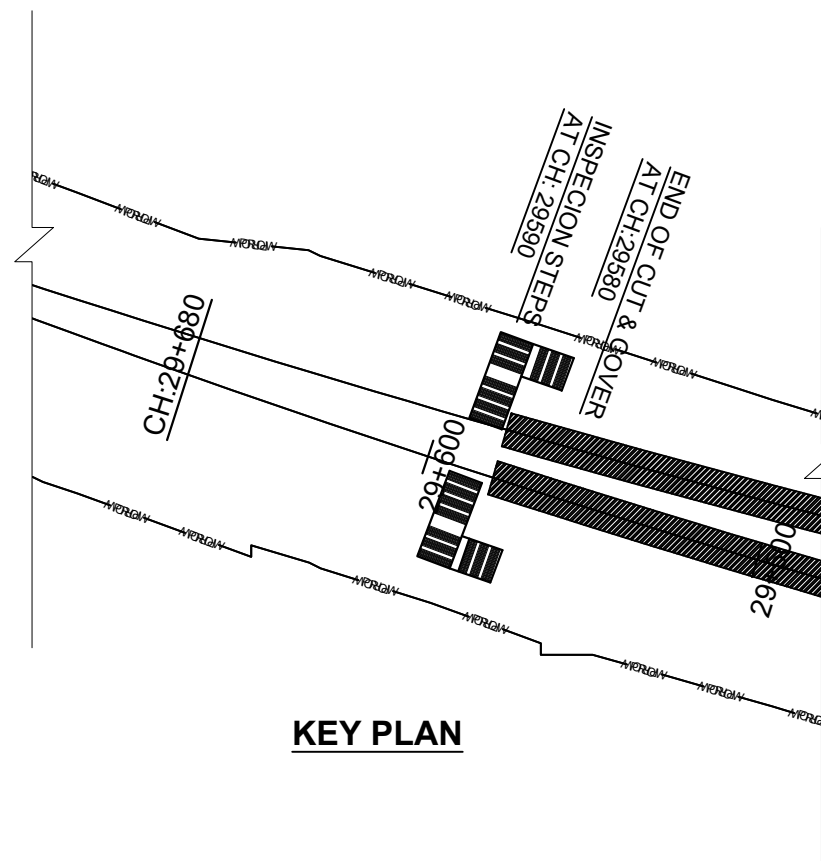
SCALE : **AS SHOWN** ISSUE DATE **11.01.2023** REVISED DATE



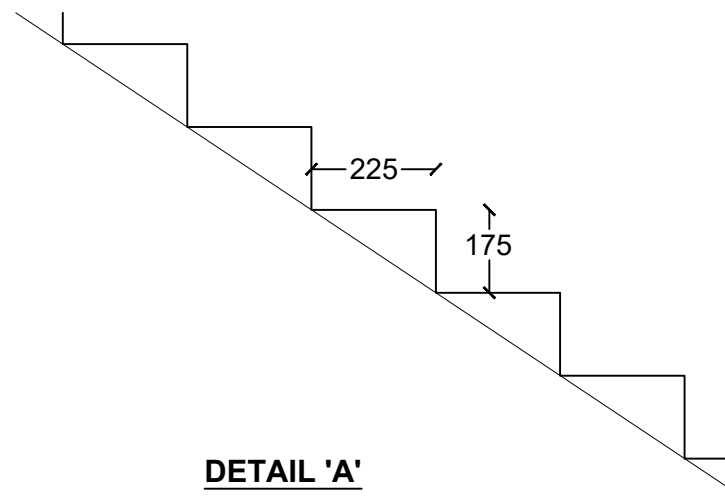
**CROSS SECTION NEAR
END OF CUT & COVER CH: 29590**

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SPECIFIED.
2. NO DIMENSION SHALL BE SCALED FROM DRAWING ONLY WRITTEN DIMENSIONS ARE TO BE FOLLOWED.
3. CHAINAGES SHOWN ARE RECKONED FROM C/L OF PRITHALA STATION BUILDING TAKEN AS 0.00m, WITH RESPECT TO UP MAIN LINE.



KEY PLAN



DETAIL 'A'

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED

CONSULTANT:
GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE: Conceptual sketch for details of
inspection steps from
cutting in formation to ground

SKETCH NO. GC-HRIDC-C4-SK-TUNNEL-002_A0 **SHEET NO.**

SCALE : AS SHOWN **ISSUE DATE** 09.01.2023 **REVISED DATE**

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
SUDHIR AGRAWAL DPD/CIVIL	<i>Sudhir</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>		


5. General Electrical Services Drawings

- NOTES:
1. SUBSTATION TO BE PROVIDED WITH VENTILATION SYSTEM TO CATER LOAD OF EQUIPMENTS.
 2. BAFFLE WALL HEIGHT SHALL COVER TOP OF THE TRANSFORMER LEVEL.
 3. THE CABLE LAYING ARRANGEMENT INSIDE THE TRENCHES SHALL BE LAID AS PER SITE CONDITION.
 4. THE BENDING RADIUS OF HT/LT CABLES SHALL CONFIRM TO IS-STANDARDS.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TENDER SPECIFICATION

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.**

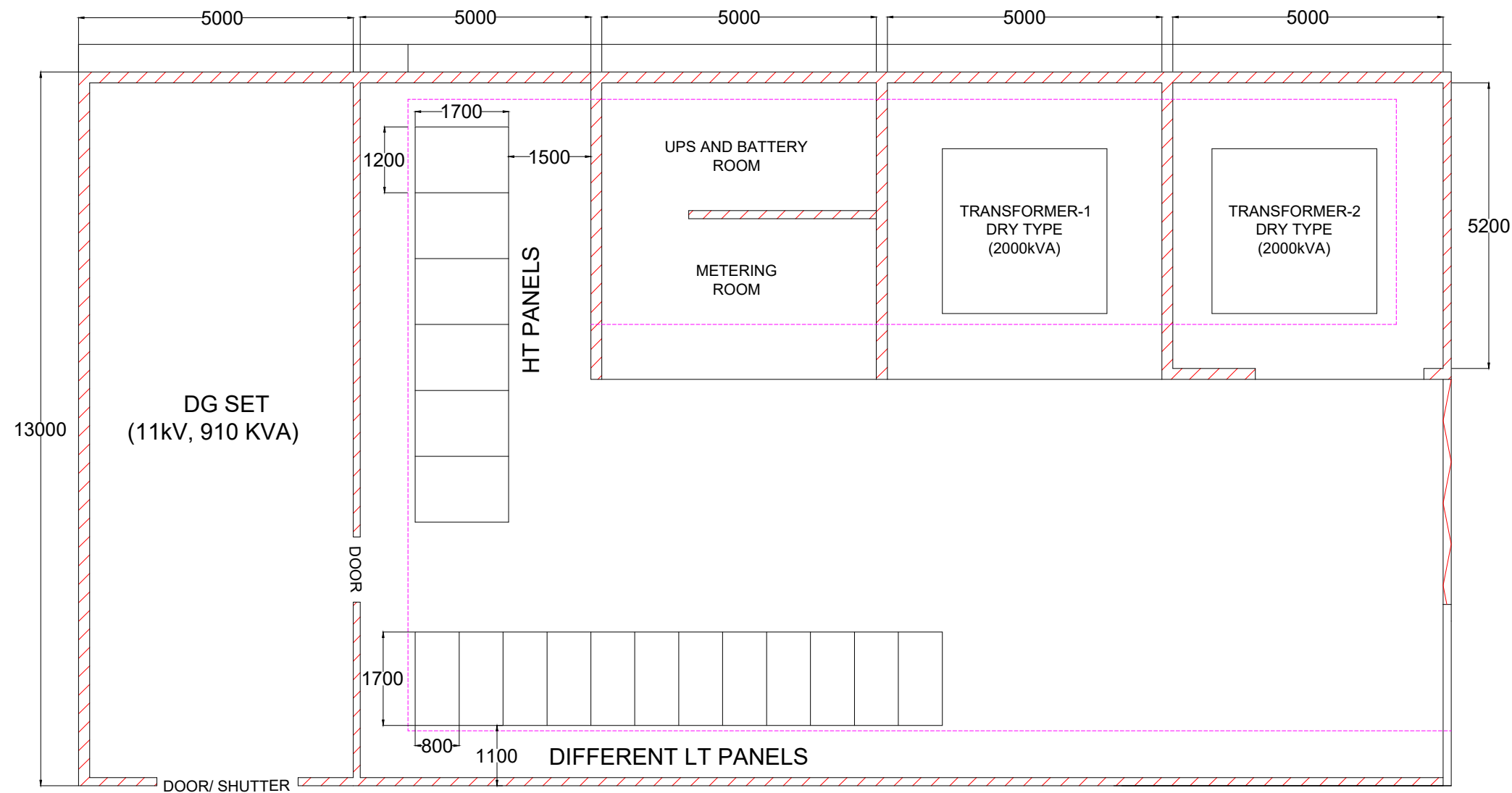
CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.






TITLE:- **INDICATIVE LAYOUT PLAN OF SUB-STATION 11/0.433kV NEAR UTILITY SHAFT**

DRG. NO. **GC-HRIDC-C4-DRW-TTL-ELE-001_A2** SHEET NO. **1 OF 1**

SCALE : **AS SHOWN** ISSUE DATE **07.11.2022** REVISED DATE **09.01.2023**



INDICATIVE LAYOUT PLAN OF SUB-STATION (SS1) NEAR CONSTRUCTION CUM UTILITY SHAFT OF TUNNEL 11/0.433kV(25M X 13M) FOR REFERENCE PURPOSE ONLY


GC/HORC		HRIDC	
NAME / DEGINATION	SIGN	NAME / DEGINATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
A.S. JANGHU CRE/Elect.		MENDLEEF KATIYAR AM/Elect.	
STIPHEN SAHOO ARE/Elect.			


NOTES:

1. SUBSTATION TO BE PROVIDED WITH VENTILATION SYSTEM TO CATER LOAD OF EQUIPMENTS.
2. BAFFLE WALL HEIGHT SHALL COVER TOP OF THE TRANSFORMER LEVEL.
3. THE CABLE LAYING ARRANGEMENT INSIDE THE TRENCHES SHALL BE LAID AS PER SITE CONDITION.
4. THE BENDING RADIUS OF HT/LT CABLES SHALL CONFIRM TO IS-STANDARDS.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TENDER SPECIFICATION

PROJECT:
 HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

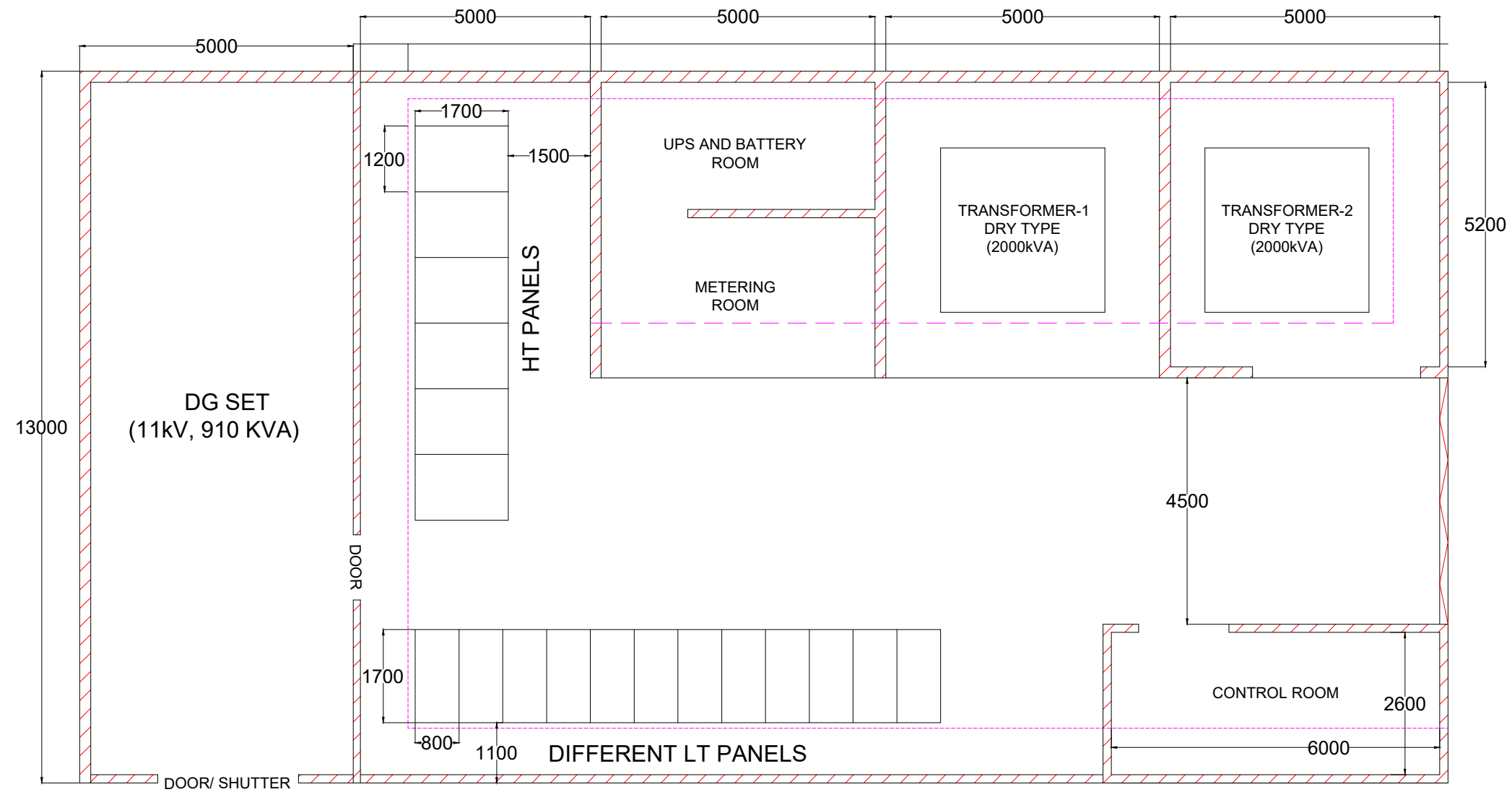
CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:- INDICATIVE LAYOUT PLAN OF SUB-STATION 11/0.433KV

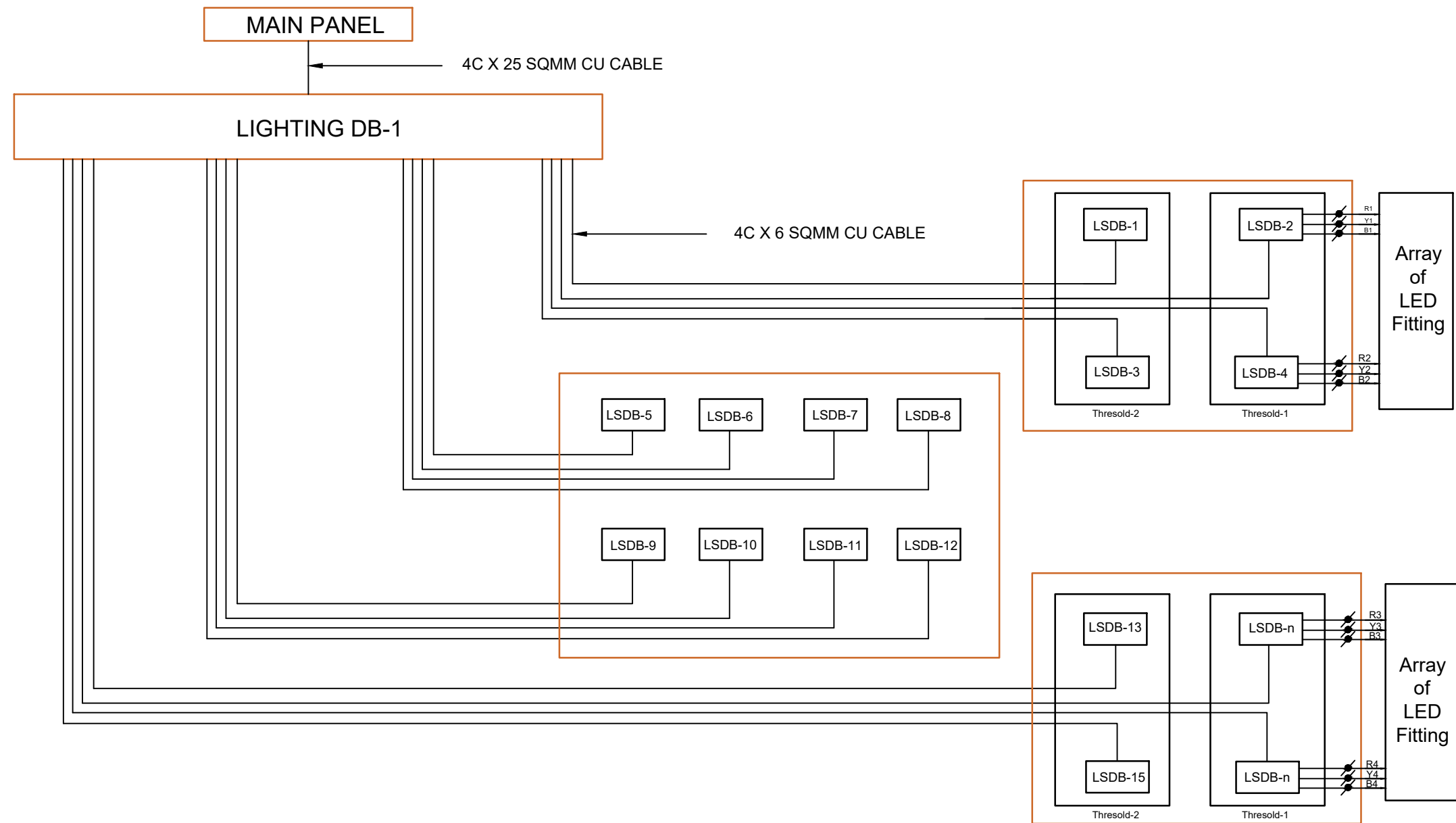
DRG. NO. GC-HRIDC-C4-DRW-TTL-ELE-002_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 07.11.2022 **REVISED DATE** 09.01.2023



INDICATIVE LAYOUT PLAN OF SUB-STATION (SS2) NEAR SONIPAT END PORTAL OF TUNNEL 11/0.443kV (25M X 13M) FOR REFERENCE PURPOSE ONLY

GC/HORC		HRIDC	
NAME / DEGINATION	SIGN	NAME / DEGINATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
A.S. JANGHU CRE/Elect.		MENDLEEF KATIYAR AM/Elect.	
STIPHEN SAHOO ARE/Elect.			



**POWER SUPPLY FOR LIGHTING
ARRANGEMENT AT TUNNEL-1 & TUNNEL-2**

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED

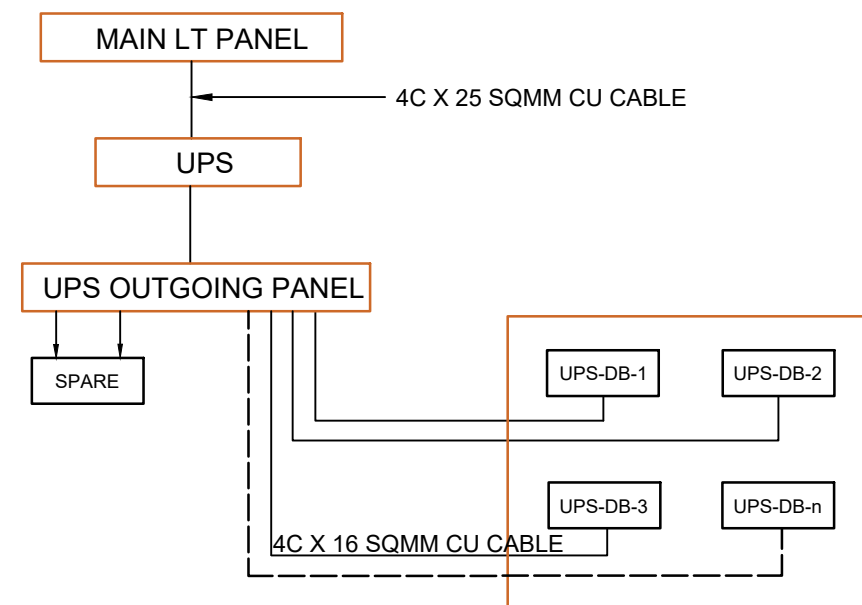
CONSULTANT:
GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



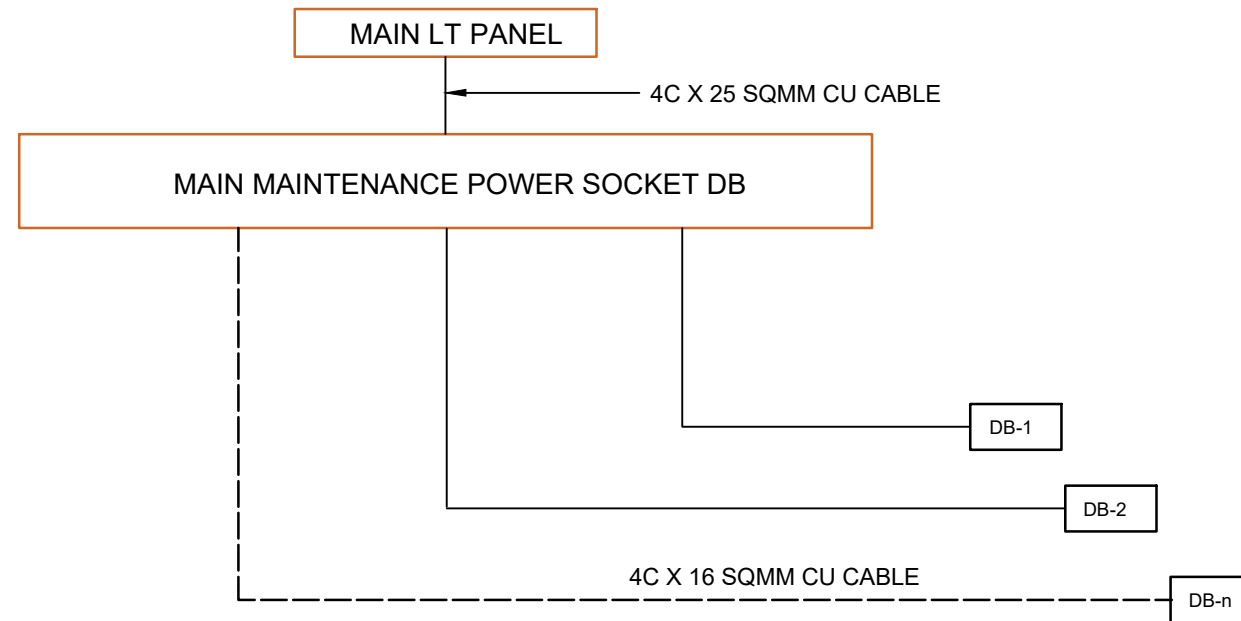
TITLE:- POWER SUPPLY FOR LIGHTING
ARRANGEMENT (INDICATIVE)

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	
A.S. JANGHU CRE/Elect.	<i>A.S. Janghu</i>	MENDLEEF KATIYAR AM/Elect.	
STIPHEN SAHOO ARE/Elect.	<i>Stephen Sahoo</i>		

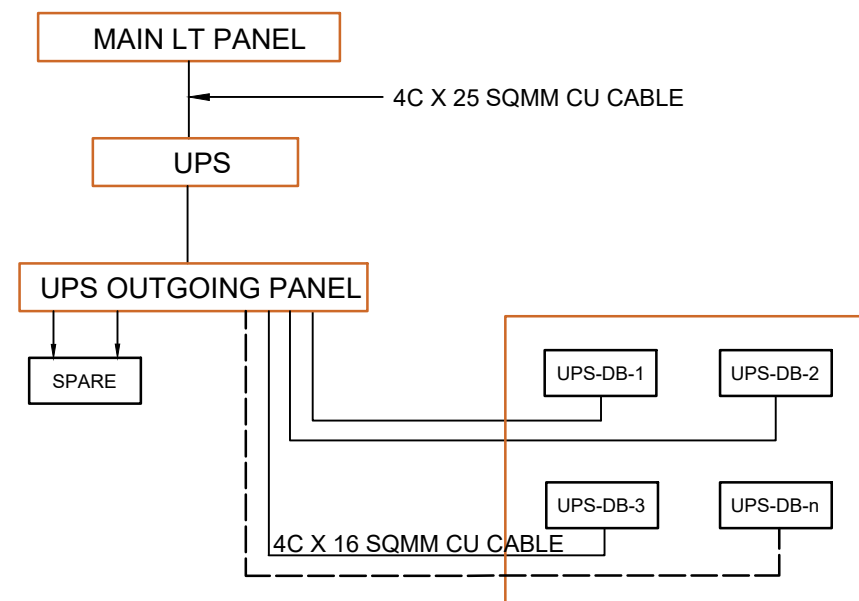
DRG. NO. GC-HRIDC-C4-DRW-TTL-ELE-003_A2	SHEET NO. 1 OF 1
SCALE : AS SHOWN	ISSUE DATE 07.11.2022
	REVISED DATE 09.01.2023



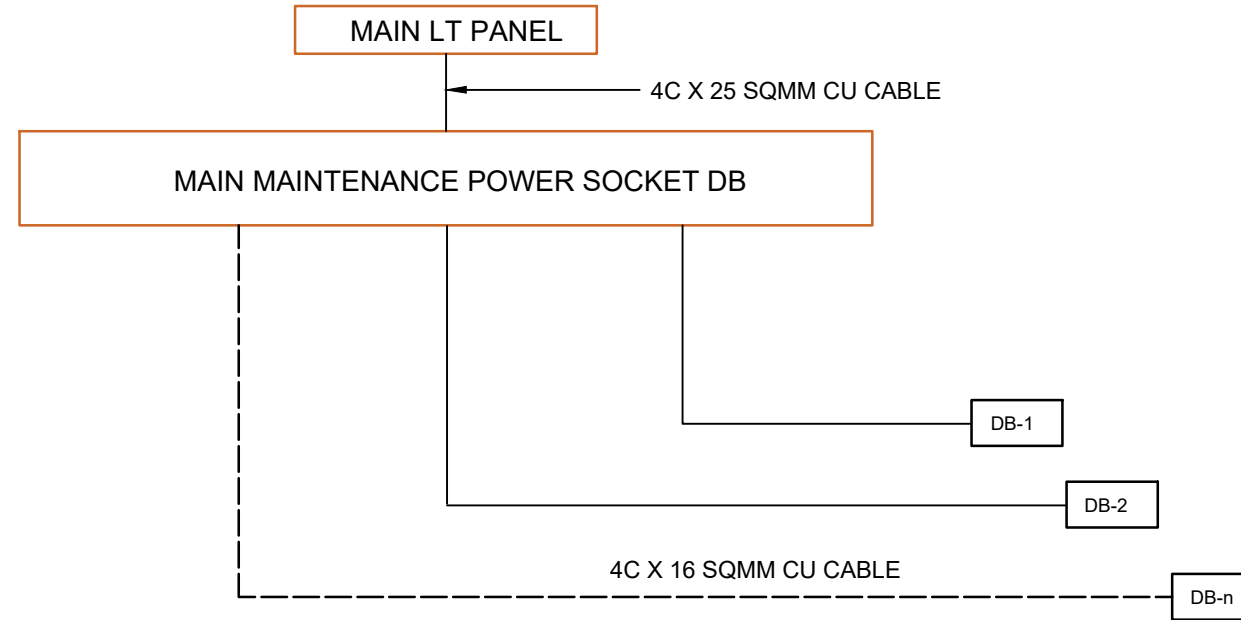
POWER SUPPLY ARRANGEMENT FOR UPS SUPPLY AT SS-1 IN BOTH TUNNELS



MAINTENANCE POWER SOCKET (1&3 PHASE) DB DIAGRAM AT TUNNEL -1




POWER SUPPLY ARRANGEMENT OF UPS MAIN PANEL AT SS-2 IN BOTH TUNNELS



MAINTENANCE POWER SOCKET (1&3 PHASE) DB DIAGRAM AT TUNNEL -2


PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 **HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED**

CONSULTANT:
 **GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR**
 RITES Limited in consortium with SMEC International Pty. Ltd.



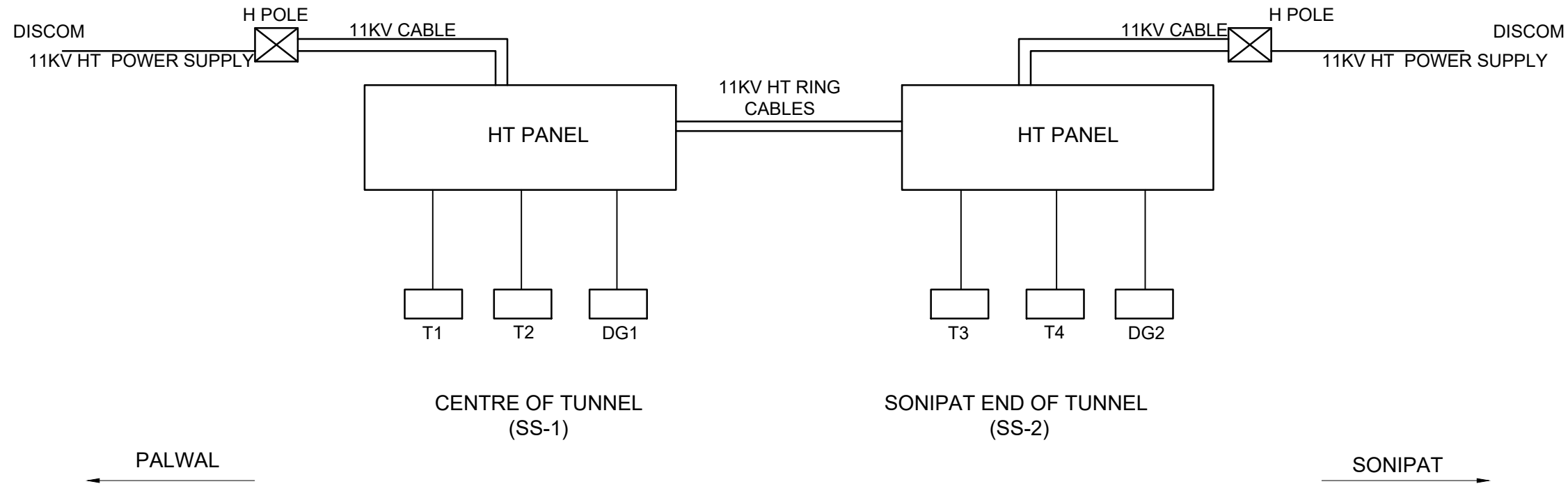
TITLE:- POWER SUPPLY ARRANGEMENT FOR EMERGENCY AND MAINTENANCE POWER SOCKET DIAGRAM (INDICATIVE)

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
A.S. JANGHU CRE/Elect.		MENDLEEF KATIYAR AM/Elect.	
STIPHEN SAHOO ARE/Elect.			

DRG. NO. GC-HRIDC-C4-DRW-TTL-ELE-004_A2 **SHEET NO.** 1 OF 1

SCALE : AS SHOWN **ISSUE DATE** 07.11.2022 **REVISED DATE** 09.01.2023

SINGLE LINE DIAGRAM OF HT POWER SUPPLY SYSTEM IN TUNNEL



- NOTES:**
- 11 kV power supply from DISCOM may be by overhead line or cable.
 - Cable bending radius to be maintained as per IS-standards.

THIS DRAWING SHALL BE READ IN CONJUNCTION WITH TENDER SPECIFICATION

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:



HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

CONSULTANT:

GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:-
 SINGLE LINE DIAGRAM OF HT SYSTEM IN TUNNEL (INDICATIVE)

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
A.S. JANGHU CRE/Elect.		MENDLEEF KATIYAR AM/Elect.	
STIPHEN SAHOO ARE/Elect.			

DRG. NO.
 GC-HRIDC-C4-DRW-TTL-ELE-005_A1

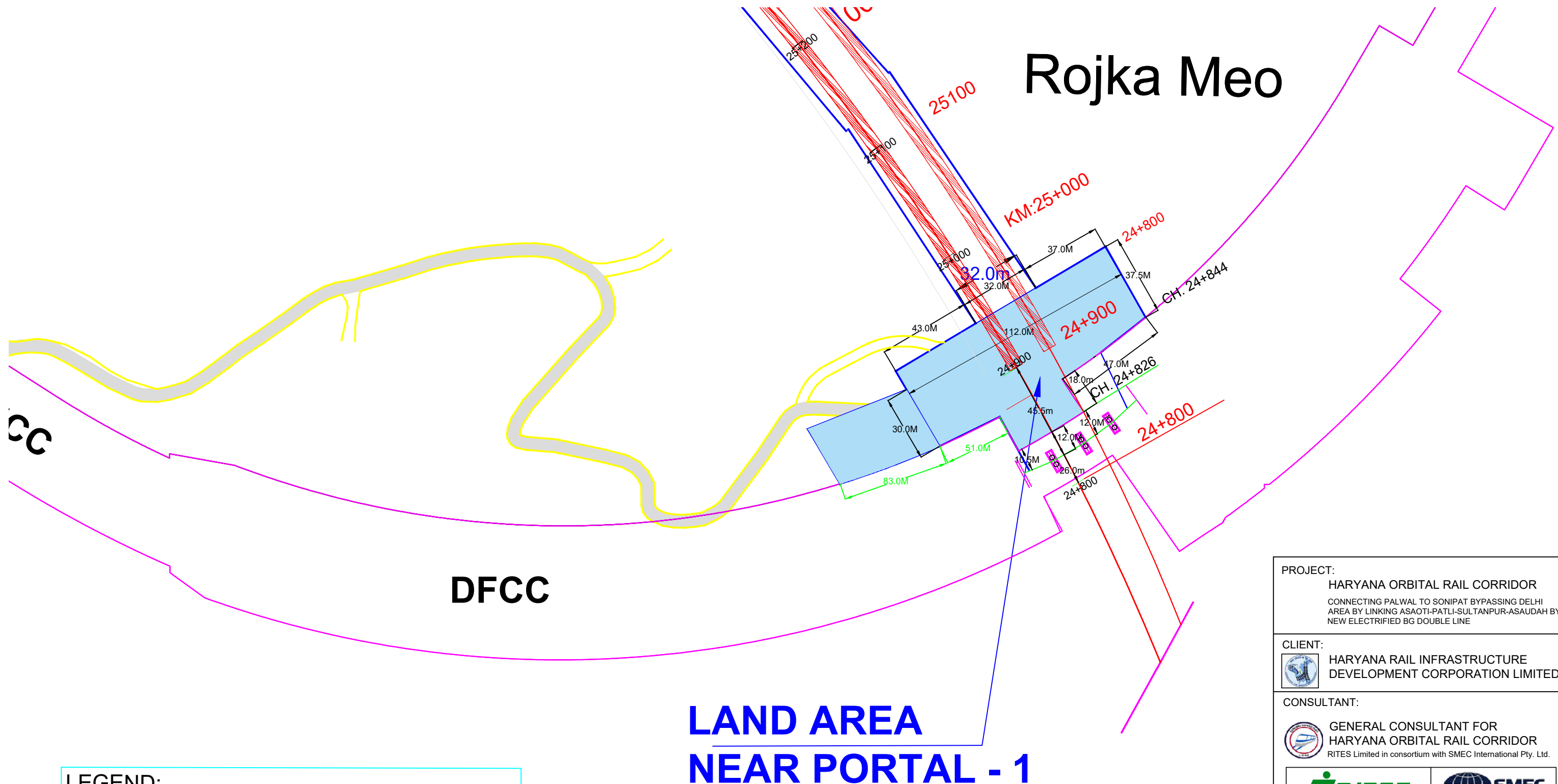
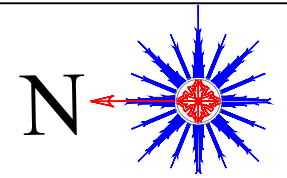
SHEET NO.
 1 OF 1

SCALE : AS SHOWN

ISSUE DATE	09.01.2023
REVISED DATE	

6. Land Area for Tunnel


Land Area Taken for Execution of Tunnel & Shafts







LAND AREA NEAR PORTAL - 1

PROJECT:
 HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED

CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



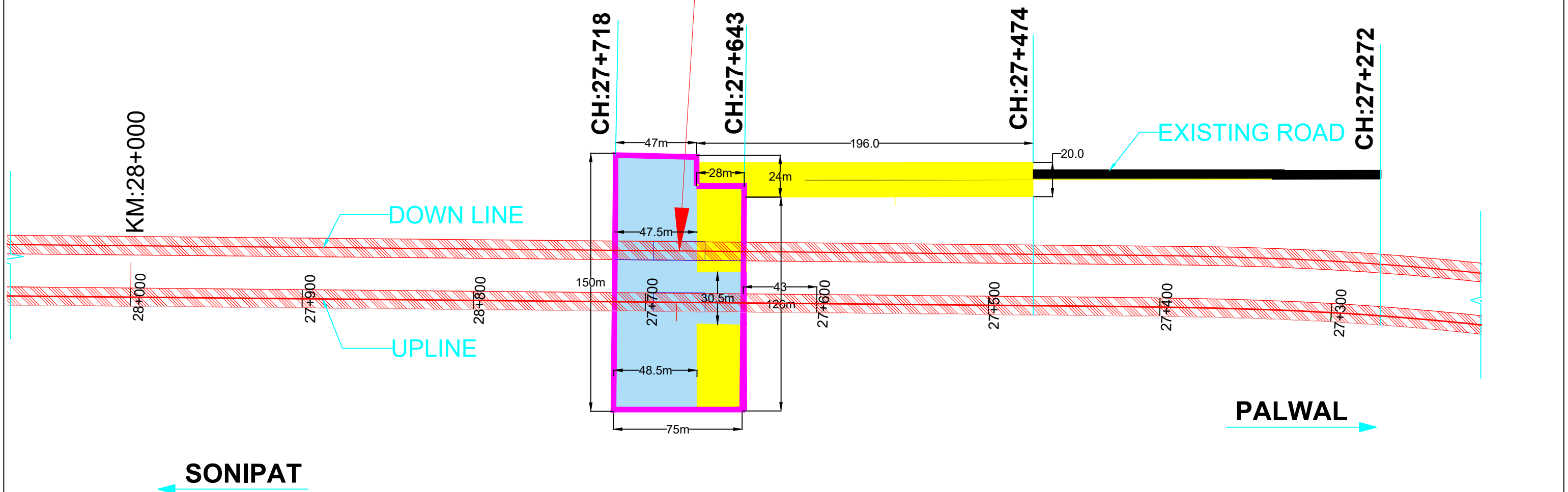
GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
REETU PATIAL CDE/ CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	

TITLE:-
 LAND AREA NEAR PORTAL-1

SKETCH NO. HRIDC-C4-SK-LANDPLAN-001_A1 SHEET NO.

SCALE : AS SHOWN ISSUE DATE 03.01.2023 REVISED DATE 10.01.2023

PERMANENT VENTILATION SHAFT 3 & 4 CH. 27+680 M



LEGEND:

LAND WILL BE HANDED OVER IN D+7 DAYS

LAND WILL BE HANDED OVER IN D+90 DAYS

D- COMMENCEMENT DATE

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED

CONSULTANT:
 GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.

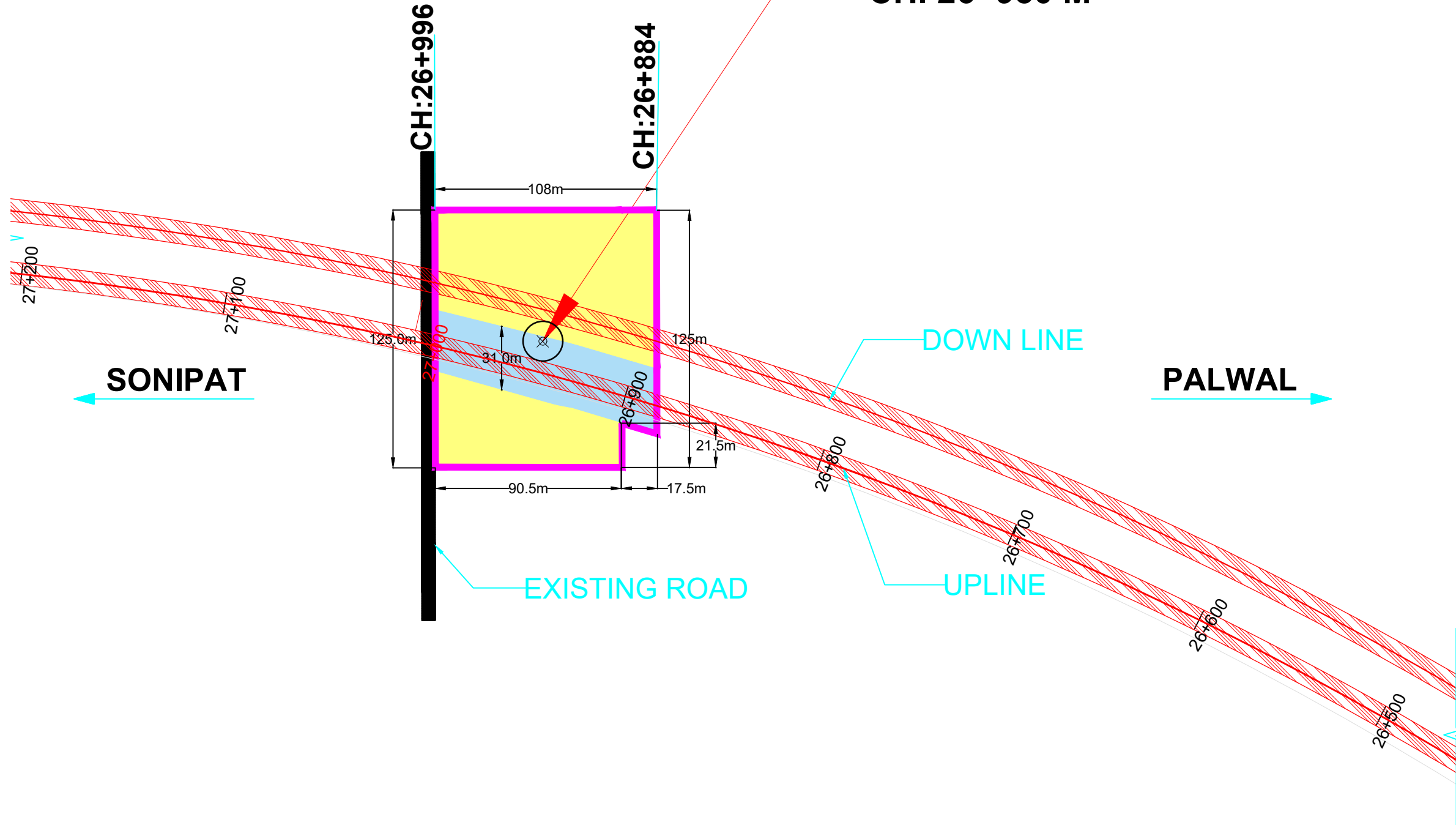


TITLE:-
LAND AREA NEAR PERMANENT
VENTILATION SHAFT 1 & 2

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRIDC	
REETU PATIAL CDE/ CIVIL		RAJU SOLANKI DGM/CIVIL/SOUTH	

SKETCH NO. HRIDC-C4-SK-LANDPLAN-002 A1		SHEET NO.
SCALE : AS SHOWN	ISSUE DATE 03.01.2023	REVISED DATE 10.01.2023

**CONSTRUCTION CUM
UTILITY SHAFT
CH. 26+950 M**



LEGEND:

LAND WILL BE HANDED OVER IN D+7 DAYS

LAND WILL BE HANDED OVER IN D+90 DAYS

D- COMMENCEMENT DATE

PROJECT:
HARYANA ORBITAL RAIL CORRIDOR
CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
HARYANA RAIL INFRASTRUCTURE
DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
GENERAL CONSULTANT FOR
HARYANA ORBITAL RAIL CORRIDOR
RITES Limited in consortium with SMEC International Pty. Ltd.



TITLE:-
LAND AREA NEAR
CONSTRUCTION CUM UTILITY SHAFT

SKETCH NO.
HRIDC-C4-SK-LANDPLAN-003_A1

SHEET NO.

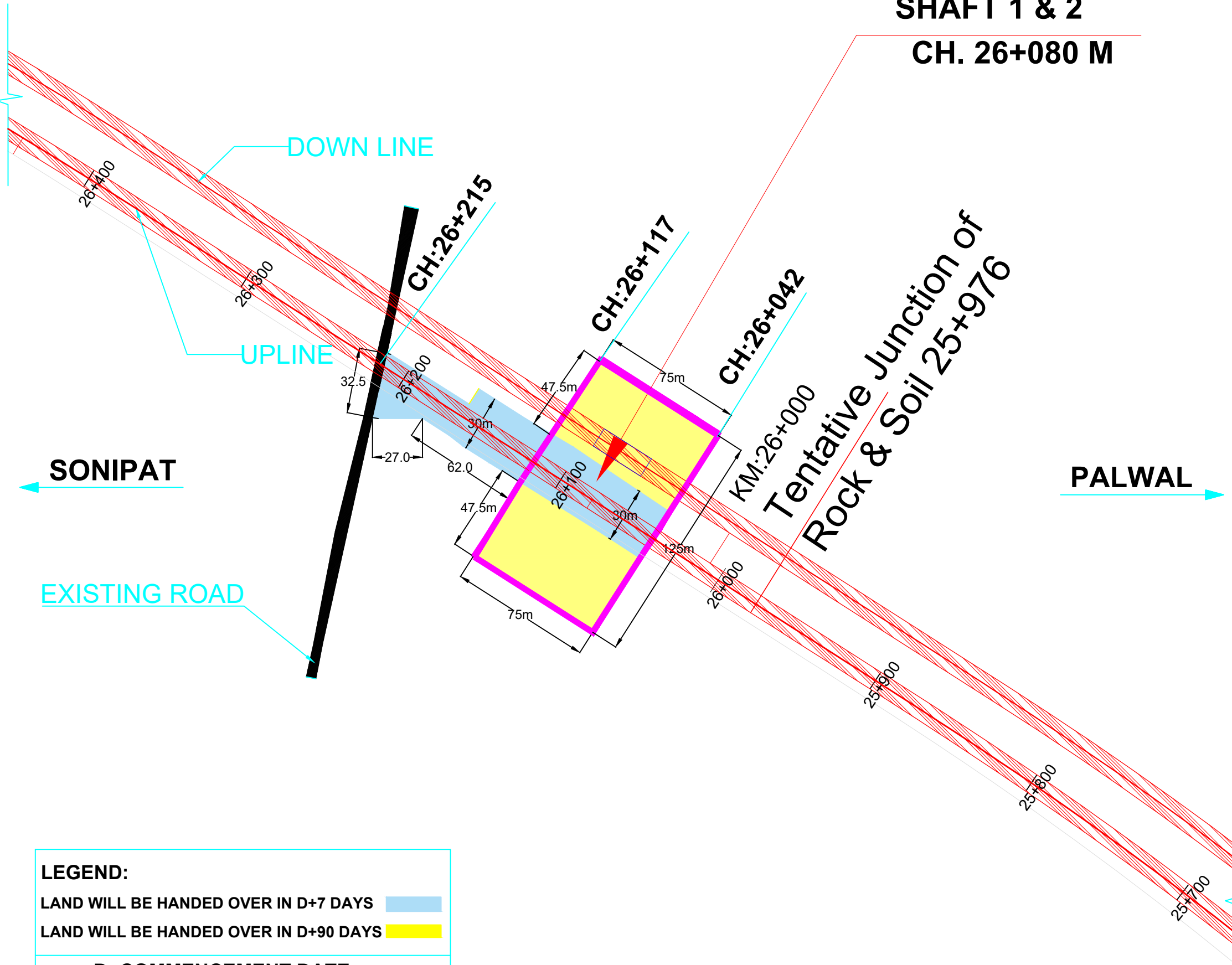
SCALE : AS SHOWN

ISSUE DATE: 03.01.2023

REVISED DATE: 10.01.2023

GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju</i>

**PERMANENT VENTILATION
SHAFT 1 & 2
CH. 26+080 M**



LEGEND:
 LAND WILL BE HANDED OVER IN D+7 DAYS
 LAND WILL BE HANDED OVER IN D+90 DAYS
D- COMMENCEMENT DATE

PROJECT:
 HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI
 AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY
 NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE
 DEVELOPMENT CORPORATION LIMITED

CONSULTANT:
 GENERAL CONSULTANT FOR
 HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.



GC/HORC		HRIDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD	<i>Chahatey Ram</i>	SHIV OM DWIVEDI CPM/HRIDC	<i>Shiv Om Dwivedi</i>
REETU PATIAL CDE/ CIVIL	<i>Reetu Patial</i>	RAJU SOLANKI DGM/CIVIL/SOUTH	<i>Raju Solanki</i>

TITLE:-
 LAND AREA NEAR PERMANENT
 VENTILATION SHAFT 3 & 4

SKETCH NO.
 HRIDC-C4-SK-LANDPLAN-004_A1

SHEET NO.

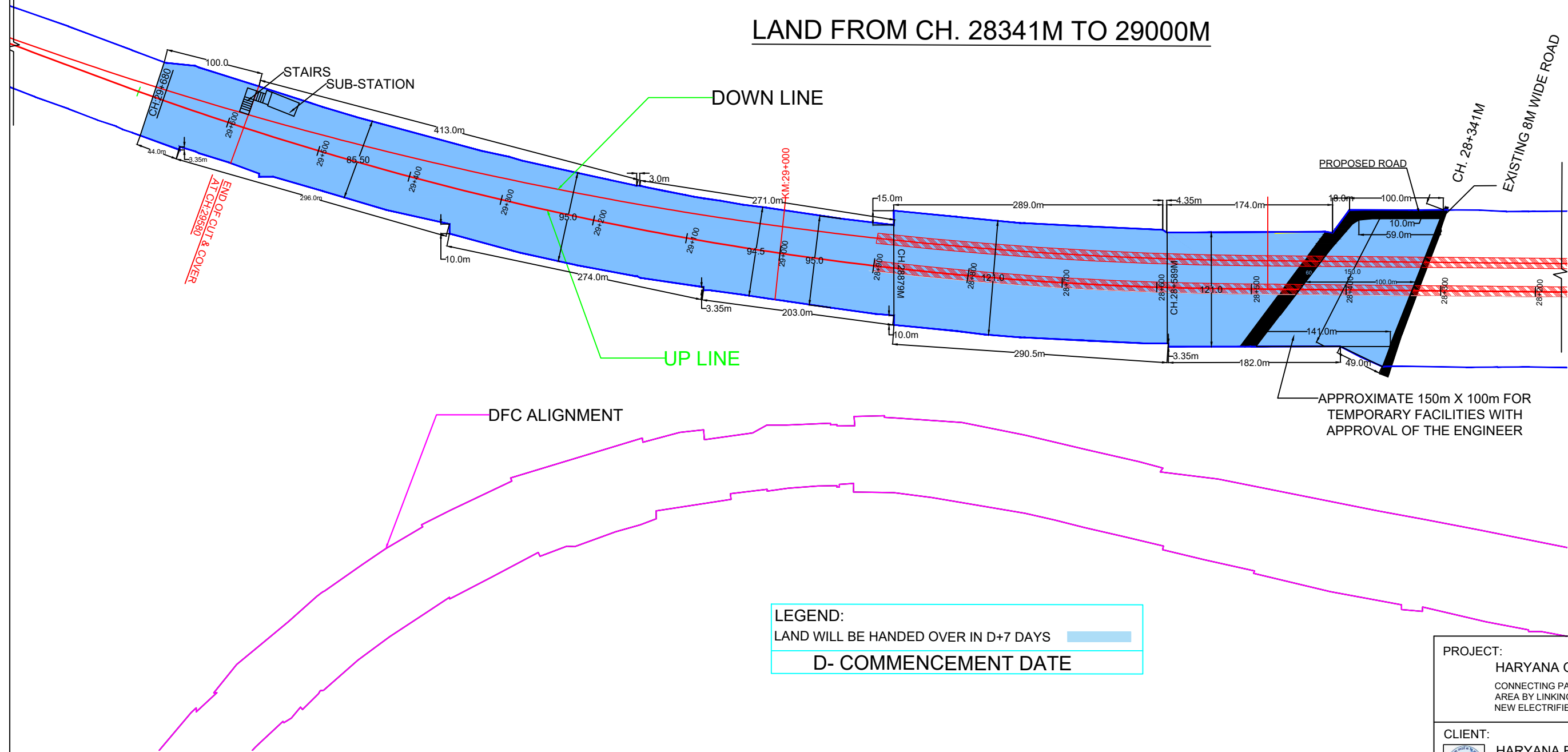
SCALE : AS SHOWN

ISSUE DATE: 03.01.2023

REVISED DATE: 10.01.2023

LAND DETAILS FROM CH.28+341M TO 29+680M

LAND FROM CH. 28341M TO 29000M



LEGEND:
 LAND WILL BE HANDED OVER IN D+7 DAYS
D- COMMENCEMENT DATE

PROJECT:
 HARYANA ORBITAL RAIL CORRIDOR
 CONNECTING PALWAL TO SONIPAT BYPASSING DELHI AREA BY LINKING ASAOTI-PATLI-SULTANPUR-ASAUDAH BY NEW ELECTRIFIED BG DOUBLE LINE

CLIENT:
 HARYANA RAIL INFRASTRUCTURE DEVELOPMENT CORPORATION LIMITED.

CONSULTANT:
 GENERAL CONSULTANT FOR HARYANA ORBITAL RAIL CORRIDOR
 RITES Limited in consortium with SMEC International Pty. Ltd.

THE INFRASTRUCTURE PEOPLE

Member of the Surbana Jurong Group

GC/HORC		HRDC	
NAME / DESIGNATION	SIGN	NAME / DESIGNATION	SIGN
CHAHATEY RAM PD		SHIV OM DWIVEDI CPM/HRDC	
		RAJU SOLANKI DGM/CIVIL/SOUTH	
REETU PATIAL CDE/ CIVIL			

TITLE:-
 LAND DETAILS FROM
 CH: 28341m TO 29680m

SKETCH NO. HRDC-C4-SK-LANDPLAN-005_A1	SHEET NO.
SCALE : AS SHOWN	ISSUE DATE 03.01.2023
	REVISED DATE 10.01.2023